

**ROMAN CHILDREN IN THE EARLY
EMPIRE:
A DISTINCT EPIDEMIOLOGICAL
AND THERAPEUTIC CATEGORY?**

by

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ABSTRACT

Roman writers acknowledged the peculiar biological and psychological characteristics of children. This thesis examines the hypothesis that they regarded them as members of distinct epidemiological and therapeutic groups. Its chief sources of information are medical texts from the Early Empire, supplemented by archaeological evidence. It attempts to determine the extent to which the above traits informed theories concerning the prevalence, pathogenesis, clinical features and prognosis of childhood ailments.

Celsus stated that children should not be treated in the same way as adults. This thesis investigates whether other medical authorities shared this view, and whether Roman practitioners abided by this principle. It explores the ways in which they treated sick children and whether they employed different approaches according to the age or gender of individuals.

This research breaks new ground in that it makes direct comparisons between treatments for children and adults, and children of varying age, and between children of either gender. It acknowledges the diversity of medicine in the Roman world and places equal emphasis on 'scientific' and supernatural practices. Another innovation is the use of case studies; these provide an opportunity to compare and discuss choices of therapeutic modalities for nine groups of diseases and in patients in different age categories.

DEDICATION

This thesis is dedicated to my family, and I am indebted for their love and support during my research. Special thanks go to my long-suffering husband who has had to endure numerous visits to museums and wet and windy archaeological sites and be a constant source of encouragement.

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ABBREVIATIONS

Epigraphy

CIL *Corpus Inscriptionum Latinarum*

Texts by Galen

Abbreviations are in accordance with C. Gill, T. Whitmarsh and J. Wilkins (eds), 2009, *Galen and the World of Knowledge*, Cambridge: Cambridge University Press, ix-xv; H.G. Liddell and R. Scott, 1996, *Greek and English Lexicon*, Oxford: Clarendon Press.

<i>AA</i>	<i>De anatomicis administrationibus, On anatomical procedures</i>
<i>Aff.Dig.</i>	<i>De proprium animi cuiuslibet affectum dignotione et curatione, On the passions of the soul</i>
<i>Alim.Fac.</i>	<i>De alimentorum facultatibus, On the properties of foodstuffs</i>
<i>Ars.Med.</i>	<i>Ars medica, Art of medicine</i>
<i>Caus.Morb.</i>	<i>De causis morborum, On the causes of disease</i>
<i>Caus.Symp.</i>	<i>De causis symptomatum differentiis, On the causes of symptoms</i>
<i>Comp.Med.Gen.</i>	<i>De compositione medicamentorum per genera, On the compounding of drugs according to kind</i>
<i>Comp.Med.Loc.</i>	<i>De compositione medicamentorum secundum locos, On the compounding of drugs according to places</i>
<i>CP</i>	<i>De causis procatarteticis, On antecedent causes</i>
<i>Cur.Rat.Ven.Sect.</i>	<i>De curandi ratione per venae sectionem, On treatment by bloodletting</i>
<i>Diff.Feb.</i>	<i>De febrium differentiis, On the differences of fevers</i>

<i>Foet.Form.</i>	<i>De foetuum formation, On the formation of the foetus</i>
<i>Hipp.Aph.</i>	<i>In Hippocratis Aphorismos, On Hippocrates' Aphorisms</i>
<i>Hipp.Elem.</i>	<i>De elementis ex Hippocrate, On the elements according to Hippocrates</i>
<i>Hipp.Epid.</i>	<i>In Hippocratis de Epidemiarum, On Hippocrates' 'Epidemics'</i>
<i>Hipp.Vict.</i>	<i>In Hippocratis De alimento, On Hippocrates' 'On nutriment'</i>
<i>HNH</i>	<i>In Hippocratis de natura hominis, On Hippocrates' Nature of Man</i>
<i>Hipp.Off.</i>	<i>In Hippocratis De Officina medici commentariorum, Commentaries on Hippocrates' On the office of a physician</i>
<i>Hipp.Prog.</i>	<i>In Hippocratis Prognostica, On Hippocrates' 'Prognostic'</i>
<i>Hipp.Vict.</i>	<i>In Hippocratis vel Polybi opud de salubri victus ratione privatorium On Hippocrates' or Polybus' 'On the healthy diet of private individuals'</i>
<i>HVA</i>	<i>In Hippocratis de acutorum morborum victu, On Hippocrates' 'Regimen in acute diseases'</i>
<i>Loc.Aff.</i>	<i>De locis affectis, On affected parts</i>
<i>MM</i>	<i>De methodo medendi, On the therapeutic method</i>
<i>MMG</i>	<i>Ad Glauconem de methodo medendi, To Glaucon on the method of healing</i>
<i>Morb.Diff.</i>	<i>De morborum differentiis, On the differences in diseases</i>

<i>Nat. fac.</i>	<i>De facultatibus naturalibus, On the natural faculties</i>
<i>PHP</i>	<i>De placitis Hippocratis et Platonis On the Doctrines of Hippocrates and Plato</i>
<i>Praen.</i>	<i>De praenotione ad Epigenem, On prognosis</i>
<i>Prop.Plac.</i>	<i>De propriis placitis, On his own opinion.</i>
<i>Puer.Epil.</i>	<i>Puero epileptico consilium, Advice for an epileptic boy</i>
<i>Purg.Med.Fac.</i>	<i>De purgantium medicamentorum facultate, On the properties of purgative medicines</i>
<i>QAM</i>	<i>Quod animi mores corporis temperamenta sequuntur, The soul's dependence on the body</i>
<i>San.Tu.</i>	<i>De Sanitate tuenda, On preserving health</i>
<i>Sem.</i>	<i>De semine, On seed</i>
<i>SMT</i>	<i>De simplicium medicamentorum temperamentis ac facultatibus, On the powers of simple drugs</i>
<i>Temp.</i>	<i>De temperamentis, On Mixtures</i>
<i>Ther.</i>	<i>De theriaca ad Pisonem, On theriac to Piso</i>
<i>Trem.Palp.</i>	<i>De tremore, palpitatione, convulsion et rigore, On tremor, palpitation, spasm, and rigor</i>
<i>Tum.Pr.Nat.</i>	<i>De tumoribus praeter naturam, On abnormal swellings</i>
<i>Typ.</i>	<i>De typis, On types [of fevers]</i>

UP *De usu partium,*
On the usefulness of parts of the body

Ven.Sect.Er. *De venae sectione adversus Erasistratum,*
On phlebotomy against Erasistratus

Vict.At. *De victu attenuante,*
On the thinning diet

Texts by other authors

Ac. Caelius Aurelianus, *Acute diseases*

Aer. Hippocrates, *Airs, waters, and places*

Agr. Cato the Elder, *De agricultura*

Aph. Hippocrates, *Aphorisms*

CA Aretaeus, *On the therapeutics of acute diseases*

CD Aretaeus, *On the therapeutics of chronic diseases*

Chr. Caelius Aurelianus, *Chronic diseases*

Coac. Hippocrates, *Coan Precognitions*

Contr. The Elder Seneca, *Controversiae*

Dent. Hippocrates, *On dentition*

De tuenda Plutarch, *De sanitate tuenda praecepta*

Epid. Hippocrates, *Epidemics*

HN Pliny the Elder, *Historia Naturalis, Natural History*

Hipp. Hippocrates

Inst.Or. Quintilian, *The Institutio Oratoris*

Inst. Gaius, *The Institutes of Roman Law*

<i>Int.</i>	Pseudo-Galen, <i>Introductio seu medicus</i>
<i>Lib. inc.</i>	<i>Liber incertus</i> . Oribasius, <i>Collectiones medicae</i>
<i>Med.</i>	Celsus, <i>De medicina</i>
<i>MM</i>	Dioscorides, <i>De materia medicae</i>
<i>Morb.Sacr.</i>	Hippocrates, <i>On the sacred disease</i>
<i>Mul.</i>	Hippocrates, <i>On the diseases of women</i>
<i>Nat.Mul.</i>	Hippocrates, <i>On the nature of women</i>
<i>Orib.</i>	Oribasius
<i>Ren.Ves.</i>	Rufus of Ephesus, <i>De renum et vesicae morbis</i> , <i>On the diseases of the kidney and bladder</i>
<i>RR</i>	Cato the Elder, Varro, <i>De re rustica</i>
<i>SA</i>	Aretaeus, <i>On the causes and symptoms of acute diseases</i>
<i>SD</i>	Aretaeus, <i>On the causes and symptoms of chronic diseases</i>
<i>Tusc.</i>	Cicero, <i>Tusculan Disputations</i>

INTRODUCTION

This thesis investigates whether there were significant differences between children's and adult medicine in the early Roman Empire. It also explores a range of matters relating to the experiences of disease and treatments for children at various stages of development and of different genders. Bertier, Dasen and Bradley state that Roman children belonged to separate epidemiological or medical groups.¹ This thesis seeks to establish whether there is sufficient textual evidence to confirm their suppositions and the possibility that Roman doctors may have regarded children as members of a distinct therapeutic category.

Sources of evidence

The principal source of information used is the corpus of medical and pharmacological texts available during the first few centuries AD. Unfortunately there are no extant Roman treatises devoted entirely to childhood diseases. Rufus of Ephesus wrote a treatise, *On the care of small children*, but only a few fragments of this survive in the works of later authors.² A wide variety of medical and non-medical genres contained scattered references to child health. Chief among these are the writings of Celsus, Pliny the Elder, Rufus of Ephesus, Aretaeus of Cappadocia, Scribonius Largus, Dioscorides, Soranus of Ephesus and Galen of Pergamum. The latter is, above all, the most abundant source for observations and theoretical concepts for human physiology, the aetiology of disease and choices of therapeutic interventions.³

¹ Bertier 1996: 2164; Dasen 2010: 700, 2011: 292-294; Bradley 2005: 72.

² These include Aetius, Oribasius, Paul of Aegina and medieval Arab physicians of the ninth and tenth centuries AD, such as Baladī, Hunain and Rhazes. See Daremberg 1879; Ullmann 1975; Scarano 1990; Pormann 1999.

³ Galen was a prolific author. Fichtner's catalogue (2012) identifies a number of works attributed to him, although some may be spurious. See also Jackson 1988: 61; Pioreschi 1998: 321-330; Mattern 2008a: 11-13; Petit 2013; Nutton 2013a: 250.

An additional and valuable resource is archaeological evidence.⁴ Artefacts, such as surgical tools, amulets, tombstones, feeding bottles and collyrium stamps can give some insight into how parents and practitioners cared for children.⁵ Votive deposits and amulets provide clues to beliefs concerning children's health.⁶ Studies of skeletal remains can reveal much about the children themselves, such as their sex, age at death, socio-economic status, feeding customs, general health and nutritional status of individual children or burial populations.⁷ In some instances, child skeletons bear traces of specific diseases and surgical interventions.⁸ Archaeology not only supplements information from written accounts, but can also contribute to the understanding of written texts.⁹

In the early first century AD, Celsus remarked that “in general children ought not to be treated like adults.”¹⁰ Galen recommended caution when prescribing medicaments to certain individuals, stating that “we have shown that strong bodies bear stronger medicines such as the weak could not bear.” He enlarged on this, saying that:

weaker, softer bodies are those of women, eunuchs and children and those with a humid natural temperament, [and] endowed with white, soft bodies.¹¹

The question of whether doctors and other practitioners actually treated children differently is the key concern of the fourth and fifth chapters of this thesis. There is a

⁴ Extant surgical implements, votives, amulets, inscriptions, and the skeletal remains of adults and children Nutton 2002: 253; Van der Eijk 2011: 28. This thesis examines the tombstone depicting a deceased infant (Fig. 3.3), that of a Gallo-Roman oculist (Fig. 5.1), surgical instruments from Rimini (Section 4.4.3), the cranium of a child from Fidenae (Fig. 4.1), skeletal evidence for breast feeding and weaning customs (Table 4.2), and palaeopathological evidence of rickets (Figs. 3.1, 3.2).

⁵ Nutton 2002: 253; Van der Eijk 2011: 28; Baker 2013: 1-4, 50.

⁶ Baker 2013: 27.

⁷ *Ibid.*, 140, 142-145.

⁸ *Ibid.*, 138, 145-147.

⁹ *Ibid.*, 4-6.

¹⁰ Celsus, *Med.* 3.7.1. Translated by W.G. Spencer.

¹¹ Galen, *Comp.Med.Gen.* 2.1 (13.467.15-18-468.2.-5K). Author's translation.

consensus among scholars that children's medicine was not a separate division of medicine during the Roman period.¹² There is, nevertheless, a potential element of doubt since Lyons identified 'paediatrics' as a separate branch of medicine in his translation of a passage in Galen's *On the Parts of Medicine*:

The ancients [...] divided all medicine into surgery, pharmacy and diet, and then afterwards they subdivided each of these parts [...] To these divisions geriatrics has been added as being a special branch of medicine and this has been coupled by some with paediatrics.¹³

There are two problems with Lyons' translation. Although doctors have always treated children, it was not until the nineteenth century AD that the term 'paediatrics' was coined.¹⁴ Secondly, it does not correspond to Schöne's Latin translation of the text which refers to the rearing and education of infants.¹⁵ On balance, it is likely that this 'subdivision' was not an all-inclusive medical system for children of all ages.

Existing literature on children's medicine

In recent decades there has been a proliferation of publications about Roman childhood and families.¹⁶ This trend followed the landmark study of Saller and Shaw (1984) of funerary epigraphy in Italy and the Western provinces. From their findings, the authors concluded that Roman families were nuclear in nature. Prior to that date, scholars believed that Roman families consisted principally of extended family members.¹⁷ The

¹² Ghinopoulo 1930: 8; Peiper 1966: 28; Hummel 1999: 5; Mudry 2004: 347; Schmitz 2011: 3455.

¹³ Galen, 1.3; 5.8. The original Greek text is lost; it survives in the form of a ninth century AD Arabic translation by Hunain. Translated into English by M. Lyons, 1969.

¹⁴ Pearn 2011.

¹⁵ Schöne's Latin translation (1911) is reprinted in the same volume above as that of Lyons. Both parts of his phrase, "*pedotrophicam, id est, infantium educatiuam*," have similar meanings. In the first part, *ped-* or *paed-* signifies child, and *τροφεύς* means a person who rears or trains (Liddell and Scott). The second means "the training [or rearing] of infants," author's translation.

¹⁶ Golden 1985; Bradley 1987; Wiedemann 1989; French 1991; Dixon 1992; Harlow and Laurence 2002; Rawson 2003; Laes 2003, 2010; Hänninen 2005; Crawford and Shepherd 2007; Harlow *et al.* 2007; Alberici and Harlow 2007; Dasen 2011. For an informative historiography, see Vuolanto 2014, and Dasen's bibliography 2001: 7-17.

¹⁷ Curchin 2000-2001: 535-536, citing R. Saller and B.D. Shaw, 1984. 'Tombstones and Roman family relations in the principate, Civilians, soldiers and slaves.' *Journal of Roman Studies* 74: 124-156.

care of newborns and wet nursing has attracted a great deal of scholarly attention.¹⁸ Various archaeological and anthropological studies have investigated the use of amulets, and the health status and diets of Roman children.¹⁹ There are, however, relatively few substantial surveys of diseases and treatments for Roman children. Kroner (1877) and Seguin (1902) summarised some accounts in medical treatises, but neither commented on the information they gathered.²⁰ Garrison (1923), Ruhräh (1925), Still (1965), Peiper (1966) and Colón and Colón (1999) described children's medicine in different cultures across vast periods of time. As a result, they provided insufficient detail relating to the Roman period.²¹ Ghinopoulo (1930) compiled a review of the physiology, diseases and treatments of Greek and Roman children from Hippocrates to Patristic times. He focused on regimen and drugs, hardly mentioning surgery. There is no mention of supernatural and folk practices, and his work is full of anachronistic assumptions about diseases.²²

In marked contrast, a paper by Bertier (1996) on Roman children's medicine in the imperial period discusses the limitations of written texts, the dominance of Hippocratic theory, and the special significance of developmental milestones. There is also an

¹⁸ Fildes 1986; Bradley 1986; Gourevitch *et al.* 1989; Gourevitch 1992; Abou Aly 1996; French 2004; Bacalexi 2005; Dasen 2010.

¹⁹ For example, amulets for infants and children: Dasen 2003. Palaeopathology relating to specific diseases: Steinbock 1993a, b; Mariani-Costantini *et al.* 2000; Blondiaux *et al.* 2002; Wood 2004; Charlier *et al.* 2007; Minozzi *et al.* 2012. Bioarchaeology: Lewis 2007; Gowland and Redfern 2010. The reconstruction of Roman breastfeeding and weaning customs: Dupras *et al.* 2001; Prowse *et al.* 2004, 2008; Fuller *et al.* 2006a; Dupras and Tocheri 2007; Rutgers *et al.* 2009; Keenleyside *et al.* 2009; Nehlich *et al.* 2011; Powell *et al.* 2014.

²⁰ T. Kroner, 1877. *Historisch-Kritische Beiträge zur Pathologie des Kinders altens nach altgriechischen Quellen*. Leipzig: B.G. Teubner; C. Seguin, 1902. *La médecine infantile chez les Grecs et les Romains*. Paris: Le Boyer. These were post-graduate medical theses.

²¹ F. H. Garrison 1923 *A System of Pediatrics*. Philadelphia: Saunders; J. Ruhräh, 1925. *Pediatrics of the Past*. New York: Hoebner; Still, 1965. *The History of Paediatrics. The Progress of the Study of Diseases of Children up to the End of the XVIIIth Century*. London: Dawsons of Pall Mall; Colón and Colón 1999.

²² Ghinopoulo referred to 'infectious diseases' 1930: 83. He also made unsubstantiated assumptions about the identity of diphtheria (*ibid.* 10-11, 58, 84), scarlatina (11) and malaria (23, 83, 86).

emphasis on the understanding of the biological traits of children which underpinned theories concerning their susceptibility to disease and influenced choices of therapeutic interventions. Bertier's comprehensive account of diseases and treatments stimulate further thought. An entire volume by Hummel (1999) on children's medicine from the Roman and Byzantine periods is equally informative. It is an extensive sourcebook of Greek medical writings which, by definition, does not include those of Latin authors. Both authors confine their attention to evidence concerning the three arts of medicine, namely regimen, pharmacology and surgery.

A book on the Roman family includes Bradley's study (2005) of health and disease in Roman children. He discusses evidence from Greek and Latin texts of mortality rates and the kinds of diseases that were common at certain periods of infancy and childhood. One of these was the deformation of the spine and limb bones that he attributes to rickets. He describes the full range of treatments that were available for children, acknowledging the widespread use of folkloristic and magical healing by means of ritual, chants and amulets. Religious healing was also important in the Roman world although Bradley gives, as an example, evidence of Epidaurian miracle healing in earlier times. Bradley's overview contains a great deal of information and raises a number of significant questions about the impact of an ailing child in a Roman household. In a chapter from another edited volume on Roman family life, Gourevitch (2010) turns her attention to stages of the human lifespan and terminology relating to children. She also investigates the relationship of sick children with their families and asks who acted as their carers.

Byl's portrayal of medicine in Hellenistic and Roman times (2011) includes a section on the physiology of children according to Galen. He describes the various stages of childhood, feeding and weaning customs, and a few examples of differences between treatments for adults and children. Another significant contributor on the health of Roman children is Baker (2010) who provides succinct summaries of infant and child mortality, humoral lore, foetal development and the biological traits of juveniles. She also discusses child care and feeding practices, the perils of premature walking and several childhood diseases. There are ample examples of treatments for children in accordance with their age and constitution, such as epilepsy, bladder calculi, fevers, epidemics and mental illnesses. She enumerates the various sources of healing in the community that include folk medicine and healing at cult centres. There is, however, little mention of magical remedies.

Lesley Dean-Jones explores the thoughts of male Greek authors concerning women's bodies, menstruation and the biological sex of embryos and children in Classical Greece (1991; 1994). She also asks whether Greek and Roman writers obtained and incorporated information from women in gynaecological texts (1995). This is especially relevant to the management of young girls around the onset of menarche. Another of her interests (1991; 2013) concerns the Hippocratic concept of internal channels within the body. These became fully open during puberty, but remained narrow throughout childhood. This lack of patency was the major feature that distinguished children from adults. This thesis examines whether this concept persisted into Roman times.

Véronique Dasen is a prolific writer on a wide range of subjects in classical antiquity. This thesis includes material from several of her works: embryos (2013), rites of

passage (2009), infant feeding and childcare (2010), dwarfs (2007) and amulets (2003; 2015). Her chapter (2011) incorporates a vast amount of information on social, cultural, developmental and medical aspects of childbirth and infancy, together with burial customs. She surveys the terminology of childhood, noting the introduction of Latin neologisms during the first century BC, key milestones, birth customs and rites of passage. She summarises the physiological and emotional characteristics infants, their physical weaknesses and liability to disease. These factors made it necessary for special precautions when massaging, moulding and swaddling their bodies and dictated choices of treatments when they became ill. Dasen includes divine and magical healing alongside 'rational' therapies. She recognises the symbolic significance of a baby's first bath and the absence of direct information from female carers and practitioners.

Bonet's conference paper (1998) examines the evidence of children's maladies and their treatment according to Pliny. It is full of much thought-provoking material concerning terminology and the particular ailments children were prone to. She emphasises Pliny's suggestions regarding tailoring drug prescriptions to suit the nature of individual children and the gravity of their ailments. Her commentary contains insights into the disproportionate use of disgusting remedies and animal ingredients in medicines for infants. Mudry's paper (2004) is based on Celsus' *De medicina*. He examines his list of common diseases that arose in infancy and childhood, and notes that some diseases affected children more or less severely than adults. He concludes that there were no specialists in child medicine, but physicians often modified therapies for children. Mudry quotes Celsus' well-known statement that children should not be

treated in the same way as adults.²³ He remarks that Celsus placed more weight on the strength of a child, rather than its age, when selecting suitable treatments. Mudry does not refer to the use of supernatural remedies since Celsus seldom referred to such practices.

In summary, the works of Bonet, Mudry, Bradley, Bertier and Hummel are exceptional in terms of the information they convey and the questions they ask.. The latter two present the most comprehensive accounts of children's medicine according to written sources. In general they exhibit a strong bias towards regimen, pharmacology and surgery, although half recognise the significance of supernatural and folk healing. Bradley alone makes fleeting references to archaeological evidence in the form of amulets. Nevertheless, none of these publications has sufficient space to investigate all aspects of Roman children's medicine and utilise the full range of source data that is available.

The contribution of this thesis

This thesis makes a significant contribution to the field of Roman children's medicine. It presents the most comprehensive and up to date overview of Roman children's medicine. There are a number of features that set it apart from existing publications. Firstly, it attempts to make systematic comparisons between the different experiences of disease in adults and male and female children at various stages of development. Another significant aspect is its inclusion of all components of Roman healing, namely regimen, pharmacology, surgery, and supernatural, astrological and folk healing. It also presents innovative case studies of diseases and therapies that provide the opportunity

²³ Mudry 2004: 347, citing Celsus, *Med.* 3.7B-C.

to investigate a number of related issues. Lastly, it includes a considerable amount of archaeological evidence from studies of human skeletal remains, medical equipment and other artefacts.

The following chapter examines medical and non-medical writings that form the main source material for this thesis. It also explores what many scholars refer to as ‘Roman medicine’ and suggests the use of a broader term that reflects its diversity and complexity.

CHAPTER 1: MEDICINE, MEDICAL SECTS AND WRITTEN SOURCES

This chapter examines the nature of medicine in classical antiquity and the various individuals who practised the healing art and medical treatises that have survived to the present day.

1.1 Defining medicine in the Roman world

Nutton defines Roman medicine as “medicine in the Roman world.”²⁴ This thesis adopts the latter term rather than the former because it is concerned with the health of individuals in all parts of the Roman Empire.²⁵ It does not distinguish between the different kinds of healing or practitioners that were available. The authors of medical treatises largely came from the eastern provinces and wrote in Greek; there were relatively few Latin medical texts until the Late Roman period.²⁶ By the early empire medicine in the Roman world had developed into a blend of different kinds of ‘rational’ and ‘irrational’ practices derived from Greek, Etruscan and Roman traditions.²⁷ The division between rational and irrational medicine is a modern, artificial construct since Romans would not have separated treatments into rigid categories.

Cato the Elder (c.180 BC) wrote a compilation on farm management. In it he described the use of chants, charms and a few remedies derived largely from cabbages and

²⁴ Nutton 2013a: 12; 1992: 36.

²⁵ Nutton points out that “Roman medicine is an ambiguous description.” ‘Rome’ could signify the city of Rome and Latium, or the Italian peninsula 1992: 36. By the second century AD the ‘Roman world’ included conquered territories from Gaul to Africa and from Syria to Britain. See R.K. Sherk 1988, *The Roman Empire: Augustus to Hadrian*. Cambridge: Cambridge University Press.

²⁶ The first Roman emperor, Augustus, reigned from 31 BC to AD 14. The Late Roman period began in AD 284 and ended in AD 602; this was followed by the Byzantine Empire: see A.H.M. Jones, 1986. *The Late Roman Empire 284 – 602*. Baltimore: John Hopkins University Press.

²⁷ Jackson 1988: 11; Vallance 1990: 132; Bourguière *et al.* 2000: vii; King 2001: 16; Horstmanshoff and Stol 2004; Van der Eijk 2011: 25, 27.

pomegranates.²⁸ He was antagonistic towards Greek medicine since it eroded the principle of Roman self-help and the use of freely available natural medicines.²⁹ Pliny the Elder, who died in AD 79, also advocated simple Roman remedies and condemned avaricious and murderous Greek doctors.³⁰ His contemporary, Celsus, was more even-handed in his assessment of the development of Greek medicine from mythical origins to Hippocrates and the Alexandrians.³¹ There is also an element of tension in his work owing to his appreciation of locally gathered Roman herbs and his admiration of Greek medical advances.³²

The importation and gradual assimilation of Greek medicine into Rome began in 291 BC when the Senate appealed for divine help from Asklepios to rid Rome of the plague. An embodiment of the Greek god was transported to the city in the form of a snake, and the Tiber Island became his cult site at Rome. In 219 BC the Senate awarded Roman citizenship to Archagathus of Sparta and appointed him as a public physician in Rome.³³ It was not long before it became fashionable for wealthy Romans to acquire the services of Greek doctors. Many of these were prisoners and slaves captured during Rome's imperial expansion; others were free persons who chose to seek their fortunes in the capital city.³⁴

²⁸ Cato, *Agr.* 160, 126, 127, 156, 157.

²⁹ Jackson 1988: 10; Nutton 2013a: 165.

³⁰ Nutton 2013a: 15, 168-169.

³¹ Celsus, *Med.* Prooemium 2-67.

³² Nutton 2013a: 169-170.

³³ Jackson 1988: 12, 31; Nutton 2013a: 162, 164. It is quite possible that Roman or Greek doctors were already active in Rome prior to Archagathus' arrival in 219 BC Nutton 1992: 37.

³⁴ Nutton 1992: 38.

Practitioners of different socio-economic status, education and gender offered a range of therapies in the early empire.³⁵ Many doctors affiliated themselves to various medical sects; the four leading sects during the early imperial period were the Empiricists, Dogmatists, Pneumatists and Methodists.³⁶ Dogmatic, Logical or Rational physicians believed that it was essential to understand the processes involved in the pathogenesis of disease.³⁷ They offered a variety of explanations that included imbalance of the four elements and humours, obstructions to the invisible pores within the body, and disturbances of digestive function.³⁸ Pneumatists were followers of Athenaeus of Attaleia who founded the Pneumatic sect in Rome in the first century AD. He believed that illnesses could arise from obstructions to the free circulation of fluids and *pneuma* through hidden pores or voids in the body. Derangements of the four qualities and humours could also bring about disease by affecting the condition of *pneuma* (the vital spirit of the body).³⁹ This sect was very prominent during the first two centuries AD.⁴⁰

Empiric or Empiricist doctors thought that it was futile to try to understand hidden causes of diseases or how medical treatments worked.⁴¹ They also thought that

³⁵ Practitioners included free, slave or ex-slave doctors, root-cutters, pedlars of drugs, eye remedies, charms and amulets, sports trainers, blacksmiths, magicians, religious and folk healers and quacks. Only a small proportion of these had access to medical texts. There were also wise women and midwives who learned their art directly from other women Nutton 1992: 38; 2013a: 201. Galen and Scribonius Largus recorded the names or descriptions of many important female sources for pharmacological drugs Flemming 2013: 277.

³⁶ Jackson 1988: 31. Celsus, for example, recorded the various views of these doctors regarding the aetiology of disease, *Med. Prooemium* 48-67.

³⁷ Nutton 2013a: 125.

³⁸ Celsus, *Med. Prooemium* 13-20.

³⁹ Stannard 1964: 31; Jackson 1988: 30-31; Vallance 1990: 7; Scarborough 1993: 44; Nutton 1995b: 44; Nutton 2013a: 173-174, 208; Carrick 2001: 41. The concept of *pneuma* had a long history in Greek medicine. Diocles of Carystus (fourth century BC) believed that diseases arose from imbalance of the four elements, qualities and humours and obstructions to the passage of *pneuma* through the body Van der Eijk 1999: 319-320; Nutton 2013a: 123-124.

⁴⁰ Nutton 2013a: 207.

⁴¹ Jackson 1988: 30; Nutton 1995b: 36.

anatomical dissections were pointless because they did not reflect the condition of internal organs in living beings.⁴² It was more imperative to place their trust in information gained through accurate clinical observation and the recording of clinical histories and signs. In the field of therapeutics, the use of tried and tested remedies was of paramount importance.⁴³ Another important sect was Methodism which was particularly influential in the Latin West. In brief, Methodist doctors treated cases according to the clinical features of their illnesses rather than theoretical concepts about their causation: this is explored in Section 1.2.5 below.

A number of prestigious male physicians, like Galen, trained in renowned medical centres.⁴⁴ A small minority of practitioners were public doctors (*archiatroi*), specialists, and physicians attached to healing sanctuaries or aristocratic and imperial households.⁴⁵ Most competed for trade in cities, while others toured the countryside.⁴⁶ Geographical factors and economic stringencies often dictated the choices available to patients. Country-dwellers in remote locations probably relied on popular Roman remedies and supernatural customs.⁴⁷

In effect, medicine in the Roman world was a spectrum of healing that included the three arts of regimen, pharmacology and surgery intertwined with popular, religious, magical, astrological and meteorological practices. These components were not

⁴² Nutton 1995b: 36.

⁴³ Nutton 2013a: 150-151, 171. See also Celsus, *Med. Prooemium* 12. The Empiric sect had its roots in fifth century BC Sicily. A major figure among its adherents was Heraclides of Tarentum (*fl.* 80 BC).

⁴⁴ Centres such as Alexandria, Smyrna and Tarsus; Nutton 2008: 154.

⁴⁵ Jackson 1993: 82-86; Riddle 1993: 120; Lloyd 1999: 213; Flemming 2000: 77; Baker 2010: 169; Oberhelman 2013: 8; Nutton 1992: 40-47.

⁴⁶ Nutton 1992: 44; 2008: 153.

⁴⁷ Nutton 1992: 37, 1995a: 11. See also Ferngren 2009: 37-39; Oberhelman 2013: 4. Roman folk or popular medicine was still thriving during the imperial period Scarborough 1993: 30.

mutually exclusive, and patients could take advantage of more than one at any time.⁴⁸ It is difficult to tease out Roman elements from Greek medicine because it evolved into an intricate blend of both traditions.⁴⁹

Conclusion

Medicine in the Roman world was a complex blend of Greek medicine, native traditions and supernatural practices. An astounding array of healers from different backgrounds worked in a variety of locations. Learned Roman physicians ascribed to various doctrinal beliefs. One of the two main camps accepted Hippocratic dogma on qualities, humours and *pneuma*. Methodists formed the other group. They accepted the principle of three basic classes of diseases and kept theoretical speculation about the hidden causes of disease to a minimum. There were also disagreements between fellow members of individual medical sects. There was such a diversity of healers and medical beliefs that it cannot be said that medicine in the Roman world was a single tradition. This had potential implications for the ways in which doctors explained biological differences between children and adults, differences in the ways diseases affected them, and whether they required different treatments.

The following two sections examine the writings of individual medical and non-medical authors in order to assess their genres, the messages they wished to convey to

⁴⁸ Nutton 2013a: 16-17. Scholars often divide ancient medical practices into high or low medicine (Riddle 1993), and rational or irrational medicine (Ferngren and Amundsen 1996: 2958). See also Von Staden, 2003, 'Galen's daimon: Reflections on 'irrational' and 'irrational.'" In N. Palmieri (ed.), *Rationnel et irrationnel dans la médecine ancienne et médiévale: Aspects historiques, scientifiques et culturels*, Saint-Étienne 2003, 15-43.) Other scholars disapprove strongly of the use of such terminology, describing it as "unhelpful" (Pinch 1994: 133-134), "inappropriate" and "a modern Western concept" (Van der Eijk 2004: 3-8). While accepting the many difficulties associated with these terms, Longrigg (1993: 1-3) feels justified in continuing to employ them. Draycott agrees that although they are "divisive" and "anachronistic," it is often impossible to avoid using them altogether 2011: 1-6.

⁴⁹ Van der Eijk 2011: 29.

prospective audiences, and to identify any difficulties likely to be experienced when seeking written evidence about the maladies of Roman children and their treatment.

1.2 Medical and pharmacological writings

Medical treatises were the product of educated men so there was a marked elite male bias in their writings. The views and work of less exalted practitioners and female physicians, midwives and nurses remain largely unknown.⁵⁰ Only a proportion of ancient medical texts survived intact, and many of these suffered from errors during copying or redaction.⁵¹ Their preservation often depended on whether they found favour in later periods, and some are only known as titles or fragments found in the works of other writers.⁵²

Medical fragments are a particular problem. Copyists occasionally distorted the meaning of fragments by inserting them into the wrong context or not transmitting them verbatim. Another difficulty is that it is not always clear whether a particular fragment represented a complete extract from an original source. Its final section may have become separated and added onto a different fragment.⁵³ Although fragments are separated from their primary contexts, they may often convey the sense of their original authors.⁵⁴ Other difficulties relate to the format and content of ancient books. A great deal of clinical teaching took place by oral and practical instruction. In many instances medical treatises provide scant details about operative techniques and the preparation of

⁵⁰ For exceptions regarding named female healers, see Holt Parker, 2012. Galen and the girls: sources for women medical writers. *Classical Quarterly* 62.1: 359-386.

⁵¹ Scarborough 1969: 162; Reynolds and Wilson 1991: 2-4, 19; Nutton 1995b: 47, 2013a: 4. Reynolds and Wilson believe that many errors resulted from “rudimentary punctuation” in Greek texts 1991: 4.

⁵² Van der Eijk 2011: 27; Nutton 2013a: 6.

⁵³ Rosenthal 1975: 198.

⁵⁴ Totelin 2010: 221.

medicaments.⁵⁵ All these factors can influence modern perceptions of healing in classical antiquity.⁵⁶

Many Roman authorities revered Hippocrates of Cos or founded their beliefs on his principles.⁵⁷ For this reason it is necessary to examine the works attributed to him alongside those of later authors.

1.2.1 Hippocrates c.450– c.350 BC

In antiquity and the Renaissance era a body of medical writings came to be associated with the historical figure of Hippocrates; these were widely circulated and eclipsed all other contemporary medical writings.⁵⁸ Scholars generally refer to them as the ‘Hippocratic Corpus’ or ‘Hippocratic writings.’ It is a diverse group and individual components vary in style, length, subject matter, doctrine and geographical origin.⁵⁹ They amount to around sixty treatises written in Ionian Greek, mainly between 420 and 350 BC.⁶⁰ They were clearly not the work of a single author and it is impossible to know which treatises were products of Hippocrates himself or members of his school.⁶¹

A conference paper by Philip van der Eijk (2015) compares ‘Hippocratic’ writings with other contemporary medical, scientific and philosophical works. He makes a

⁵⁵ Nutton 1985: 24; Petit 2010: 243.

⁵⁶ Scarborough 1969: 162; Reynolds and Wilson 1991: 3-4, 19; Van der Eijk 2011: 27; Nutton 1995b: 47, 2013a: 4. Many of Galen’s works contained a great deal of theoetical speculation Nutton 1995b: 4.

⁵⁷ Johnston and Horsley 2011: xxvi; Nutton 2013a: 5-6. Pneumatists, Empiricists and Methodists held Hippocrates in great respect Nutton 2013a: 211. Galen regarded himself as Hippocrates’ spiritual heir Smith 1979: 106, 124.

⁵⁸ Smith 1979: 178; van der Eijk 2011: 28.

⁵⁹ Jackson 1988: 21; King 2001: 9, 13; van der Eijk 2015: 17. Nutton believes that the treatises originate from Cos, Cnidus and various cities in Central Greece 2013a: 61.

⁶⁰ Johnston and Horsley 2011: xxv; Nutton 2013a: 74-81. The collection was gathered and stored in the Library of Alexandria on the direction of King Ptolemy Euergetes I during the third century BC Smith 1979: 199; Jackson 1988: 2; King 2001: 9.

⁶¹ Van der Eijk 2015: 17, 24. Van der Eijk lists the works of fifth and fourth century BC medical writers such as Alcmaeon, Chrysippus, Democedes, Empedocles, Diocles of Carystus, Praxagoras of Cos, and Aristotle and Plato: *ibid.* 27-32.

compelling case for including all medical works of the above period under the new heading of Classical Greek Medicine of the Fifth and Fourth centuries BC.⁶² Throughout this thesis the author continues to refer to ‘Hippocrates,’ the ‘Hippocratic Corpus’ and ‘Hippocratic writings’ for the sake of convenience. It does not intend to associate any particular treatises with Hippocrates himself and is mindful of the difficulty of distinguishing between Hippocratic and non-Hippocratic texts.

Individual treatises of the Corpus address the effects of the seasons, meteorological, climatic and environmental conditions, and the age of individuals on the prevalence of diseases.⁶³ Some refer to humoral imbalance or disturbances in the circulation of *pneuma*, and others to allopathic treatments.⁶⁴ The Hippocratics recognised differences in the anatomical characteristics and humoral complexions of children and adults. These and the width and patency of internal pores explained variations in susceptibility to disease at different ages (see Section 2.4.1 below). It is unfortunate that they provided scant information on the treatment of children’s ailments.⁶⁵ As mentioned below, Galen based his own theories and practices on Hippocratic principles.

1.2.2 Rufus of Ephesus *fl.* AD 98-117

Rufus was an influential physician and a prolific writer.⁶⁶ He promoted Hippocratic teachings on health and disease, and diagnoses and prognoses.⁶⁷ He is best known for

⁶² *Ibid.* 18.

⁶³ Hippocrates on seasons, weather and climate: *Airs, waters and places*; environment: *Breaths* 5.1; age: *Aphorisms* 3.24-31.

⁶⁴ Hippocrates, *Nature of man* cites humoral imbalance and obstruction to the circulation of *pneuma* as causes of disease. *Places in man* 42 mentions allopathic remedies requiring the use of ‘opposite’ remedies for ‘opposite’ ailments.

⁶⁵ Hippocratic texts that refer to narrow channels in children include *On generation* 2 and *Sacred Disease* 8, 9. Bertier’s survey of child patients and their maladies finds very few references to treatments in the Hippocratic treatises and concludes that “one cannot speak of children’s medicine in the Hippocratic Corpus” 1990: 219-220.

⁶⁶ Scarborough 1993: 44; Smith 1979: 240.

several extant short monographs and the lengthy treatises such as *On kidney and bladder diseases* and *On melancholy*. Rufus ascribed melancholia to abnormalities in black bile and *pneuma*.⁶⁸ His therapies for melancholia required dietary manipulation to correct humoral imbalance and to bring about improvement in the condition of *pneuma*.⁶⁹

Most of Rufus' writings are either lost or survive only as extracts and fragments in the works of later writers.⁷⁰ Oribasius (fourth century AD) included many ostensibly direct quotations from Rufus, Soranus and Galen regarding children's medicine. He is the sole source for the title of Rufus' lost treatise, *On the care of the small child*.⁷¹ Many fragments or quotations from the latter are preserved in the works of Aetius, Alexander of Tralles and Paul of Aegina (sixth and seventh centuries AD) or the writings of Arabic physicians, such as al-Rāzī (Rhazes), al-Baladī and Ibn al-Jazzār.⁷² Surviving material from this treatise is subject to extensive adaptation, translation, copying, recopying and fragmentation during late antiquity and the medieval period.⁷³ Al-Baladī sometimes transmitted third hand information in his treatises, an example being a

⁶⁷ Nutton 2008: 147; 2013: 214, 218.

⁶⁸ Fragment F11 from Aetius 6.9 in Pormann 2008: 35.

⁶⁹ Pormann 2008: 131.

⁷⁰ Prioreschi 1998: 250. Fragments, short extracts and titles of Rufus' lost treatises are preserved in Greek, Syriac and Arabic writings of Oribasius, Aetius, al-Baladī and Rhazes Rosenthal 1975: 197; Nutton 2013a: 6, 202, 214. In 1879 Daremberg and Ruelle published a collection of extant works and numerous extracts and fragments from Rufus. His lost works include commentaries on Hippocratic texts and a handbook of home remedies entitled *For the layman* Smith 1979: 240; Nutton 2013a: 403.

⁷¹ *Oribasius, Coll. Med., Lib. inc.* 38, Raeder 1933, 4:136-138. Arabic sources refer to Rufus' writing on the subject as *On the regimen of children* and *On the education of children* Bos and McVaugh 2015: 7-8.

⁷² Rosenthal 1975: 201; Ullmann 1975; Scarano 1990; Pormann 1999. A more informative account is that of Bos and McVaugh. They published critical editions in English of the Hebrew and Latin translations of a work attributed to al-Rāzī or Rhazes (AD 865-925) entitled *On the treatment of small children*. There is, however, some doubt as to whether Rhazes was its author. Gerard of Cremona was probably responsible for translating the Arabic text into Latin during the twelfth century AD. Bos and McVaugh believe that this Latin edition is more reliable than the three Hebrew versions 2015: 2-10.

⁷³ Bos and McVaugh 2015: 7-10.

fragment from Rufus about Paul of Aegina's treatment of skin diseases affecting infants:

Paul mentioned in his book something that Rufus told. This is a literal quote: Rufus said.⁷⁴

In spite of this being a 'literal quote,' there were obvious opportunities for Rufus' therapies to become corrupted over the space of eight centuries.

It is difficult to gain an overall impression of the scope of Rufus' lost treatise on the small child from extracts and fragments. Even if it had survived intact it would still not have been possible to compare child and adult medicine according to Rufus. Too few other texts of his remain to provide an adequate amount of information.

1.2.3 Aretaeus of Cappadocia *fl.* first or second century AD.

There is some uncertainty regarding Aretaeus' dates.⁷⁵ All that remains of his writings are treatises on the causes, therapy of acute and chronic diseases.⁷⁶ These are largely intact, but some chapters are missing or incomplete.⁷⁷ His lost works include those on surgery, fevers, pharmacology and gynaecology.⁷⁸ His admiration for Hippocrates is reflected in his use of Ionian Greek.⁷⁹ Although he adhered to Hippocratic doctrines of *pneuma* and the four qualities, there is some doubt about his affiliation to the Pneumatic sect.⁸⁰ Aretaeus attributed synanche and angina, for example, to pathological states of

⁷⁴ Rufus from Paul in Baladī, Fragment F 14, Pormann 1999: 47-49. Cf. Crito from Paul in Baladī, Fragment F 20, Pormann 1999: 53-54.

⁷⁵ Stannard 1964: 27-28; Oberhelman 1994: 942; Pormann 2008: 157; Nutton 2013a: 211.

⁷⁶ Aretaeus' extant books are *On the causes and symptoms of acute diseases*, *On the causes and symptoms of chronic diseases*, *On the therapeutics of acute diseases*, and *On the therapeutics of chronic diseases*.

⁷⁷ Missing chapters are SA 1.1-1.4, and incomplete chapters include SA 1.5 and CD 1.8: 2.5.

⁷⁸ Nutton 2013a: 210; Stannard 1964: 28.

⁷⁹ Scarborough 1993: 43; Dihle 1994: 144; Oberhelman 1994: 961; Pormann 2008: 157; Nutton 2013a: 211. Smith regards this as "a literary affectation" 1979: 244.

⁸⁰ Smith 1979: 244; Pormann 2008: 157; Nutton 2013a: 211. Oberhelman identifies him firmly as a pneumatist 1994: 961.

pneuma, while coldness and humidity engendered epilepsy.⁸¹ He acknowledged the influence of the seasons, age, gender and the characteristics of individuals on the prevalence and prognosis of maladies.⁸² He described diseases in some detail and demonstrated remarkable clinical acumen.⁸³ His therapies were typically Hippocratic.⁸⁴ They aimed to restore the condition of *pneuma* and the humours, especially phlegm.⁸⁵

There are no known works by Aretaeus on children's medicine. In his extant writings he described the prevalence, clinical features, prognosis and treatment of each disease in a clear and systematic way. He also explained how these varied according to the age of patients and the season of the year.⁸⁶ They have proved to be a valuable source for this thesis.

1.2.4 Soranus of Ephesus fl.AD 100

Methodism held sway in the Latin West while humoral lore was dominant in the Greek East.⁸⁷ Methodist doctors like Soranus rejected complex theories about disease such as humoral lore.⁸⁸ Instead they universally accepted its simple classification into three types or 'commonalities:' these were stricture, laxity, or a combination of both.⁸⁹

⁸¹ Aretaeus, *SA* 1.7, *SD* 1.4.

⁸² Nutton 2013a: 211. Women were prone to tetanus and asthma because of their cold, wet nature, while children recovered more readily because they were growing and hotter Aretaeus, *SA* 1.6; *SD* 1.11.

⁸³ Pormann regards Aretaeus' writings "the best nosological treatise in Greek antiquity" 2008: 157.

⁸⁴ Nutton 2013a: 211.

⁸⁵ Cupping improved the condition of *pneuma* for those suffering from cholera, Aretaeus *CA* 2.4; diets containing ptisan could dissolve phlegm in those suffering from pleurisy *CA* 1.10; purgation with *hiera* and dessicant foods combated phlegm in chronic epilepsy *CD* 1.4.

⁸⁶ Nutton 2013a: 210-211.

⁸⁷ Temkin 1956: xxix; Hanson and Green 1994: 1044. Themison founded the Methodist school and arrived in Rome in the late first century BC to early first AD to promote his new 'method' of medicine Vallance 1990: 133; Nutton 2013a: 195. Famous Methodist doctors included Soranus, Antonius Musa, Antipater, Eudemus, and Caelius Aurelianus who wrote around AD 400 Nutton 2013a: 192-193. According to Celsus, 'the Method' steered a middle course between complex theoretical speculation and total reliance on experience; Celsus, *Med. Prooemium* 57.

⁸⁸ Vallance 1990: 57, 132; Nutton 2013a: 211.

⁸⁹ Underlying commonalities (Latin *communia*, Greek *koinotetes*) of disease is the notion that stricture hindered the transit of atoms through the pores, while laxity was a state of flux, or excessive transit

Soranus wrote *Gynaecology* for the benefit of midwives, physicians who treated women, and educated laymen.⁹⁰ In this he referred to stricture and laxity, and pores and vessels within the body.⁹¹

Methodist doctors treated patients according to the class of disease present, for example, relaxants for stricture and constricting therapies for laxity.⁹² There were, though, differences of opinion about which class some individual diseases belonged to.⁹³ In the early stages of acute diseases, bland, ‘restorative’ therapies built up patients’ strength.⁹⁴ They enabled them to withstand more rigorous remedies during the ‘metasyncritic’ phase of treatment.⁹⁵ The latter generally took place over periods of three days known as the *diatritus*.⁹⁶ Galen described this in relation to the treatment of Commodus (see Section 4.4.1 below). He was highly critical of the *diatritus* and other aspects of Methodist therapeutics.⁹⁷

Temkin 1956: xxvi; Vallance 1990: 132; Prioireschi 1998: 102; Bourguière *et al.* 2000: Carrick 2001: 41; Pormann 2008: 150; Nutton 2013a: 195, 211. Stricture was generally associated with acute diseases, and laxity with chronic disorders Nutton 2013a: 195. Methodists thought it was futile to seek hidden foci of diseases because all conditions affected the entire body McDonald 2012: 73-76.

⁹⁰ Temkin 1956: xxxvii-xxxviii. It is not possible to know what proportion of midwives would have been sufficiently literate to read Soranus’ treatise Hanson and Green 1994: 973. On the other hand, Nutton notes that there were many well-educated and skilled midwives 2013: 219. Flemming believes that they mostly worked in major cities, and only a few ventured into the countryside 2013: 280.

⁹¹ Soranus wrote that when nurslings cried their ducts opened up, allowing the distribution of food around the body, *Gyn.* 2.17. He mentioned pores and ducts in the context of the breasts of wet nurses 2.19, astringent plasters for infants suffering from diarrhoea, 2.28. Mixed feeding should be delayed while the pores of infants remained narrow, 2.21.

⁹² Celsus, *De medicina* 1 Prooemium 56-57.

⁹³ Lloyd 1983: 196.

⁹⁴ Prioireschi 1998: 140. The course of an illness ran in three distinct stages: a period of increasing intensity, followed by a plateau, and then diminishing severity. Relapses could occur, hence the need for constant clinical re-assessment Prioireschi 1998: 117; Pormann 2008: 151; Nutton 2013a: 197-198.

⁹⁵ These typically involved acrid foods, cupping, forced vomiting, purgation and heat in order to modify the condition of affected pores Temkin 1956: xxxv; Prioireschi 1998: 117, 140; Bourguière *et al.* 2000: xv; Nutton 2013a: 197. In general, bland remedies were suitable during acute phases. Drastic treatments were more appropriate for ‘quiet’ periods between acute exacerbations of chronic diseases Temkin 1956: xxxv.

⁹⁶ Temkin 1956: xxxv; Bourguière *et al.* 2000: xv; Leith 2008: 586- 588; Nutton 2013a: 195. Themison coined the term *diatritus* Nutton 2013a: 195. See Leith (2008) for a discussion of whether ‘diatritus’ signified the third day or a period of three days.

⁹⁷ Galen, *MM* 11.15 (10.781K).

The *Gynaecology* did not survive intact in its original Greek form. Ilberg published a Greek edition reconstructed from readings in Aetius and a fifteenth century manuscript in 1927 for *Corpus Medicorum Graecorum*. Owsei Temkin's English translation is derived from this material.⁹⁸ Three Late Roman authors, Caelius Aurelianus, Muscio and Theodorus Priscianus, produced Latin redactions of the *Gynaecology*.⁹⁹ These would have catered mainly for Latin-speaking nurses and midwives in the Western provinces.¹⁰⁰ Soranus' *Gynaecology* is a valuable repository of information on gynaecology, obstetrics and the care and treatment of small infants.¹⁰¹ It does not, however, provide an all-embracing system of children's medicine. It was concerned only with diseases that afflicted young babies, and there are lacunae among these, such as eye complaints and ileus.

Most of Soranus' prolific output is lost.¹⁰² Caelius Aurelianus' Latin treatise, *Acute and chronic diseases*, depended heavily on the work of Soranus.¹⁰³ Nevertheless, many chapters are very brief and lack detail about diseases and treatments for different age groups. They do not cover all diseases, notable omissions being hernias, dermatological diseases and ophthalmic disorders. These deficiencies and the loss of Soranus' works

⁹⁸ Hanson 1992; Hanson and Green 1994: 970-972.

⁹⁹ Caelius Aurelianus paraphrased Soranus' text *Gynaecology* around AD 400 Hanson and Green 1994: 969, 1042; Nutton 2013a: 301. Theodorus Priscianus, who lived in the late fourth century AD, produced an even shorter adaptation in the third book of his treatise, *Euporista* Temkin 1956: xlv; Hanson and Green 1994: 1049. A century later, Muscio/Mustio's version combined material from *Gynaecology* with a short catechism for the use of midwives Temkin 1956: xlv.

¹⁰⁰ Hanson and Green 1994: 973.

¹⁰¹ Temkin 1956: xxxviii; Hanson and Green 1994: 970. Nutton regards Temkin's translation of *Gynaecology* as the best modern language edition 2013a: 384n66.

¹⁰² Soranus wrote on generation, embryology, fevers, hygiene, drugs and clysters, but these treatises are lost Temkin 1956: xxiv; Hanson and Green 1994: 968, 1042; Nutton 2013a: 200.

¹⁰³ Drabkin judges Caelius Aurelianus' *On acute and chronic diseases* to be a "fairly close" translation of Soranus' treatise 1945: 299. Temkin describes it as a "Latin paraphrase..that is, for all intents and purposes, a translation of Soranus" 1956: xxiv. Hanson and Green consider that although this work is not a direct translation of Soranus' work, it is more faithful to it than his translation of *Gynaecology* 1994: 979. Nutton believes that Caelius Aurelianus' redaction contained some original contributions of his own 2013a: 200.

on hygiene, fevers, drugs and clysters are an impediment to the investigation of differences between children's and adult medicine.

1.2.5 Galen AD 130-c.200.

Galen had a prolonged training in rhetoric, philosophy and medicine.¹⁰⁴ His output was phenomenal and although many of his works are lost, a considerable number have survived.¹⁰⁵ He directed them at a diverse audience that included doctors, medical students, laymen and friends. They served a variety of purposes. A large proportion formed a corpus of didactic texts for physicians and laymen.¹⁰⁶ Galen wrote several letters, including one of advice to the father of an epileptic boy.¹⁰⁷ He took every opportunity to laud his superior abilities and opinions over those of his predecessors and rivals; he berated doctors who ignored or refused to follow Hippocrates' teachings for being stupid and stubborn.¹⁰⁸ Many of Galen's works summarised and commented on the beliefs and practices of past and contemporary physicians.¹⁰⁹ His works were influential in his own lifetime and for many centuries afterwards.¹¹⁰

¹⁰⁴ Galen's medical studies at Pergamum, Smyrna and Alexandria included surgery, anatomical studies and physiological experimentation Nutton 2013a: 223-224, 237.

¹⁰⁵ Over three hundred and fifty of Galen's treatises have survived to the present day Nutton 1995b: 60. Medieval physicians of the Near East preserved many of his writings in Greek, Latin, Arabic, Syriac, Armenian and Hebrew Reynolds and Wilson 1991: 57; Hanson and Green 1994: 1045; Flemming 2003: 248; Nutton 2013a: 6-7.

¹⁰⁶ Galen dedicated his commentary on *The nature of man* to his friend and fellow philosopher, Boethus. Prominent among his didactic texts were his Hippocratic commentaries. His writings formed a cohesive body of teaching material López Férez 2010: 396; Johnston and Horsley 2011: xxvi; Nutton 2013a: 225-228. Galen also urged educated laymen to acquaint themselves with philosophy and medicine, and learn how to lead healthy lives and select the best physicians Dihle 1994: 293; Johnson 2010: 76-77.

¹⁰⁷ Galen, *Puer. Epil.*

¹⁰⁸ Smith 1979: 72, 80-81.

¹⁰⁹ Scarborough 1969: 163; Smith 1979: 100; Flemming 2003: 247. Galen is a key source for modern scholars of Hippocratic theories and practices Petit 2010: 343.

¹¹⁰ Nutton 2013a: 235. The reasons behind Galen's dominance are the sheer volume of his works, his constant denigration of rival doctors, the reception of Greek humoral pathology by Arabic doctors and the selective transmission of his treatises in Late Roman and medieval times Smith 1979: 75, 80-81; Conrad 1995: 108; Nutton 1995b: 58; Van der Eijk 2011: 28; Johnston and Horsley 2011: lii.

As a young man Galen studied philosophy in Pergamum.¹¹¹ He did not claim allegiance to any specific school, but adopted much material from the writings of Plato and Aristotle.¹¹² He had a profound belief that medicine and philosophy were an essential combination. Practitioners who had a thorough education in physiology and philosophy were in a good position to be able to tend to the bodies and souls of their patients.¹¹³ Galen recognised the inextricable links between soul, mind and body.¹¹⁴ He linked *pneuma* with the soul and body, and the mind with the body.¹¹⁵ He wrote several works on these themes, such as *The best doctor is also a philosopher*; *The soul's dependence on the body*; *The affections and errors of the soul*; *On the passions and errors of the soul*.¹¹⁶

The study of anatomy was also essential to enable physicians to become familiar with human parts and minimise the risk of surgical mishaps.¹¹⁷ Galen urged them to gain experience by dissecting apes since “man has the same bodily structure as an ape.”¹¹⁸ Galen wrote that men often took the opportunity to dissect dead humans, including the

¹¹¹ Galen studied Stoic, Platonist, Aristotelian and Epicurean philosophy. Dihle 1994: 291; Nutton 2013a: 223, 227-229.

¹¹² Chiaradonna 2009: 251-252. Galen believed that the Platonic tripartite soul resided in the brain, heart and liver, *PHP* 9.9.7. Plato (390-c.348 BC) was also Galen's source for the four elements, qualities, phlegm and bile and the circulation of *pneuma* Johnston and Horsley 2011: xxvii-xxviii. Plato transmitted his concepts in *Timaeus* and *Republic* Nutton 2013a: 116-118. Aristotle (384-322 BC), another source for Galen, was a biologist and natural philosopher who reconciled the four elements with inner heat, *pneuma*, the brain and the soul.

¹¹³ Von Staden 2012: 84-85.

¹¹⁴ Nutton 2013a: 240.

¹¹⁵ *Pneuma* and the soul: Galen, *PHP* 7.3.19-22 (5.603K); *pneuma* and the body, *MM* 12.5 (10.841K); mind and body, *Puer.Epil.* 2 (11.360K).

¹¹⁶ Galen, *Opt.Med* 1.53-63K); *QAM* (4.767-822K); *Aff.Dig.* (5.1-57K); *Pecc.Dig* (5.58-103K).

¹¹⁷ Galen, *AA* 2.2, 3.1 (2.286, 340-341K). See also Nutton 2013a: 236.

¹¹⁸ Galen, *AA* 3.5 (2.386K). Translated by C. Singer. *Cf.* 1.2 (2.219K).

bodies of exposed infants.¹¹⁹ He admitted to having broken into graves to dissect corpses, and it is reasonable to suppose that he examined children's bodies himself.¹²⁰

Galen's Hippocratism and pneumatism

Galen trained in the Hippocratic tradition and adopted its canonical teachings.¹²¹ He selected and moulded these to fit his own views and disseminated them with missionary zeal.¹²² He found proof of the existence of four elements, qualities and humours in two key Hippocratic treatises, *Nature of man* and *Elements*.¹²³ Galen's vigorous promotion of the four-humour doctrine secured its ascendancy in the Greek East.¹²⁴ He established his own authority on the precept that he alone was sufficiently competent to understand and comment on Hippocratic writings.¹²⁵ His influence down the ages has coloured present-day perceptions of medicine in the Roman world.¹²⁶

¹¹⁹ Galen, *AA* 3.5 (2.386K). He also suggested using the opportunities that arose when exploring and treating the wounds of live subjects, *ibid.*, 1.2, 7.13 (2.225, 632-633K).

¹²⁰ *Ibid.*, 1.2 (2.221K).

¹²¹ Smith 1979: 96; Dihle 1994: 144; López Férez 2010: 361; Nutton 2013a: 212-213. Canonical teachings included topics such as ethics, critical days, humoral lore, innate heat, the effects of the seasons, climate and weather on health, the natural causation of diseases, natural holistic healing and allopathy Carrick 2001: 41-42; Nutton 2013a: 225.

¹²² Smith 1979: 75, 175.

¹²³ Galen, *Hipp.Elem.* 1.462, 2.492-493; *HNH* 1.65-66. Galen stated that *Nature of man* was the work of Hippocrates' pupil, Polybus, *HNH* 2.108-109. The four humours he described were phlegm, blood, and yellow and black bile. Other Hippocratic texts identified four different humours, for example blood, phlegm, bile and water, *Diseases* 4. Others named two or three humours King 2001: 13; Van der Eijk 2011: 29; Jouanna 2012: 336; Nutton 2013a: 79. Galen elaborated on the Hippocratic doctrine of mixtures, pronouncing that there were nine combinations of mixtures or temperaments, *Temp.* 2.1 (1.519-523K). Only one of the nine was a well-balanced mixture consisting of equal amounts of all four qualities. *Eucrasia* signified healthy balance of qualities or humours, while *dyscrasia* meant unhealthy balance Smith 1979: 99-100.

¹²⁴ Van der Eijk 2011: 30; Jouanna 2012: 337-338. Galen stated that humoral lore was "the most widespread doctrine among the most distinguished doctors and philosophers," *Temp.* 1. 2 (1.510-511K). Translated by P.N. Singer. Although it was dominant in the Greek East, Methodism flourished on the Latin West Temkin 1956: xxix; Hanson and Green 1994: 1044.

¹²⁵ Nutton 2013a: 225. For a discussion of the power dynamics between commentators and source texts, see I. Sluiter, 2013, 'The violent scholiast: power issues in ancient commentaries.' In M. Ager (ed.) *Writing Science: Medical and Mathematical Authorship in Ancient Greece*. Berlin: De Gruyter, 191-213, especially 191, 207.

¹²⁶ Nutton 1995b: 58; Flemming 2003: 248.

Pneuma (spirit) was also central to Galen's system of physiology.¹²⁷ It entered the body by inspiration and underwent changes within the lungs, heart and brain to emerge as psychic *pneuma*. This formed the origin of nerves that conveyed sensory and motor signals.¹²⁸ Narrowing or blockage of the body's internal channels could interrupt the free transit of *pneuma*.¹²⁹ This disruption and pathological states in *pneuma* generated diseases.¹³⁰ Epilepsy was one striking example of this (see below in Section 3.3.1). Galen was at times ambiguous about the various forms of *pneuma* and their anatomical location.¹³¹ Temkin believes that Galen's emphasis often "shifted according to the point he wished to make or the view he wished to combat."¹³² The question of differences in heat within children and adults is another such example (see Section 2.3 below).

Galen was a philosopher-physician who practised a highly developed form of Hippocratic medicine. He is the most important source of information on the physiology of children and adults, the diseases that affected them and their treatment. There are lacunae in his coverage of some subjects. There is, for example, no surviving treatise of his on surgery. Other problems stem from Galen's tendency to make contradictory statements, change his opinions over time or concoct evidence to justify his theoretical explanations. Notable examples are the nature of apthae, temporal variations in heat in children and the use of a peony amulet for epilepsy. These are discussed below.

¹²⁷ Smith 1979: 99, 100, 233; Carrick 2001: 42.

¹²⁸ Galen, *UP* 7.8 (3.541-542K). Cf. *MM*, 12.5 (10.839-840K).

¹²⁹ Galen, *San.Tu.* 1.5 (6.15K); *Caus.Morb.* 7.4 (7.32K). The blockage of internal pores was, for example, was instrumental in causing ephemeral fever, *MM* 10.2 (10.668K).

¹³⁰ Galen, *MM* 12.5 (10.841K).

¹³¹ Temkin identifies Galen's statement in *MM* 12.5 (10.839K) as the only instance where he mentioned all three forms of spirit (*pneuma*). He wrote that the brain was the fount of psychic spirit. He wrote that it was not unlikely that the vital spirit was contained in the heart and arteries and that if there was a natural spirit, it should be contained in the liver and veins 1977: 161.

¹³² *Ibid.*, 161.

1.2.6 Pseudo-Galen late second century AD

The pseudo-Galenic medical handbook, *Introduction (Introductio sive medicus)* is the work of an unknown near contemporary of Galen. This thesis will, for the sake of brevity, refer to its author as Pseudo-Galen.¹³³ *Introductio* contains information on the medical sects and short summaries of diseases and treatments.¹³⁴ Like Galen, the author followed doctrines of *pneuma* and the four qualities and humours.¹³⁵ He also described corpuscles and invisible or larger pores within the body.¹³⁶ On some occasions his views differed greatly from those of Galen.¹³⁷ He referred to several Hippocratic treatises by name, but simplified and often distorted their contents.¹³⁸

The identity, biography and relationship of the author of *Introductio* to other medical writers are unknown. The main relevance of the text lies in its similarities and contrasts with Galen's theories and practices. Pseudo-Galen's work is brief and sketchy, and contains very few references to childhood diseases. It is, therefore, of limited value in advancing the aims of this thesis.

1.2.7 The Greek medical papyri

Two significant treatises by unknown Roman authors came to light in the late nineteenth century.

¹³³ See Petit 2009: 345.

¹³⁴ Pseudo-Galen gave an account of the beliefs of Rationalists, Empiricists and Methodists *Int.* 3.1-8 (14.678-683K).

¹³⁵ Pseudo-Galen, *Int.* 9.1-2 (14.695-697K).

¹³⁶ *Ibid.*, 9.4 (14.698K). Pseudo-Galen referred to channels of varying size as 'pores.' There were large channels such as the external auditory canal, those associated with eye, and the trachea with its cartilaginous rings to ensure free passage of *pneuma*, *ibid.*, 10.3; 11.3, 7 (14.701, 710, 715K).

¹³⁷ It is likely that the *Introduction* served as a teaching aid for 'average' students of medicine, as opposed to learned individuals who were fully conversant with Hippocratic texts Petit 2010: 355-357.

¹³⁸ He referred to several Hippocratic texts, such as *Aphorisms*, *Epidemics*, *Places in Man* and *Nutriments* Petit 2010: 351-354, 357.

Anonymus Parisinus first AD century

Anonymus Parisinus (AP) is otherwise known as Anonymus Medicus.¹³⁹ His work, *On acute and chronic diseases*, lists fifty-five conditions arranged in head to foot order.¹⁴⁰ He described their symptoms and treatments, but recorded the views of four predecessors, Hippocrates, Erasistratus, Praxagoras and Diocles of Carystus, on their hidden causes.¹⁴¹ Sometimes the opinions of these authorities co-incided, but often they diverged greatly.¹⁴² AP refrained from stating whether he agreed or disagreed with these sources.¹⁴³ Three centuries later Caelius Aurelianus included similar doxographical sections in his redaction of Soranus' treatise on acute and chronic diseases.¹⁴⁴

Anonymus Londinensis second half of the first century AD

This papyrus is preserved in the British Library.¹⁴⁵ The middle section examines the causes of disease according to doctors residing in Southern Italy and Sicily.¹⁴⁶ Whereas one group blamed imbalance of mixtures and humours within the body, the other held the accumulation of undigested food remnants responsible.¹⁴⁷ There was disparity in the

¹³⁹ In 1997 Garofalo published the first-ever critical edition of the text which was discovered at Mount Athos in Greece Van der Eijk 1999: 29; Nutton 2013a: 125.

¹⁴⁰ Anonymus Parisinus described sixteen acute and thirty-nine chronic diseases. Thessalus of Tralles first separated acute from chronic diseases, and this practice did not re-emerge until the writings of Aretaeus, Soranus and Caelius Aurelianus Garofalo 1997: viii.

¹⁴¹ Garofalo 1997: x; Van der Eijk 1999: 303, 308, 311, 317; McDonald 2012: 77; Nutton 2013a: 125. On one occasion AP cited a fifth authority, Democritus Van der Eijk 1999: 303.

¹⁴² The 'ancients' were often at variance about the site of origin of a disease (*locus affectus*) McDonald 2012: 77. Galen wrote an entire treatise on this matter, *Loc.Aff.* (8.1-452K).

¹⁴³ Although AP indicated where there was common ground between 'the ancients,' he refrained from stating his own views Van der Eijk 1999: 314. There are grounds for supposing that AP was a Methodist van der Eijk 1999: 326-327. Methodists rejected theories about hidden causes or local origins of disease McDonald 2012: 83.

¹⁴⁴ For example, Caelius Aurelianus mentioned Hippocrates, Asclepiades, Themison and Heraclides in relation to pleurisy or pleuritis, *Ac.* 2.19-24. See also *Chr.* 1.4.80-139 for Thessalus, Hippocrates, Diocles, Asclepiades, Serapion and Heraclides on epilepsy.

¹⁴⁵ P.BrLib inv. 137 = P.Lit.Lond. 165. Gourevitch 1989: 237; Marganne 2004: 69; Nutton 2013a: 211.

¹⁴⁶ Seven of the fifth to fourth century BC physicians had been hitherto unknown Gourevitch 1989: 237; Nutton 2013a: 72, 43. The middle section was probably the work of Menon, a pupil of Aristotle Gourevitch 1989: 238; Marganne 2004: 70; Nutton 2013a: 345n2.

¹⁴⁷ Gourevitch 1989: 251; Manetti 1999: 101-102.

views of Hippocrates, Aristotle and other authorities about the ways in which residues (*perittomata*) produced disease.¹⁴⁸ There are no extant Hippocratic treatises on residues, but it is possible that Aristotle had access to an unknown lost text.¹⁴⁹ The discovery of this papyrus prompted discussions about the authenticity of the Hippocratic Corpus.¹⁵⁰ These two papyri indicate that early Greek medicine was much less uniform than previously assumed.¹⁵¹ They contain a few useful anecdotal references to treatments for children, but neither contributes directly to the understanding of differences in children's medicine and that of adults.

1.2.8 Pharmacological texts

Roman pharmacological texts listed medicaments from plant, animal and mineral sources alongside the ailments they treated. Their recipes often lacked details about the quantities of ingredients used.¹⁵² Galen wrote several pharmaceutical treatises which feature in later chapters.¹⁵³ The following two physicians are known only for their pharmaceutical handbooks.

Scribonius Largus *fl.* AD 45

¹⁴⁸ For example, undigested food was transported to the head which, in the presence of thick *pneuma*, resulted in sickness; residues could also generate noxious humours 4.25-30. These humours could also obstruct passages within the head, *ibid.* 9.34. Aristotle believed that food was digested by the process of *pepsis* or coction, but any remaining surplus residues could exert harmful effects Manetti 1999: 101, 113. The concept of residues originated in Egyptian medicine Gourevitch 1989: 250; Prioreshi 1998: 462.

¹⁴⁹ Nutton 2013a: 72, 338n3. Galen made several references to the residue theory of disease, for example, *Caus.Morb.* 7.5 (7.33-34K) and *UP* 9.1 (3.684-686K). Hippocrates mentioned briefly that excessive food intake gave rise sickness, *Aph.* 2.17.

¹⁵⁰ Gourevitch 1989: 237; Marganne 2004: 69; Nutton 2013a: 72.

¹⁵¹ Nutton 2013a: 321.

¹⁵² Totelin points out that some modern translators modify ancient units of weight to assist readers 2010: 226-227. Spencer employs metric equivalents in his translation of Celsus' *De medicina*. These often involve unwieldy fractions of grams. For the sake of clarity, this thesis quotes ancient weights and measures.

¹⁵³ Galen's chief pharmacological works are *SMT*, *Comp.Med.Loc.*, *Comp.Med.Gen* (11.379-13.1058K).

Scribonius Largus wrote *Compositiones* which was the first Latin pharmacological text.¹⁵⁴ It is a relatively short work and has an index for easy reference for a wide variety of ailments and cures arranged in head to toe order.¹⁵⁵ He obtained remedies from several named physicians, but admitted purchasing two from lay women.¹⁵⁶ Most of his remedies were standard pharmaceuticals, but a few involved folklore, magic or the use of bizarre and repugnant substances.¹⁵⁷ Disgusting as they were, he felt that some may have been efficacious.¹⁵⁸

In his dedicatory letter, Largus praises the ethical standards laid down by ‘Hippocrates.’ He recommended that it was safer to use tried and tested drugs.¹⁵⁹ He deplored the fact that some physicians refused to treat incurable cases and urged them to use all available means to relieve suffering. Hippocratic writers had differing opinions on treating incurable cases: some advised against it.¹⁶⁰ Von Staden argues that there was no clear-cut division between curable and incurable conditions in the Hippocratic treatises, and many ‘incurable’ illnesses were chronic complaints.¹⁶¹

¹⁵⁴ Pellegrino and Pellegrino 1988: 24; Nutton 2013a: 175. Scribonius wrote the work between AD 44 and 48, dedicating it to an imperial freedman, Caius Julius Callistus Baldwin 1992: 76; Nutton 2013a: 175. Sergio Sconocchia produced a critical edition of the treatise in 1983 Totelin 2010: 219.

¹⁵⁵ *Compositiones* contains two hundred and seventy one recipes Hamilton 1986: 211; Baldwin 1992: 78; Nutton 2013a: 175; Jocks 2013: 1.

¹⁵⁶ Scribonius’ sources included Apuleius, Celsus, Tryphon, Paccius, Antiochus and Dionysus. He purchased one remedy from a little African woman living in Rome, *Comp.* 122, and a magical formula from a Roman matron for curing children with epilepsy, *ibid.* 16.

¹⁵⁷ Pellegrino and Pellegrino 1988: 30; Baldwin 1992: 79; Scarborough 1993: 30; Nutton 2013a: 176.

¹⁵⁸ For example, the blood of a slain gladiator; Scribonius Largus, *Comp.* 17.

¹⁵⁹ See Hamilton 1986: 211; Pellegrino and Pellegrino 1988: 30-31. The reference to tried and tested remedies leads some scholars to think he was an Empiric Pioreschi 1998: 175.

¹⁶⁰ The Hippocratic treatises, *On the art of medicine* 3, 18 and *On joints* 63, state that one must not take on incurable cases.

¹⁶¹ Von Staden 1990: 75-84. For further discussion on incurability in the Hippocratic Corpus, see R.M. Rosen, and H. Horstmanshoff, 2003. The *andreia* of the Hippocratic physician and the problem of incurables. In R.M. Rosen and I. Sluiter (eds). *Andreia: Studies in Manliness and Courage in Classical Antiquity*. Leiden: Brill, 95-114.

Celsus believed that it was not in a practitioner's best interest to deal with such patients.¹⁶² Other Roman authors were prepared to treat hopeless cases.¹⁶³ Jocks examined *Compositiones* and found a great deal of sensitivity and compassion for all patients.¹⁶⁴ Porter (2014) identifies similar findings in the works of Aretaeus, Soranus and Caelius Aurelianus. Scribonius Largus was unique in combining the virtues of compassion and mercy as a prerequisite for ethical medical practice.¹⁶⁵

Dioscorides of Anazarbus AD 40-90

Dioscorides gave directions on the collection, preparation and storage of plants in the preface to his pharmacopoeia, *Materia Medica*.¹⁶⁶ It is an inventory of over a thousand 'simples' or single pharmaceutical substances.¹⁶⁷ Dioscorides only described cures he could verify in person, instead of merely repeating information from other authorities.¹⁶⁸ He included some magical and folk remedies alongside orthodox cures.¹⁶⁹ He probably wrote for professional physicians and educated men, and his treatise remained the most authoritative pharmacological work from antiquity until the Early Modern period.¹⁷⁰

¹⁶² Celsus wrote that "it is the part of a prudent man first not to touch a case he cannot save, and to risk the appearance of having killed one whose lot is but to die," *Med.* 5.26.1C. Translated by W.G. Spencer.

¹⁶³ See Mattern 2008: 236 for a discussion of Galen's opinion that a doctor must declare his prognosis when a patient was terminally ill and not use heroic and useless therapies. He was prepared to alleviate their suffering and prolong their lives in appropriate circumstances.

¹⁶⁴ Jocks 2013: 26-38.

¹⁶⁵ Porter 2014: 126-127.

¹⁶⁶ Jackson 1988: 77; Scarborough 1996: 44; Doody 2010: 137; Irwin 2016: 273-274.

¹⁶⁷ Dioscorides classified drugs according to their origin from plants, animal parts, animal products and mineral substances Pioreschi 1998: 239; Nutton 2013a: 178-179. He provided full descriptions, common names, synonyms, habitats and medical uses for many of the six hundred plants listed Irwin 2016: 273.

¹⁶⁸ Pioreschi 1998: 243.

¹⁶⁹ Scarborough 1993: 37.

¹⁷⁰ Dioscorides' work was translated into Arabic, Syriac, Armenian and Latin King 2001: 51; Irwin 2016: 274.

Although Dioscorides claimed that he ordered drugs according to their properties, this was not the case. He arranged them in relation to their origin, i.e plants, trees, shrubs, animal parts and products, and minerals.¹⁷¹ This would have made it very difficult for practitioners to search for medicaments for specific ailments. It was by no means a handy reference work. Reading through his lists, it is striking that most drugs supposedly cured several different ailments.¹⁷²

Interpreting drug prescriptions

Totelin discusses problems faced when translating Greek and Latin pharmacological prescriptions. She argues that one of the main difficulties is the identification of vegetal ingredients due to the lack of an agreed system of classification of plant names in antiquity. It was also often not clear whether a recipe required the root, leaves, seeds or other parts of plants.¹⁷³ A further complication concerns quantities of ingredients in medical recipes. Scribonius Largus often, but not always, quoted exact weights in his recipes (see below for a further discussion). Largus and Dioscorides described only a small number of remedies for children. The majority of their prescriptions did not identify particular age categories so that there is insufficient information to compare children's medicines with adult therapies.

Pharmacological poems

The transmission of pharmaceutical knowledge by means of verse had certain advantages over prose texts. They could overcome problems due to the Greek numbering system which denoted quantities of drugs using letters or combinations of

¹⁷¹ Prioreschi 1998: 243-245, 249.

¹⁷² For example, iris was a warming drug that could cure coughs, bowel, and eye complaints, fits, fistulae, sores, sciatica, venomous bites, headaches, and gynaecological and splenic disorders, *MM* 1.1.

¹⁷³ Totelin 2010: 220-230.

letters. These were subject to mistakes or deliberate falsifications by copyists.¹⁷⁴ Galen recognised this and suggested writing numerals in words; he also believed that verse was a useful means of memorising prescriptions.¹⁷⁵ He quoted the medical poems by Damocrates and Andromachus.¹⁷⁶ One example of a didactic poem was that of Quintus Serenus Sammonicus who died in AD 212. His *Liber medicinalis* blended Greek medical recipes with folklore, magic and repugnant ingredients.¹⁷⁷ He occasionally included remedies for children's ailments, but there were no comparisons between treatments at different stages of life.

1.2.9 Conclusion

There is great diversity among the authors of medical texts from the first three centuries AD. The one thing they had in common was that they were all literate, male Roman citizens. They came from a variety of backgrounds, had different approaches to the aetiology of diseases and wrote in various genres for different audiences. Many of their texts are entirely or partially lost, and all that remains of others are fragments quoted by later authorities. This is the greatest barrier to reconstructing diseases and treatments of patients at different stages of life. Another problem is that most written references to therapies did specify for whom they were intended, adults or for infants and children.

¹⁷⁴ Totelin 2010: 226-227; Hautala 2014.

¹⁷⁵ Galen, *De antidotis* 1.4, 2.1 (14.31, 115K); *Comp.Med.Gen.* 7.8 (13. 988-990K).

¹⁷⁶ Damocrates' poem on plasters: Galen, *Comp.Med.Gen.* 5.10 (13.820-823K). Andromachus on theriac: *De antidotis* 1.6 (14.35-42K). See Totelin 2010: 312 n56 on the relative clarity of these two compositions.

¹⁷⁷ Scarborough 1993: 20. In the preface of his poem Quintus Serenus Sammonicus stated that his intention was to provide simple, inexpensive medicines. He was murdered by Caracalla in AD 212 Prioeschi 1998: 506.

1.3 Encyclopaedic works

Lay Roman authors commented on medical matters in a broad assortment of genres.¹⁷⁸

Two writers, Celsus and Pliny the Elder, produced encyclopaedias. While Celsus confined his information on the history and practice of medicine to a separate section, medical remedies are scattered throughout many of Pliny's books.

1.3.1 Celsus c.25 BC - c.AD 50

Aulus Cornelius Celsus' encyclopaedic work was entitled *Artes*.¹⁷⁹ Its subjects originally included agriculture, rhetoric, warfare, philosophy, jurisprudence and medicine.¹⁸⁰ The sole surviving part, *De medicina*, is the earliest extant Latin medical text. It is a valuable source for Alexandrian medical history and the practice of rational medicine in the Hellenistic period and early Empire.¹⁸¹ Although his work is largely based on the Greek medical tradition, Celsus wrote from a practical, Roman perspective and included several native folk remedies.¹⁸² He derived his information from a number of unknown Greek sources.¹⁸³

Scholars debate whether he was, in any sense, a physician and whether he wrote from his own experience, direct observation of the work of doctors, or merely translated the medical writings of other writers. Those who credit him with being a professional physician include Spencer (1926), Spivack (1991) and Vallance.¹⁸⁴ Nutton and

¹⁷⁸ Nutton 2013a: 264, 273, 320.

¹⁷⁹ Nutton 1985: 31, 33; Dihle 1994: 144; Von Staden 1996: 401; Doody 2009: 9.

¹⁸⁰ Quintilian, *Inst.Or.* 12.11.24.

¹⁸¹ Spencer 1926: 129.

¹⁸² Hanson 2010: 497, 498.

¹⁸³ Smith 1979: 226-227; Hanson 2010: 497; Nutton 2013a: 158. Possible candidates were Cassius or Titus Aufidius Siculus (see Spencer, Introduction to *De medicina*, Volume 1: ix).

¹⁸⁴ Spencer 1926; Spivack 1991; Vallance 2012: 377.

Langslow believe there is no evidence that he practised professionally.¹⁸⁵ Sabbah and Mudry state that he was an interested amateur rather than a doctor, but they admit that it is impossible to arrive at a definitive conclusion on the matter.¹⁸⁶ Celsus aimed to provide Roman gentlemen with sufficient knowledge to treat members of their households.¹⁸⁷ He may have had some informal medical training since his work displays a thorough knowledge of regimen, pharmacology and technical aspects of many complex surgical procedures.¹⁸⁸

Celsus acknowledged the effects of the seasons, weather and environment, age and bodily strength on health and stressed the importance of diagnosis and prognosis.¹⁸⁹ In spite of *De medicina* having a strong Hippocratic tenor, it includes very little theoretical speculation about the pathogenesis of disease.¹⁹⁰ It provides a thorough and well organised programme of maintaining health and treating disease by means of regimen and pharmacology. Another of its strengths is that it contains descriptions of complex surgical treatments that are either brief or absent in many other texts.

¹⁸⁵ Nutton 1985: 31; 2013a: 5; Langslow 1991: 327. Scarborough describes him as a medically educated layman who “could take his place with the best Roman physicians” 1969: 41; 1993: 30. Köckerling *et al* regard Celsus as man who studied medicine for the benefit of his own household and friends 2013: 610. Le Blay describes him as a scholar whose purpose was to benefit wealthy laymen 2016: 376.

¹⁸⁶ Sabbah and Mudry 1994: 7-9.

¹⁸⁷ Nutton 1985: 32; Von Staden 1996: 394; Prioireschi 1998: 213; Langslow 1991: 327; Hanson 2010 497.

¹⁸⁸ Sabbah and Mudry 1994: 9; Dihle 1994: 144; Von Staden 1996: 401; Flemming 2003: 238; König and Woolf 2013: 40; Le Blay 2016: 376-377. Celsus described many difficult operations, such as eradicating fistulae, excising pterygia, couching cataracts, lithotomy and the management of abdominal stab wounds *Med.* 7.4; 7.7.4; 7.7.13-14; 7.26.2-5; 7.16.

¹⁸⁹ Celsus described Hippocrates as “the oldest authority,” *Med.* 1 Proemium 66, and “the father of all medical art” *ibid.*, Proemium 7. Regarding the seasons, weather, environment and age, see *Med.* 2.1.18-23, 2.8. Spencer lists parallel passages in Hippocrates’ *Aphorisms, Prognostics, Regimen, Airs, Breath, Humours and Art, De Medicina*, Volume 3: 624-627.

¹⁹⁰ Prioireschi 1998: 194-195.

Celsus largely focussed on the health of upper class adult males in their prime.¹⁹¹ He tended to direct his accounts of diseases and therapies for these individuals or to none in particular. His references to children were sporadic. He often omitted information about the way certain diseases affected infants and children and how to treat them; epilepsy is a case in point.¹⁹² At times, then, it is difficult to make systematic comparisons between patients of various ages.

Conclusion

De medicina is a valuable source for the history of Greek medicine and its practice in Rome during the first century AD. It is a well structured text with a remarkable amount of technical detail, especially with regard to surgery. Although it is unlikely that Celsus treated any persons outside his domestic sphere, the breadth and quality of his work is remarkable. *De medicina* is a valuable medical treatise that is the product of Celsus' own medical knowledge and that of one or more unknown Greek doctors. Although this thesis refers to its author as 'Celsus,' it recognises the contribution made by one or more professional physicians.

1.3.2 Pliny the Elder AD 23-79

Pliny described *Natural History* as his unique account of "the nature of things, and life as it actually exists."¹⁹³ His massive undertaking encompassed all forms of life, natural resources and phenomena.¹⁹⁴ He intended it be read for pleasure and the education of

¹⁹¹ See especially Celsus, *Med.* 1.1-3.31; 2.11-17.

¹⁹² *Ibid.*, 3.23.

¹⁹³ Pliny, *HN* 1. Translated by J. Bostock and H.T. Riley. Pliny wrote that he consulted two thousand works from one hundred authors and that his remaining thirty-six books covered twenty thousand topics Fögen 2013: 86.

¹⁹⁴ Conte 1994: 68; Murphy 2004; Beagon 2005: 20; 5-6; König and Woolf 2013: 42-43. One of Pliny's concerns was relations between human beings and the rest of the natural world Beagon 2005: 21. Pliny claimed that, for the sake of completeness, he omitted none of the information he gathered, even when he thought it inaccurate or disagreeable Beagon 2005: 22.

Roman gentlemen.¹⁹⁵ Scholars have begun recently to re-assess it from various perspectives. A dominant theme relates to encyclopaedias, encyclopaedism, and Roman imperialism.¹⁹⁶ The question of whether Pliny's work counts as an encyclopaedia is a matter of dispute: it is a modern conception since no such genre was known in antiquity.¹⁹⁷ The term 'encyclopaedism' appears to equate with the Greek term, *enkuklios paedeia*, but this may not be its true meaning.¹⁹⁸ Pliny dedicated his masterpiece to Emperor Titus.¹⁹⁹ This and the general ethos of his work have led to lively discourses about its role in promoting imperial myths and ideology.²⁰⁰ Pliny repeatedly emphasised the positive benefits of Roman expansion into new territories for conquering and subject nations.²⁰¹ These included increased access to a wider variety of *materia medica*.²⁰²

Unlike Celsus' encyclopaedic work, *Natural History* does not segregate medical matters into a single set of books. Roman readers would have had difficulty in locating specific references to diseases and treatments, rendering it useless as a handy medical

¹⁹⁵ King 2001: 32; Murphy 2004: 12; Schultze 2011: 167; Fögen 2013: 86; König and Woolf 2013: 43; Agostini 2013: 4.

¹⁹⁶ Beagon (2005) explores man as a member of the animal world, and Wallace-Hadrill (1990) examines how Romans viewed nature, and man's exploitation of its bounties.

¹⁹⁷ Many historians refer to *Natural History* as an encyclopaedia, for example Pioreschi 1998: 224; Beagon 2005: 20; Agostini 2013: 4; Nutton 2013a: 258. Carey 2003: 17; Doody 2009: 18; Laehn 2013: 82. Murphy is ambiguous about the nature of Pliny's work: he describes it as "the earliest surviving encyclopaedia" and a sourcebook which is unlike any modern encyclopaedia 2004: 2. He is concerned about the issue of anachronism, but states that "it deserves to be considered as one," *ibid.* 11, 12. Doody has similar reservations about applying anachronistic labels, but believes that it is reasonable to refer to *Natural History* an encyclopaedia because that was the way readers used it 2009: 18.

¹⁹⁸ The Greek term *Enkuklios paedeia* denotes an all-round general education rather than a literary genre Doody 2009: 3, 11, König and Woolf, 2013: 23, 27, 35; Murphy 2004: 12; Beagon 2005: 14.

¹⁹⁹ Pliny, *HN* 1 (Preface). Pliny was a friend of Emperors Vespasian and Titus. Titus was a widely travelled intellectual who was interested in novelties and marvels from distant lands Morello 2011: 150.

²⁰⁰ Carey 2003; Murphy 2004; Naas 2011; Laehn 2013. Pliny's work glorifies imperial ideology and politics Murphy 2004: 50; Beagon 2005: 6; Doody 2010: 173. The ability of Rome to acquire natural resources and marvels magnified its power and importance Naas 2011: 62.

²⁰¹ Roman conquests of new territories facilitated the spread of knowledge and culture throughout the entire empire Murphy 2004: 5, 15; Naas 2011: 57-59, 61; Laehn 2013: 62; König and Woolf 2013: 29; Beagon 2013: 84-85.

²⁰² Flemming 2003: 239; Beagon 2005: 25; Laehn 2013: 64.

manual.²⁰³ *Natural History* is full of errors that undermine its value as a serious source for medicine in the Roman world.²⁰⁴ Pliny had a love of the sensational and did not criticise the claims of his sources, except in the case of some bizarre remedies.²⁰⁵ It is best to have firm reservations about the veracity of his material. The general quality of his medical evidence was superficial, inaccurate and tainted with chauvinism.²⁰⁶ In his defence, his collection of vegetal remedies is impressively large, and several recipes are strikingly similar to those of Dioscorides who was almost certainly his source.²⁰⁷ The *Natural History* is also a valuable resource for popular medicine and magical practices in the early Empire.²⁰⁸ Modern readers should approach his more bizarre and sensational cures with considerable scepticism.

Conclusion

Pliny was not a physician and he was interested solely in treatments derived from the natural world. In spite of serious problems about the quality of his medical data, the *Natural History* is an important source of botanical cures. It contains many references to pharmaceuticals for infants and children and, occasionally, modifications to adult dosages and routes of administration of drugs.

²⁰³ *Natural History* is an unwieldy book even for modern scholars. Roman readers would have had difficulty in finding references in book rolls that lacked page numbers and subject headings Doody 2010: 114, 132; König and Woolf 2013: 41; Nutton 2013a: 178, 379. The later codex format had the advantage of numbered pages, making the process less tedious Reynolds and Wilson 1991: 35.

²⁰⁴ Murphy 2004: 30; Doody 2010: 11; Naas 2011: 66; König and Woolf 2013: 40.

²⁰⁵ Prioreschi 1998: 223. See, for example Pliny, *HN* 28.13, 30.47.

²⁰⁶ Pliny had limited knowledge of medicine and merely collected fascinating medical anecdotes Hanson 2010: 509. This might explain the lack of discussions on medical theory and diseases in *Natural History* Fögen 2013: 102. Pliny's imperialist rhetoric is evident in his praise of the Roman virtue of medical self-help using simple herbs. He berated Greek doctors on account of their nationality, medical practices, avarice and murderous intent, *HN* 26.7, 8; 29.7, 8. He was highly critical of magicians, especially Persian magi, *HN* 24.5; 26.9; 28.27; 30.1. This did not deter him from collecting vast numbers of magical cures and rituals Agostini 2013: 2.

²⁰⁷ Prioreschi 1998: 230-231.

²⁰⁸ Doody 2011: 135; Agostini 2013: 1; Nutton 2013a: 179. See Agostini (2013) for an in depth discussion of magical practices in the *Natural History*.

1.3.3 Philosophical works

Stoicism was the most influential of the four schools of philosophy in the early imperial period.²⁰⁹ Seneca (AD 1-65) was a famous Stoic philosopher and statesman who had expertise in medical theory and nomenclature.²¹⁰ In his moral essay about the passions, he likened anger to madness.²¹¹ He described its manifestations and harmful effects on the minds and bodies of persons of all ages, and it was essential to avert or eradicate anger by sound moral training.²¹² Plutarch (AD 45-c.120) was a Middle Platonist philosopher, biographer and moral essayist.²¹³ He had some knowledge of anatomy and medicine.²¹⁴ He was interested in many aspects of the care and education of children, and his essay *De liberis educandis* described a common-sense and humane way of rearing and educating freeborn children.

The writings of Seneca and Plutarch affirm the close links between medicine and philosophy. They do not contain material relating to the diseases of children and adults. They focus on the raising of children and the moral training of persons of all ages; these had health benefits for children and adults alike. Sections 2.5.1 and 4.2.2 below discuss the harmful effects of violent emotions and the measures that were necessary to control them.

²⁰⁹ The remaining three were the Epicurean, Platonic and Peripatetic schools Pioreschi 1998: 47-48.

²¹⁰ Nutton 2013a: 161, 205.

²¹¹ Seneca, *De ira* 1.2.1-3.

²¹² *Ibid.*, 1.2, 13; 2.16-21.

²¹³ Nutton 2013a: 211, 216; Becchi 2014: 73.

²¹⁴ Nutton 2013a: 258.

1.4 Conclusion

Medicine in the Roman world evolved as a complex mixture of different traditions: a vast assortment of healers from different backgrounds offered a wide range of services. The majority did not leave any record of their work.

Medical authors wrote in various genres for different purposes and had their own biases and perspectives on human biology, health, sickness and healing. There are many lacunae in the written evidence for the practice of medicine in the Roman period. Other issues concern the reliability of the evidence they present and the amount of material they contain on children's maladies and therapies. Particular problems arise from non-medical texts, most notably Pliny's *Natural History*.

It is, therefore, not always easy to gather evidence from individual writers on the diseases that affected children and adults and whether they treated them differently. Examining evidence gathered from all of the above sources helps to build a more complete picture. This thesis now investigates how Romans understood children, their biological characteristics and predisposition to disease.

CHAPTER 2: BIOLOGICAL TRAITS AND SUSCEPTIBILITY TO DISEASE

2.1 Introduction

Hummel states that Roman physicians believed that a child was not a small version of an adult since it had “physical and psychological peculiarities and its own weaknesses.”²¹⁵ This and the proposal that children were prone to specific ailments at particular stages in their lives bear scrutiny.²¹⁶ First of all it is worth considering what constituted ‘the child’ in the early imperial period.

2.2 Defining the Roman child

Romans believed that childhood began at the moment of birth and ended at puberty.²¹⁷ They were conscious of the fact that childhood was a separate phase in life that could be measured by a series of well-defined stages; these were often marked by certain rituals.²¹⁸ Birth and the onset of female puberty were clearly defined events, but maturation in males was a slower and less well defined process.²¹⁹ From a legal standpoint, girls and boys reached the age of puberty at twelve and fourteen years respectively.²²⁰ This related to minimum ages for marriage and financial responsibility rather than biological status.²²¹

²¹⁵ Hummel 1999: 300.

²¹⁶ Bertier 1996: 2175.

²¹⁷ Harlow and Laurence 2002: 35-36; Alberici and Harlow 2007: 193; McWilliam 2013: 264.

²¹⁸ Dixon 1992: 101, 104; Harlow and Laurence 2002: 35, 37-38; Dasen 2011: 291.

²¹⁹ Dixon 1992: 101.

²²⁰ Gaius, *Inst.* 1.154, 196.

²²¹ Dixon 1992: 105-107; Alberici and Harlow 2007: 196. See section 2.5.2 for a discussion of the age at which Roman children attained puberty.

There is little written evidence for the lives of the majority of children who belonged to the lower sections of Roman society. This is because authors generally confined their attention to children from elite classes.²²² They wrote in a variety of literary genres, such as poetry, histories, essays, philosophy, moral essays, legal codes and medical works.²²³ They presented a range of views so that there is “no single image of Roman children.”²²⁴

The experience of childhood differed considerably according to the geographical situation of the child, the socio-economic status and attitudes of its parents or carers, and its age and gender.²²⁵ Many children were the objects of adult concern and genuine affection.²²⁶ Country dwellers were often affected by poverty, while those living in large cities were likely to suffer the effects of overcrowding, poor sanitation, malnutrition and disease.²²⁷ Among slave populations, some children were over-worked or encountered extreme physical and sexual abuse.²²⁸ A fortunate few were reared and

²²² Harlow and Laurence 2002: 35; Dasen 2011: 291; Harlow 2013: 148.

²²³ French 1991: 14; Bradley 1999: 192; Harlow and Laurence 2002: 35; Crawford and Shepherd 2007: 2. Since there is no direct testimony from children, we must rely on evidence from elite male sources French 1991: 14, 15, 23; Harlow and Laurence 2002: 35.

²²⁴ Rawson 2003: 22.

²²⁵ French 1991: 23; Harlow and Laurence 2002: 34.

²²⁶ Rawson 2003: 4. A large number of epitaphs and sarcophagi indicate great deal of parental affection and grief. They are difficult to interpret fully as they were influenced by prevailing social conventions Huskinson 1996: 1; Laes 2011: 284. Rawson (2003: 17-19) presents a study of the memorial altar and statue of Q. Sulpicius Maximus dating to around AD 95, *CIL* 6.33976. He died at the age of eleven years and seems to have been a child prodigy, although his statue appears to depict a much older boy. The inscription states that his parents loved and mourned him greatly, and that he died of exhaustion from over-zealous studying. This begs a number of questions about the accuracy of his cause of death, the expense of the memorial, and the messages his bereft parents may have been trying to convey. Did they wish to emphasise the intellectual status and wealth of the family? Were they ‘pushy’ parents and, if so, did they feel guilty about his death? Was his statue intended to depict a *puer senex*, i.e. a precocious child with adult qualities? See Rawson 2003: 183. It is only possible to speculate on the answers to these questions.

²²⁷ Laes 2011: 33, 40-43.

²²⁸ French 1991; Laes; 2003: 301; Sigismund Nielsen 2013: 287.

cosseted as *delicia* or pet children and formed affectionate relations with their masters.²²⁹ In some cases these relationships were sexual in nature.²³⁰

Conclusion

The previous chapter determined that Roman practitioners were a diverse group of individuals in terms of their socio-economic status, medical beliefs and practices. Almost all written accounts of children dealt with those from elite classes, but it is important to realise that sick children also came from a wide variety of backgrounds that had implications for their health and well-being.

2.3 Age divisions and terminology of childhood

Ancient writers devised various schemes for dividing the human lifespan and terminologies for individuals within each stage of the life cycle.

2.3.1 Age divisions

Many Roman age divisions were based on artificial and arbitrary principles, although others related loosely to major developmental milestones.²³¹ Several difficulties arise from these systems. One stems from the preoccupation of ancient authors with male lives; they rarely referred to the life course of females who comprised half of the adult population.²³² This is evident, for example, in Philo Judaeus' summary (first century AD) of Solon's *Elegy on the Ages of Men*, a poem written in the sixth century BC:

²²⁹ Laes 2003: 315; Rawson 2003: 261.

²³⁰ Laes 2003: 317-318.

²³¹ Harlow and Laurence 2002: 16; Parkin 2010: 85, 89, 90.

²³² Harlow and Laurence (2002: 15) and Alberici and Harlow (2007: 194) ascribe this to male bias in classical literature and the low profile of females in public life. Apart from Laurence (2000: 444), male scholars generally do not comment on this hiatus: for example, Parkin 2010: 85-91; Laes 2006.

the growth of men from infancy to old age, when measured by the number seven, displays in a most evident manner its perfecting power.²³³

The Solonic model consisted of ten periods of seven years or hebdomads. A child's permanent teeth appeared at the end of the first hebdomad, i.e. in the seventh year, and boys started to sprout beards at fourteen or twice-seven years.²³⁴ It is not obvious how females fitted into this and alternative schemes. The number seven was also important for the Hippocratics who divided each of the first three stages of life into seven years.²³⁵ The timing of the eruption and shedding of primary teeth was particularly significant.²³⁶

An even greater barrier to the understanding of Roman age structures is their lack of uniformity. In the third century AD, Censorinus recorded several different systems, and many of these remained popular during the Roman period. He contrasted Varro's notion (late first century AD) of a single stage of childhood with Hippocrates' hebdomads:

Varro thinks that human life is divided into five equal epochs, each of fifteen years, except the last. Thus the first epoch, which lasts to the fifteenth year, embraces childhood..Hippocrates, the physician, divides life into seven periods; the first, according to him, terminates at seven years, the second at fourteen.²³⁷

Some Roman authors, like Pliny and Aretaeus, referred to infants and children without discussing the limits of these age bands.²³⁸ Other medical writers, such as Celsus and Galen, incorporated the Hippocratic hebdomads; the emergence of permanent teeth, around the seventh month, was the transitional point between infancy and childhood.²³⁹

²³³ Philo Judaeus, (*De opificio mundis* 36.103-105). Translated by C.D. Yonge. Solon was an Athenian statesman, philosopher and poet Laes 2011: 92.

²³⁴ Parkin 2010: 85.

²³⁵ *Ibid.*, 86.

²³⁶ Hanson 2004: 202; Macfarlane 2015: 279.

²³⁷ Censorinus, *De die natali* 4 (14). Translated by W. Maude.

²³⁸ Pliny, Aretaeus and Soranus did not discuss age divisions. Pliny identified two categories of juveniles, infants and children in the *Natural History*, and devoted three chapters to remedies for the diseases of infants (*HN* 28, 30, 32). Aretaeus referred to children as if they were a homogeneous group. Soranus' gynaecological treatise was mainly concerned with newborns and infants until they were old enough to come under the care of paedagogues, *Gyn.* 2.28.

²³⁹ Celsus, *Med.* 2.1.18-20; Galen, *Hipp.Aph.* 3.24-26 (17B.627- 637K), *San.Tu.* 1.12 (6.59K).

The number seven was highly significant because of its magical and astrological associations.²⁴⁰

Galen distinguished between infants and older children. Nevertheless, there is some academic discussion of whether he divided childhood into three, four or even five stages.²⁴¹ There is no evidence that he identified the end of the first year as a major transitional point, despite the first twelve months being the most hazardous period of a child's life.²⁴² Nor is there any reason to believe that he regarded the completion of weaning as one of these, even though it is clear that it had great social and medical significance.²⁴³ In his treatise on hygiene from the cradle to the grave, Galen devoted separate chapters to the care of newborns and infants who were breastfed until the third year.²⁴⁴ It is clear that he recognised the special needs of individuals during these periods, but he did not stipulate them as distinct subdivisions of infancy. For further details, see the following chapter.

Conclusion

Several different systems of age divisions were in operation during the Roman period. They are inconsistent and ambiguous, but they act rather as guides to social and biological milestones rather than definitive subdivisions of childhood.

²⁴⁰ Regarding age divisions according to Varro, Horace, Seneca (first century AD) and Ptolemy (second century AD), and the mathematical, magical, and astrological significance of the number seven, see Harlow and Laurence 2002: 15-17; Rawson 2003: 136; Parkin 2010; Evans Grubbs and Parkin 2013: 6.

²⁴¹ Laes (2006: 231-2) believes that Galen divided childhood into three, or four or five phases. He takes issue with Hummel (1999: 97-98) who argues that Galen identified the first stage of childhood as the period from birth to the end of the first twelve months; the second period was complete when full weaning occurred, a third stage continued up to the time when permanent teeth began to erupt, followed by the final stage from seven to fourteen years. Admittedly complete cessation of breastfeeding was an important social milestone since a weaned child was able to walk, speak and take part in many activities Dasen 2007: 49.

²⁴² Gourevitch 1992: 79; Harlow and Laurence 2002: 10; Parkin 2013: 55.

²⁴³ Dasen 2011: 292.

²⁴⁴ Galen, *San. Tu.* 1.7,9.

2.3.2 Terminologies for children and childhood

Medical treatises exhibited a wide range of terms relating to the children and childhood. Celsus described illnesses in childhood (*pueritia*) and puberty (*pubertas*).²⁴⁵ Galen used the equivalent Greek terms, *paidia* and *hebe*.²⁴⁶ During the Late republic, new Latin words relating to small children and early childhood began to appear in certain literary contexts.²⁴⁷ The nouns *infans* (infant) and *infantia* (infancy) were derived from an adjective signifying the inability of an individual to speak.²⁴⁸ The Greek equivalents, νήπιος and νήπιος, had similar origins.²⁴⁹ There was, however, no Latin word that signified a baby.²⁵⁰

Other neologisms arising around this time were *bimus* and *bimulus*. These appear on gravestones in Rome commemorating children who died around the age of two years.²⁵¹ Literary references are rare; Suetonius (b. c. AD 69) mentioned a *bimulus* in relation to Caligula.²⁵² A better known example is a depiction by the poet, Catullus (84-54 BC), of a *bimulus* sleeping in his father's arms.²⁵³ He also referred to *parvus*, *parvulus*, *puella*, *nepos* and *nepotis*. It is debatable whether the emergence of these terms resulted from an increased interest in babies and toddlers during the Late Republic.²⁵⁴ It is more likely that they were literary motifs that did not reflect the attitudes and sentiments of Roman parents.

²⁴⁵ Celsus, *Med.* 2.1.20.

²⁴⁶ Childhood and puberty, παιδία and ἡβη. Galen, *Hipp.Aph.* 3.25, 26 (17B.637, 630K).

²⁴⁷ Dasen 2011: 292. The acquisition of new territories in the Greek-speaking world resulted in the development of hybrid Latin/Greek technical and medical terminologies Nutton 2013a: 160-161.

²⁴⁸ Rawson 2003: 140; Dasen 2011: 292.

²⁴⁹ Infant and infancy, νήπιος and νήπιος. Liddell and Scott, *Greek-English Lexicon*.

²⁵⁰ Harlow and Laurence 2002: 36-37; Dixon 1992: 104.

²⁵¹ Funerary inscriptions *CIL* 6.5861, 6.6031, 6.16739, 6.171196. See Rawson 2003: 140; Dasen 2011: 292. *Annuculus* is reserved for a one year old child and *pupula* meant 'little doll' Dasen 2006: 32.

²⁵² Suetonius, *Lives of the Caesars*, Caligula 8.8.

²⁵³ Catullus 17.13.b. See Rawson 2003: 140; Dasen 2011: 292.

²⁵⁴ Manson 1978: 247-249; Dasen 2011: 292.

Medical texts mentioned children at different developmental stages. Celsus distinguished two broad age categories: infant (*infans*) and child (*puer*).²⁵⁵ On occasions he used phrases to refine them further, such as “tender infants not yet children,” or children “where age is more advanced” and those “at the commencement of puberty.”²⁵⁶ The Greek language had a greater number of terms that allowed more flexibility.²⁵⁷ Soranus used the term *brephos* most frequently to denote a baby, but also referred to a *paidion* or *nepios* (little child) and the *galathenos* (suckling).²⁵⁸ Galen’s terminology included *pais* (child), *paidion* and *paidarion* (little child), and *neognos paidion* (newborn little child).²⁵⁹ He also identified sucklings as “those who consume food from wet nurses.”²⁶⁰

Such ambiguities can be a great source of confusion.²⁶¹ *Pais* sometimes indicated an infant or a child of any age.²⁶² A *brephos* might be an embryo, foetus, baby or older child, and *nepios* could apply to infants and older children through to puberty.²⁶³ Galen referred to a fourteen-year old male as *puer* even though he would have been an adult according to Roman law.²⁶⁴ Misunderstandings also arise from the custom of referring

²⁵⁵ Celsus, *Med.* 7.14.7, 1.3.32.

²⁵⁶ Celsus, *Med.* 2.1.18-20. Translated by W.G. Spencer.

²⁵⁷ Nutton 2013a: 160.

²⁵⁸ Soranus, *Gyn.*: *brephos* 2.13, 14, 20; *paidion* 2.12, 13; *nepios*: 2.26; *galathenos* 2.13, 28.

²⁵⁹ *Brephos*: Galen, *San.Tu.* 1.5 (6.25-26K). *Paidion*: *Hipp.Aph.* III.24 (17B.630K). *Paidarion*: *MMG* 2.6 (11.105-107K). *Pais*: *Comp.Med.Loc.* 1.1 (12.400K). Newborn little children: *Hipp.Aph.* III.24 (17B.627K).

²⁶⁰ Galen, *Comp.Med.Loc.* 6.9 (12.1004-1005K). Author’s translation.

²⁶¹ Laes 2006: 230.

²⁶² Soares 2014: 375.

²⁶³ Laes 2006: 235.

²⁶⁴ Galen, *Loc.Aff.* 1.6 (8.64K).

to male slaves of any age as children.²⁶⁵ This was not new to the Roman period since similar uncertainties occurred in the Hippocratic texts.²⁶⁶

In general, medical texts employed gender-neutral terms that referred to boys or girls. On some occasions authors were more specific. For example, Scribonius Largus recorded different treatments for the same condition in a boy, *puer*, and a girl, *puella*.²⁶⁷ Aretaeus referred to tonsillitis affecting girls.²⁶⁸ Galen mentioned a girl (*paediske*) from Chios and described pubertal changes occurring in a boy (*meriakion*) or virgin girl (*parthenos*).²⁶⁹ When Celsus was describing surgery for bladder stones, he referred to the sufferer as *puer*.²⁷⁰ He clearly meant a male child since he suggested modifying the operation for a girl (*virgo*) or a woman (*mulier*).²⁷¹ Therefore it is sometimes possible to arrive at a correct interpretation by examining the whole context of a written reference.

Conclusion

Ambiguities and inconsistencies in Greek and Latin terminologies for children and childhood can make it difficult to be sure about the age categories of children mentioned in medical treatises. It follows that they can, potentially, hinder the understanding of the prevalence of diseases at certain ages, and treatments prescribed for children at different stages in life. In actual practice, a careful scrutiny of the text is often helpful in resolving the matter.

²⁶⁵ Golden 1985; Harlow and Laurence 2002: 37; Laes 2006: 233-234; Gourevitch 2010: 276.

²⁶⁶ Dean-Jones 2013: 111-112.

²⁶⁷ Scribonius Largus, *Comp.* 16.10-13.

²⁶⁸ Aretaeus, *SA* 1.9.

²⁶⁹ Galen, *Ven.Sect.Er.* 3 (11.199-201K); *Hipp.Epid.* VI 3.27 (17B.212K).

²⁷⁰ Celsus, *Med.* 7.26.2C.

²⁷¹ *Ibid.*, 7.26.4.

2.4 The physiology of children

Dasen remarks that Greek and Latin medical texts “demonstrate a consciousness of the characteristics of children.”²⁷² Not all Roman doctors, especially Empiricists and Methodists, would have acknowledged that children had distinct physiological traits. Furthermore, there is no way of knowing the thoughts of the majority of Roman physicians, midwives and other carers. The following sections attempt to establish the traits children possessed and how they differed from adults.

Galen was remarkable for the complexity of his theories concerning human physiology.²⁷³ He based these on Hippocratic teachings on *pneuma* and the four qualities and humours, as shown in Section 1.2.6 above. The elements and humours related as follows: blood with air, phlegm with water, yellow bile with fire, and black bile with earth.²⁷⁴ Galen wrote that “the child corresponds in age groups to the spring in seasons.”²⁷⁵ Therefore he associated childhood with springtime, hot and wet qualities, and blood and phlegm.²⁷⁶ Humidity decreased relentlessly, day by day, throughout the life cycle.²⁷⁷ Thus children were born “extremely wet,” but “old men [were]..dry.”²⁷⁸

²⁷² Dasen 2011: 292.

²⁷³ Bertier 1996: 2165.

²⁷⁴ Galen, *Hipp.Elem.* 8.12 (1.480K). Translated by W.J. Lewis.

²⁷⁵ Galen, *PHP* 8.6.17 (5.693K). Translated by P. De Lacy. Galen linked summer, autumn and winter to adolescence, maturity and old age respectively. He agreed with Hippocrates that “in each of the four seasons, the prevailing humour is the one similar in mixture to that same season, and on this account names phlegm, cold and wet, as corresponding to winter, and blood, hot and wet, just like spring, and yellow bile, like summer he says to be hot and dry, and black bile, like autumn, to be cold and dry,” *HNH* 1.35 (15.87-91K). Translated by W.J. Lewis.

²⁷⁶ Galen, *MMG* 1.7 (11.22-24K).

²⁷⁷ Galen, *San.Tu.* 1.12 (6.59-60K).

²⁷⁸ Galen, *Temp.* 2.2 (1.578, 581K). Translated by P.N. Singer.

Celsus was aware of the doctrines of the elements, humours and *pneuma*, but did not discuss them in any detail.²⁷⁹ Very few of Rufus' comments on the heat and humidity of children have survived. One short fragment is confusing:

the [bodily] heat of children is not a [very] strong one corresponding to their moisture. This can be deduced from the slackness, feebleness, and numbness of their bodies.²⁸⁰

Whereas Galen and Aretaeus described children as hot, Rufus implied that children were just moderately hot and moist. The reader is left to wonder whether he explained how this accounted for their physical weaknesses in a part of the original text that is now lost. This illustrates the difficulty of having to depend on small fragments preserved, or even corrupted, by later writers. In a slightly longer extract Rufus linked the natural humidity of children with a susceptibility to epilepsy.²⁸¹ *Pneuma* and the four qualities were of chief concern to Aretaeus who remarked that children were hot and humid.²⁸² As a Methodist, Soranus made no comments about these two qualities in children.

There are three distinct models concerning temporal variations in bodily heat based on evidence from Rufus, Aretaeus and Galen.²⁸³ Rufus believed that heat increased progressively from the moment of birth and through to old age.²⁸⁴ Aretaeus took the opposite view, saying that “there is most heat in them [children]” and “old persons [have] a cold body.”²⁸⁵

²⁷⁹ Celsus mentioned that Herophilus and Hippocrates recognised the role of the four humours, the elements, and *pneuma* in health and disease, *Med. Prooemium* 14-15; he also wrote that it was necessary to know “the sick man's temperament; whether his body is rather humid or rather dry,” *ibid.*, 53. Translated by W.G. Spencer.

²⁸⁰ Rufus in Baladī, Fragment 2, Pormann 1999: 61.

²⁸¹ Rufus in Baladī, Fragment 5, Ullmann 1975: 175.

²⁸² Aretaeus, *SA* 1.9, 2.6

²⁸³ Bertier (1996: 2168-2169) bases her evidence on the writings of Rufus (Fragment 2 above); Aretaeus, *SA* 1.9, *SD* 1.11; and Galen. *Temp.* 2.2 (1.597-598K). See Baker (2010: 162) for a summary.

²⁸⁴ Rufus in Oribasius, *Lib. inc.* 20.18-19, Daremberg and Bussemaker, Volume 3: 158.

²⁸⁵ Aretaeus, *SA* 1.9, *SD* 2.3. Translated by F. Adams.

Following a protracted discussion, Galen concluded that children had more innate heat than adults, but adults had more acquired heat than children. Although its character changed as time passed, the total content of body heat remained unaltered over the life course.²⁸⁶ This only applied to individuals with ideal constitutions:

in the best constituted bodies warmth remains the same up to their full development, whereas in those which are moister and cooler than the best, warmth increases.²⁸⁷

It is worth considering the possibility that at some stage Galen opted for a more elaborate account involving different kinds of heat. He stated that only trained experts, like him, were capable of discerning how much or what kind of heat was present in the human body.²⁸⁸ Galen's tactile testing of body temperature and arterial pulses have come under scrutiny; he had no effective means of discriminating between innate and acquired heat.²⁸⁹ His methodology was flawed and there are reasons to suppose that he adjusted his clinical findings to fit his own theoretical preconceptions.²⁹⁰ The latter is a likely explanation, and the purpose of his self-proclaimed expertise in the matter was to demonstrate his superior knowledge and clinical acumen.

Conclusion

Humoral physicians such as Rufus and Galen believed that children were humid and hot. The following sections will explore whether this had implications for theories

²⁸⁶ Galen conducted a series of tactile tests on hundreds of subjects *Temp*, 2.2 (1.591-594K). He refuted two opposing views and concluded that "neither camp was correct..I have detected no difference in heat between childhood and the prime of life..in children the heat appears to the touch more vaporous, large in quantity and gentle, while in the prime of life it appears small, dry and less gentle. For much of a child's substance flows away to the outside, because of its moisture; much less in the prime of life, when the substance is dry. Neither therefore is hotter in any simple sense, but the former appears so by virtue of the quantity of transpiration, the latter by virtue of its sharpness. The innate heat in children is greater in quantity..and gentler" *ibid.*, 2.2 (1.593, 597-598K), translated by P.N. Singer. Galen reiterated this conclusion in *Prop.Plac.* 4.4-5.1.

²⁸⁷ Galen, *San.Tu.* 1.12 (6.60K). Translated by R.M. Green. In the ideal or best constitution there is a perfect balance of all four qualities Galen, *Temp.* 1.3 (1.519K).

²⁸⁸ Galen, *Temp.* 2.2 (1.593K).

²⁸⁹ Nutton 1993: 12-13; Hankinson 2008: 221; Mattern 2008: 152.

²⁹⁰ Connell 2000: 415.

about the pathogenesis and clinical features of certain childhood diseases and their treatment. Galen is the best source on this matter, although his account of temporal changes in heat raises several questions. The Methodist doctor, Soranus, offered no comments on the matter, and there are major lacunae in the evidence from other writers.

2.5 Different stages of development

There were marked morphological and physiological differences between tiny infants and children approaching puberty. Changes occurred in their bodies during a series of stages within the womb and from birth to puberty.²⁹¹

2.5.1 Prenatal life and early infancy

Physiology and anatomy

According to Galen, conception occurred when male and female semen mixed together in the womb.²⁹² Philosophers and physicians described the gradual growth and development of embryos.²⁹³ Galen believed that they were initially plant-like, but they became living, animal beings once they gained the ability to move.²⁹⁴ There were other views on the subject: Plutarch, for example, thought that this transformation occurred when the umbilical cord separated.²⁹⁵ For Galen in particular, embryos were initially ‘one-sex’ or neutral in gender. Various circumstances then dictated whether they

²⁹¹ Dasen 2011: 291.

²⁹² Galen, *Sem.* 2.1.14-14 (4.596K).

²⁹³ See Hanson (2008) and Dasen (2013: 17-19) for discussions on the stages of development of unborn children according to Hippocrates, Aristotle and Galen.

²⁹⁴ Galen, *Sem.* 1.9.8, 10-12, 2.5.74 (4.543-544, 642K).

²⁹⁵ Plutarch, *Roman Questions* 102C (=288C). Greek philosophers argued about this matter. Stoics believed that an infant was plant-like until the moment of birth when its first gasp of air converted vegetative *pneuma* into animal *pneuma* Gaskin 2014: 227.

developed into males or females.²⁹⁶ In all cases, heat was the determining factor. Embryos implanted in the hotter, right side of the uterus became males, and females grew in the cooler, left side.²⁹⁷ They were nourished by blood which was a hot humour, so that “the substance of the newborn child is hottest in innate heat.”²⁹⁸ In addition to this, “the male foetus is from the beginning warmer and drier than the female” and that “after they are born, the male is at all times of life hotter than the female.”²⁹⁹

Humoral physicians believed that a child’s health depended on having the correct balance of elemental qualities and humours according to its age; imbalance or corruption of the humours led to sickness.³⁰⁰ This balance was also intimately associated with *pneuma*, the essential life-force.³⁰¹

The small size, immaturity, softness, frailty and helplessness of newborn infants would have been obvious to all Romans. The delicate nature of a neonate’s skin rendered it liable to irritation or damage.³⁰² Newborns were also “soft and almost fluid.”³⁰³ They also had “a moister constitution than those of other ages.”³⁰⁴ Their soft tissues and skin,

²⁹⁶ For further reading on Hippocratic and Aristotelian thoughts on the biological sex of embryos, see Dean-Jones 1994: 44-46 and H. King, 2013, *The One-Sex Body on Trial: The Classical and Early Modern Evidence*. Farnham: Ashgate.

²⁹⁷ Galen, *UP* 14.6, 7 (4.295, 309-310K); *Sem.* 2.5.36-47 (4.633-636K). Other factors influenced the gender of foetuses such as whether semen originated from his right or left testis of a man. Galen explained that the male left testis received blood that was impure and cool, while blood supplying the right testis was pure and warm *UP* 14.7 (4.306, 309K). Both male and female semen was required for conception to occur, *Sem.* 2.1.14-15 (4.596K); *UP* 14.6 (4.301-312K). Women had smaller testes than men; they secreted “scantier, colder and wetter” semen that generated female embryos. Poor quality of regimen in pregnant mothers could also result in female embryos *UP* (4.301, 308K).

²⁹⁸ Galen, *PHP* 8.7.9 (5.710K). Translated by P. De Lacy. Cf. *San.Tu.* 1.7 (6.36K).

²⁹⁹ Galen, *Sem.* 2.5.26 (4.631K). Translated by P. De Lacy.

³⁰⁰ Galen, *San.Tu.* 1.7 (6.33-35K); *Temp.* 1.9, 2.2 (1.585, 509-571K).

³⁰¹ *Idem*, *PHP* 7.3.19-20, 27, 28 (5.604-606K).

³⁰² Soranus, *Gyn.* 2.8, 9.

³⁰³ Galen, *Caus.Morb.* 7.1 (7.27K). Translated by I. Johnston.

³⁰⁴ Galen, *San.Tu.* 1.7 (6.33K). Translated by R.M. Green. Cf. *Caus.Symp.* 3.10 (7.258K). Medical scientists have confirmed that the total body water content of humans falls as age progresses. Water accounts for eighty-five percent of the bodies of premature babies; this figure falls to seventy and fifty-five percent in newborns and adults respectively Buchanan and Baird-Lambert 1988: 2.

therefore, needed protection.³⁰⁵ Bones were also at risk of deformation during normal childcare procedures.³⁰⁶ These are discussed in Section 3.3.4 below. There is little information on these dangers from other sources. The only surviving reference from Rufus on the matter stresses the weakness of an infant's spine and the need to support its head during swaddling.³⁰⁷ Rufus and Galen recognised the immaturity of infants' brains. This accounted for the weakness of their cognitive functions and lack of motor development.³⁰⁸ Rufus also blamed the humidity and "febleness of their brains" for their predisposition to serious illnesses.³⁰⁹ These suppositions indicate a close association of anatomical and physiological traits

Another difference between children's and adults' bodies relates to their internal pores, channels, vessels or conduits. The concept of disease resulting from their blockage was widely held in antiquity.³¹⁰ Dean-Jones regards the Hippocratic notion of children having constricted internal vessels as an important feature that distinguished them from adults.³¹¹ She cites the explanation in *On generation* for their sexual immaturity:

In the case of children, their vessels are narrowed and blocked, and therefore prevent the passage of sperm. Girls while they are still young do not menstruate for the same reason. Translated by I.M. Lonie.³¹²

Hippocratic physicians believed that many diseases affecting children, such as mouth ulcers, dysentery, dropsy and epilepsy, were the result of phlegm dropping down from

³⁰⁵ Galen, in Oribasius, *Coll. Med. Lib. inc.* 12.1-2. Daremberg and Bussemaker, Volume 3: 118; *San.Tu.* 1.7 (6.32-33K).

³⁰⁶ Soranus, *Gyn.* 2.9, 10. Galen, *San.Tu.* 1.7 (6.31K); *Caus. Morb.* 7.1 (7.26-29K).

³⁰⁷ Rufus in Oribasius, *Coll. Med. Lib. inc.* 20.2. Daremberg and Bussemaker, Volume 3: 155.

³⁰⁸ Galen, *Foet.Form.* 3 (4.670K); *Temp.* 2.2 (1.585K); *San.Tu.* 1.8 (6.43K).

³⁰⁹ Rufus, from Paul of Aegina in Baladi, Fragment 5 in Ullmann 1975: 175; Fragment F (R) 4 in Pormann 1999: 62-63. Cf. Galen, *Loc.Aff.* 3.9 (8.175K).

³¹⁰ For example, by Diocles, Praxagoras and Erasistratus Vallance 1990: 98.

³¹¹ Dean-Jones 1994: 46; 2013: 109, 113. The Hippocratics believed that many diseases affecting children, such as mouth ulcers, dysentery, dropsy and epilepsy, were the result of phlegm dropping down from their heads Dean-Jones 2013: 116, 117. According to Hippocrates most small children who developed seizures died because their vessels were too slender to allow the passage of thick, copious phlegm, *Morb.Sacr.* 8.8.

³¹² Hipp., *On generation* 2, 3.

their heads.³¹³ According to Hippocrates most small children who developed seizures died because their vessels were too slender to allow the passage of thick, copious phlegm.³¹⁴

When patent, they conveyed various substances around the body, and acted as reservoirs for excess fluid and noxious humours such as phlegm and bile.³¹⁵ Galen differentiated invisible, microscopic pores from visible, macroscopic channels.³¹⁶ Those that became constricted or too loose gave rise to disease.³¹⁷ This was the cornerstone of the Methodist doctrine of commonalities of disease, as explained in Section 1.2.5 above. Galen described many consequences of obstructed pores or internal vessels.³¹⁸ In this matter the views of Methodist and humoral physicians sometimes coincided. An example of this concerns the nature and aetiology of epilepsy; see Section 3.3.1 below. Soranus indicated that an infant's pores remained tightly closed until the age of six months or more, and it was inadvisable to commence mixed feeding before then.³¹⁹

It is debatable whether Soranus associated the growth of infants with a gradual increase in the firmness of the body.³²⁰ A close inspection of translations by Temkin and Burguière *et al.* reveals that he did not mention or even imply growth in this respect.³²¹

³¹³ Dean-Jones 2013: 116, 117.

³¹⁴ Hippocrates, *Morb.Sacr.* 8.8.

³¹⁵ Craik 2009: 107, 110; Nutton 2013a: 78.

³¹⁶ Vallance 1990: 98-99; Johnston 2006: 46-47.

³¹⁷ Vallance 1990: 99. Galen wrote that pores in the skin conveyed substances to the surfaces, but these could become obstructed *San.Tu.* 3.10 (6.218-219K).

³¹⁸ Galen, *San.Tu.* 1.5, 3.10 (6.15, 218-219K); *Caus.Morb.* 7.4 (7.32K); *MM* 10.2 (10.668K). Celsus also referred briefly to invisible pores that could become blocked (*Med.* 1 Prooemium 16). He wrote that channels obstructed by phlegm were responsible for running eyes (*ibid.*, 7.7.15G).

³¹⁹ Soranus, *Gyn.* 2.21.

³²⁰ Bertier (1996: 2169-2170) bases this assumption on Soranus' remarks concerning infant feeding, the removal of swaddling bands and the weaning of infants, *Gyn.* 2.14, 19, 21.

³²¹ "When the infant has become firm of body..then the wet nurse should also take some medium-sized fowl" Soranus, *Gyn.* 2.14, translated by Temkin: 100; "we deem it right to loosen them when the body has already become firm" *ibid.*, 2.19, Temkin: 114; "until the child has become firm, it should only be fed on milk," *ibid.*, 2.21, Temkin: 117. Burguière *et al.* also refer to firmness or robust constitution, 2000: 38, 54, 55.

Galen, on the other hand, was clear that growth occurred in three dimensions and depended on nutrition and the presence of innate heat and humidity.³²²

Conclusion

The anatomical and physiological characteristics of children made them especially liable to injury and certain diseases.

Psychological characteristics

The Stoic philosopher, Seneca, believed that while children were susceptible to heated outbursts due to feelings of anger, they differed from animals. Wild animals could be ferocious but were incapable of feeling anger.³²³ Galen took issue with the Stoic viewpoint, likening the behaviour of children to that of wild beasts:

Plato clearly shows that the angry part [of the soul] is other than rational. Thus children and brutes too, are full of anger and have no share at all in reason. Some persons have dared to say of animals that there is neither anger nor desire in their souls.³²⁴

Adults were generally less prone to anger:

Mature persons, whenever they..make reason their guide in life: they check their anger..but nothing of the sort happens in children or in brutes because the conations of the former are not yet ruled by reason, and those of the latter are never so ruled.³²⁵

Children lacked reason and so were unable to control their emotions. Toddlers were notorious for their violent temper tantrums:

Small children of two years often attempt to strike with their hands and feet..they have, moreover, desire for vengeance upon what has harmed them..they wish to strike and to bite the person who has harmed them..There occurs with it a burning redness in the eyes, and in the whole face redness, heat, and rush of blood.³²⁶

³²² Galen, *Nat.Fac.* 1.7, 2.4 (2.18-89K); *HNH* 2.13 (15.155-156K). *Cf. Temp.* 2.2 (1.584K). Galen recognised that his readers would find his theories on growth incomprehensible. As an analogy, he described how children liked to inflate pigs' bladders with air and heat them over a fire. The cavities distended, but the walls became thinner in the absence of nutritive substances, *Nat.Fac.* 1.7 (2.17-18K).

³²³ Seneca, *De ira* 1.3.3-7.

³²⁴ Galen, citing Plato's *Republic*, *PHP*, 5.7.77-79 (5.500K). Translated by P. De Lacy.

³²⁵ *Ibid.*, 5.7.80-82 (5.501K). Translated by P. De Lacy.

³²⁶ Galen, *De Moribus* 3. Translation in Walzer 1949: 90. This lost treatise survives in the form of an Arabic summary published in 1939 by P. Kraus; J.N. Mattock translated this into English in 1972.

Soranus wrote that strong emotions, frights and excessive crying could cause “afflictions, sometimes of the body, sometimes of the soul,” though he did not identify these diseases or describe how they were generated.³²⁷ Galen was more specific about some of the illnesses: emotional disturbances could:

kindle fevers and constitute the beginnings of severe diseases. Fevers and febrile ailments, the latter by obstruction of various viscera, by epilepsies and apoplexies..and by the catarrhal and rheumatic diseases.³²⁸

Galen thought that the obstruction of the above viscera was due to the blockage of internal pores or channels. Another circumstance when newborns could become emotionally distressed was when they were subject to excessive heat and cold, when they were hungry or soiled, or when:

The habit of the mind is impaired by faulty customs in food and drink and exercise and sights and sound and music.³²⁹

Furthermore, Galen believed that “the faculties of the soul depend on the mixtures of the body.”³³⁰ Fits of anger could lead to a potentially fatal excess of yellow bile and dissipation of *pneuma*.³³¹ Anger also caused fever due to the effect of yellow bile which increased the amount of innate heat within the body.³³² Fright and anger not only affected physical health, but was also harmful to the mind and soul. This is discussed further in relation to epilepsy in Section 3.3.1. There were a number of measures that aimed to prevent and alleviate the effects of strong emotional disturbances (see Section 4.2.2).

³²⁷ Soranus, *Gyn.* 2.17.40. Translated by O. Temkin: 113.

³²⁸ Galen, *San.Tu.* 1.8 (6.40, 41K). Translated by R.M. Green.

³²⁹ *Ibid.*, 6.43-44 (39-40K). Translated by R.M. Green.

³³⁰ Galen, *QAM* 1 (4.767K). Translated by P.N. Singer. *Cf. Loc.Aff.* 3.10 (8.191K).

³³¹ Galen, *Temp.* 2.6 (1.633K); *MM* 12.5 (10.842K).

³³² Galen, *MM* 10.4 (10.679K). For further discussions of Galen’s theories about the effects of anger on the soul and body, see Von Staden 2012: 83-85.

Conclusion

The natural humidity, immaturity and frailty of babies made them susceptible to illness or injury. As a result they required special care during feeding, bathing, swaddling and general handling. Infants were also prone to the harmful effects of anxiety, frustration and anger and it was essential to avert or control these. These points will be addressed in the following two chapters.

2.5.2 Late infancy, childhood and puberty

Weaning was an important milestone in an infant's life.³³³ Total withdrawal from the breast was generally complete during the third year of life, although there is evidence of considerable variations in breastfeeding and weaning practices across the Roman world (see Section 4.2.3 below). Another significant point in a child's life was the first appearance of permanent teeth around the age of seven years. Over the years children continued to develop and grow and, as we have seen, according to those who accepted humoral lore, they became progressively dryer.

Puberty was a complex process that transformed Roman children into sexually mature beings.³³⁴ Soranus described the changes that occurred in females. These consisted of an initial enlargement of the breasts and uterus, followed by the first onset of menstruation.³³⁵ He did not refer to male puberty; nor did he speculate on what brought these changes about. In contrast, Galen provided a detailed account of the maturation of

³³³ Dasen 2011: 292.

³³⁴ The term 'puberty' is derived from the Latin word *pubescere*, 'to become hairy' (Warren 1983: 3). It did not confer true adult or citizen status since these involved legal, social, cultural and gender considerations Dixon 1992: 101; Harlow and Laurence 2002: 35-36; Parkin 2010: 87; Gowland and Redfern 2010:18.

³³⁵ Soranus, *Gyn.* 1.15. 24- 25 (Temkin: 20-21).

both sexes.³³⁶ He believed that puberty was triggered at the moment when innate heat dried the body to a critical level.³³⁷ He described breast swelling, pubic hair growth, vaginal bleeding and deepening of the voice in girls. Boys exhibited a growth spurt, emission of semen, increased body hair and more profound vocal changes.³³⁸

Roman authors remarked on wide deviations in the age of onset of puberty.³³⁹ Rufus wrote that menarche generally occurred at the age of fourteen years, although various factors could delay its onset. These included a cold, moist constitution, and pallor and lack of flesh around the hips.³⁴⁰ According to Soranus, “menstruation, in most cases, first appears around the fourteenth year, but excessive singing, dancing and games and dietary restriction could delay its onset.”³⁴¹ Galen said that puberty generally commenced in boys around the end of the fourteenth year and agreed that there were individual variations.³⁴² The average age at menarche and marriage of Roman girls has attracted a considerable amount of scholarly discussion. The general consensus is that the clientele of Roman medical writers were members of the elite classes, and their children were probably healthier and better fed than the majority of the population. These factors may have led to an earlier menarche than in less privileged girls.³⁴³ It is probable, therefore, that individuals within the general population matured later than the treatises suggested.

³³⁶ Galen, *Hipp.Aph.* III.27 (17B.212K). He believed that menstruation rid females of superfluous blood each month through vessels that connected the breasts and the genital tract, *UP* 14.5, 8 (4.151, 177K).

³³⁷ Galen, *Hipp.Prog.* 3.28 (18B.280K).

³³⁸ Galen, *Hipp.Epid.* VI 1.5 (17A.825K).

³³⁹ Pliny reported the extreme case of a three-year old boy, *HN* 7.7.

³⁴⁰ Rufus, in Orib., *Lib. inc.* 2.21, 23-24, Daremberg and Ruelle: 86-87.

³⁴¹ Soranus, *Gyn.* 1.4.22, 23 (Temkin: 17, 19).

³⁴² Galen, *Hipp.Aph.* VI 1.7 (17B.791-792); *San.Tu.* 6.2 (6.387K).

³⁴³ Hopkins 1965: 311; Rousselle 1994: 303; Gourevitch 1996: 2095; Harlow and Laurence 2002: 35; Rawson 2003: 3; Bradley 2005: 80; Crawford and Shepherd 2007: 2. Treggiari (1991: 40) argues that the age at menarche was around thirteen years for girls from rich families and equates this to modern Western statistics. For errors in assuming constancy in the rates of human development across time, see Harlow and Laurence 2002: 13.

Puberty was a special time of danger.³⁴⁴ It coincided with the appearance of a number of specific diseases; conversely, it could also confer health benefits (see below in Sections 2.7.2 and 3.3.1). Additionally, many ‘adult’ treatments were more suitable and safer after the onset of puberty.³⁴⁵

Conclusion

Puberty marked the transition between childhood and adulthood; it also had medical implications. It was a potentially dangerous time when certain serious diseases were likely to strike. Conversely, other illnesses were less troublesome, and it marked the point when individuals became eligible for many treatments reserved for adults.

2.6 Morbidity and mortality

Soranus instructed midwives to identify newborn infants who were fit to rear, implying that some parents discarded weak or sick newborns.³⁴⁶ There is indeed evidence that many Roman newborns were subject to infanticide or exposure.³⁴⁷ This topic lies

³⁴⁴ Celsus, *Med.* 2.1.20.

³⁴⁵ For example, Galen reserved venesection for adults, i.e. those aged over fourteen years or over, *Cur.Rat.Ven.Sect.* 13 (11.290K); *MM* 11.4 (10.777-778K).

³⁴⁶ Soranus, *Gyn.* 2.6 (Temkin: 79-80).

³⁴⁷ Infanticide and the exposure of newborns in antiquity is an emotive issue that has generated a vast corpus of secondary literature. See, for example: D. Engels, 1980. ‘The problem of female infanticide in the Greco-Roman world.’ *Classical Philology* 75 (2): 12-120; S.B. Pomeroy, 1983. ‘Infanticide in Hellenistic Greece.’ In A. Cameron and A. Kuhrt (eds). *Images of Women in Antiquity*. Croom Helm, 207-222; J.E. Boswell, 1988. *The Kindness of Strangers: The Abandonment of Children in Western Europe from Late Antiquity to the Renaissance*. Chicago: Chicago University Press, 53-137; C. Patterson, 1985. ‘Not worth the rearing: The causes of infant exposure in ancient Greece.’ *Transactions of the American Philological Association* 115: 103-123; D.W. Amundsen, 1987. ‘Medicine and the birth of defective children. Approaches of the ancient world.’ In R.C. McMillan *et al.* (eds). *Euthanasia and the Newborn. Conflicts Regarding Saving Lives*. Dordrecht: Reidel; M. Faerman, *et al.*, 1998. ‘Determining the sex of infanticide victims from the Late Roman era through ancient DNA analysis.’ *Journal of Archaeological Science* 25: 861-86; W.V. Harris, 1982. ‘The theoretical possibility of extensive infanticide in the Graeco-Roman world.’ *The Classical Quarterly* 32 (1): 114-116; S. Mays, 2003. ‘Comments on “A Bayesian approach to ageing perinatal skeletal material from archaeological sites: Implications for the evidence for infanticide in Roman Britain”’ by R.L. Gowland and A.T. Chamberlain. *Journal of*

outside the scope of the present thesis: since its primary concern is the prevention and treatment of sickness in infants and children.

A large proportion of Roman children failed to survive into adulthood.³⁴⁸ Estimates of infant and child mortality rates in antiquity vary considerably, but around half of all children who survived the first year died by the age of ten years.³⁴⁹ These figures are derived from several classes of evidence, each with its own methodological problems. Revised model life tables suggest that infant mortality rates of between twenty and thirty five percent respectively are more realistic.³⁵⁰ Although it is impossible to be sure of how many Romans died in infancy and childhood, it is evident that a great many suffered from serious or fatal illnesses.³⁵¹

Hippocrates identified certain times when children were most at risk of dying. These were the fortieth day, the seventh month, the seventh year and around puberty (twice seven).³⁵² Celsus followed the Hippocratic timings.³⁵³ Galen inevitably mentioned the same pattern in his comments on Hippocrates' *Aphorisms* III.³⁵⁴ Plutarch wrote that "the seventh [day] is dangerous for newly-born children," therefore Roman girls were

Archaeological Science 30: 1695-170; B.D. Shaw, 2001. 'Raising and killing children: Two Roman myths.' *Mnemosyne* 54 (1): 31-37.

³⁴⁸ Marcus Aurelius (AD121-180) wrote that "When a man kisses his child, said Epictetus, he should whisper to himself, 'To-morrow perchance thou wilt die,'" *Meditations* 11.34. Translated by G. Long.

³⁴⁹ There are marked differences in estimates of mortality rates during the first year of life. They vary from under ten percent French 2004: 53; to twenty percent Hopkins 1966: 264; twenty-five to thirty percent Burn 1953: 14; Garland 1990: 108; Bradley 1999: 184; over thirty percent: Harris 1982: 115; Saller 1994: 12; Harlow and Laurence 2002: 8. In times of adversity it may have reached sixty percent French 2004: 53; Wiedemann 1989: 16; Soren *et al.* 1999: 483; Saller 2007: 91. For discussions on child mortality rates, see Wiedemann 1989: 16; Garnsey 1998: 256; Bradley 1999: 184; Pearce 2001: 125; Harlow and Laurence 2002: 43; Saller 2007: 91.

³⁵⁰ Woods (2007: 373-374) suggests that the old Princeton Coale-Demeny tables overestimate mortality rates. His South Europe and East Asia model life tables yield more reliable statistics for infants and children in antiquity. For comments, see Parkin 2010: 99.

³⁵¹ Bradley 2005: 92.

³⁵² Hippocrates, *Aphorisms* III.28.

³⁵³ Celsus, *Med.* 2.1.20.

³⁵⁴ Galen, *Hipp.Aph.* III.28 (17B.639-640K).

named on the eighth day, and boys on the ninth.³⁵⁵ Other critical periods corresponded to developmental stages such as the removal of swaddling bands, the appearance of milk teeth and then adult dentition and, finally, puberty at the age of twice-seven years. They reflect the magical properties of the number seven rather than having any real basis.³⁵⁶ Anthropological studies have determined that there were many health risks with the weaning process during Roman times.³⁵⁷ Despite this, the sources are not explicit about this being a special time of danger. Soranus was concerned with the consequences of premature weaning or prolonged breastfeeding.³⁵⁸

Conclusion

Roman children were at great risk from disease since around a half failed to survive past ten years. Medical texts identified particularly dangerous time during infancy and childhood, but they made no explicit mention of the weaning period. This may, perhaps, be explained by its prolonged duration and variability in its timing (see Section 4.2.3 below). Illnesses that struck during these hazardous times are included in the following discussions.

³⁵⁵ Plutarch, *Roman Questions* 102. Translated by F.C. Babbitt. It was clearly best to wait until after the dangerous seventh day. Fathers had until the seventh day to decide whether they wished to rear their newborns. One of the reasons Plutarch suggested for choosing the eighth and nine days was the Pythagorean association of even numbers with females and odd numbers with males. Harlow and Laurence 2002: 39; Rawson 2003: 105.

³⁵⁶ Rawson 2003: 136.

³⁵⁷ Cereals used for weaning were often contaminated with bacteria and lacked vital nutrients such as vitamins C and D Garnsey 1998: 267; Prowse *et al.* 2010: 177; Redfern and deWitte 2011: 204. In addition to this, Roman infants were prone to iron deficiency anaemia due to the low iron content of cereals and the presence of phytates which interfered with the absorption of iron from other foods. High rates of *cribra orbitalia* are present in the remains of children from many Roman cemeteries. This is a skeletal marker for anaemia, and its name reflects the sieve-like appearances of the orbital bones. Around thirty-eight per cent of sub-adult skeletons from Londinium, for example, were affected Gowland and Redfern 2010: 32-33. Another adverse effect following the complete withdrawal of breast milk would have been the loss of immunity derived from this source. Therefore they would have been less able to combat pathogens in contaminated food or those that had been pre-masticated by nurses Gourevitch 1992: 91; 1998: 45; Redfern and deWitte 2011: 204.

³⁵⁸ Soranus, *Gyn.* 2.21.46.

2.7 Identifying diseases in the texts

It is important to be aware of the potential pitfalls of relying on written references to diseases. The retrospective diagnosis of illnesses in past populations involves the application of modern medical nomenclature and classification of disease to descriptions in ancient texts. This practice remains a controversial topic among historians. Nevertheless, some studies have received critical acclaim.³⁵⁹ A number of scholars believe that such means of diagnosing past diseases is irrelevant, anachronistic and flawed.³⁶⁰ Others are less assertive but acknowledge the many difficulties associated with it.³⁶¹ On the other hand, Mitchell argues convincingly that the retrospective diagnosis of disease from textual sources can be valid for a minority of medical conditions. This depends on an adherence to strict criteria regarding the quality of the descriptions of illnesses and the circumstances in which they were written.³⁶² One such example is the identification of Vitamin D deficiency rickets from those of Soranus and Galen of limb and spinal deformities in infants (see Section 3.3.4 for a discussion). It is essential for medical historians to be cautious about injudiciously applying modern disease names to ancient medical entities because this could lead to errors when considering their treatment.

³⁵⁹ For example, a study of the *Epidemics*: L.A. Graumann, 2000. *Die Krankengeschichten der Epidemienbücher des Corpus Hippocraticum*. Medizinhistorische Bedeutung und Möglichkeiten der retrospektiven Diagnose. Aachen: Shaker Verlag; for a review, see Bontty 2002. See also the Assyrian and Babylonian *Diagnostic Tablets*: J. Scurlock and B.R. Anderson, 2005. *Assyrian and Babylonian Medicine: Diagnostic Texts*. Chicago: University of Illinois Press; for a review, see M. Worthington, 2007. *Medical History* 51 (2): 269-271.

³⁶⁰ Cunningham 2002; Hummel 1999: 6-7, 131; Leven 2004: 370; Karenberg 2009: 143.

³⁶¹ Bontty 2002; Salazar 2004.

³⁶² Mitchell maintains that in order to maximise the validity of retrospective diagnoses of diseases from written sources, texts must (i) contain sufficient information and detail to make a diagnosis and come from reliable sources; (ii) be actual eye-witness accounts; (iii) provide accurate records of symptoms and signs of the disease; (iv) describe the characteristics and sites of any lesions; (v) identify at least one pathognomic symptom or sign; (vi) be devoid of any evidence that an author altered his descriptions in line with medical opinions and theories in his time 2011: 8, Table 3.

An additional barrier to the understanding of ancient diseases is the mutability of some infectious illnesses over the centuries. Many conditions that existed in past centuries are unknown today, and new diseases appear over time.³⁶³ Another hazard is the disparity between some ancient and modern names for diseases.³⁶⁴ Above all, it is important to recognise that notions of sickness in the past were subject to prevailing social and cultural factors.³⁶⁵

Conclusion

Although the retrospective diagnosis of diseases from ancient medical texts is fraught with difficulty, it is sometimes possible to identify a few with a degree of certainty. One such disease is rickets for reasons that will be apparent in Section 3.3.4. In general, though, this thesis will employ terminologies and descriptions of ailments and groups of symptoms as they appear in Roman texts.

2.8 Diseases of infancy and childhood

Celsus and Galen reiterated and commented on information from the Hippocratic *Aphorisms* that children were most healthy during the spring and early summer.³⁶⁶

Galen also wrote that:

in the age of childhood, in puberty and adolescence, no few or slight diseases occur.³⁶⁷

³⁶³ Porter 1993: 225; Mitchell 2011: 82.

³⁶⁴ Hummel 1999: 131; Salazar 2004: 295.

³⁶⁵ Cunningham 2002: 135; Leven 2004: 383; Stein 2006: 620; Mitchell 2011: 82.

³⁶⁶ Celsus, *Med.* 2.1.17; Galen, *Hipp.Aph.* III.18 (17B.613K). According to Hippocrates, diseases that were common in the Spring included epilepsy, angina and skin pustules, *Aph.* 3.20. Cf. Celsus, *Med.* 2.1.6; Galen, *Hipp.Aph.* III.20 (17B.615-619K). Summer: diarrhoea and ulceration of the mouth, *Hipp.Aph.* 3.21. Cf. Celsus, *Med.* 2.1.7; Galen, *Hipp.Aph.* III.21 (17B.619-621K). Autumn: strangury, lientery, dysentery, asthma and epilepsy, *Hipp.Aph.* 3.22. Cf. Celsus, *Med.* 2.1.8; Galen, *Hipp.Aph.* III.22 (17B.621-625K). Winter: coughs, chest conditions, lethargy, headache and apoplexy, *Hipp.Aph.* 3.23. Cf. Celsus, *Med.* 2.1.9; Galen, *Hipp.Aph.* III.23 (17B.624-627K).

³⁶⁷ Galen, *San.Tu.* 5.1 (6.309K). Translated by R.M. Green.

Although many ailments affected all age groups, infants and children were particularly vulnerable to certain serious conditions.³⁶⁸ Dasen believes that there is reason to conclude that children formed “a distinct epidemiological group.”³⁶⁹ The focus now concentrates on what these diseases were and whether it is safe to conclude that children belonged to a unique epidemiological group.

2.8.1 Common conditions

Hippocrates’ *Aphorisms* III identified different ranges of diseases that were particularly common in specific age groups.³⁷⁰ Celsus drew heavily on this material for his summary of illnesses affecting individuals from infancy to puberty.³⁷¹ Since Galen commented directly on the *Aphorisms*, the maladies he discussed were identical to those of Hippocrates. Table 2.1 below compares information from these three sources and Rufus.

³⁶⁸ Dasen 2011: 292.

³⁶⁹ *Ibid.* Dasen also writes that “throughout classical Antiquity one considers that children form a category distinct from adults” with specific pathologies.

³⁷⁰ Hippocrates, *Aphorisms* 3.24-31.

³⁷¹ Bradley 2005: 77.

Table 2.1 Children's ailments according to source

	Hippocrates	Celsus	Rufus	Galen
Newborns				
Aphthae	*	*	*	*
Vomiting	*	*	*	*
Coughs	*			*
Insomnia	*	*	*	*
Terrors	*		*	*
Ear pain, discharge	*	*	*	*
Ulcers, inflammation navel	*	*		*
Dentition				
Gum ulceration, pruritus	*	*	*	*
Fevers	*	*	*	*
Convulsions, spasms	*	*	*	*
Diarrhoea	*	*	*	*
Older infants and children				
Spinal curvature	*	*		*
Swellings in the neck	*	*		
Asthma	*			*
Inflammation of tonsils	*	*		*
Bladder stones	*	*	*	*
Round worms, ascarides	*			*
Wart-like skin lesions	*	*		*
Struma	*			*
Phymata, swellings	*	*	*	*
Around puberty				
The above and in addition:	*	*		*
Chronic fevers	*	*		*
Epistaxes (nose-bleeds)	*	*		*

Sources: Hippocrates, *Aph.* 3.24-27; Celsus, *Med.* 2.1.18-20, 6.4.2; Galen, *Hipp.Aph* III.24-27 (17B.627-638K); Rufus, *Ren.Ves.* 12.1; Fragments from Rufus in Ullmann 1975; Scarano 1990; Pormann 1999.

Celsus' list is very similar, but he omitted infantile coughs and terrors, and intestinal worms and asthma in children. Surviving fragments from Rufus do not present inventories of childhood diseases; those appearing in the above table are mostly derived from scattered references in his extant writings. The similarity of the wording of Celsus' account to that of Hippocrates' is so striking that it may be regarded as a copy

of the relevant sections of *Aphorisms*.³⁷² A summary of the data from Soranus and Aretaeus appears in Table 2.2 below.

Table 2.2 Ailments according to Soranus and Aretaeus

	Hippocrates	Soranus	Aretaeus
Newborns			
Aphthae	*	*	
Vomiting	*		
Coughs	*	*	
Insomnia	*		
Terrors	*	*	
Ear pain, discharge	*		
Ulcers, inflammation of navel	*		
Dentition			
Gum ulceration	*	*	
Fevers	*		
Convulsions, spasms	*	*	*
Diarrhoea	*	*	*
Older infants and children			
Spinal curvature	*		
Asthma	*		*
Inflammation of tonsils	*	*	*
Bladder stones	*		*
Round worms, ascarides	*		
Wart-like skin lesions	*		
Struma	*		
Phymata, swellings	*		
Around puberty			
In addition:	*		
Chronic fevers	*		
Epistaxes (nose-bleeds)	*		

Sources: Hippocrates, *Aph.* 3.24-27. Soranus, *Gyn.* 2.22-28. Aretaeus, *SA* 1.5, 1.9. 2.5; *SD* 1.4, 1.11, 2.3.

There is little correspondence between the ailments mentioned by Soranus and Aretaeus with those of the Hippocratic model. Soranus confined his discussions to a limited number of diseases that afflicted infants. It is, therefore, not a comprehensive account of

³⁷² Celsus preceded his list of diseases in various age groups with sections on the effects of the seasons and weather on health (*Med.*, 2.1-17) just as Hippocrates did in *Aphorisms* 3.1-23.

conditions that were common throughout the whole of childhood. The information Aretaeus provided in his books on acute and chronic diseases is even more incomplete. This leads to the question of whether Celsus' and Galen's opinions on the prevalence of childhood disorders during the first few centuries AD were valid. There is a possibility that the range of diseases that were commonplace in the fifth century BC remained unchanged throughout antiquity.³⁷³ On the other hand, Celsus wrote that:

Frequently, too, novel classes of disease occur about which hitherto practice has disclosed nothing.³⁷⁴

Pliny also referred to such new ailments.³⁷⁵ He was the first Roman author to mention siriasis occurring in infants. This may have been an example of a new disease.³⁷⁶ A more likely explanation, though, is that its clinical features were signs associated with serious febrile illnesses in general, and that it was not a separate entity.³⁷⁷

An alternative method of determining which diseases often struck Roman juveniles is to examine the regularity with which their treatments appear in medical literature.³⁷⁸ There are several reasons why this approach might not produce an accurate reflection of their prevalence throughout Roman society. Roman writers were generally biased towards elite sections of society and so they were less likely to have described diseases affecting the poor. Another consideration is that the majority of sick children would have received treatment from members of their own households or local communities, for which there would have been no record.³⁷⁹ Rufus indeed commented that wet-nurses

³⁷³ Bradley 2005: 77, 78.

³⁷⁴ Celsus, *Med. Prooemium* 17.

³⁷⁵ Pliny, *HN* 26.1.

³⁷⁶ *Ibid.*, 32.48.

³⁷⁷ Soranus wrote that Demetrius described it as "nothing but a burning fever," although others believed that it was due to inflammation of "the brain and the meninges" *Gyn.* 2.27. Translated by O. Temkin.

³⁷⁸ Bertier 1996: 2179.

³⁷⁹ Baker 2010: 168.

dealt with many minor ailments.³⁸⁰ It is also often not clear which age groups medical authors were discussing, and some serious diseases, such as epilepsy and bladder stones, received a disproportionate amount of attention. Some of the most frequently mentioned conditions in Roman in Table 2.1 are aphthae, bladder stones, coughs, diarrhoea, aphthae, ear and throat complaints, fevers and epilepsy.³⁸¹ Others that appear in Table 2.1 are hernias, siriasis and skin diseases.³⁸²

Many other ailments are absent from these lists, one being chronic hardening of the spleen. Aretaeus said that it affected children “readily,” and jaundice was “not altogether unusual” in them.³⁸³ According to Celsus, some diseases rarely or never affected Roman children, such as painful joints in the hands and feet.³⁸⁴ A form of

³⁸⁰ Rufus in Baladī, Fragment F(R) 3, Pormann 1999: 61-62.

³⁸¹ Aphthae: Celsus, *Med.* 7.14; Soranus, *Gyn.* 2.24; Galen, *Comp.Med.Loc.* 6.9 (12.988-1007K); Dioscorides, *MM* 1.37, 2.81, 3.154; 3.32. Egyptian ulcers, gangrenous ulcers and nomas: Rufus, Fragment 9 in Ullmann 1975: 175; Galen, *Comp.Med.Gen.* 5.11 (13.824K); Dioscorides, *MM* 2.96.

Bladder stones: Celsus, *Med.* 2.8.30, 7.26; Aretaeus, *SD* 12.3; Galen, *HNH* 2.11 (15.154K); *Loc.Aff.* 6.4 (8.408K); Dioscorides, *MM* 2.140, 3.157.

Cough: Pliny, *HN* 20.49, 21.83, 22.75, 28.28, 30.47.

Diarrhoea and other bowel problems: Celsus, *Med.* 2.8.21, 2.10.1; Aretaeus, *SD* 2.7, *SA* 2.5, 2.6.

Ear complaints: Rufus, Fragments 11, 12, in Ullmann 1975: 178-179, Fragments 5a, 5b, in Pormann 1999: 63; Pliny, *HN* 23.77.

Fevers: Celsus, *Med.* 2.7.7, 3.2.4, 3.7.1, 5.26.6; Rufus, Fragment 3, in Pormann 1999: 62; Galen, *Diff.Feb.* 2.1 (7.335K).

Epilepsy, convulsions: Rufus in Oribasius, *Lib. inc.* 38; Aretaeus, *SD* 1.4, *CA* 1.5; Soranus, *Gyn.* 2.14, 17; Pliny, *HN* 21.76, 20.73, 28.78; Dioscorides, *MM* 3.11, 4.120, 4.122; Galen, *Loc.Aff.* 3.11 (8.194K), *Puer.Epil.*, *SMT* 6.3 (11.858-861K).

Throat ailments: Celsus, *Med.* 6.11.2-3, 5-6; Aretaeus, *SA* 1.8, 9; Soranus, *Gyn.* 2.24; Galen, *Praen* 11, 12 (14-660-662K).

Intestinal worms: Celsus, *Med.* 4.24.1-2.

³⁸² Hernias: Celsus, *Med.* 7.26.2; Dioscorides, *MM* 4.70. Umbilical hernia: Celsus, *Med.* 6.17, 7.20; Pliny, *HN* 20.81, 26.49; Dioscorides, *MM* 4.70. Intestinal hernia: Celsus, *Med.* 7.21.2; Pliny, *HN* 26.49.

Siriasis: Pliny, *HN* 22.29, 30.47, 32.48; Soranus, *Gyn.* 2.27; Dioscorides, *MM* 4.193, 2.162, 2.16, 4.71.

Skin diseases Soranus, *Gyn.* 2.25. Ophis: Celsus, *Med.* 6.4.2. Lichen: Dioscorides, *MM* 1.74. Ulcers: Rufus, Fragment 3a, Ullmann 1975: 173, Fragment F14, Pormann 1999: 46; Pliny, *HN* 20.81, 22.30, 28.13, 28.28, 28.20, 28.78, 30.47, 32.48, 35.52; Galen, *Alim.Fac.* 3.14. Excrescences: Celsus, *Med.* 5.28.14. Pustules: Celsus, *Med.* 5.28.15C-E; Rufus, Fragment 10a, Pormann 1999: 68. Exanthemata: Galen, *Comp.Med.Gen.* 1.13 (13.42K). Various others: Rufus in Paul, Ullmann 1975: 174; Pormann 1999: 46.

³⁸³ Aretaeus, *SD* 1.14, 15. Translated by F. Adams.

³⁸⁴ Celsus, *Med.* 4.31.1.

insanity known as melancholia was associated strongly with excess black bile and senility, although it may have occurred in children on rare occasions.³⁸⁵

Conclusion

There were two basic models of diseases that occurred in persons within specific age categories: those of Hippocrates and of Soranus. Since nurses, midwives, parents and other family members handled most ailments affecting infants and small children, there is a possibility that some may have escaped the notice of medical writers. Therefore it is not possible to be entirely sure about which illnesses most commonly affected them.

2.8.2 Specific diseases of childhood

Over the past two decades a number of scholars have debated whether Roman physicians classed certain conditions as ‘specific’ diseases of childhood. There is a spectrum of opinions on the matter. One perspective is that although many illnesses were most prevalent during infancy and childhood, some “only affected children.”³⁸⁶ A contrasting notion is that “in ancient medicine no illness is specific to children, but children have predispositions to specific illnesses that can rapidly become fatal.”³⁸⁷ There are various opinions between these polar opposites, such as the assertion that ancient sources identified epilepsy and or bladder stones as specific diseases of childhood.³⁸⁸

³⁸⁵ Aretaeus wrote that “adult men, therefore, are subject to mania and melancholy, or persons of less age than adults” SD 1.5. Rhazes recorded Rufus’ statement that melancholia “does not occur in adolescents, but sometimes occurs in infants, children and the decrepit” (Fragment 127, translated by Daremberg and Ruelle: 454-455). For two other conflicting fragments, see Pormann 2008: 39-40.

³⁸⁶ Baker 2010: 163. Baker describes teething problems in babies and a list of other conditions that were common to infants and children. She does not, however, provide any examples of diseases that were peculiar to children.

³⁸⁷ Dasen 2011: 294.

³⁸⁸ Bertier believes that epilepsy and bladder stone qualified as specific diseases of childhood 1990: 217-218. Hummel describes several ailments mentioned by Soranus as ‘typical children’s diseases,’ namely, tonsillitis, oral ulcers, skin complaints, wheezing and coughing, and siriasis (Soranus, *Gyn.* 2.23-27)

Mudry's meticulous study of Celsus' *De medicina* demonstrates that most of the ailments he described affected all age groups, although children were especially prone to some. He concludes that references to 'specific paediatric illnesses' are rarely found in ancient medical texts, and that "in these few cases, Celsus' scheme is nuanced."³⁸⁹ For example, Celsus commented on intestinal round worms "*qui pueros maxime exercent.*"³⁹⁰ Mudry interprets its meaning as "which above all affect children."³⁹¹ An alternative translation, "which especially trouble children," is a little more understated.³⁹² Neither of these readings gives the impression that they *only* affected children. In fact, Celsus did mention that they occurred in adults.³⁹³ Mudry believed that the main priorities of ancient physicians were to establish accurate prognoses and appropriate therapies for children; it mattered much less whether their illnesses qualified as specific childhood diseases.³⁹⁴ Indeed it is remarkable that Aretaeus who commented regularly on the prevalence of illnesses in different age groups never described any as 'specific' or 'true' diseases of childhood.³⁹⁵

Other Roman writers had different thoughts. Soranus described epilepsy as 'the children's disease' because it was very common during childhood.³⁹⁶ Galen identified

1999: 16. She adds that some diseases were exclusive to children or primarily affected them, and that Galen regarded epilepsy as a *puerilis passio*, or children's disease 131-132.

³⁸⁹ Mudry (2004: 342) refers principally to Celsus' version (*Med.* 2.1.18-21) of Hippocrates' *Aphorisms* III 24-27, but includes material from other books of *De medicina* 2004: 242. He notes that Celsus did not suggest that any conditions *only* affected children. He generally employed terms such as "affects for the most part young children" in the case of *ophis* (creeping baldness), *Med.* 6.4.2, and verrucas and chilblains 5.28.6A.

³⁹⁰ Celsus, *Med.* 4.24.2.

³⁹¹ Mudry 2004: 342, citing Celsus, *Med.* 4.24.2.

³⁹² W.G. Spencer, Celsus, *Med.* Volume 1: 438.

³⁹³ Celsus stated that for "a man in health..there is no harm in passing off some round worms"*Med.* 2.3.6.

³⁹⁴ Mudry 2004: 342.

³⁹⁵ Ileus is "customary with children," Aretaeus *SA* 2.6; "children especially suffer" from ulcers on the tonsils *ibid.* 1.9; cholera struck children "more frequently" than other age groups *ibid.* 2.5. Translated by F. Adams.

³⁹⁶ Caelius Aurelianus, *Chr.* 1.4.60.

two conditions as true diseases of childhood: bladder stones and epilepsy.³⁹⁷ Rufus and Pliny were less informative. Rufus stated that acute bladder disorders were “ordinarily a malady of childhood” and that bladder calculi appeared “in children rather than adults.”³⁹⁸ Pliny spoke of “epilepsy and other infantile diseases,” and associated terrors, siriasis, ulcers on the scalp, mouth and skin, and hernias with infancy.³⁹⁹ There were, therefore, many conflicting opinions and ambiguities on the subject.

Conclusion

There is no unanimity among ancient sources and present-day scholars in relation to the notion of ‘specific diseases of childhood.’ Some medical authors described epilepsy and bladder stones as such, even though they also affected adults. One possible reason is that they believed they arose in early infancy due to anatomical and humoral factors; Sections 3.3.1 and 3.3.3. This would not have been the view of Methodist physicians who avoided such speculation. Other likely candidates from a modern perspective might have included congenital abnormalities, teething problems and bending deformities of the limbs, spine and thorax affecting infants. It is likely that the chief concerns of Roman doctors would have been the diagnosis and prognosis of illnesses and their treatment. In other words, the designation of a condition being ‘a true disease of childhood’ was not only misleading but had no real practical significance.

³⁹⁷ Galen, bladder stones: *Loc.Aff.* 6.4 (8.408K); *Hipp.Aph.* III.25 (17B.632K). Epilepsy: *Hipp.Epid.* VI 1.7 (17B.341K).

³⁹⁸ Rufus, *Ren.Ves.* Proemium 3-5; 13.4, Daremberg and Ruelle: 2, 54.

³⁹⁹ Pliny, *HN* 28.78. Translated by J. Bostock and H.T. Riley. Pliny listed terrors *ibid.*, 28.78; siriasis 22.29, 30.47; ulcers of the scalp, mouth and skin, 20.53, 28.20, 35.52; hernias 30.47. He employed the epithet *infantium* (of infants) in relation to these conditions Bonet 1998: 188-192.

2.9 Conclusion

There are inconsistencies and ambiguities in Roman age divisions and childhood terminology that can cause difficulties when interpreting accounts of children's diseases. It is sometimes possible to resolve them by paying close attention to the context of the each written reference. A more problematic issue is the elite bias of Roman authors. They seldom referred to the living conditions, health and diseases of lower class and servile children.

Roman doctors recognised that children were small, soft, weak and immature. Humoral physicians described them as moist and warm beings. Their hot nature and lack of reason was responsible for emotional instability; this put their bodies, minds and souls at risk. Hummel's supposition that the Roman child had physical and psychological peculiarities and its own weaknesses is valid as far as their anatomical and psychological characteristics are concerned.

Roman children were susceptible to various ranges of specific diseases at certain stages of the life cycle. Although many other ailments mentioned by Hippocrates, Celsus and Galen occurred most commonly in infants and children, they were not restricted to them. With the sole exception of teething problems, there was considerable fluidity in the prevalence of disease among different age groups. This casts doubt on the veracity of the assertion that Roman children formed a distinct epidemiological group in its strictest sense.

The following chapter will focus on particular diseases that struck at specific points in infancy and childhood and the different ways in which they affected individuals according to their age and constitution.

CHAPTER 3: CHILDHOOD DISEASES

3.1 Introduction

Attention now turns to how Roman authors believed that certain diseases affected individuals at different stages of the life cycle. Four particular conditions, epilepsy, mouth ulcers, bladder stones and limb deformities in infants, are the subject of case studies of disease. They provide the opportunity to explore these conditions in some depth and address a number of related additional issues.

3.2 Variations in the forms and outcome of diseases

The medical treatises described a number of conditions that appeared to take different forms or varied in their gravity and prognosis in different individuals.

3.2.1 Different forms of the same disease

Celsus recorded a large number of inflammatory skin lesions in subjects of all ages, grouping them together under the heading of minute abscesses. Occasionally they became painful, grew in size and suppurated. They had distinctive names according to their clinical features.⁴⁰⁰ One particular type of lesion was the phyma:

A phyma is a swelling which resembles a boil, but is rounder and flatter, often also larger..Now in children this occurs more often and is more readily relieved; in young adults it is more rare..Where age has hardened the body, the disease does not even occur.⁴⁰¹

Therefore, phymata were more prevalent in children and differed in appearance from other lesions that affected older patients.

⁴⁰⁰ Celsus, *Med.* 5.2811.

⁴⁰¹ *Ibid.*, 5.28.9. Translated by W.G. Spencer.

In contrast, children were prone to a particularly troublesome kind of pustule, the phylzacion:

There are many kinds [of pustules]..A phylzacion is a somewhat harder pustule, whitish and pointed, from which moisture is squeezed out. But after pustules at times small ulcerations arise, either dry or moist, sometimes attended only by itching, sometimes also by inflammation and pain; the discharge is either pus or sanies or both; this generally occurs in children.⁴⁰²

It is not clear whether Celsus thought that these lesions were directly related to each other.

Celsus also described warty skin lesions, of which there were four varieties, the acrochordon, thymion, clavus and myrmecia. Children were more likely to develop acrochordons which differed clinically from the other three lesions.⁴⁰³ By considering these growths together in this way, Celsus implied that they shared a common aetiology. Judging by their very different clinical appearances, it is more likely that they were separate pathological conditions.

Aretaeus distinguished four kinds of dropsy according to the pattern of accumulation of fluid. This could present with the presence of free fluid (ascites) within the abdominal cavity. Children were more likely to suffer from *anasarca* and *leucophlegmatia* where excess fluid gathered in other parts of the body:

Certain ages are more exposed to certain species of the disease; children to Anasarca and Leucophlegmatia..In Anasarca and Leucophlegmatia the lower belly is empty, the patients are swelled in the face and arms..in Leucophlegmatia there is collected a white, cold and thick phlegm; with it the whole body is filled, and the face is swollen, and also the neck and arms; but the abdomen is full from the swelling..But, in Anasarca, there is wasting of the flesh to a fleshy humour, and a bloody ichor.⁴⁰⁴

⁴⁰² *Ibid.*, *Med.* 5.28.15A-C. Translated by W.G. Spencer.

⁴⁰³ Celsus, *Med.* 5.28.14A-D. Translated by W.G. Spencer. See also *Med.* 2.1.19.

⁴⁰⁴ Aretaeus, *SD* 2.1. Translated by F. Adams. In this passage, Aretaeus identified other forms of dropsy. "if the watery suffusion float in the flanks..the disease is called *Tympanites*." Pseudo-Galen recognised only three forms of dropsy, ascites, tympanites and leucophlegmatia, but did not state which variety occurred most often in children, *Int.* 13.31 (14.746K).

The above description is lengthy and complex. Dropsy almost certainly incorporated a collection of pathological conditions which resulted in gatherings of free fluid within body cavities and oedema in the soft tissues. It would be futile to speculate on the nature of any of these diseases from the above descriptions; Aretaeus himself said that “it is not possible exactly to state the cause.”⁴⁰⁵ The sinister implications of dropsy are discussed in the following section.

Aretaeus also recorded five different kinds of inflammation and swelling of the uvula which was also known as the columella or gurglio:

The columella..suffers from various affections, for it becomes thickened from inflammation, being elongated and of equal thickness from the base to the extremity, and is attended with redness. Columna is the appellation of this affection. If it be rounded towards the extremity alone, and with its enlargement become livid and darkish, the name of the affection is Uva; for it altogether resembles a grape..A third affection is that of the membranes..called Lorum, for the lengthened folds of the membranes resemble thongs.⁴⁰⁶

Lorum was more common during infancy and puberty, while Columna affected the elderly; Uva occurred in “the young and adults for they abound in blood, and are of a more inflammatory nature.”⁴⁰⁷ All the above conditions were inflammatory in nature, but this was more intense in uva. All of these forms were potentially dangerous: they led to coughing and a sense of suffocation. It is difficult to judge whether they represented distinct clinical entities.

Another example concerned the appearance of stones in the urinary tract. According to Aretaeus, they varied in colour which ranged from white through to clay or saffron.⁴⁰⁸ Section 3.3.3 explains how these related to the age of individual subjects and their site of origin.

⁴⁰⁵ Aretaeus, *SD* 2.1. Translated by F. Adams.

⁴⁰⁶ Aretaeus, *SA* 1-8. Translated by F. Adams. Aretaeus also mentioned two other varieties.

⁴⁰⁷ *Ibid.* Translated by F. Adams.

⁴⁰⁸ Aretaeus *SD* 2.3.

Conclusion

Some diseases took various forms according to the age of sufferers. There was often such marked divergence in these clinical manifestations that it is likely that they represented separate pathological entities. Certain of these were specific to children. This may have presented problems to practising physicians. They may have had difficulties in deciding whether to treat children as if they were afflicted by a discrete pathological condition or a form of the same disease seen in adults.

3.2.2 Different prognoses

The outcome of illnesses could differ between individuals according to their age. Some conditions carried a more serious prognosis, resulting in increased morbidity and risk of death. This was often the case for vulnerable infants.⁴⁰⁹ Soranus thought that epilepsy was more violent and dangerous in young babies than older children.⁴¹⁰ According to Celsus, *aphthae* were more likely to be lethal for babies (see Section 3.3.2 below).⁴¹¹ Another special concern was the combination of fever and bladder symptoms in adults and children:

In fevers: Now red and thin urine is usual in severe indigestion, and often..it carries the man off.The worst and especially death-bringing urine, however, is that which is black, thick, malodorous; such urine is most to be dreaded both in men and in women; but in children urine which is thin and diluted.⁴¹²

Celsus believed that patients were at grave risk of death when certain danger signals were present.⁴¹³

⁴⁰⁹ Peiper 1966: 36; Mudry 2004: 342-343; Dasen 2011: 294.

⁴¹⁰ Caelius Aurelianus, *Chr.* 1.4.70.

⁴¹¹ Celsus, *Med.* 6.11.3-6.

⁴¹² *Ibid.*, 2.6.11. Translated by W.G. Spencer.

⁴¹³ *Ibid.*, 2.8.1. A long list of aphorisms occupy the entire chapter in which Celsus aimed “to explain the special signs which in any particular affection indicate either hope or danger.” Translated by W.G. Spencer.

One such example was:

Pain in the bladder with persistent fever, when nothing is passed by the bowel, is a fatal evil; the danger is greatest in boys from the seventh to the fourteenth year.⁴¹⁴

Spencer translated Latin term, *pueris*, to mean “in boys.” In this context it possibly signified children of either gender. This is one of the relatively few occasions when Celsus was specific about the chronological age range of those affected. He also wrote that the prognosis was very poor for children who had diarrhoea and fever. They were likely to die and were at more risk than older individuals.⁴¹⁵

Galen envisaged a gloomy outlook for children with chronic respiratory impairment since:

those who are gibbous [hunch-backed] from asthma or cough will perish before puberty.⁴¹⁶

He also warned that children suffering from epilepsy were prone to renal disease and bladder stones.⁴¹⁷

Not all diseases carried a poorer prognosis for infants and children: they sometimes fared better than adults. Celsus believed that wounds and fractures healed faster in children. As demonstrated above, he regarded phymata as being less troublesome to children and more amenable to treatment. The passage of undigested food in the stools was also easier to eradicate from them.⁴¹⁸ Celsus believed that dermatological lesions known as acrochordons generally affected juveniles and were self-limiting and did not recur after excision.

⁴¹⁴ *Ibid.*, 2.8.21. Translated by W.G. Spencer. Note that Mudry incorrectly cites this passage as 2.28.1 (2004: 342-343).

⁴¹⁵ *Ibid.*, 2.8.30.

⁴¹⁶ Galen, *Hipp.Aph.* VII.46 (18A.77K). Translated by the author.

⁴¹⁷ *Idem*, *Hipp.Epid.* VI 1.5 (17A.826-829K).

⁴¹⁸ Celsus, *Med.* 5.26.3B; 5.26.6; 5.28.9; 2.8.14.

Acrochordons were less troublesome than other forms of ‘warts’ that affected adults:

Acrochordon[s] often end of themselves..The myrmecia and corns scarcely ever subside without treatment. The acrochordon, if cut off, leaves no trace of a root behind, and so does not sprout again. When the thymion and clavus have been cut off, a small rounded root is formed underneath, which penetrates right down into the flesh, and if this is left behind it sprouts up again.⁴¹⁹

Their outlook was more favourable.

Aretaeus was optimistic about the prognosis of several childhood maladies. He noted that children who suffered from asthma, a cold and humid condition, improved faster than adults because their greater natural heat warmed and dried the body.⁴²⁰ The presence of jaundice was particularly dangerous in the aged, less so for adolescents and the young, but children were “not entirely free from danger.”⁴²¹ Although dropsy was a serious disease, Aretaeus believed that the outlook for patients with anasarca and leucophlegmatia, the two forms that affected children, had less grave consequences:

Dropsy, in all its forms of disease, is bad. But the most dangerous is that form in which Tympanites is mixed with Anasarca..Tympanites is particularly worse than Ascites. But of those affecting the whole body, Leucophlegmatia is less than Anasarca. But of these, Leucophlegmatia is the more mild.⁴²²

According to Aretaeus, tetanus and cholera were less deadly in children.⁴²³ Other conditions that carried a better prognosis for children were hardening of the spleen and cachexia.⁴²⁴

Galen described penetrating injuries to the central part of the cornea caused blindness in adults. The vision of a child, on the other hand, remained intact as leaking aqueous fluid

⁴¹⁹ *Ibid.*, 5.28.14D. Translated by W.G. Spencer.

⁴²⁰ Aretaeus, *SD* 1.11.

⁴²¹ *Ibid.*, *SD* 1.15. Translated by F. Adams.

⁴²² Aretaeus, *SD* 2.1. Translated by F. Adams.

⁴²³ Aretaeus, *SA* 1.6, 2.5.

⁴²⁴ Aretaeus, *SD* 1.14, 1.16.

replenished itself within a short time.⁴²⁵ Another condition that had a more favourable outlook for children was epilepsy. It often left them around puberty, whereas the prospects were grave for those in whom it persisted or when the condition arose for the first time during adulthood (see Section 3.3.1 below).

The medical treatises rarely referred to differences in prognosis between male and female children. One tenuous example is Aretaeus' suggestion that ulcerated tonsils occurred most frequently in girls until the onset of menstruation, and in boys until they reached puberty. Since girls generally matured at an earlier age than boys, they would have been vulnerable for a shorter length of time.⁴²⁶

Conclusion

The prognosis for a sick person depended on the nature of his disease, the absence or presence of complications, and his chronological age or developmental stage. Infants and children often had a poorer outcome than adults, but the reverse sometimes applied. The implications of this are of great significance since practitioners may have taken these factors into consideration when making decisions about their treatment. In the case of an individual who had no hope of survival they might have regarded any interventions as futile.

3.3 Case studies of diseases

This section presents four case studies, namely epilepsy, aphthae, bladder stones and bending deformities of the lower limbs. It explores their aetiology and prevalence and

⁴²⁵ Galen, *Caus.Symp.* 1.2.9 (VII.99-100K).

⁴²⁶ Aretaeus, *SA* 1.9.

the ways in which they affected different groups of patients. It also investigates various issues associated with these conditions.

3.3.1 Epilepsy and convulsions

Celsus gave a brief description of an epileptic seizure in an adult:

That malady which is called comitialis..is one of the best known.The man suddenly falls down and foam issues out of his mouth; after an interval he returns to himself, and actually gets up by himself.⁴²⁷

Areteus provided a more detailed account of the falling, loss of consciousness and spasms of a typical grand mal seizure.⁴²⁸ Soranus depicted two varieties of attacks, a simple episode of unconsciousness, or petit mal, and a grand mal convulsion. This survives in a Latin translation by Caelius Aurelianus:

As the disease [epilepsy] emerges and takes hold of the body, the patient is bereft of his senses..in some cases the patient remains completely immobile..he is overcome as if by a deep sleep. But in other cases the patient suffers a convulsive seizure; his limbs are flung about and keep shaking..other symptoms occurring during the attack are..clenching and gnashing of the teeth, tongue protruding..involuntary discharge of faeces and urine..the utterance of confused sounds, and before the attack abates an effusion of foam..When the attack abates, the patient has no recollection of what has happened.⁴²⁹

These seizures could affect individuals of any age and either gender. Although epilepsy affected adults and children alike, medical writers regarded it as characteristic of childhood (see above in Section 2.8.2).

The author of the Hippocratic treatise, *On the sacred disease*, rejected the idea that epilepsy had supernatural causes. Nevertheless, the view that it arose as the result of demonic possession or as a punishment for sin against the gods persisted well into the Late Roman period.⁴³⁰

⁴²⁷ Celsus, *Med.* 3.23.1. Translated by W.G. Spencer. Romans referred to epilepsy as *morbus comitialis* or disease of the assembly hall. This reflected the disruption that occurred during proceedings when a person present suffered convulsions Temkin 1971: 8; Pioreschi 1998: 142 n316.

⁴²⁸ Areteus, *SA* 1.5.

⁴²⁹ Caelius Aurelianus, *Chr.* 1.4.64-65. Translated by I.E. Drabkin.

⁴³⁰ See Stol 1993: 1-3 for a discussion.

Soranus offered two suggestions about the disease which:

is called the Sacred Disease either because it is thought to be sent by a divine power or because it defiles the soul which is sacred.⁴³¹

Areteaus explained why some people associated epilepsy with supernatural forces:

It is reckoned a disgraceful form of disease; for it is supposed, that it is an infliction on persons who have sinned against the Moon: and hence some have called it the Sacred Disease, and that for more reasons than one, as from the greatness of the evil..or because the cure of it is not human, but divine; or from the opinion that it proceeded from the entrance of a demon into the man: from someone, or all these causes together, it has been called Sacred.⁴³²

Pseudo-Galen referred to epilepsy as the disease “that one also calls sacred.”⁴³³

There was an important connection between the moon and epilepsy. The moon controlled cycles of the disease.⁴³⁴ The peony that could prevent or cure epilepsy was also known as the moon plant, selenion, after the moon goddess Selene.⁴³⁵ The supernatural aspects of epilepsy remain a subject of discussion among scholars.⁴³⁶

Roman physicians held different views about the nature and aetiology of epilepsy. Soranus and other Methodists classed it as a disease of stricture.⁴³⁷ Areteaus blamed “coldness with humidity.”⁴³⁸ Rufus ascribed the predisposition to convulsions of suckling infants to their peculiarities, such as:

the humidity, softness and feebleness of their temperaments and organs, the feebleness of their brains, and the great amount of breast-feeding.⁴³⁹

According to Anonymus Parisinus, epilepsy resulted from an excess of thick, cold phlegm in the winter and salty phlegm in the summer.⁴⁴⁰ Soranus did not speculate on

⁴³¹ Caelius Aurelianus, *Chr.* 1.4.60-61. Translated by I.E. Drabkin.

⁴³² Areteaus, *SD* 1.4. Translated by F. Adams.

⁴³³ Pseudo-Galen, *Int.* 13.22 (14.739K). Translated by C. Petit.

⁴³⁴ Ptolemy, *Tetrabiblos* 3.14; 4.9.

⁴³⁵ Stol 1993: 1-3, 125. The association between the moon and epilepsy was rooted in ancient cultures in the eastern Mediterranean and Ancient Near East. For example, the moon-god Sin was one of the Akkadian deities associated with the disease, *ibid.* 21.

⁴³⁶ For discussions on the longevity of concepts about the mythological, religious and magical aspects of epilepsy, see Temkin 1971: 7-8; Magiorkinis *et al.* 2010: 104-105; M.J. Eadie and P.F. Bladin, 2001, *A Disease Once Sacred*. Eastleigh: John Libbey.

⁴³⁷ Caelius Aurelianus, *Chr.* 1.4.72.

⁴³⁸ Areteaus, *SD* 1.4. Translated by F. Adams.

⁴³⁹ Rufus in Baladī, Fragment F (R) 4 in Pormann 1999: 62. Cf. Rufus in Oribasius, *Lib. inc.* 42; Fragment 5, Ullmann 1975: 175-176.

any hidden causes of epilepsy and defined it as a disease of stricture. On the other hand he believed that contributory factors were wine-drinking, indigestion, head injury and fear.⁴⁴¹

Galen was the first Roman physician to devise a comprehensive explanation for the pathogenesis of seizures based on his anatomical researches and the Hippocratic doctrine of four qualities and humours.⁴⁴² He classed epilepsy as one of the diseases that occur in bodies where the quality of cold is dominant. These included “spasm, tetanus, palpitation, stupor, paralysis, epilepsy.”⁴⁴³

There were three form of the disease that:

Sometimes result from a primary affection of the head, and sometimes by sympathy....All epilepsies have this in common, that the brain is affected either because the condition has arisen from birth, as in the majority of epilepsies, or that the orifice of the stomach..rises sympathy to the brain.[There is] another form..of epilepsy [in which] the condition begins in one part of the body, then ascends up to the brain.⁴⁴⁴

The cause of the commonest variety of epilepsy, therefore, was an idiopathic disorder of the brain that arose at the time of birth.⁴⁴⁵ Galen agreed with the view expressed in Hippocrates’ *Epidemics* that the condition began in early infancy.⁴⁴⁶ This was at variance with the assertion of the author of the *Sacred disease* that “it begins to be formed while the foetus is still *in utero*.”⁴⁴⁷ There is some reason to believe that Galen doubted that this treatise was a genuine Hippocratic work.⁴⁴⁸

⁴⁴⁰ Anonymus Parisinus, *De morbis acutis et chroniis* 3.3.1-5.

⁴⁴¹ Caelius Aurelianus, *Chr.* 1.4.72, 99.

⁴⁴² Temkin 1971: 60.

⁴⁴³ Galen, *Trem.Palp.* 7 (7.618K). Translated by D. Sider and M. McVaugh. *Cf. Morb.Diff.* 5.3 (6.850K).

⁴⁴⁴ Galen, *Loc.Aff.* 3.11 (8.193-194K). Translated by C. Daremberg, Volume 2: 571.

⁴⁴⁵ Temkin 1971: 63. The epithet ‘idiopathic’ implies that there is no known cause of the condition.

⁴⁴⁶ Galen, *Hipp.Epid.* VI, Comm. I: 5 (17A.824-825K).

⁴⁴⁷ Hippocrates, *Morb.Sacr.* 3, 5. Translated by F. Adams.

⁴⁴⁸ Temkin 1971: 5-6.

Galen emphasised the crucial need for the channels that transmitted *pneuma* through the cerebral ventricles to remain patent. These could become blocked by an accumulation of the thick humours, phlegm and black bile.⁴⁴⁹ This provoked involuntary seizures in order to shake the nerve roots free of the thick humours:

it is most likely that a thick humour produces the condition by obstructing the passages of *pneuma* and the origins of the nerves agitate themselves in order to clear the noxious materials.⁴⁵⁰

The concept is reminiscent of the Methodist principle of stricture in which internal pores or channels are narrowed or blocked.

Children could suffer from other forms of epilepsy. Galen described a different kind of seizure that occurred in a young boy:

I saw this phenomenon for the first time in a boy of thirteen years..I heard the child recall that the affection began in his leg, and that it rose directly to the neck from the thigh, iliac region, the rib cage, the side of the neck up to the head, and the head was also included. After this he had no more awareness of it himself.⁴⁵¹

Modern clinicians describe this form of convulsion as a Jacksonian fit.⁴⁵² Galen likened explained the attack to the progressive march of symptoms caused by the spread of poison from the bite of a venomous creature.⁴⁵³ Visual, auditory and olfactory phenomena usually preceded grand mal seizures:

there are before the sight circular flashes of purple or black colours. Or of all mixed together, so as to exhibit the appearance of the rainbow expanded in the heavens; noises in the eyes; a heavy smell.⁴⁵⁴

These could affect children and adults alike. Galen applied the term *aura* to such sensations that mimicked a cold breeze travelling up through the body.⁴⁵⁵ A large

⁴⁴⁹ The downflow of liquefies phlegm caused a blockage to the passage of *pneuma* Hippocrates, *Morb.Sacr.* 7.

⁴⁵⁰ Galen, *Loc.Aff.* 3.9. (8.173K). Translated by C. Daremberg, 1884-1856. Volume 2: 561, 562.

⁴⁵¹ Galen, *Loc.Aff.* 3.11 (8.194K). Translated by C. Daremberg, 1884-1856. Volume 2: 571.

⁴⁵² Nutton 2013a: 245.

⁴⁵³ Galen, *Loc.Aff.* 3.11 (8.195-196K). According to Hippocrates adults were aware when attacks were imminent, *Morb.Sacr.* 12.

⁴⁵⁴ Aretaeus, *SA* 1.5. Translated by F. Adams.

range of factors could provoke fits in susceptible children. Galen, like Hippocrates, observed that fevers, diarrhoea and convulsions frequently occurred around the time when teeth first began to erupt in infancy.⁴⁵⁶ Rufus and Galen also believed that epilepsy was a consequence of unhealthy diets in nurses or infants and children.⁴⁵⁷

Soranus also thought that sucklings were liable to attack:

if the milk becomed spoiled and sour, the nervous system suffers and epilepsy and apoplectic attacks take place.⁴⁵⁸

According to Rufus, infants were at risk when nurses gave them wine, overfed them, or bathed them too soon after feeding.⁴⁵⁹ Several authors believed that strong emotions and terrors were important causes of convulsions (see Section 2.5.1 above). Rufus believed that one should calm an infant's cries if "they risk giving him convulsions."⁴⁶⁰ Galen also warned that psychological disturbances could cause convulsions in children.⁴⁶¹

Specific circumstances could trigger seizures in epileptics. Dyspepsia and exposure to the cold could provoke seizures in susceptible individuals.⁴⁶² Others factors included:

frost and violent heat, strong winds and strenuous baths, repulsive food and whirling wheels, lightning and thunder, sleeplessness and indigestion, distress and anger and weariness and similar things of which the chief characteristic is that they stir up and trouble the body violently, and produce a paroxysm.⁴⁶³

Rufus associated epilepsy with teething since it:

befalls children when they are close [to the age of] dentition..after a fever and especially [when it befalls] obese children suffering from constipation.⁴⁶⁴

⁴⁵⁵ Galen, *Loc.Aff.* 3.11 (8.194K).

⁴⁵⁶ Galen, *Hipp.Aph.* III.25 (17B.629-630K).

⁴⁵⁷ Rufus in Oribasius, *Coll. Med., Lib. Inc.* 20, 31; Fragments 4, 8 in Ullmann 1975: 175, 177; Galen, *Puer.Epil.* 4,5 (11.357-358K). Pliny blamed nurses who ate parsley, *HN* 20.44.

⁴⁵⁸ Soranus, *Gyn.* 2.17.38. Translated by O. Temkin: 110.

⁴⁵⁹ Rufus in Oribasius, *Coll.Med., Lib. inc.* 20.27. Daremberg and Bussemaker, Volume 3: 160.

⁴⁶⁰ Rufus in Oribasius, Fragment 30.12-14, Daremberg and Ruelle: 303.

⁴⁶¹ Galen, *San.Tu.* 1.8 (6.40-41K). Cf. Hippocrates *Morb.Sacr.* 10; Galen, *Loc.Aff.* 3.8 (8.172K).

⁴⁶² Aretaeus, *CA* 1.5. Cf. Hipp., *Aph.* 5.17.

⁴⁶³ Galen, *Puer.Epil.* 2 (11.360K). Translated by O. Temkin.

⁴⁶⁴ Rufus in Baladī, Fragment F (R) 4, Pormann 1999: 62. Cf. Hipp. *Aph.* 3.25.

This was also a view that ‘Hippocrates’ expressed.⁴⁶⁵

Epilepsy could have a fatal outcome, especially in acute attacks:

Even the first fall in epilepsy is dangerous, if the disease attack in an acute form; for it has sometimes proved fatal in one day.⁴⁶⁶

Galen explained how this might come about:

some people have died from [these] even if they have not caused death, at least create *pneuma* that is dissipated and weakened..some people obviously also die, sometimes when the *pneuma* is being destroyed and sometimes when it is being changed.⁴⁶⁷

According to Celsus, when a convulsion spread from one part of the body, its site of origin had a bearing on the likelihood of recovery:

whenever the sensation of the coming fit begins in some one part of the body. It is best for it to begin from the hands or feet, next from the flanks, worst of all from the head.⁴⁶⁸

The age at which the disease first appeared was a major prognostic factor:

epileptic fits again are not difficult to bring to an end, when they have commenced before puberty.⁴⁶⁹

Even if medical treatments failed to cure children, epilepsy often resolved spontaneously with the commencement of puberty in boys and the onset of menstruation in girls.⁴⁷⁰ Galen elaborated on Hippocrates’ concept further by explaining that an improvement was brought about by the natural drying process that occurred with increasing age, together with a child’s tendency to exercise more and consume drying foods as puberty approached.⁴⁷¹

⁴⁶⁵ Hippocrates, *Aph.* 3.25; cf. *On Dentition* 6. Cf. also, Celsus, *Med.* 2.1.18-19; Galen, *Hipp.Aph.* III.25 (17B.629-632K). Cf. Caelius Aurelianus, *Chr.*1.4.71.

⁴⁶⁶ Aretaeus, *CA* 1.5. Translated by F. Adams.

⁴⁶⁷ Galen, *MM* 12.5 (10.841K). Translated by I. Johnston and G.H.R. Horsley.

⁴⁶⁸ Celsus, *Med.* 2.8.11. Translated by W.G. Spencer.

⁴⁶⁹ *Ibid.*, 2.8.11. Translated by W.G. Spencer.

⁴⁷⁰ *Ibid.*, 3.23.1-2.

⁴⁷¹ Galen, *Hipp.Aph.* V.7 (17B.790- 791K).

‘Hippocrates’ believed that when epilepsy arose for the first time after the twenty-fifth year of life it generally proved fatal.⁴⁷² Some Roman authors accepted that it was very difficult to control epilepsy when it arose in adulthood or persisted beyond puberty.⁴⁷³

Areataeus wrote that epilepsy could become:

not only chronic, but, in certain cases, perpetual; for if it pass the prime of life, it clings to him in old age and in death.⁴⁷⁴

He also suggested that the disease “is sometimes driven out in another more advanced period of life.”⁴⁷⁵ These statements appear to contradict each other.

Conclusion

According to Methodist doctors, epilepsy was a disease of stricture. Another view was that it resulted from changes in the four qualities, humours and *pneuma*. The conduct of wet nurses deserved special scrutiny because spoiled breast milk affected the health of sucklings. The medical treatises affirmed links between the health of the body, mind and soul; they also provided evidence that the notion of supernatural causes for the condition persisted well into the Roman period. There was, therefore, a potential for many different approaches to the prevention and therapy of convulsive disorders. The following chapter will take this into account when examining dietetic, pharmacological, surgical, and supernatural and folk practices. It also seeks to determine whether practitioners made allowances for the age, developmental status and gender of patients suffering from epilepsy.

⁴⁷² Hipp., *Aph.* 5.7.

⁴⁷³ Celsus, *Med.* 2.8.29; Galen, *Hipp.Aph.* V.7 (17B.792K); Pseudo-Galen, *Int.* 13.22 (14.739K).

⁴⁷⁴ Areataeus, *CA* 1.5. Translated by F. Adams.

⁴⁷⁵ Areataeus, *SD* 1.4. Translated by F. Adams.

3.3.2 Mouth ulcers

The ubiquity and lethal potential of oral ulcers, or aphthae, among Roman children is evident from the impressive number of references found in Galen's writings.⁴⁷⁶ He endorsed Hippocrates' statement that superficial ulcers were among several diseases that afflicted newborns and little infants.⁴⁷⁷ Celsus wrote that:

It is very probable that infants and children still of tender age should suffer from the creeping ulcerations of the mouth which the Greeks call aphthas.⁴⁷⁸

Mouth ulcers, *ulcera oris*, could also affect older children and adults.⁴⁷⁹ Although Aretaeus did not discuss lesions that arose primarily in the mouth, he acknowledged that children were particularly prone to similar lesions on the tonsils until the age of puberty.⁴⁸⁰ Galen explained that aphthae occurred mostly in sucklings due to their hot nature and their consumption of tainted breast milk.⁴⁸¹

In his gynaecological treatise, Soranus defined an aphtha as "a superficial ulcer located in the cavity of the mouth" that could have a small crust with or without oozing.⁴⁸² Although the lesions could become inflamed, he clearly regarded aphthae as a trivial disease. In addition to aphthae, he described another malady, *stomachicum*, which he classified as a disease of stricture. It affected the oesophagus and the mouth and sometimes progressed into *phagedaena*, in which gangrene developed in the mouth, gums and throat. The chapters concerned are preserved in Caelius Aurelianus' Latin

⁴⁷⁶ Galen mentioned aphthae referred to a large number of treatments for aphthae in *Comp.Med.Loc.* 6.9 (12.988-1007K). Dioscorides also mentioned them several times, for example *MM* 1.4, 19, 123, 138, 146; 2.122, 129; 3.32; 4.2, 42, 89, 156; 5.5, 6, 21.

⁴⁷⁷ Galen, *Hipp.Aph* III.24 (17B.627K). Cf. *Hipp. Aph.* III.24.

⁴⁷⁸ Celsus, *Med.* 2.1.18; Translated by W.G. Spencer.

⁴⁷⁹ Celsus, *Med* 6.11.3-4.

⁴⁸⁰ Aretaeus, *SA* 1.9. Translated by F. Adams.

⁴⁸¹ Galen, *Comp.Med.Loc.* 6.6, 9 (12.988, 1004K).

⁴⁸² Soranus, *Gyn.* 2.24. Translated by O. Temkin: 121-123.

edition.⁴⁸³ Soranus made no mention of children being affected by either of these two conditions.

Scholars have attempted to apply modern microbiological diagnoses for Soranus' ulcers, such as candida, and bacterial and viral infections.⁴⁸⁴ In all probability the lesions described in the medical treatises represented a wide range of pathological conditions. It is impossible to be certain what kind of disease processes, infective or otherwise, contributed to this complex clinical mosaic in Roman children.

The age of a sufferer influenced the outcome of oral aphthae. Children generally remained at risk of death until they attained puberty.⁴⁸⁵ Galen took the optimistic view that sucklings responded to simple treatments if the ulcers were superficial.⁴⁸⁶ Celsus, however, believed that nurslings were most at risk of death because there were few therapeutic options open to them.⁴⁸⁷ In general, the treatment of sucklings presented many difficulties for practitioners: these are discussed below in Section 5.3.

Another unfavourable circumstance was the tendency for the lesions to spread into the surrounding tissues:

These ulcers begin from the gums: next they invade the palate and the whole mouth; then they pass downwards to the uvula and throat, and if these are involved it is not easy for the child to recover.⁴⁸⁸

⁴⁸³ Caelius Aurelianus, *Chr.* 3.2.13, 21; 3.3.46.

⁴⁸⁴ Burguière *et al.* 2000: 115 n267 believe that aphthae signified infections with *Candida albicans* or viruses. Temkin also interprets ἀφθης as thrush 1956: 121. Pormann (1999: 64) translates the term Rufus used for both white and black ulcers as thrush. Dental researchers describe bacterial infections arising from the gums that can spread into the jaws with devastating results Johnson and Engel 1986. These suggestions run counter to the views of many historians who are critical of attempts at retrospective diagnosis Hummel 1999: 144.

⁴⁸⁵ Aretaeus, *SA* 1.9.

⁴⁸⁶ Galen, *Comp.Med.Loc.* 6.6, 9 (12.988, 1004K) 12.988K. Translated by the author.

⁴⁸⁷ Celsus, *Med.* 6.11.3-4.

⁴⁸⁸ Celsus, *Med.* 6.11.3-4. Translated by W.G. Spencer.

Invasive or malignant ulcers were particularly dangerous if they were also purulent:

ulcers are particularly bad in the mouths of infants and young persons, quickly becoming filled with corruption which spreads down into the fleshy parts of the jaws.⁴⁸⁹

Galen suggested an alternative description for such lesions:

sometimes become putrid with the passage of time, and these are called phagadaenic (eating) ulcers by doctors.⁴⁹⁰

He explained that this term applied to “an ulcer that eats away or erodes” the surrounding tissues.⁴⁹¹

The colour of an ulcer was also linked to its prognosis. Soranus only described innocuous, white aphthae occurring in infancy. Other writers mentioned lesions that varied in hue from white to red and black. Some were “accompanied by inflammation..foul and reddish.”⁴⁹²

According to Rufus, the least serious ulcers were white in colour, and those that were red and black were far more deadly:

Sometimes children get ulcers which break open into their mouths. The colour of some of them is white, red, or again black as if they are scars of a burn..[they are] for the patient pernicious.⁴⁹³

The black coloration resulted from necrosis, or death of the tissues; the disease progressed rapidly, causing seizures, suffocation and:

disturbance of sensory perception, difficulty in breathing, and difficulty moving the neck; the eye rotates..and the child dies.⁴⁹⁴

⁴⁸⁹ Rufus in Rhazes, Fragment 176, Daremberg and Ruelle: 474. Author’s translation from the Latin.

⁴⁹⁰ Galen, *Comp.Med.Loc.* 6.6, 9 (12.988, 1004K) 12.988K. Translated by the author.

⁴⁹¹ Galen, *MM* 2.2 (10.84K). Translated by I. Johnston and G.H.R. Horsley.

⁴⁹² Celsus, *Med.* 6.11.1. Translated by W.G. Spencer.

⁴⁹³ Rufus in Baladī, Fragment 9, Ullmann 1975: 178. *Cf.* Rufus in Rhazes, Fragment 177, Daremberg and Ruelle: 474.

⁴⁹⁴ Rufus in Baladī, Fragment 9, Ullmann 1975: 178. *Cf.* Rufus in Baladī, Fragment F (R) 7a, Pormann 1999: 64-65.

Areataeus described similar lesions that affected the tonsils and mouth. Some were superficial, mild and harmless:

but others of an unusual kind, pestilential, and fatal..such as are broad, hollow, foul, and covered with a white, livid, or black concretion, are pestilential..The land of Egypt engenders it..Syria also..and hence they have been named Egyptian and Syrian ulcers.⁴⁹⁵

These ulcers spread rapidly into the jaws and neck or down into the lungs.⁴⁹⁶ Galen painted a similar picture of the lethal effects:

In some children this ulcers manifests itself as a continuous fever; in others the ulcer lights up the fever; children are taken by coughs, rigidity of the jaws and difficulty with breathing; the neck becomes stiff, the eye fixed, the ulcer extends into the lung, and it kills by a prolonged stay in this organ.⁴⁹⁷

Rufus referred to the lesion as the Egyptian boil which:

Is a curse for those who have it. It often comes out in children among the population of Egypt, and for that reason this ailment is called the Egyptian boil.⁴⁹⁸

In addition to white, red and black lesions, Galen described some that had a yellow appearance. He believed that the presence of abnormal humours were responsible for their hue. White lesions indicated the presence of phlegm, but ulcers could become:

more ruddy due to inflammation or indeed yellowish either from blood or yellow bile..and when they become older they acquire the malignancy of the humour black bile..redness is evident from the prevailing humour, blood; yellowness from bitter bile, whiteness from phlegm, blueness and blackening from the humour black bile.⁴⁹⁹

Physicians, therefore, associated the age of patients and the colour of the lesions with the magnitude, gravity and outlook for the disease.

Conclusion

There is a certain amount of confusion about the terminology of ulcers that affected the mouths of Roman children. Soranus identified aphthae as innocuous lesions in infants.

⁴⁹⁵ Areataeus, *SA* 1.9. Translated by F. Adams.

⁴⁹⁶ *Ibid.*

⁴⁹⁷ Galen, in Oribasius *Lib. inc.* 25, Daremberg and Bussemaker, Volume 3: 193-195.

⁴⁹⁸ Rufus in Rhazes, Fragment F (R) 7a = Oribasius, *Coll. Med., Lib. inc.* 43, Pormann 1999: 64-65.

⁴⁹⁹ Galen, *Comp.Med.Loc.* 6.9 (12.1003-1004K). Translated by the author.

He also described a disease that arose in the throat that sometimes resulted in gangrenous lesions spreading into the mouth and throat. Other authorities used the term ‘aphthae’ to denote a variety of ulcers that ranged from benign lesions to potentially lethal forms. They affected all age groups, but infants and small children were especially vulnerable to them. The prognosis of the disease depended on the age of sufferers. Adults usually recovered well, but the outlook was particularly grim for nurslings because therapeutic options were limited for this group. The colour and depth of the lesions themselves was another important factor. All these factors influenced the kinds of treatments that physicians employed to combat the disease. These are explored below in Section 5.3.

3.3.3 Bladder stones

Greek physicians were familiar with the problems caused by bladder calculi. Hippocrates counted them as one of the diseases that afflicted older children.⁵⁰⁰ Rufus wrote an entire treatise on kidney and bladder disorders, and other authors described the disease and its treatment at some length.⁵⁰¹ It is therefore reasonable to suppose that they affected a considerable number of persons during the imperial era. This is despite some misgivings that the intensity of the sufferings they caused may have accounted for a disproportionate degree of attention to them in medical literature.⁵⁰²

⁵⁰⁰ Hipp., *Aph.* 3.26.

⁵⁰¹ Rufus, *On the diseases of the kidneys and bladder*, Daremberg and Ruelle 1879: 1-63. Celsus and Aretaeus described them in detail; Galen referred to calculi in several of his works, for example, *Loc.Aff.*, *Caus.Symp.* and his commentaries on various Hippocratic treatises; Pliny devoted five chapters to bladder stones, and Dioscorides listed forty-five remedies.

⁵⁰² Garnsey 1998: 246.

When stones became impacted in the bladder neck or urethra they caused the painful condition known as strangury.⁵⁰³ This was recognised as one of “the most agonizing torments” to afflict the human body.⁵⁰⁴ Patients experienced a constant urge to void the bladder.⁵⁰⁵ Celsus described the slow, painful passage of small amounts of urine:

urine is passed with difficulty and slowly..drop by drop..this some pass more readily standing, some whilst lying on the back and especially those with large calculi..Some also when in great pain interlock their feet, crossing alternately the one over the other.⁵⁰⁶

In order to try to ease their desperate plight, males:

continually pull the genital member, they hold it in the hand and producing an erection; also they continually feel the need to urinate and overcome the strangury.⁵⁰⁷

This problem tended to occur more frequently in the autumn.⁵⁰⁸

Large or irregular stones could block the bladder neck or urethra completely, causing ischuria or retention of urine.⁵⁰⁹ Galen described these problems:

A painful operation is the passage through the member; for if the stone be larger than the urethra, it is detained for a long time, the bladder is filled behind, and the ischuria is very painful, for along with the bladder the ureters, also, are filled.⁵¹⁰

Galen described it as the complete inability to pass urine due to various causes, such as an impacted mass of thick humour or a calculus, inflammation or tumour.⁵¹¹ It was not uncommon for children to suffer from total retention of urine in this way.⁵¹²

It is surprising that Celsus omitted bladder stones from his list of childhood ailments.⁵¹³

That he recognised their significance is obvious from his lengthy descriptions of various

⁵⁰³ Celsus, *Med.* 2.1.8; Caelius Aurelianus, *Chr.* 5.4.65.

⁵⁰⁴ Pliny, *HN* 15.7. Translated by J. Bostock and H.T. Riley.

⁵⁰⁵ Pseudo-Galen defined strangury as the slow passage of urine drop by drop, *Int.* 13.35 (14.750K).

⁵⁰⁶ Celsus, *Med.* 2.7.14-15. Translated by W.G. Spencer. *Cf.* Galen, *Loc.Aff.* 1.1 (8.10-11K).

⁵⁰⁷ Rufus in Paul 3.45, Fragment 117.8-9, Darenberg and Ruelle: 444. *Cf.* Celsus, *Med.* 2.7.15.

⁵⁰⁸ Celsus, *Med.* 2.1.8.

⁵⁰⁹ According to Pseudo-Galen, ischuria was the complete cessation of micturition, *Int.* 13.35 (14.750K). *Cf.* Galen, *Caus.Symp.* 8.1 (7.248K); Caelius Aurelianus, *Chr.* 5.4.65.

⁵¹⁰ Aretaeus, *SD* 2.3. Translated by F. Adams.

⁵¹¹ Galen, *Loc.Aff.* 6.4 (8.403K).

⁵¹² *Ibid.*, (8.410K).

⁵¹³ Celsus, *Med.* 2.1.18-22.

surgical procedures for their removal which are discussed in Section 5.5 below. There was a general consensus that stones mostly affected children.⁵¹⁴ Galen went further by stating that “the generation of calculi..is a proper disease of children.”⁵¹⁵

Although the treatises mentioned bladder stones afflicting Roman children with some frequency, they rarely appear in archaeological contexts. This is because they are easily overlooked or mistaken for gravel during the excavation process.⁵¹⁶ Archaeologists recently recovered two rare examples of calculi from children’s graves. The first was a small stone found close to the skeleton of a boy aged ten years from the Late Roman Cannington Cemetery in Somerset.⁵¹⁷ The second was a larger, U-shaped calculus from the third century AD tomb of a five to six-year old girl in a necropolis on the Via della Serenissima close to Rome.⁵¹⁸ According to Aretaeus, bladder calculi were generally “oblong, being formed according to the shape of the passages.”⁵¹⁹

Palaeopathologists estimate that during antiquity boys were ten times more likely to suffer from bladder stones than girls.⁵²⁰ Soranus stated they arose in boys.⁵²¹ Celsus mostly referred to males when discussing surgical procedures to remove them.⁵²² He felt that they were less likely to trouble females because “the woman’s urethra is both shorter and straighter” than that of the male.⁵²³ They often passed small stones without

⁵¹⁴ Rufus, in Alexander of Tralles 8.26, Fragment 100, Daremberg and Ruelle: 420; Rufus, *Ren.Ves.* 13.3-4, 5-7; Rufus, in Paul 3.45, Fragment 117.7-9, Daremberg and Ruelle: 444; Aretaeus, *SD* 2.3.

⁵¹⁵ Galen, *Hipp.Aph.* III.25 (17B.634K). Translated by the author. *Cf. Hipp.Epid.* VI Comm. III.15 (17B.43K).

⁵¹⁶ Grmek 1989: 74.

⁵¹⁷ The calculus measured twelve mm Anderson 2001: 352.

⁵¹⁸ Charlier *et al.* 2007; 2011.

⁵¹⁹ Aretaeus, *SD* 2.3. Translated by F. Adams.

⁵²⁰ Aufderheide and Rodríguez-Martín 1988: 284-285; Steinbock 1993b: 1088.

⁵²¹ Caelius Aurelianus, *Chr.* 5.4.64.

⁵²² Celsus, *Med.* 7.26.2A, C, E.

⁵²³ *Ibid.*, 26.1C. Translated by W.G. Spencer. See also Soranus, *Gyn.* 1.3.18; Hipp., *Aer.* 9. Celsus described bronze catheters designed to take into account these differences, *Med.* 7.26.1A, B.

intervention.⁵²⁴ It is unclear whether Celsus was relying on his own experience or that of his sources when he wrote that:

women are forced to put their hands to their vulvar orifice and scratch; at times they feel the stone when they put a finger to the place where it is pressing upon the neck of the bladder.⁵²⁵

It is likely that he obtained this information from contemporary sources rather than reading the Hippocratic treatise, *Airs, waters, and places*, which states that:

Females suffer less from stone. Nor do they rub the privy parts as do males, nor handle the urethra.⁵²⁶

Rufus also believed that, for a female, a stone “is not very dangerous because it is accompanied neither by strangury nor strong pains.”⁵²⁷ Rufus was a renowned authority who undoubtedly had extensive knowledge of disorders of the kidneys and bladder. On balance, it is most likely that girls and women rarely suffered in the same way as males.

In addition to the pain and distress caused by bladder calculi, there were several serious and sometimes fatal complications. Large, hard stones rubbed against the bladder lining and caused ulcers to form, so that the urine was tinged with blood or pus.⁵²⁸ Haemorrhage was another cause for concern. A slow loss of blood could sap the strength of patients, but heavy bleeding could result in rapid exsanguination or ischuria due to clot retention.⁵²⁹ Abscesses could form in the bladder, producing fever and rigors, and they were often fatal. Other problems included swollen genitals due to constant handling in order to relieve pain, and anal prolapse from continual straining to

⁵²⁴ Celsus, *Med.* 7.26.4.

⁵²⁵ Celsus, *Med.* 2.7.13-16. Translated by W.G. Spencer.

⁵²⁶ Hipp., *Aer.* 9. Translated by W.H.S. Jones.

⁵²⁷ Rufus, *Ren.Ves.* 3.6-7, Daremberg and Ruelle: 23.

⁵²⁸ Rufus, *Ren.Ves.* 12.2-6, Daremberg and Ruelle: 50-51; Aretaeus, *SD* 2.3, 4; Galen, *Loc.Aff.* 6.4 (8.408K). Cf. Hipp., *Aph.* 4.75.

⁵²⁹ Aretaeus, *SD* 2.4.

pass urine.⁵³⁰ On occasions fistulae developed between the bladder wall and colon.⁵³¹ Altogether bladder lithiasis was an extremely agonising and dangerous condition.

It is not possible to know for sure what was responsible for the reputedly high incidence of bladder stones in Roman children. Suggestions include protein malnourishment in wet-nurses, premature cessation of breast feeding and the use of inferior weaning foods contributed to the formation of calculi.⁵³² Roman authors put forward various explanations for their formation. One theory was that some stones formed within the kidneys and passed downwards into the bladder. They believed that this applied mainly to adults since those occurring in children mostly formed within the bladder lumen.⁵³³

The colour of a calculus sometimes provided a clue to its site of origin:

some are white, clayey, as is mostly the case with children; others are yellow, and saffron-coloured in old persons, in whom the stones usually form in the kidneys, whereas in children it is rather in the bladder.⁵³⁴

This is further confirmation that the bladder was the primary source of the problem for children. Physicians generally placed the blame on wet nurses for the generation of bladder calculi. According to ‘Hippocrates:’

the initial cause of this disease is milk, when the the milk on which the infant is suckled is impure. The impurity occurs..if the nurse is unhealthy, and suffers from an excess of bile or water or blood or phlegm, the child’s milk too becomes bad, since the nurse’s body and stomach contribute to the milk..the earthy and phlegmatic substances..[pass] into the infant’s stomach, and all that the veins can filter into the bladder passes there [and it] becomes stone”⁵³⁵

⁵³⁰ Aretaeus, *SD* 2.4.

⁵³¹ Galen, *Loc.Aff.* 6.4 (8.408K).

⁵³² Makler 1980: 318-319; Jackson 1988: 125; Grmek 1989: 112; Garnsey 1998: 246; Bonet 1998: 190.

⁵³³ Rufus, *Ren.Ves.* 3.15, Daremberg and Ruelle: 27; Rufus in Alexander of Tralles 8.26, Fragment 100, Daremberg and Ruelle: 420.

⁵³⁴ Aretaeus, *SD* 2.3. Translated by F. Adams. See also Galen, *Hipp.Epid.* VI Comm. III.15.

⁵³⁵ Hipp., *Diseases* IV.55.1-4. Translated by I.M. Lonie.

Any impurities in the milk settled to form a layer of sediment in the bladder where the phlegm then acted like glue to coagulate it into stone.⁵³⁶ Rufus may have had Hippocrates' explanation in mind when he postulated that:

Regarding the development of stones in the bladder, this is above all the location in young children..The material cause of the formation of stones in the bladder is existence of a thick and earthy humour and the effect of burning heat in the kidneys and bladder.⁵³⁷

Galen was a prolific source of information for the generation of calculi. He agreed that unwholesome breast milk was thicker than normal, healthy milk:

for the nature of milk is thick and is most apt to create stones.⁵³⁸

Thick matter settled out from the urine and became "agglutinated into sandstone" by the action of heat within the bladder and external heat.⁵³⁹ The presence of heat in this location was instrumental in generating calculi:

the excretions in the urine which are so described often occur..when a sufficiently thick or viscous humor, making a slow exit-passage, is dried by the heat of that place and congeals.⁵⁴⁰

This confirms his view that many stones began to form during early infancy. Nevertheless, the problem did not cease once infants were weaned. Galen believed that an older child was liable to develop bladder stones when he ate "a lot and in an untimely manner" because this caused an accumulation of crude humour within the bladder.⁵⁴¹ His alternative suggestion was that children possessed insufficient heat to allow them to digest the thick material in the bladder.⁵⁴² This is a perplexing statement since, as we have seen, Galen argued that children had sufficient heat within the bladder

⁵³⁶ *Ibid.*, 55.3-4.

⁵³⁷ Rufus in Paul 3.45, Fragment 117.7,10 Daremberg and Ruelle: 444. For a discussion on whether Rufus believed that heat within the bladder generally came from an internal or external source, see Abou Aly 1992: 72.

⁵³⁸ Galen, *Hipp.Epid.* VI Comm. III.15 (17B.47K). Translated by the author.

⁵³⁹ *Ibid.*, (17B.43K). Translated by the author.

⁵⁴⁰ Galen, *HNH* 2.11, 18 (15.153-154, 163K). Translated by W.J. Lewis.

⁵⁴¹ Galen, *Hipp.Prog.* 2.74 (18B.227-228K). Author's translation. Cf. Rufus in Alexander of Tralles, Fragment 100, Daremberg and Ruelle: 420.

⁵⁴² Galen, *Hipp.Aph.* III.26 (17B.634-635K).

to convert thick matter into stone. Rufus also linked overeating with the formation of calculi since inordinate greed and immobility after meals produced an excessive accumulation of thick matter.⁵⁴³

According to Hippocrates, drinking water was another potential source of trouble since it often contained sediments.⁵⁴⁴ Although heat was an important factor in the formation of stones, Rufus believed that cold conditions within the bladder could present problems since:

Soft stones can also be produced by other waters that are clear, with no deposit, but colder and harder.⁵⁴⁵

Children's drinking habits also contributed to the formation of calculi:

The stone is more common..in children than in adults, because..children drink more cold water than can be supported by most individuals advanced in age.⁵⁴⁶

The evidence is that cold causes bladder stone and is also probable that, as a result of some heat, it forms a deposit in the bladder which dries out.⁵⁴⁷

Aretaeus stated that although both cold and heat could generate stones, the action of heat was a more important factor in children:

cold concretes thick fluids more readily than heat, the proof of which is seen in the thermal springs; for when congealed, the water gets concreted into a sort of chalk-stones. But in children, the copious recrement [residues] of the blood, being overheated, gives origin to their formation, like fire.⁵⁴⁸

Soranus, as a Methodist physician, did not attempt to explain the reasons why calculi formed. He classed it as a disease of stricture.⁵⁴⁹

⁵⁴³ Rufus in Alexander of Tralles, Fragment 100, Daremberg and Ruelle: 420.

⁵⁴⁴ Water from rivers and lakes were likely to contain mud or sand. Calculi did not develop in all persons drinking such water, but in susceptible individuals the sediment condensed and became indurated Hipp., *Airs, Waters and Places* 9. Cf. Hipp., *Aph.* 4.79.

⁵⁴⁵ Rufus, *Ren.Ves.* 13.3-4, Daremberg and Ruelle: 53-54. Cf. Rufus in Paul, Fragment 177.10-11, Daremberg and Ruelle: 444.

⁵⁴⁶ Rufus, *Ren.Ves.* 13.4, Daremberg and Ruelle: 54.

⁵⁴⁷ Rufus, *Ren.Ves.* 13.6, Daremberg and Ruelle: 55.

⁵⁴⁸ Aretaeus, *SD* 2.3. Translated by F. Adams.

⁵⁴⁹ Caelius Aurelianus, *Chr.* 5.4.64.

The prognosis for all sufferers of bladder stones was grave unless they could be successfully dissolved or removed.⁵⁵⁰ Rufus recognised that it was essential to be aware of the conditions that led to the formation of calculi since:

this knowledge is necessary to determine the subsequent diet; one who knows what causes the disease to generate will find many ways to prevent its production.⁵⁵¹

Therapeutic measures designed to prevent or eliminate calculi are addressed below in Section 5.5.

Conclusion

A number of Roman writers explored complex theories on the pathogenesis of bladder calculi in some detail according to Hippocratic principles. These involved the presence of thick humours or sediments in the bladder during early infancy or childhood. It was necessary to be familiar with these processes in order to be in a position to prescribe suitable regimen and drugs to dissolve them or to prevent them forming. The severity of the symptoms and dangerous complications arising from calculi in male patients would explain the sometimes desperate surgical measures that practitioners resorted to in order to remove them.

3.3.4 Deformities of the limbs, spine and thorax

Soranus and Galen provided the only two extant descriptions of bending deformities of the limbs, spine and chest in Roman infants. According to Soranus the infant:

usually becomes hunchedback (the spine bending..)the legs may become distorted in the region of the thighs.⁵⁵²

⁵⁵⁰ Aretaeus, *SD* 2.3, 4.

⁵⁵¹ Rufus, *Ren. Ves.* 13.1, Daremberg and Ruelle: 53.

⁵⁵² Soranus, *Gyn.* 2.20.43. Translated by O. Temkin: 115.

Galen provided more details about these deformities:

For the legs are distorted either inwardly or outwardly in relation to the original inclination of the shank from the actual weight of the bodies which are borne. In those whose legs are straighter than is natural, they are more splay-footed (knock-kneed - *blaisos*), and in those whose legs are more curved in, they are bandy-legged (bow-legged - *raibos*).⁵⁵³

He added that sometimes baby girls developed deformities in the thoracic spine and rib cage.⁵⁵⁴ This would have been a serious concern since it was desirable for females to acquire an attractive conformation.⁵⁵⁵

There were several explanations for these deformities. Firstly, there was a lack of strength and softness in the bones that made them susceptible to damage.⁵⁵⁶ It was possible for midwives to handle infants incorrectly during delivery, so distorting their bones, or for nurses to do so while feeding or washing them.⁵⁵⁷ Rufus clearly thought that some nurses, at least, should not be entrusted with bathing newborns (see Section 4.2.1 below). Special care was essential when laying a baby down to rest:

nor must one lay it down upon anything too soft lest this be very yielding and thus, again, the backbone or the neck be distorted.⁵⁵⁸

The major concern of Soaranus and Galen was the effect of allowing a child to sit or walk prematurely:

Many of the limbs are distorted, some by..a defective movement when they are allowed to stand or walk earlier than is proper, or are moved too vigorously..or when untimely or violent movements agitate the limbs and twist them around as they ought not to be.⁵⁵⁹

For if it is eager to sit up too early and for too long a period it usually becomes hunchbacked..If.. it is too prone to stand up and desirous of walking, the legs may become distorted in the region of the thighs..if nobody looks after the movements of the infant the limbs..become distorted, as the whole weight of the body rests on the legs, while the ground is solid and hard.⁵⁶⁰

⁵⁵³ Galen, *Caus.Morb.* 7.1 (7.28K). Translated by I. Johnston.

⁵⁵⁴ *Ibid.*, 7.2 (7.28-29K).

⁵⁵⁵ Soranus, *Gyn.* 2.9.

⁵⁵⁶ Soranus, *Gyn.* 2.20,43, 44; Galen, *Caus.Morb.* 7.1 (7.27K).

⁵⁵⁷ Galen, *Caus.Morb.* 7.1 (7.27K).

⁵⁵⁸ Soranus, *Gyn.* 2.10.16. Translated by O. Temkin: 87.

⁵⁵⁹ Galen, *Caus.Morb.* 7.1 (7.27K).

⁵⁶⁰ Soranus, *Gyn.* 2.20.43. Translated by O. Temkin: 115-116.

Careless technique during swaddling was another issue:

And in the thorax, the parts are often deformed by nurses binding them badly..we see such a thing occurring all the time in young girls. For their nurses..strongly binding all the parts in relation to the shoulder blades and thorax..when there is unequal tension, either the breast shows a prominence to the front, or the opposing parts in the spine are convex.⁵⁶¹

In Galen's view, this was:

a result of the error and ignorance of nurses not knowing how to bandage in a properly balanced way.⁵⁶²

The catalogue of blame was relentless: nurses were also responsible for overfeeding infants, thus allowing the weight of their heavy bodies to distort their soft bones.⁵⁶³ In short, Soranus believed that some nurses exhibited poor standards of child care because “they do not make themselves fully acquainted with child rearing.”⁵⁶⁴ When selecting nurses it was best to choose those who were in their prime since “younger women are ignorant in the rearing of children.”⁵⁶⁵ Although Soranus and Galen held midwives and nurses responsible for these injuries, they probably would not have dared to place any blame on parents for their lack of vigilance in supervising their actions. It is likely that this would have offended their rich clients.

A further point to consider is that all of the above-mentioned authorities appear to have accepted that the bodies of all small infants were extremely soft and malleable. Soranus believed that bending deformities were a particular problem in the Roman capital. He did not provide any reasons of his own why this was so, or comment on their prevalence in his home province of Asia.

⁵⁶¹ Galen, *Caus.Morb.* 7.2 (7.27-29K). Translated by I. Johnston.

⁵⁶² *Ibid.* Translated by I. Johnston.

⁵⁶³ Galen, *Caus.Morb.* 7.1 (7.27K).

⁵⁶⁴ Soranus, *Gyn.* 2.20.44 Translated by O. Temkin: 116.

⁵⁶⁵ Soranus, *Gyn.* 2.12.19. Translated by O. Temkin: 91.

The retrospective diagnosis of rickets

Scholars generally assume that bending deformities of bones described by Soranus and Galen were the result of Vitamin D deficiency rickets.⁵⁶⁶ It is worth examining the grounds for this supposition. Mitchell justifies the validity of retrospective diagnoses of disease from sufficiently detailed clinical descriptions that represent eye-witness accounts (see also Section 2.6 above).⁵⁶⁷ The descriptions of infants with skeletal deformities appear to be the result of first-hand experience of Soranus and Galen.

It is sometimes possible to assess the value of such accounts by comparing them with relevant palaeopathological data.⁵⁶⁸ Mitchell believes that scholars who are “triple-trained” in modern medicine, the history of medicine and anthropology are well placed to conduct this kind of research. The additional benefits of research by multidisciplinary teams of individual specialists include an increase in the pool of available expertise and the capacity to stimulate novel lines of enquiry.⁵⁶⁹

The next question to consider is whether the skeletal deformities described by Soranus and Galen correspond to modern diagnostic criteria for rickets. This disease encompasses a range of metabolic disorders which impair the mineralisation of bones. It results in widespread pathological changes. The commonest cause of the disorder is deficiency of vitamin D due to inadequate exposure to sunlight; dietary insufficiency plays a lesser role. The action of ultra-violet light on the skin is essential for the

⁵⁶⁶ Ebstein 1908: 522-524; Peiper 1966: 39; Jackson 1988: 38; Laurence 2012: 137; Garnsey 1998: 245-249; Carroll 2012: 50. Bradley made conflicting comments concerning the retrospective diagnosis of diseases. In a single article he stated that one should rely “only on Roman perceptions of childhood illnesses – the names and descriptions of illnesses used by ancient authorities – not on modern medical diagnosis and terminology” 2005: 71. This is despite his earlier pronouncement that “the disease Soranus describes is almost certainly rickets” *ibid.*, 70.

⁵⁶⁷ Mitchell 2011: 8, Table 3.

⁵⁶⁸ Porter 1993: 226; Mitchell 2011: 81.

⁵⁶⁹ Mitchell 2011: 87, 84, 86.

synthesis of the vitamin within the body which then facilitates the formation of calcium-rich bone matrix. The growth plates (metaphyses and epiphyses) and shafts of long bones in children with deficiency of vitamin D become soft and porous, and they are easily deformed by normal mechanical stress.⁵⁷⁰ Other, rarer forms of the disease can occur, such as renal rickets and certain genetic disorders.⁵⁷¹ An interesting example of a hereditary condition in the archaeological record is the skeleton of a young girl from fourth century Roman Gaul.⁵⁷²

Children might exhibit several, but not necessarily all, rachitic stigmata. These commonly include chest and spinal deformities, and bending and bowing of the forearms of infants who are crawling, and of the legs in those who are walking.⁵⁷³ Fig. 3.1 below illustrates some of the chief features of the condition.

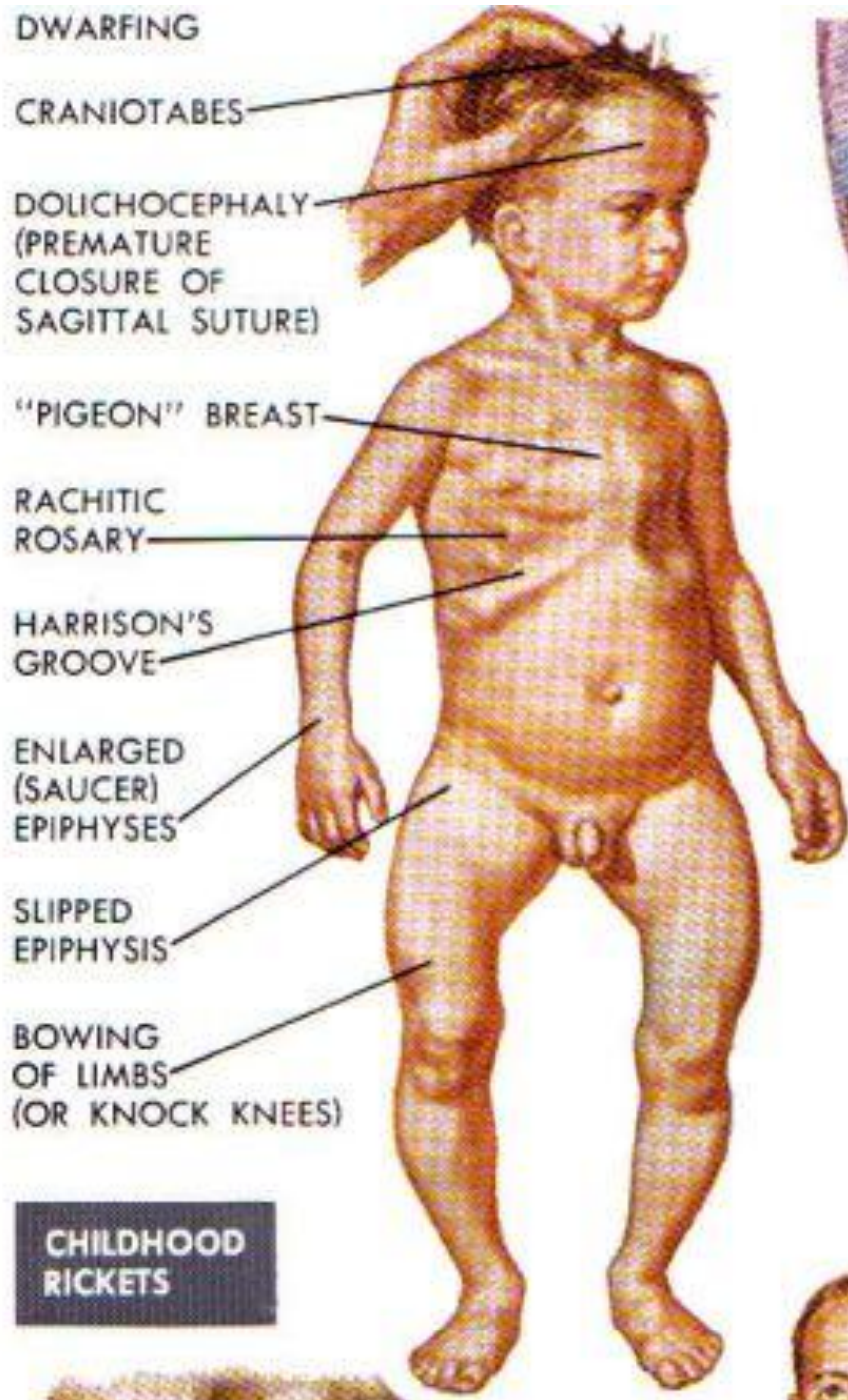
⁵⁷⁰ McCredie 1998: 642; Mays et al 2006: 362; Lewis 2007: 119; Brickley and Ives 2008: 75; Minozzi *et al.* 2012: 276.

⁵⁷¹ There are various heritable forms of the disease, the commonest being vitamin D-resistant X-linked hypophosphataemia. In this condition the body lacks the ability to regulate the metabolism of phosphate which is required for the generation of new bone McCredie 1998: 642.

⁵⁷² Blondiaux *et al.* (2002) found signs of the the latter in the remains of a Gallo-Roman girl aged two years from a fourth century AD cemetery in Lisieux

⁵⁷³ Wing and Brown 1979: 84; McCredie 1998: 642; Stuart-Macadam *et al.* 1998: 256; Brickley and Ives 2008:103-107; Pettifor 2008: 444.

Figure 3.1 Chief clinical features of vitamin D deficiency rickets



From A. Blatner, 2010. *Lecture 5: Discovering Nutritional Deficiency Diseases: 7-8.*

The term craniotabes refers to thinning of the skull. 'Rachitic rosary' denotes the appearance of nodules similar to a string of beads in the anterior chest wall due to swelling of the costo-chondral junctions. Harrison's groove is a permanent indentation of the chest wall along the rib margins.

Table 3.1 below demonstrates the correspondence between Soranus' and Galen's descriptions and some of the principal characteristics of rickets affecting the limbs, chest and spine.

Table 3.1 Deformities according to source and features of modern rickets

Soranus	Galen	Modern medical criteria
Soft, weak bones Distortion of femur	Soft, weak bones Lower limb distortion, inward or outward, knock knees, bandy legs	Soft, weak bones Bowling of femur and tibia Knock knees, bandy legs
Hunchback	Convex spine Prominent chest	Kyphosis (hunchback) Pigeon chest

Sources: Soranus, *Gyn.* 2.20; Galen, *Caus.Morb.* 7.1-2 (7.27-29K).
Lewis 2007: 125; Brickley and Ives 2008: 103-104; Pettifor 2008: 444.

Anthropologists and osteoarchaeologists often collaborate in the kinds of multi-disciplinary projects that would gain Mitchell's approval. They have established, for example, that bowing of the long bones is a frequent finding in skeletal assemblages and that it usually signifies rickets. It is possible to be certain of this when several other features of rickets are present.⁵⁷⁴ Soranus and Galen described children whose soft, weak bones were prone to multiple deformities that were typical hallmarks of rickets. It is, therefore, reasonable to make a retrospective diagnosis of the disease in these Roman

⁵⁷⁴ Stuart-Macadam *et al.* 1998: 256; Brickley and Ives 2008: 103-105. Rarer conditions that can produce bowing include birth defects, trauma, osteogenesis imperfecta (brittle bone disease), joint laxity and infantile cortical hyperostosis. In practice, these are usually easily discounted Brickley and Ives 2008: 114-117.

children. This opinion is shared by several researchers in the field of anthropology and osteoarchology.⁵⁷⁵

The geographical distribution of rickets

Soranus commented on the geographical distribution of the condition that caused infants to suffer distorted limbs:

This is observed to happen particularly in Rome; as some people assume, because cold waters flow beneath the city.⁵⁷⁶

There is some dispute as to whether he meant the Roman capital itself, the Italian peninsula, or Rome rather than Greece.⁵⁷⁷ It is clear from the above that he referred to the city of Rome, and he did not mention Greece at all in this context.

It should be possible, in theory, to determine the prevalence of the disease in various parts of the Empire by studying burial assemblages from various grave sites. There are, however, a number of problems associated with this methodology. First of all it is unfortunate that few studies to date have investigated the incidence of rickets in cemeteries within the ancient Rome capital.⁵⁷⁸ Archaeologists and anthropologists are aware of the underrepresentation of infant skeletal remains in many cemetery populations. There are several reasons for this that relate to Roman burial customs, the preservation of skeletal material and the attitudes and skills of excavators.⁵⁷⁹ A further

⁵⁷⁵ For example, Steinbock 1993a: 978; Lewis 2010; Redfern *et al.* 2012; Brickley and Ives 2008: 94-95; Minozzi *et al.* 2012: 277.

⁵⁷⁶ Soranus, *Gyn.* 2.20.44 Translated by O. Temkin: 116.

⁵⁷⁷ Lewis (2010: 413) assumes that Soranus meant that the disease was common in Roman Italy, while Steinbock (1993a: 978) and Rajakumar (2003: 132) state that he believed that it occurred more frequently in Rome than in Greece.

⁵⁷⁸ Minozzi *et al.* 2012: 277.

⁵⁷⁹ The underrepresentation of infants in Roman cemetery populations is due partly to the practice of burying small babies in domestic contexts or in separate burial areas. Other factors include poor preservation of bones, selection bias, inexpert excavation techniques and post-depositional disturbance Saunders 1992: 1-3; Scott 1999: 90-122; Scheuer and Black 2000: 18-19; Baker *et al.* 2005: 3, 11, 13; Lewis 2007: 20.

drawback is that any evidence for diseases in burial populations may not reflect their incidence in the living communities they served. For example, not all Roman children who suffered from rickets died as a result of the disease.⁵⁸⁰ Around three quarters of affected children who survived into adulthood were likely to have had complete healing of their bony lesions.⁵⁸¹ This is because changes occurring during periods of growth can obliterate lesser degrees of malformation.⁵⁸² An example of residual deformities in the tibial bones of a Roman female adult skeleton is illustrated in Figure 3.2 below.

⁵⁸⁰ Scheuer and Black 2000: 14; Perry 2005: 90. Mortality bias has been the subject of much discourse over the past few decades. For discussions on ‘the osteological paradox’ see J.W. Wood, G.R. Milner, H.C. Harpending and K.M. Weiss, 1992. The osteological paradox: Problems of inferring prehistoric health from skeletal samples. *Current Anthropology* 33: 343-370. See also, M.N. Cohen, 1994. The osteological paradox reconsidered. *Current Anthropology* 35 (5): 629-631; L.E. Wright and C.J. Yoder, 2003. Recent progress in bioarchaeology: Approaches to the osteological paradox. *Journal of Archaeological Research* 11 (1): 43-70.

⁵⁸¹ Residual lesions are present in the skeletons of around a quarter of adults who develop rickets during childhood Mays *et al.* 2006: 362-3; Mays 2008: 218; Brickley and Ives 2008: 11, 114-115.

⁵⁸² Lewis 2007: 124.

Figure 3.2 Tibial deformities in a Roman skeleton



Macroscopic and radiographic views of the tibiae of a woman aged 27-37 years from the first to third century AD necropolis at Collatina situated fifteen km from the centre of Rome. These show typical bowing due to childhood rickets. Spinal, mandibular and femoral abnormalities were also present. From Minozzi *et al.* 2012. *Palaeopathology in the Roman Imperial Age. Pathobiology* 79: 269, 277.

The necropolis of Collatina contained burials from a wide range of socio-economic classes. The woman was of very short stature owing to substantial deformities of her thoracic spine and upper and lower legs.⁵⁸³ Another example of an adult Roman skeleton with evidence of residual rickets is that of a victim of the eruption of Vesuvius in AD 79.⁵⁸⁴ Although information about the prevalence of rickets in the ancient capital

⁵⁸³ Minozzi *et al.* 2012: 269, 277.

⁵⁸⁴ Herculaneum skeleton Er C 103, Bisel and Bisel 2002: 472.

city is scarce, there is much more available from Roman Italy and Britain. One study examined nearly two hundred juvenile skeletons from the necropolis of Isola Sacra at Porta Romae which is situated thirty km to the south-west of Rome. It found unequivocal evidence of rickets in fifteen percent of subjects, and probable signs in a further thirteen percent; the disease, therefore affected around a quarter of all children who lay buried in the cemetery.⁵⁸⁵ Since this did not take account of adult survivors, it is likely that the disease affected a much larger proportion of the population.

Turning to Roman Britain, a recent survey identified rickets in the remains of around eight percent of children below the age of three years from twelve different burial sites in Dorset.⁵⁸⁶ Cemetery sites at London yielded a higher rate of eleven percent.⁵⁸⁷ In 1993 Fardell and Molleson examined the remains of infants from Poundbury Camp for signs of rickets on the basis of deformed limb bones. They found very few cases, but noted that all the bones were poorly mineralised.⁵⁸⁸ Lewis re-evaluated nearly two hundred and fifty juvenile skeletons from the same collection, using newer techniques and improved diagnostic criteria. She found evidence of rickets in at least eleven percent of children. The condition was particularly prevalent in infant remains: fifty-four percent exhibited signs of both vitamin C and D deficiencies.⁵⁸⁹ Figures from Roman Italy and Britain are roughly comparable to data from a nineteenth century cemetery site in industrial Birmingham where thirteen percent of juvenile skeletons

⁵⁸⁵ Wood 2004: 80, 89.

⁵⁸⁶ Redfern *et al.* 2012: 1253.

⁵⁸⁷ Gowland and Redfern 2010.

⁵⁸⁸ Fardell and Molleson 1993: 175, 184.

⁵⁸⁹ Lewis 2010. Children suffering from rickets were often malnourished and had co-existing iron and vitamin C deficiencies Brickley and Ives 2008: 113-114.

exhibited hallmarks of rickets.⁵⁹⁰ In summary, rickets affected a significant proportion of the skeletal remains of juvenile at certain burial sites in Britain and at Isola Sacra. Although no comparable evidence is available from the centre of Rome, it is reasonable to assume the accuracy of Soranus' comment that it was also commonplace in the capital.

Roman women, child care practices and skeletal deformities

Soranus and Galen held nurses accountable for malformations of the soft, weak bones of infants. It is essential to consider why children's bones were so soft and liable to damage in the first place. A possible clue comes from Galen who referred to:

the female sex, who stay indoors, neither engaging in strenuous labour nor exposing themselves to direct sunlight.⁵⁹¹

He may have been thinking of women from the elite classes who generally chose to avoid exposure to the sun. Less affluent women may well have ventured outdoors in urban areas. They may have had little access to ultra-violet light since large cities like Rome were polluted and overcrowded, and high rise buildings blocked out the sunlight.⁵⁹² In contrast, poorer women in farming communities may have worked outdoors for most of the day. A large proportion of city women of all classes, therefore, would have been vulnerable to vitamin D deficiency.⁵⁹³ Low levels of this vitamin in pregnant and nursing women would have made newborns and sucklings vulnerable to

⁵⁹⁰ Mays *et al.* (2006) examined skeletal remains from St. Martin's churchyard in Birmingham. They demonstrated the adverse effects of overcrowding, pollution and lack of sunlight on vitamin D metabolism.

⁵⁹¹ Galen, *Ven.Sect.Er.* 5 (11.164K). Translated by P. Brain 1986: 26.

⁵⁹² For discussions on environmental conditions in Rome, see Garnsey 1998: 248; Cohen 2000: 68; Lewis 2010: 413,414; Minozzi *et al.* 2012: 277. See also A. Scobie, 1986, Slums, sanitation, and mortality in the Roman world. *Klio* 68: 399-433; Z. Yavetz, 1958, The Living Conditions of the Urban Plebs. *Latomus* 17: 500-517.

⁵⁹³ Brickley *et al.* 2005: 391; 2008: 81; Gowland and Thompson 2013: 126. See Wood 2004: 148-152 for a discussion of socio-cultural factors that caused Roman women to minimise their exposure to sunlight.

severe rickets from an early stage.⁵⁹⁴ Soranus described the laborious process of applying soft woollen swaddling bands to the entire bodies of newborns, sparing only their faces.⁵⁹⁵ This is apparent in the gravestone depicted in Figure 3.3 below.

Soranus prohibited mothers from feeding their newborns on colostrum and deplored others who encouraged the practice.⁵⁹⁶ Galen did not discuss this matter at all.⁵⁹⁷ It is uncertain how many Roman mothers breastfed their babies, but some lower class women may have been more likely to have done so.⁵⁹⁸ It is impossible to know how many babies had access to colostrum. On the other hand, it was not customary for women in elite sections of society to suckle their own babies because it was a demeaning task. The use of wet nurses was the norm.⁵⁹⁹ The denial of colostrum, together with total starvation for the first two days of life, premature or prolonged weaning and the use of poor quality weaning foods would have aggravated any pre-existing vitamin D deficiency.⁶⁰⁰ Colostrum is rich in calcium which is essential for healthy bone growth; it has two or three times more than that contained in mature breast milk.⁶⁰¹

⁵⁹⁴ Lewis 2007: 119-120. The onset of rickets generally occurs between the age of six months and three years, providing that mothers have adequate vitamin D levels during pregnancy and lactation. The disease appears earlier and in a more severe form when mothers are deficient in the vitamin.

⁵⁹⁵ Soranus, *Gyn.* 2.9.15. Translated by O. Temkin: 85-86.

⁵⁹⁶ Soranus, *Gyn.* 2.11.17.

⁵⁹⁷ Parkin 2013: 53n18.

⁵⁹⁸ Laes 2011: 69-70.

⁵⁹⁹ Joshel 1986: 10; Dixon 1992: 128; Abou Aly 1996: 87.

⁶⁰⁰ Wood 2004: 154; Lewis 2010: 9.

⁶⁰¹ Kalwarf and Specker 1995: 91.

Figure 3.3 Severina laying down a swaddled infant



A late the third century AD stele from the Romano-German Museum in Cologne, Inv. no. 74414. The nutrix, Severina, raised this monument to the memory of the infant she had nurtured before its death Dasen 2010: 709.

The purpose of swaddling was to protect and shape the bodies of infants for a finite period (see Section 4.2.1). Soranus indicated that there was considerable variation in the time that elapsed before babies could be released from the restriction of swathing bands:

As time goes on one must free the child of the swaddling clothes. Now some people do this about the fortieth day, the majority about the sixtieth, while others assign a period which is even longer than this..we deem it right to loosen them when the body has already become reasonably firm and when there is no longer fear of any of its parts being distorted.⁶⁰²

This meant that the bodies of infants remained covered for two or three months. The custom of swaddling, together with the tendency to keep babies indoors, prevented sunlight from irradiating their skins.⁶⁰³ Infants suffering from vitamin D deficiency have soft, weakened bones and poor muscle tone.⁶⁰⁴ In parts of the developing world today mothers still swaddle their infants and keep them close to their own bodies. The practice is still common in Ibadan in western Nigeria where such infants are prone to rickets.⁶⁰⁵

Conclusion

Vitamin D deficiency rickets was responsible for the bending deformities of the limbs, thorax and spine described by Soranus and Galen. The practice of swaddling, together with prevailing feeding and weaning customs, contributed greatly to the disabilities that affected a significant proportion of Roman children. Medical authors did not offer any suggestions for trying to reduce the deformation once it was established. They may, perhaps, have realised that this would have been futile as the damage was irreversible.

⁶⁰² Soranus, *Gyn.* 2.19.42. Translated by O. Temkin: 114.

⁶⁰³ Lewis 2010: 120; Pettifor 2008: 444.

⁶⁰⁴ Pettifor 2008: 444; Brickley and Ives 2008: 92; Lewis 2010: 414.

⁶⁰⁵ Brickley and Ives 2008: 93-94.

3.4 Conclusion

The medical treatises identify a number of diseases that manifest themselves in diverse forms in children and adults. It is likely that some of these represented distinct pathologies that may have required different treatments. In many instances the gravity and outcome of illnesses varied according to the age of sufferers. The prognosis for infants or children was generally less favourable than for adults although, for certain complaints, children fared better than older persons. Physicians may have borne this in mind when selecting suitable therapies. They may have reserved relatively mild treatments for patients who were likely to recover well or those who were terminally ill. Drastic measures may have been more appropriate for patients suffering from serious illnesses who had some chance of pulling through.

Four case studies serve to underline several issues relating to the pathogenesis, prevalence, clinical features and prognosis of epilepsy, aphthae, bladder stones and bending deformities of the limbs, spine and thorax.

The medical treatises associated tainted or unwholesome breast milk with epilepsy, mouth ulcers, and bladder calculi. This brings into question whether it was possible to treat nurslings by administering medicaments to wet nurses or by taking steps to rectify their regimen. Sucklings were at greatest risk of death from epilepsy and aphthae. It is possible that their relatively poor prognosis and the practical difficulties of treating such tender individuals might have had a bearing on their management. The eating and drinking habits of weaned infants and children played a role in the formation of bladder stones. These would, perhaps, have been amenable to strict dietary supervision.

Galen associated the colours of aphthae with all four humours. Seizures resulted from the blockage of channels within the brain by thick, phlegmatic humours. Calculi also arose from their presence within the bladder. Several approaches would have been available for dissipating or removing these substances from the body. Small children were susceptible to frights and bouts of anger which could engender serious diseases like epilepsy. It might have been possible to adopt measures to avert or calm them. The notion that supernatural forces caused epilepsy appears to have persisted to some extent in the Roman period. This would have opened up the possibility of combating them by means of superstitious or magical practices. See Section 5.4 below.

Physicians held a variety of different views about the nature and aetiology of diseases; this was especially true of those who belonged to medical sects. It is likely that their doctrinal beliefs would have had some influence on their approaches to treatments.

The following chapters are concerned with the treatment of disease. They will investigate whether anatomical, physiological and psychological traits did, in fact, influence strategies for the management of children's illnesses.

CHAPTER 4: CHILD CARE AND PREVENTION AND TREATMENT OF DISEASE

4.1 Introduction

Previous chapters have established that medical authors credited children with unique biological and psychological characteristics. It is, nevertheless, important to remember that the views of individual physicians on the pathogenesis of disease were often coloured by their doctrinal affiliation. Those who had Hippocratic leanings believed that individuals were especially prone to certain ranges of diseases at specific stages of the life cycle. They explained these on the basis of humoral and pneumatic lore. In contrast, Methodists and Empiricists had little or no use for complex theories and therefore did not subscribe to such speculation.

The overarching research question of this thesis is whether or not there were significant differences between children's medicine and that of adults. In other words, is there enough evidence to support the hypothesis that children comprised a distinct therapeutic category? In order to answer this question it is necessary to seek evidence for variations in treatments between children and adults and between children of different ages and gender across the entire spectrum of Roman healing. This includes religious, magical and folk practices in addition to the Three Arts, namely regimen, pharmacology and surgery. Although most of the evidence depends on written sources, there is also a substantial amount of supporting data from the archaeological record.

There now follows an examination of the general principles that healers observed when trying to prevent diseases and treat those who fell sick. Wherever possible it will compare and contrast therapies for children and adults, and for children of different

gender. It will also take into account the beliefs of different kinds of practitioners who may have had their own ideas on healing.

The first step is to explore the general care of newborn infants. Physicians like Rufus, Soranus and Galen regarded infant care as an important medical concern since good practices laid the foundation for good health in childhood, adolescence and adulthood.

4.2 The care of newborns

Roman writers acknowledged that newborns were totally dependent on adults for their health and survival. They were interested in all aspects of the care of infants. These included breastfeeding, weaning, bathing, massaging, swaddling, rest, exercise, the control of emotion, and education in its broadest sense. These constituted the first elements of the all-age system for the preservation of health known as regimen.⁶⁰⁶ Attention now focuses on three particular aspects of infant care, namely the cleansing and moulding of their bodies, controlling the emotions, and breast feeding and weaning practices.

4.2.1 Cleansing, bathing and shaping bodies

According to Soranus, the midwife made an initial assessment of the viability of a newborn infant.⁶⁰⁷ If she declared it to be healthy, she passed it to the father to hold it in recognition of it as a member of his family. Until recently scholars accepted that he lifted it from the ground in a ritual action known as *tollere liberos*. There is, however,

⁶⁰⁶ Van der Eijk 2011: 28.

⁶⁰⁷ Soranus, *Gyn.* 2.6.10 (Temkin: 79).

no convincing evidence that this ever took place.⁶⁰⁸ The midwife then prepared the baby for its first bath. Rufus advised that:

All nurses do not know how to handle the child well in the bath, at least initially; and here is why we consign them to midwives for this office.⁶⁰⁹

This implies that Rufus regarded all midwives as adept at bathing infants and that all nurses were generally incapable of performing this function. The word ‘initially’ indicates that the midwife first trained the nurse to perform the service. When lifting infants from the bath, midwives:

secured by taking them by the feet, and holding them with the head low down, it seems to me, the small, permeable veins of this region..expel humours. These are the manoeuvres that the nurse must know and be able to execute.⁶¹⁰

This is a clue that midwives were responsible for judging when nurses were fit to bathe babies unsupervised. Soranus provided lengthy instructions on how to cleanse, salt and bathe the baby:

There is need of things which both cleanse..that the natural crust of sticky blood on the body be removed..Taking fine and powdery salt, or natron or aphronite, one must besprinkle the newborn..But the newborn being delicate, it may be necessary to beat up the salt with honey or with olive oil.. After having cleansed the body, one must bathe it with lukewarm water and wash away all the covering emulsion.⁶¹¹

The application of salt had a medical purpose since it allowed the skin to “be hardened and rendered immune against the development of rashes.”⁶¹² The prime concern of medical writers was to ensure that infants were cleansed of maternal fluids and their waxy skin coating (*vernix caseosa*) before being made comfortable and presentable.

⁶⁰⁸ Shaw regards this as a myth since there is no unequivocal evidence of such a ceremony being performed 2001: 32. *Tollere liberos* referred to land grants by Emperor Trajan to enable young couples to be able to afford to raise children, *ibid.* 40. See also Laes 2014: 64.

⁶⁰⁹ Rufus, in Oribasius, *Lib. inc.* 20.1, Daremberg and Bussemaker, Volume 3: 154. Cf. Rufus, in Oribasius *Coll. Med.* 8.20, Fragment 30, Daremberg and Ruelle: 303: “Bathing the nursling..must be assigned to the midwife rather than the nurse.”

⁶¹⁰ Rufus, in Oribasius, *Lib. inc.* 20.7-8, Daremberg and Bussemaker, Volume 3: 155-156.

⁶¹¹ Soranus, *Gyn.* 2.8.12-13. Translated by O. Temkin: 82-83. Cf. Galen, *San. Tu.* 1.7 (6.31K).

⁶¹² Soranus, *Gyn.* 2.8.12-13. Translated by O. Temkin: 82-83.

The Roman child's first bath had certain symbolic meanings. Soranus implied that babies who were not fit to rear were taken away unwashed (see above). Therefore the decision to bath an infant was an acknowledgement that his parents had accepted him as being fit to rear.⁶¹³ The bath also marked a transition from intrauterine existence to a new life within the family.⁶¹⁴ This may sound fanciful, but Roman infants and children underwent a series of other rites of passage from the first moment of birth through to puberty.⁶¹⁵ More importantly, there is iconographic evidence to support the significance of the ritual. A number of biographical sarcophagi that date to the second and third centuries AD depict scenes from the lives of the deceased. They commonly portray a midwife giving a baby its first bath, watched over by the mother.⁶¹⁶ In these circumstances the child is always shown surrounded by women.⁶¹⁷ This is because such liminal rites belonged to the arcane world of women who left no written evidence of their thoughts and beliefs.⁶¹⁸

Certain precautions should be taken when bathing newborns. At first the temperature of the water should be pleasantly warm, but after a few days the baby should "become accustomed to being washed with tepid water."⁶¹⁹ Excessive bathing was:

harmful, for the body becomes weak, susceptible to disease, easily cooled and easily affected by any harm..Therefore one should give it its bath during the daytime, never by night, and not two or three times, except when there is a need, when it soils itself very much or is roughened by a rash.⁶²⁰

⁶¹³ Dasen 2011: 300.

⁶¹⁴ Hänninen 2005: 55; Dasen 2011: 297, 300.

⁶¹⁵ Harlow and Laurence 2002: 39; Dasen 2009: 199. These included the *dies lustricus* when the child received its name and entered society; it took place on the eighth day for girls and on the ninth for boys Harlow and Laurence 2002: 40; Dasen 2011: 303; Laes 2014: 370. Hänninen described this as the child's "social birth" as opposed to biological birth 2005: 57. Freeborn boys received the *bullae* and *toga praetexta* when they attained puberty Harlow and Laurence 2002: 39-41.

⁶¹⁶ Huskinson 1996: 111-112; Hänninen 2005: 55; Dasen 2009: 202; Carroll 2012: 47.

⁶¹⁷ Dasen 2011: 300.

⁶¹⁸ Hänninen 2005: 55; Laes 2014: 364.

⁶¹⁹ Soranus, *Gyn.* 2.16.30, 31. Translated by O. Temkin: 103-104.

⁶²⁰ *Ibid.* Translated by O. Temkin. Galen suggested that daily baths were sufficient, *San.Tu.* 1.10 (6.48K).

An important function of bathing was to help maintain humidity in infants. They:

should receive..baths of pure water; for they require a completely moist regime, since they have a moister constitution than those of other ages.⁶²¹

Galen explained that the normal rule of treatment by opposites did not apply to children and that Hippocrates said:

“that all moist treatments are beneficial to the febrile, especially to children and to those who are accustomed to be restored by such measures.” In childhood which is not a disease but in accordance with nature, that which is most similar is most advantageous..Therefore one ought not to dry children..but to nourish them in accordance with nature.⁶²²

According to Soranus, the newborn could suffer if it was fed immediately after a bath:

Having let a little time pass so that [the newborn may rest after] the disturbance of the bath, the wet nurse should put it to the breast. For to give food immediately is harmful, not only for a child, but for an adult.⁶²³

It was also dangerous to bathe an infant soon after feeding since digestion might not be complete. It was essential to delay bathing until:

no undigested milk remains in the stomach. For the danger is that this may be absorbed into the baby’s entire body before having been well digested. Therefore great care should be observed that the baby does not take nourishment before bathing..Babies should not be permitted to drink after food before the bath; for in this way the distribution of food from the stomach into the body is swifter..it is better for the bath to precede food.⁶²⁴

Rufus believed that such circumstances could lead to serious illnesses like convulsions and epilepsy.⁶²⁵

In many Roman households, wet nurses bore the responsibility for massaging and shaping the bodies of small babies.⁶²⁶ Rufus preferred to trust midwives with this task since it required skill and practice. He described how, following a bath, they should mould the infant, flexing and manipulating all parts of the body.⁶²⁷ Soranus regarded this routine as an essential daily task and gave lengthy and detailed instructions on the

⁶²¹ Galen, *San.Tu.* 1.7 (6.33K). Translated by R.M. Green.

⁶²² *Ibid.*, (6.33-35K). Translated by R.M. Green. Cf. Galen, *MM* 8.9 (10.591-592K).

⁶²³ Soranus, *Gyn.* 2.17.36. Translated by O. Temkin: 108.

⁶²⁴ Galen, *San.Tu.* 1.10 (6.48, 51K). Translated by R.M. Green.

⁶²⁵ Rufus, in Oribasius, *Lib. inc.* 20.9, Daremberg and Bussemaker, Volume 3: 156.

⁶²⁶ Bacalexi 2005; Vander Stichele and Penner 2009: 68.

⁶²⁷ Rufus, in Oribasius, *Lib. inc.* 20.7-8, Daremberg and Bussemaker, Volume 3: 155-156.

systematic process of anointing, massaging and modelling every part of the infant's body:

One must anoint freely and at once massage and model every part so that imperceptibly that which is as yet not fully formed is shaped into its natural characteristics.⁶²⁸

The midwife or nurse should:

smoothe out the spine by both straight and circular movements. Then..make it hollow by pressing upwards along its length with the thumb..so that the arrangement of the vertebrae may be perfected, and with it comeliness and ease of movement...gently push away the parts overlying the highest vertebra of the spine..and in the same manner down the back and between the shoulders so that these parts may not easily be distorted nor become deformed.⁶²⁹

The facial features also required shaping to make them attractive:

With the thumbs she should massage the eyes [and] shape the nose, raising it if flat, but pressing it if it is aquiline.⁶³⁰

The purpose of these procedures was to endow the child with an attractive, supple, and well-formed body. This leads to the question of what Soranus meant by an infant's natural characteristics. Scholars have postulated that it may have had more to do with the ideas of elite sections of society concerning desirability of form rather than healthy morphology.⁶³¹ An alternative view is that Roman society regarded infants as unformed savages who were in need of reshaping into human form.⁶³² An additional consideration is the paramount importance of the ability of children to walk upright, unlike animals who moved around on all fours.⁶³³

⁶²⁸ Soranus, *Gyn.* 2.16.32. Translated by O. Temkin: 105.

⁶²⁹ *Ibid.*, 2.16.33. Translated by O. Temkin: 106-107. This parallels Soranus' concern with the newborn's body immediately after delivery: "One must mould every part according to its natural shape, [and] and if something has been twisted during the time of delivery, one must correct it and bring it into its natural shape; if, however, some part has been squeezed and has become swollen, one must anoint it with white lead triturated with water, or with litharge." *Ibid.*, 2.9.14. Translated by O. Temkin: 84.

⁶³⁰ *Ibid.* Translated by O. Temkin: 84.

⁶³¹ Martin 1995: 26; Foxhall 2013: 74, 77.

⁶³² Blundell 1986: 77; Dasen 2001: 12, 2011: 302.

⁶³³ Dumont 2007: 219; Gourevitch 1995.

The process of cleansing, salting and moulding would have been time-consuming.⁶³⁴ It is not possible to know whether nurses were always skilled and diligent in the care their charges. Despite all the directions in the medical treatises, a significant proportion of Roman infants developed limb, thoracic and spinal deformities: these are discussed in Section 3.3.4 above.

Galen thought it was essential to massage and shape infants with care:

The child is born; but even at this stage it remains extremely wet, not just in its vessels, organs, and flesh, but even in its bones, which are the driest part in us. These bones, and with them the limbs as a whole, are then moulded by the infant's nurses, in the manner of wax objects.⁶³⁵

On the other hand, he also expressed the view that:

the babies' bodies should be rubbed with sweet oil, as most nurses do, manipulating and moving the various parts. But in the child under consideration, with a perfect constitution, there is no need for the nurse to undertake manipulation of the parts, but merely rub them moderately and bathe them daily.⁶³⁶

There is, perhaps, an element of conflict between these two passages. On the one hand, the former instruction appears to apply solely to infants at the moment of birth, while the latter probably relates to babies in the later neonatal period who were already 'perfect.'

It was not only desirable for infants to acquire aesthetically pleasing forms: they also needed to be fit to fulfil their future reproductive roles. Since the anatomical arrangements of male and female infants differed from each other, their bodies required different handling. It was particularly necessary to pay special attention to the male genitalia.

⁶³⁴ Gourevitch *et al.* 1989: 228-229.

⁶³⁵ Galen, *Temp.* 2.2 (1.578K). Translated by P.N. Singer.

⁶³⁶ Galen, *San. Tu.* 1.10 (6.48K). Translated by R.M. Green.

Soranus directed that:

if the infant is male and looks as though it has no foreskin, she should gently draw the tip of the foreskin forward or even hold it together with a strand of wool to fasten it. For if gradually stretched and continuously drawn forward it easily stretches and assumes its normal length, covers the glans and becomes accustomed to keep the natural good shape. In addition, she should shape the scrotum from where the thighs meet.⁶³⁷

This passage emphasises the desirability of a prepuce that covered the glans completely.⁶³⁸ Masculine prowess and decency were important concerns in Roman society where men appeared naked in bath houses and gymnasia.⁶³⁹ This issue is explored in more detail below in Section 4.4.3.

There is a large body of references to the practice of swaddling in Roman literature, indicating that it was a widespread practice.⁶⁴⁰ The archaeological record provides supporting evidence in the form of funerary iconography and votive deposits of images of swaddled babies, particularly from Roman Gaul.⁶⁴¹ Swaddling served to protect the infant's tender body but it may also have had a symbolic significance.⁶⁴² Soranus directed that midwives should apply swathing bands according to the gender of the child:

The midwife..should wrap one of the broader bandages circularly around the thorax, exerting an even pressure when swaddling males, but in females binding the parts of the loins loose, for in women this form is more becoming.⁶⁴³

In addition to concerns about aesthetics, as an expert in gynaecology, Soranus must also have taken into account the adequacy of a girl's pelvis for future child-bearing.⁶⁴⁴ Boys

⁶³⁷ Soranus, *Gyn.* 2.16.34. Translated by O. Temkin: 107.

⁶³⁸ Hodges 2001: 394.

⁶³⁹ Foxhall 2013: 74, 77.

⁶⁴⁰ For example, Plutarch, *De liberis educandis* 5.

⁶⁴¹ Harlow and Laurence 2002: 42, 43; Dasen 2011: 302; Deyts 2004. The Musée des Antiquités, St. Germain-en-Laye, displays numerous Gallo-Roman limestone votives from the first three centuries AD - Inv. Numbers 10-15-04/26 and 28.

⁶⁴² Dasen 2010: 700-701.

⁶⁴³ Soranus, *Gyn.* 2.9.15. Translated by O. Temkin: 85.

⁶⁴⁴ Dasen 2010: 701.

from the upper echelons of society required strong physiques that would fit them for gymnastics and military service.⁶⁴⁵ It is evident that the process of shaping the bodies of Roman children began immediately after birth. This also applied to their socialisation through contact with those who cared for them and various rites of passage. The aim was to inculcate them with a sense of moral and social responsibility.⁶⁴⁶ All these ideals pervaded Roman literature which, one must remember, was the product of upper class male authors.⁶⁴⁷ It is reasonable to assume that they reflected the views of elite society and, perhaps to some extent, wider sections of the community.

Conclusion

From the moment of birth, the bodies of Roman children of both genders were subject to physical manipulation. Its purpose was to produce individuals who conformed to models of physical perfection in the eyes of elite Roman society. These ideals differed according to gender. Whereas girls required attractive bodies with good child-bearing potential, it was essential for boys to acquire bodies suited to their future reproductive roles and careers. There were several other aspects of the control or socialisation of Roman children, such as education, physical training, control of sexuality and moral instruction. One way of ensuring the latter was the instillation of discipline and control of emotional outbursts.

⁶⁴⁵ Gourevitch *et al.* 1989: 229; Bertier 1996: 2171-2173; Harlow and Laurence 2002: 42, 43; Rawson 2003: 121; Bacalexi 2005: 25-26; Baker 2010: 161; Dasen 2010: 700, 701; Dasen 2011: 293, 302.

⁶⁴⁶ McWilliam: 264, 268, 270-272.

⁶⁴⁷ Vander Stichele and Penner 2009: 68.

4.2.2 Controlling the emotions

Seneca believed in the need to discipline the young, saying “give children sound training from the beginning.”⁶⁴⁸ He explained how to control the behaviour of young children:

we must guide the child between the two extremes, using now the curb, now the spur. He should be subjected to nothing that is humiliating, nothing that is servile..rather let his own desert and his past conduct and good promise of it in the future be rewarded. In struggles with his playmates we should not permit him either to be beaten or to get angry; we should take pains to see that he is friendly toward those with whom it is his practice to engage in order that in the struggle he may form the habit of wishing not to hurt his opponent but merely to win.⁶⁴⁹

Plutarch recognised the value of manipulating children’s bodies, but it was also essential to train their minds from the very beginning:

it is necessary, immediately after birth, to begin to mould the limbs of the children's bodies in order that these may grow straight and without deformity..it is fitting from the beginning to regulate the characters of children. For youth is impressionable and plastic, and while such minds are still tender lessons are infused deeply into them; but anything which has become hard is with difficulty softened. For just as seals leave their impression in soft wax, so are lessons impressed upon the minds of children while they are young.⁶⁵⁰

Both Seneca and Plutarch were concerned with philosophical reasons for achieving high standards of moral behaviour.

Physicians had a different agenda for controlling strong emotions in children: they could lead to serious medical conditions. It is evident from the following fragment from Rufus, that the disease that was uppermost in doctors’ minds was epilepsy. He felt that it was necessary to intervene when an infant cried incessantly:

it is necessary to calm cries [that are] too intense, because they threaten a danger of producing convulsions.. all these means put the child in danger of catching the malady called ‘disease of the child’ [epilepsy].⁶⁵¹

Soranus believed that crying was a natural and healthy phenomenon in babies, and it could be beneficial since it was a natural form of exercise that improved their

⁶⁴⁸ Seneca, *De ira*, 2.20.2-21. Translated by J.W. Basore.

⁶⁴⁹ *Ibid.*, 2.21.3-7. Translated by J.W. Basore.

⁶⁵⁰ Plutarch, *De liberis educandis* 5. Translated by F.C. Babbitt.

⁶⁵¹ Rufus in Orib., *Lib inc.* 20.26, 277, Daremberg and Bussemaker, Volume 3: 160.

respiratory function and aided digestion.⁶⁵² He was concerned, though, with the physical consequences of prolonged crying:

But one should not let it cry too long, for this harms the eyes and moreover causes a slipping down of the intestines into the scrotum..Fright arising from such things becomes the cause of afflictions, sometimes of the body, sometimes of the soul.⁶⁵³

He did not explain the nature of the injury to the soul or how it came about.

Wet nurses came in for much criticism in Roman literature. Soranus stressed the importance of selecting the best possible candidate: the nurse should be sympathetic, affectionate and good-tempered:

some wet-nurses are so lacking in sympathy towards the nursling that they..pay no heed when it cries for a long time..Not ill-tempered..angry women are like maniacs and sometimes when the newborn cries from fear and they are unable to restrain it, they let it drop from their hands or overturn it dangerously.⁶⁵⁴

Another fault in some Roman nurses was that they sometimes took an active delight in frightening infants with tales of ghosts, the spirits of the dead, and demons like Gello and Lamia who snatched or killed babies. The latter were often referred to collectively as the *strigae*.⁶⁵⁵ Such imaginings may have been behind Rufus' warning that it was essential to avoid such spectres. He instructed that nurses should avoid scaring babies and soothe them in various ways when they became distressed:

appease them with the nurses' own songs as well as other means that you know to be pleasant for infants; one will also avoid, more than anything else, fear, loud noises and shouts in the ear, and one will not try to scare them suddenly by the appearance of spectres..one will reassure him, partly by showing him objects..most dear to him, partly by cuddling, partly by singing..and rocking him so that he falls asleep; because the effect of sleep will make him forget his fears.⁶⁵⁶

Soranus also advised checking to see whether the baby was suffering from a sting, tight wrappings, cold and heat, hunger or constipation.

⁶⁵² Soranus, *Gyn.* 2.17.39.

⁶⁵³ Soranus, *Gyn.* 2.17.40. Translated by O. Temkin: 111, 113.

⁶⁵⁴ Soranus, *Gyn.* 2.12.19. Translated by O. Temkin: 93.

⁶⁵⁵ Dasen 2003: 277-278; Laes 2011: 68.

⁶⁵⁶ Rufus in Orib., *Lib inc.* 20.26-28, Daremberg and Bussemaker, Volume 3: 160-161.

If the child remained inconsolable:

The wet nurse should hold it in her arms, and soothe its wailing by patting, babbling, and making gentle sounds..rocking should be performed in proportion to the condition of the body, at first a little, by shaking the crib..Later on the infant should be rocked in a litter; moreover, when it is four months old the wet nurse should hold it in her arms and walk about or be rocked in a carriage drawn by animals.⁶⁵⁷

From his reference to litters and horse-drawn carriages, Soranus obviously aimed his advice at rich clients.

Galen was much more informative on the subject. He thought that the key to the successful raising of children was good discipline, moral training and hygiene since “training and education dispel evil, and engender good.”⁶⁵⁸ He also remarked that:

The habit of the mind is impaired by faulty customs in food and drink and exercise and sights and sound and music. Therefore the hygienist must be skilled in all of these, and must not consider that it concerns the philosopher alone to mould the habit of the mind. For to him is assigned above all else the health of the mind, but to the physician that the body should not easily fall into disease.⁶⁵⁹

Having acknowledged that the humoral balance of the body influenced the state of health of the soul, Galen added that

We derive a good bodily mixture from our food and drink and other daily activities, and this mixture is the basis on which we build the virtue of the soul.⁶⁶⁰

This, again, confirms Galen’s concern with the health of the minds, physical bodies and souls of children.

Although some children already possessed a perfect constitution and did not require any active measures, carers should still remain alert:

the infant with whom we are concerned in this discussion is perfect in every respect. In him there is no need to correct the habits of mind, but to guard them that they be not corrupted..But infants, who have the best constitution..require no little care in order that no immoderate activity of the mind may occur in them. For, not yet being able to talk, they evince their distress by crying, calling, and disorderly movement.⁶⁶¹

⁶⁵⁷ *Ibid.*, *Gyn.* 2.17.40. Translated by O. Temkin: 113.

⁶⁵⁸ Galen, *QAM* 10 (4.812-813K). Translated by P.N. Singer; *De moribus* 4 in Walzer 1949: 92.

⁶⁵⁹ Galen, *San. Tu.* 1.8 (6.39-40K). Translated by R.M. Green.

⁶⁶⁰ Galen, *QAM* 1 (4.767-768K). Translated by P.N. Singer.

⁶⁶¹ Galen, *San. Tu.* 1.8 (6.39, 43K). Translated by R.M. Green.

It was always essential to be on one's guard and be able to anticipate and avoid precipitating violent anger attacks:

Whoever undertakes the bringing up of infants must be able to guess accurately what is moderate and comfortable and provide this before increasing distress throws the body and mind into excess of activity..It is our duty, conjecturing what they need, to provide it always before their distress increases..For often they cry and thrash about because they are teething, are disturbed by something external, or because they want to empty the bowels or urinate or eat or drink..Sometimes they..desire warmth..or..need cooling.⁶⁶²

Once infants became agitated, nurses should hold them in their arms and soothe them with rocking movements and modulated voices.⁶⁶³

There were alternative means of dealing with disobedient and fearful babies. Tertullian, an Early Church father, wrote in the early third century that pagans prayed to the deities to modify the behaviour and allay the fears of their offspring:

They have likewise Volumnus and Voleta, to control the will; Paventina, (the goddess) of fear.⁶⁶⁴

Nevertheless, it must be remembered that the veracity of this evidence is questionable since Tertullian was an aggressive Christian polemicist.⁶⁶⁵ There were also a number of other supernatural methods, such as amulets, for achieving the same aim (see Section 4.3 below).

Conclusion

Discipline and training were the key means of controlling the emotions and behaviour of children from the moment of birth. Three sources were concerned that ungoverned anger and fear damaged the health of infants' souls and bodies. Intestinal hernias and epilepsy were two of the physical consequences. These were serious conditions that

⁶⁶² *Ibid.*, 1.8 (6.43K). Translated by R.M. Green.

⁶⁶³ *Ibid.*, 1.7 (6.36-37).

⁶⁶⁴ Tertullian, *Ad nationes* 2.11. Translated by P. Holmes. *Cf.* St. Augustine, *City of God* 4.11, 21.

⁶⁶⁵ Quintus Septimius Florens Tertullianus was a native of Carthage. He wrote in a time when paganism, heresy and persecution threatened Christianity Fitzgerald *et al.* 1999: 822.

required surgery and prolonged dietetic and pharmacological treatment respectively (see Sections 5.9 and 5.4).

4.2.3 Breastfeeding and weaning

Roman breastfeeding and weaning customs continues to be a popular theme in scholarly literature.⁶⁶⁶

Mother's milk and wet-nursing

The use of wet nurses was commonplace among most classes in Roman society.⁶⁶⁷

They were generally slaves or freedwomen.⁶⁶⁸ The subject was an emotive issue for some Roman writers. Plutarch considered that infants enjoyed much affection when suckling from their mothers:

Mothers ought...to feed their infants and nurse them themselves. For they will feed them with a livelier affection and greater care, as loving them inwardly..mothers should themselves nurse and feed what they have brought into the world..Yet apart from all this, mothers would come to be more kindly disposed towards their children, and more inclined to show them affection.⁶⁶⁹

The second century AD Latin author and grammarian, Aulus Gellius, was particularly concerned about the employment of foreign wet nurses.

He believed that their imperfections passed into their milk:

What the mischief, then, is the reason for corrupting the nobility of body and mind of a newly born human being, formed from gifted seeds, by the alien and degenerate nourishment of another's milk? Especially if she whom you employ to furnish the milk is either a slave or of servile origin and, as usually happens, of a foreign and barbarous nation, if she is dishonest, ugly, unchaste and a wine-bibber; for as a rule anyone who has milk at the time is employed and no distinction made.⁶⁷⁰

⁶⁶⁶ For example, Joshel 1986; Bradley 1986; Fildes 1986; Gourevitch 1992; Abou Aly 1996; Bacalexi 2005; Dasen 2010.

⁶⁶⁷ Abou Aly 1996: 87; Harlow and Laurence 2002: 41; Laes 2011: 69; Dasen 2011: 307.

⁶⁶⁸ Dasen 2010: 699.

⁶⁶⁹ Plutarch, *De liberis educandis* 5. Translated by F.C. Babbitt.

⁶⁷⁰ Aulus Gellius, *Attic Nights* 12.1-23. Translated by J.C. Rolfe. See Joshel 1986: 6-10 for deeper issues concerning the delegation of childcare to slave and servants, perceptions of the decadence and moral decline of elite sections of Roman society in the imperial period, and male attitudes towards the control of women of all classes.

Some writers viewed the use of wet nurses as evidence of the decline of Romans into a state of idleness and decadence. Tacitus, for example, scorned women who abandoned their children to the care of nurses and slaves. He harked back to the golden days when it was usual for chaste and devoted mothers to nurture their own offspring.⁶⁷¹

Physicians were concerned solely with the medical advantages of maternal breastfeeding.⁶⁷² They felt that it was:

better to feed the child with maternal milk; for this is more suited to it, and the mothers become more sympathetic towards the offspring, and it is more natural to be fed from the mother after parturition..But if anything prevents it one must choose the best wet nurse.⁶⁷³

This was subject to the mother's state of health:

Mother's milk is equally best for all children, provided it be not by chance diseased, and not least for the child of the best constitution..for it is likely that his mother's whole body and her milk are free from disease.⁶⁷⁴

Some mothers were unable to feed their young through illness, but most elected to use wet nurses because they felt that breastfeeding was a menial task and caused premature ageing.⁶⁷⁵

Soranus advised that the newborn should receive nothing by mouth for two days; then they should be given honey and hydromel to nourish the baby and purge it of residual maternal material.⁶⁷⁶ If the mother wished to breast feed, it was advisable to withhold her milk for the first three weeks of life since it was unsuitable for sucklings:

one should feed with milk from somebody well able to serve as a wet nurse, as for twenty days the maternal milk is in most cases unwholesome, being thick, too caseous, and therefore hard to digest, raw, and not prepared to perfection.⁶⁷⁷

⁶⁷¹ Tacitus, *Dialogue on Orators* 28.

⁶⁷² Dasen 2010: 704.

⁶⁷³ Soranus, *Gyn.* 2.11.18. Translated by O. Temkin: 90.

⁶⁷⁴ Galen *San.Tu.* 1.7 (6.36K). Translated by R.M. Green.

⁶⁷⁵ Abou Aly 1986: 87; Dixon 1990: 123; Laes 2011: 70.

⁶⁷⁶ Soranus, *Gyn.* 2.1.17.

⁶⁷⁷ Soranus, *Gyn.* 2.11.18. Translated by O. Temkin: 88-89.

He berated Damnastes and Apollonius Biblas who favoured allowing newborns to feed on colostrum, the first milk that new mothers secreted. This demonstrates that there were conflicting views on the matter in antiquity. Historians and medical researchers agree that the consumption of colostrum would have benefitted Roman newborns. It is rich in proteins, minerals like calcium and immunological antibodies that protect infants from infectious diseases.⁶⁷⁸ The denial of colostrum would have been a predisposing factor for the pathogenesis of rickets (see Section 3.3.4 above).

Selecting and monitoring wet nurses

The medical treatises described how to select the best available wet nurse.⁶⁷⁹ Soranus and Galen were equally concerned with the harmful effects of unwholesome breast milk.⁶⁸⁰ For this reason they stated that it was essential for parents and midwives to routinely test the quality of breast milk.⁶⁸¹ The regimen of nurses also required supervision since this played an important role in maintaining their health and ensuring that their milk was plentiful and fit for babies to suckle.⁶⁸² There was also a risk that if nurses indulged in sexual relations or became pregnant, they would lose affection for their charges, and the flow and quality of their milk would diminish.⁶⁸³ If nurses

⁶⁷⁸ Parker 1999: 518; Garnsey 1999: 53, 106, 107; Harlow and Laurence 2002: 41; Prowse *et al.* 2008: 305; Parkin 2013: 53.

⁶⁷⁹ Soranus, *Gyn.* 2.12; Galen in Orib., *Coll. Med. Lib. inc.* 13, Daremberg and Bussemaker, Volume 3:120-128.

⁶⁸⁰ Soranus, *Gyn.* 2.13.21; Galen *Alim.Fac.* 3.14 (6.685-686K).

⁶⁸¹ Soranus, *Gyn.* 2.13. Galen, *San.Tu.* 1.9 (6.46K); in Orib., *Coll. Med. Lib. inc.* 16, Daremberg and Bussemaker, Volume 3:134-137. *Cf.* fragment from the fourth century BC physician, Mnesitheus of Cyzicus, in Oribasius, *Coll. Med., Lib. inc.* 15.9-12, Daremberg and Bussemaker, Volume 3: 129-131.

⁶⁸² Soranus believed that that poor regimen in nurses could diminish the quality of breast milk and compromise the health of the suckling. He advocated that they should have adequate sleep, undertake moderate work and suitable exercise, and moderate their diet and wine intake according to the age and developmental stage of the infant *Gyn.* 2.14. *Cf.* Galen *San.Tu.* 1.9 (6.45K); Galen in Orib., *Coll. Med. Lib. inc.* 13.5-18, Daremberg and Bussemaker, Volume 3:122-125. In the latter fragment, Galen wrote that nurses should avoid many kinds of food: celery, for example, could render a suckling susceptible to epilepsy, p 124.

⁶⁸³ Soranus, *Gyn.* 2.12.19 (Temkin: 92-93); Galen, *San.Tu.* 1.9 (6.46K).

became ill, then parents should find replacements.⁶⁸⁴ It is unlikely that all parents and wet nurses adhered to the guidelines set by Soranus and Galen which were counsels of perfection.⁶⁸⁵

In summary, it was of vital importance to select wet nurses who were likely to produce healthy milk. It was also essential to monitor their conduct and regimen since these could influence the quality of their milk; the very health and survival of nurslings were at stake. In later chapters there will be further discussion on some serious diseases caused by unwholesome milk such as epilepsy and bladder stones.

Infant feeding guidance in medical texts

Rufus wrote a great deal on infant feeding, but only a few fragments survive in the works of later authors. Soranus and Galen, therefore, are the main sources for Roman breastfeeding and weaning practices. Table 4.1 below presents a summary of the advice from these three authors.

⁶⁸⁴ Galen, *San. Tu.* 1.9 (6.45K).

⁶⁸⁵ Abou Aly 1996: 86.

Table 4.1 Feeding and weaning schedules according to source

	Soranus	Galen	Rufus
Source of milk	(i) mother; (ii) wet nurse	(i) mother; (ii) wet nurse	(i) mother; (ii) wet nurse
Colostrum	Banned	Banned	Banned
First food before milk established	Starve for 2 days, then boiled honey and drops of hydromel	No information	Honey, milk and honey; drops of hydromel
Commence breast feeds	From day 2: wet nurse for 20 days, then mother or nurse	No information	Fourth day
Frequency of feeds	Several times daily, 3 hourly intervals	No information	No information
Commence weaning	Not before body is firm, around age of 6 months	After first tooth erupts in the seventh month	Age not clear; start at the Autumn equinox
Type of weaning food	Cereals, bread in hydromel, milk, wine; soup and porridge, egg, diluted wine	Bread, ground vegetables, meat	Stale bread dipped in water, honey and wine; then bread with water and wine
Progress	Gradually	No information	No information
Complete withdrawal	From 18-24 months in the spring If child falls ill, resume breastfeeding	At age 2-3 years	Until third year of life

After Castilho and Barros Filho 2010: 180.

Sources: Soranus, *Gyn.* 2.11-13.

Galen, *San.Tu.* 1.9 (6.45K); Orib., *Coll. Med., Lib. inc.* 17.1, Daremberg and Bussemaker, Volume 3: 138.

Rufus, Fragment 30, Scarano 1990: 226; Fragment F (R) 1, Pormann 1999: 61; Oribasius, *Coll. Med., Lib. inc.* 14, Daremberg and Bussemaker, Volume 3: 128; Oribasius, *Coll. Med., Lib. inc.* 20.23, Daremberg and Bussemaker, Volume 3: 160; Oribasius, *Coll. Med.* 8.12, Fragment 27, Daremberg and Ruelle: 302.

Although Soranus' and Galen's schedules appear to be comprehensive and unambiguous at first sight, closer inspection reveals areas of uncertainty. The

introduction of mixed feeding, for example, depended on developmental milestones. There would have been considerable subjectivity in assessing the degree of firmness of an infant's body, and teeth might not have erupted when expected. Although bread was common to all three weaning diets, there were striking differences between them. Soranus advised gradual weaning during the second year, but did not define an endpoint.⁶⁸⁶ The other writers specified similar chronological ages for completion. It is important to bear these uncertainties and differences in mind when reflecting on whether parents and carers followed the guidelines outlined in the medical treatises. Weaning marked a transition point which had special implications for choices of therapeutic options for sick infants (see Section 4.4.2 below).

Evidence from Egyptian wet nursing contracts

A long-standing assumption has been that Roman parents and nurses followed breastfeeding and weaning guidance set down in the medical treatises.⁶⁸⁷ Researchers have recently begun to challenge this. An alternative source of information on actual infant feeding practices is a surviving corpus of wet-nursing contracts from Roman Egypt. They usually specified payments, and the duration and conditions of service, such as nurses having to avoid coitus and becoming pregnant. Unfortunately they lacked details of weaning foods and schedules.⁶⁸⁸ It is possible that they may have described practices that were peculiar to Ptolemaic and Roman Egypt.

⁶⁸⁶ Soranus discounted the views of certain of his predecessors that "one should wean a female six months later because it is weaker." Nevertheless, he found that some girls were "stronger and fleshier than many males" *Gyn.* 2.21.48. Translated by O. Temkin: 118-119.

⁶⁸⁷ Peiper 1966: 32; Bradley 1994: 139-141; Šlaus 2008: 464.

⁶⁸⁸ Bradley 1980: 321; Lefkowitz and Fant 1982: 166 -168; Abou Aly 1996: 89, 90. See B.P. Grenfell and A.S. Hunt. *The Oxyrhynchus Papyri*. London: Egypt Exploration Fund.

Stable isotope ratio analysis

In recent decades scientists have devised chemical analyses of the skeletal remains of infants and young children as an investigative tool for the study of feeding customs, either for individual cases or for entire cemetery populations. Strontium/calcium chemical ratios have a role to play in this respect, but analyses of stable isotope ratios yield more specific data about the ages at which weaning began and ended, and the nature of foods that infants consumed.⁶⁸⁹

The significance of stable isotope ratio analyses of nitrogen, carbon, oxygen and sulphur depends upon the premise that their signatures within the body correspond to those of the food and water that all animals ingest.⁶⁹⁰ A second important point is that a breastfed infant is one trophic level in the food chain above its mother, since the ingestion of breast milk equates to consumption of maternal tissue.⁶⁹¹ In modern human populations values for $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ in the tissues of exclusively breastfed infants are respectively one percent and between two to four per cent higher than those of their mothers. As complementary foods are introduced, levels of $\delta^{15}\text{N}$ begin to fall, eventually declining to adult values after complete withdrawal from the breast.⁶⁹² Values for stable sulphur isotope ratios ($\delta^{34}\text{S}$) reveal corresponding trophic changes.⁶⁹³ Oxygen isotope assay provide information regarding sources of water in breast milk or

⁶⁸⁹ For further details of strontium/calcium ratios, see Sillen and Smith 1984: 238. For data obtained from stable isotope ratio analysis: Stuart-Macadam 1995: 75-77; Schurr 1998: 328; Fuller *et al.* 2006a: 45-47; Katzenberg 2008: 425; Barbou and Garvie-Lok 2009: 65; Szostek 2009: 3; Rutgers *et al.* 2009: 1127.

⁶⁹⁰ Schurr 1998: 330; Fuller *et al.* 2006a: 46.

⁶⁹¹ Fuller *et al.* 2006b: 279; Lewis 2007: 115; Szostek 2009: 11.

⁶⁹² Katzenberg and Pfeiffer 1995: 222; Schurr 1998: 330; Szostek 2009: 14. Since the fall of $\delta^{13}\text{C}$ is far more rapid than that of $\delta^{15}\text{N}$, stable C^{13} isotope assays afford a relatively sensitive indicator of the age at which supplementary food is initially introduced, whereas N^{15} levels are more useful for determining the duration of breastfeeding Fuller *et al.* 2006a: 47.

⁶⁹³ Nehlich *et al.* 2011: 4971.

drinking water.⁶⁹⁴ A further application of isotopic studies of carbon is the identification of the kinds of cereals used in weaning foods; these include C3 cereals like barley, rye and wheat, and C4 plants such as millet and sorghum.⁶⁹⁵

The interpretation of information arising from these studies is problematic for a number of reasons. First of all, the relative scarcity of infants in some burial populations often makes it difficult to compare data between cemetery sites.⁶⁹⁶ One striking example of small sample size is the single skeleton recovered from the catacomb of St. Callixtus in Rome. An equally important factor is the small number of available studies to date. So far information comes from just seven cemetery groups from various regions of the Empire, spanning a total period of five centuries. It is to be hoped that new research might increase the database in the future, especially from sites within and around the city of Rome itself where evidence is even scarcer.⁶⁹⁷ Table 4.2 below summarises the data from these seven studies.

⁶⁹⁴ Infants imbibe fluid from breast milk or drinking water. Dental enamel and dentine in nurslings contain higher levels of ¹⁸O than the tissues of their mothers, but these values fall when they rely on drinking water after weaning is complete Wright and Schwarcz 1998: 3; Lewis 2007: 117-118; Szostek 2009: 14.

⁶⁹⁵ Cereals with three or four carbon elements in each carbohydrate molecule are designated as C3 and C4 foods respectively. The consumption of C4 food produces higher levels of stable ¹³C isotope, but values are lower for C3 foods. Analyses of ¹³C in skeletal material can therefore determine whether C3 or C4 cereals were consumed by infants as weaning foods or milk from animals fed on these cereals Katzenberg 2008: 430.

⁶⁹⁶ Barbou and Garvie-Lok 2009: 66.

⁶⁹⁷ Killgrove and Tykot 2012: 36. These authors add that there is very limited evidence from a few sites in Rome and its vicinity, such as St. Callixtus, Casal Bertone and Castellaccio Europarco. Such studies require considerable expertise and funding Baker 2013: 149-150.

Table 4.2 Stable isotope ratio values by cemetery site

Site	Isola Sacra Ostia, Roman Italy	St. Callixtus Catacomb, Rome	Kellis 2 Dakhleh Oasis, Egypt	Leptiminus Tunisia	Queenford, Oxfordshire Britain	Queenford, Oxfordshire Britain	London Britain
Period	1-3C AD	3-5C AD	1-5C AD	2-3C AD and 4-5C AD	4-6C AD	4-6C AD	1-early 5C AD
Infants in sample	37	1	27	20	28	28	59
Isotopes	N, C	N, C	N, C, O	N, C	N, C	N, C, S	N, C
Weaning Initiated	By end of the first year	Not yet at 2 years	6 months	6 months	?	?	6 months
Complete	By 2.5 - 3.0 years	Not apply	Gradual, complete by 3 years	Majority by 3 years	Variable; most by 2-4 years	Variable; between 2-4 years	Gradual, complete in third year
Weaning foods	C3 plants, marine protein	Not apply	C4 plants, milk of animals fed on them	C3 plants	C3 plants	C3 plants and fresh- water protein	
Authors	Prowse <i>et al.</i> 2004, 2008	Rutgers <i>et al.</i> 2009	Dupras <i>et al.</i> 2001; Dupras & Tocheri 2007	Keenleyside <i>et al.</i> 2009	Fuller <i>et al.</i> 2006a	Nehlich <i>et al.</i> 2011	Powell <i>et al.</i> 2014
Comments		Single sample		A few were still breast fed at 4 years	Few infants less than 18 months in sample		

Note that two different research teams analysed identical skeletal assemblages from Oxfordshire and that the 2011 study includes data for the sulphur stable isotope $\delta^{34}\text{S}$.

From Table 4.2 above, it is evident that infant feeding and weaning patterns differed across the Roman Empire. Isotopic data from in Egypt, Tunisia and London suggest the introduction of weaning foods from around the age of six months. At Isola Sacra the weaning commenced a little later, up until the end of the first year. The single infant recovered from the Roman catacomb of St. Callixtus, however, was still receiving breast milk exclusively at the age of two years. The significance of this anomaly is unclear, but a passage from Soranus' treatise provides a possible clue. He advised that breastfeeding should be continued or resumed when infants became sick, and that weaning should be postponed until they recovered.⁶⁹⁸ There were also differences in timings for the total cessation of breastfeeding. For infants from London, this occurred during the third year. The mean age for all groups was about three years, but at Queenford Farm in Oxfordshire there was a wider range from two to four years.

Weaning foods

The first century AD physician, Athenaeus of Attalia, wrote that high quality weaning food aided the growth of infants.⁶⁹⁹ Rufus, Soranus and Galen suggested a variety of foods, such as bread, eggs, honey, meat, vegetables and porridge made with wheat (Table 4.1). Data from Isola Sacra, Leptiminus and Britain demonstrate the use of barley, wheat or rye as weaning foods or for feeding animals whose milk the infants drank. These are all C3 foods, as explained above. There is some evidence that weaning diets at locations in and around the Roman capital also utilised millet (a C4 cereal) which was popular among poorer sections of society in Italy.⁷⁰⁰ Infant skeletal remains

⁶⁹⁸ Soranus, *Gyn.* 2.21.46 (Temkin: 119).

⁶⁹⁹ Athenaeus, in Orib., *Lib. inc.* 21, Daremberg and Bussemaker, Volume 3: 154.

⁷⁰⁰ Killgrove and Tykot 2012: 36. Garnsey believes that families from higher socio-economic classes were able to afford protein-rich weaning foods, while those who were less affluent relied mainly on cheap cereals 1993: 62.

recovered from the Kellis 2 cemetery indicate that children in the Dakhleh Oasis region were weaned on millet since it was the predominant crop.

The research project of 2006 examined the Queenford Farm assemblage and concluded that weaning diets consisted solely of terrestrial foods.⁷⁰¹ A more recent study (2011) examined $\delta^{15}\text{N}$, $\delta^{13}\text{C}$ and $\delta^{34}\text{S}$ values in bones from the same collection. These proved conclusively that infants were weaned on freshwater fish, birds and cereal plants from the vicinity of the river Thames.⁷⁰² In addition to C3 cereals, Isola Sacra infants consumed marine foods. Local geographical and climatic conditions must have been major reasons for variations in the sources of carbohydrate and protein at different locations in the Empire.

Uniformity of feeding customs and compliance with Roman treatises

A major controversy has recently arisen about the relationship between isotopic evidence and breastfeeding guidance in Roman medical treatises. It centres on the interpretation by three groups of researchers of data from the cemeteries at Isola Sacra, Kellis 2 and Oxfordshire. A survey published in 2006 purported to demonstrate uniformity in infant feeding and weaning practices across the Roman world due to the influence of medical texts “in these three corners of the Roman Empire.”⁷⁰³ Other researchers studied the same skeletal collections and found evidence of distinctive feeding patterns at these three sites. They concluded that guidance in Roman medical authors presented a model of best practice for wealthy parents. Furthermore, they

⁷⁰¹ Fuller *et al.* 2006a: 47.

⁷⁰² This is the largest study to date of Romano-British dietary patterns using $\delta^{34}\text{S}$ stable isotope ratios and is also the first to examine breast-feeding and weaning practices. Nehlich *et al.* also discovered that children over the age of eight years consumed terrestrial foods only, perhaps due to prevailing cultural practices 2011: 4973-4974.

⁷⁰³ Fuller *et al.* 2006a: 50.

describe their advice as being prescriptive in nature, rather than reflecting actual feeding customs employed across all sections of Roman society.⁷⁰⁴

A third group also investigated the same data and found evidence of marked variations in feeding and weaning patterns between sites in Britain, Egypt, Isola Sacra and the city of Rome. They ascribed these to variations in social, cultural and economic in different parts of the Roman world. On the basis of this, they were very sceptical about the influence of Roman medical treatises on infant feeding customs across the Empire.⁷⁰⁵

Conclusion

Looking at Table 4.2 above, it is easy to detect wide variations in data from five burial populations.⁷⁰⁶ Weaning appears to have commenced around the age of six months at four locations, and by the end of the first year at another. The average age of completion varied considerably, ranging from two to four years, but some individuals were still being breastfed after the age of four. There were also marked differences in weaning foods infants consumed. On balance, it is reasonable to conclude that there was a lack of uniformity in Roman infant feeding customs.

Table 4.1 above illustrates the ambiguities and deficiencies of written instructions by three Roman authors. Soranus and Galen suggested initiating weaning around six to seven months, and Rufus and Galen thought it should be complete by the third year or between the ages of two and three. The skeletal data show significant deviation from these guidelines, especially with regard to the total cessation of breast milk. There was also considerable divergence in the kinds of weaning foods that infants actually

⁷⁰⁴ Prowse *et al.* 2008: 297, 304-305. Lewis believes that it is possible that Roman medical writers directed their comments at wet-nurses charged with feeding slave and foundling babies rather than ordinary parents (2010: 413).

⁷⁰⁵ Powell *et al.* 2014:102-106.

⁷⁰⁶ These discussions exclude the single, possibly anomalous, infant recovered from St. Callixtus.

consumed. There is, therefore, ample justification for believing that medical texts had little or no influence on decisions about infant feeding and weaning in various parts of the Roman world. All of the above findings support the supposition that medical treatises were prescriptive rather than descriptive of actual practices.

A third group of investigators similarly argues that such written guidance was irrelevant to the majority of Romans. They suggest that infant feeding customs depended on local social, cultural and economic factors. Choices of weaning foods clearly depended on the geographical location of communities. Egyptian babies from Kellis 2 received millet, which was a staple food in Egypt as well as for poorer communities in Italy. Weanlings from Dorchester fed on freshwater protein from the nearby river Thames. It is also no surprise that Isola Sacra infants who lived close to the sea were fed on sea food.⁷⁰⁷ On balance, then, the evidence supports the assertion by Powell *et al.* that infant feeding practices varied across the Empire; these operated independently of medical guidelines and were more influenced by socio-economic and cultural considerations.

4.2.4 Teething ailments

The eruption of a child's teeth caused much misery, and medicaments were often needed to relieve the discomfort.⁷⁰⁸ The authors of two Hippocratic treatises were aware of particular dangers for infants around this time.⁷⁰⁹ Pliny, Dioscorides and Galen placed much reliance on the soothing effect of butter and honey.⁷¹⁰ Soranus was alone in proscribing the use of butter since it irritated the gums and lancing them to allow

⁷⁰⁷ Isola Sacra was close to the sea between Portus and Ostia. See Keay 2012: 40, 51 for maps of these locations.

⁷⁰⁸ Celsus, *Med.* 2.19; Soranus, *Gyn.* 2.22.49 (Temkin 119); Galen, *Hipp.Aph.* III.25 (17B.629-630K).

⁷⁰⁹ Macfarlane 2015: 277-278. See Hipp., *On Dentition*; *Aphorisms* 3.25.

⁷¹⁰ Pliny, *HN* 28.78; Dioscorides, *MM* 2.81; Galen, *SMT* 10.2 (12.272-273K).

teeth to come through.⁷¹¹ Instead, he suggested fomentations, poultices, and ointments containing boiled honey, together with warm, sweet olive oil dripped into the ears.⁷¹² The latter may have soothed any concurrent inflammation in the ears or even referred pain from the mouth.

It was also advisable to attend to the regimen of the child and his nurse:

send him frequently to be bathed in warm water, and to let him eat sparsely..it is necessary that the wet nurse sticks to the appropriate food and drink⁷¹³

This required modification when complications occurred:

If sympathetic disturbances are marked one should omit the bath too and should see that the wet nurse drinks little, and then only water.⁷¹⁴

It is not clear what these ‘disturbances’ were, but they may have included diarrhoea since Rufus instructed that if a teething child was troubled by diarrhoea or vomiting:

bind his stomach..with..a dressing of cumin in wool, and anis, [or] seeds of celery and roses. If the stomach of the child is upset, one ought to soothe it with honey that forms a sort of suppository.⁷¹⁵

Another possibility was emotional stress.⁷¹⁶ Hippocrates associated convulsions with teething.⁷¹⁷ Galen, likewise, stated that they accompanied teething, together with fever and diarrhoea.⁷¹⁸ One of the aims of treating dentition may have been to prevent convulsions (see Section 2.5.1 regarding triggers for epilepsy). Rufus and Pliny suggested remedies that eased the harmful effects of fear during dentition.⁷¹⁹ A long-lasting tradition was the soothing of painful gums by rubbing them with the milk of

⁷¹¹ Soranus, *Gyn.* 2.22.49.

⁷¹² Soranus, *Gyn.* 2.22.49.

⁷¹³ Rufus in Baladī, Fragment F (R) 8a, Pormann 1999: 66-67.

⁷¹⁴ Soranus, *Gyn.* 2.22.49. Translated by O. Temkin.

⁷¹⁵ Rufus in Baladī, Fragment F (R) 8a, Pormann 1999: 66-67.

⁷¹⁶ Bonet finds more than ten references by Pliny to the dangers associated with dentition, perhaps accounting for the considerable number of many different and sometimes bizarre therapies 1998: 186.

⁷¹⁷ Hipp., *On Dentition* 6, 8, 10.

⁷¹⁸ Galen, *Hipp.Aph.* III.25 (17B.629-630K).

⁷¹⁹ Rufus, Fragment F (R) 4, Pormann 1999: 62-63; Pliny, *HN* 28.78. Cf. Celsus, *Med.* 2.1.18-19; Galen, *Hipp.Aph.* III.25 (17B.629-630K).

goats or dogs and sheep or hare's brain.⁷²⁰ It is possible that remedies derived from the hare owed their esteem to its remarkable teeth.⁷²¹

Pliny recommended applying the ashes of the teeth of dogs or dolphins to relieve pain.⁷²² Amulets were a useful alternative for treating teething problems:

The first teeth shed by a horse, attached as an amulet to infants, facilitate dentition, and are better still, when not allowed to touch the ground.⁷²³

Pliny described other examples containing iris root, grains from snails' horns, vipers' brains and stones from the heads of boas.⁷²⁴ However, he made his incredulity clear:

It is hardly possible to preserve one's seriousness in describing some of these remedies, but as they have been transmitted to us, I must not pass them in silence.⁷²⁵

This was in keeping with his policy to include all available information in the *Natural History*. Galen was not averse to mentioning amulets containing old snails' shells.⁷²⁶

These remedies undoubtedly worked by sympathetic magic. There is a theory that mysterious diseases called for strange animal recipes.⁷²⁷ This cannot be said about dentition which is a visible and easily understood process.

Many adult toothache cures had parallels in infant treatments. For example, Pliny recorded a large number of medicinal and amuletic remedies.⁷²⁸ The volume of written references to teething and dental problems in infants and adults is reflected in frequent

⁷²⁰ Dioscorides, *MM* 2.21; Pliny, *HN* 28.78; 30.47. According to Galen, Archigenes (AD 98-117) advocated the use of dog's milk and hare's brain for soothing inflamed gums, *Comp.Med.Loc.* 5.5 (12.874K). Cf. Quintus Serenus Sammonicus, *Liber medicinalis* 58. Hare's brain remained a popular remedy throughout late antiquity (Paul 1.9) and into the early modern period.

⁷²¹ Dasen 2015: 193.

⁷²² Pliny, *HN* 30.38; 32.24. Quintus Serenus Sammonicus (late second century AD) wrote a medical poem in which he recommended foals' teeth, *Liber medicinalis* 58.

⁷²³ Pliny, *HN* 28.78. Translated by J. Bostock and H.T. Riley.

⁷²⁴ *Ibid.*, 21.83; 30.47.

⁷²⁵ *Ibid.*, 30.47. Translated by J. Bostock and H.T. Riley.

⁷²⁶ Galen, *Comp.Med.Loc.* 5.5 (12.874K).

⁷²⁷ Bonet 1998: 196.

⁷²⁸ Remedies and amulets for toothache in adults in Pliny *HN*: hyenas' teeth 28.27; teeth of the hippopotamus and dog 28.31, 30.8; ashes of the teeth of various animals 28.49, 30.7, 30.8; ashes of the head of a wolf and dog 28.49, 30.8; hare's rennet 28.49; bones 30.8, 32.26; earthworms 30.8; dung as amulets or injected into the ear 30.8; goat's milk 30.8.

discoveries of amulets in their graves. The demand for animal teeth was so great that manufacturers often substituted them with artificial teeth.⁷²⁹

Conclusion

Remedies alleviated the discomfort of teething. They may have had a further function in minimising some of the more serious ailments that accompanied dentition, such as, fever and convulsions.

4.3 Preventing diseases

Prophylactic measures had an important role in keeping Roman children free from disease. A possible reason for their popularity was the ineffectiveness of drugs for some serious afflictions and the dangers of surgery.⁷³⁰ Regimen, or dietetics, was the principal means of safeguarding of a person's health. Celsus described how a man might adopt a healthy life-style and remain free of disease into his old age.⁷³¹ Galen's treatise on hygiene provided a comprehensive guide from the cradle to the grave:

Let us now discuss the ideal constitution.. Such a person, placed under the art of hygiene, would be fortunate if entrusted to it immediately after birth..But even if he came under hygienic care at some later age, he will derive the greatest advantage therefrom..if one took such a person from the beginning, one would keep him healthy through his whole life.⁷³²

Medical and pharmacological treatises also mentioned the use of prophylactic drugs, folk practices and magic. The medical care of Roman children was largely the province of women, such as mothers, female relatives, midwives and nurses. Theirs was an oral tradition, and so they left no written accounts of how they tried to safeguard the health

⁷²⁹ Many examples include necklaces made from animal teeth; a boar's tusk in Musées royaux d'Art et d'Histoire, Brussels R1054; an imitation lion's tooth set in gold from Augusta Raurica 1973.550 Dasen 2015: 192-193.

⁷³⁰ Jackson 1988: 32; Prioreshi 1996: 762; Bonet 1998: 185; Dasen 2003: 288; Debru 2002: 80; Bradley 2005: 74n8. Pliny commented on the powerlessness of physicians to cure quartan fevers, *HN* 30.30.

⁷³¹ Celsus, *Med.* 1.1-3.

⁷³² Galen, *San. Tu.* 1.7 (6.31K). Translated by R.M. Green.

of the young.⁷³³ Pliny and Dioscorides are our best source in this respect, and Section 4.4.4 below explores popular medicine and folk practices in more detail.

The surviving works and fragments of Aretaeus and Rufus make little mention of the prevention of disease. In contrast, there is plenty of evidence of the role of supernatural medicine in preventing developmental problems and illness in Roman children. Scholars often comment on the large number of minor deities that presided over the progress and health of children.⁷³⁴ They generally quote from Tertullian, who wrote that:

Cunina is present as the protector of the child's deep slumber..To lift them (when fallen) there is Levana, and along with her Rumina. It is a wonderful oversight that no gods were appointed for cleaning up the filth of children. Then, to preside over their first pap and earliest drink you have Potina and Edula; to teach the child to stand erect is the work of Statina..They have likewise Volumnus and Voleta, to control the will.⁷³⁵

There are no first-hand accounts of parents requesting or gaining reassurance from any of these gods. Tertullian's cynical and anti-pagan view on the matter raises an element of doubt about the value of this evidence; see Section 4.2.2 above.

There is, in contrast, ample evidence from iconography and finds of amulets in burial contexts to confirm that infants and children wore a variety of amulets.⁷³⁶ These were objects charged with magical powers that protected wearers from disease and other kinds of harm. They were most commonly worn around the neck and were fashioned from or contained a range of materials.⁷³⁷ Pliny reported many folk and magical

⁷³³ Jones 1957: 468; French 1991: 13; Scarborough 1993: 19; Flemming 2000: 82; Schmitz 2011: 3455; Oberhelman 2013: 8.

⁷³⁴ Harlow and Laurence 2002: 39; Rawson 2003: 109 110, 136; Vuolanto 2010: 135; Dasen 2011: 295; Laes 2011: 68.

⁷³⁵ Tertullian, *Ad nationes* 2.11. Translated by P. Holmes. St. Augustine (late fourth century AD) was the only other source for these deities.

⁷³⁶ Dasen 2010: 310.

⁷³⁷ Lowe 1929: 24; Lane 1999: 642; Dickie 2001: 304; Tavenner 2003: 77, 96; Dasen 2003: 275, 276.

methods for averting illness in subjects of all ages, and amulets featured strongly among these.

Children of either gender wore a variety of amulets, and boys often wore phallic amulets known as *fascina*.⁷³⁸ Freeborn boys received golden bullae that contained amulets from their fathers as they approached puberty, and girls wore crescent-shaped necklaces known as *lunulae*.⁷³⁹ Initially bullae were reserved for the sons of those of the equestrian and senatorial classes, but this privilege later extended to the sons of all freeborn citizens.⁷⁴⁰

Infants were prone to fears which put them at risk from serious disease (see section 4.2.2 above). Amulets could protect them from fear and agitation:

One of these [dolphins'] teeth, worn as an amulet, is a preventive of sudden frights; the tooth of the dog-fish being also possessed of a similar property.⁷⁴¹

A wolf's tooth, attached to the body, prevents infants from being startled..an effect equally produced by making use of a wolf's skin.. An ass's skin, too, thrown over infants, renders them insensible to fear..Goats' dung, attached to infants in a piece of cloth, prevents them from being restless, female infants in particular.⁷⁴²

Adults could suffer from badly from nightmares. Pliny recorded the bizarre use of animal parts to ward them off. He said that they:

will experience relief by rubbing themselves morning and evening with the tongue, eyes, gall, and intestines of a dragon, boiled in oil, and cooled in the open air at night.⁷⁴³

It is difficult to believe that any of the above could have been effective. The use of an ass's hide probably originated a spell to ward off the Greek child-killing demon,

⁷³⁸ Carroll 2012: 43.

⁷³⁹ Bradley 1999: 190; 2005: 89. Harlow and Laurence 2002: 40; Dasen 2003: 284, 2011: 310-311; Vuolanto 2010: 135; Dasen 2011: 311. Bullae from the first to third centuries are found in the Museo e Gallerie Nazionale di Capodimonte, Naples, Inv. no. BAL 5037; British Museum, Inv. no. AN 904165001. Depictions of bullae and a lunula are visible on the Ara Pacis commissioned in 13 BC (Museo Dell'Ara Pacis, Rome).

⁷⁴⁰ Pliny, *HN* 33.4. See Dasen 2003: 284.

⁷⁴¹ Pliny, *HN* 32.48. Translated by J. Bostock and H.T. Riley.

⁷⁴² *Ibid.*, 28.78. Translated by J. Bostock and H.T. Riley.

⁷⁴³ *Ibid.*, 30.24. Translated by J. Bostock and H.T. Riley.

Gello.⁷⁴⁴ A Latin epitaph, dated *c.*AD 20, is testimony to fears that witches could harm children. It records the fatal abduction of a little boy:

Lucundus, the slave of Livia the wife of Drusus Caesar, son of Gryphus and Vitalis. As I grew towards my fourth year I was seized and killed, when I had the potential to be sweet for my mother and father. I was snatched by a witch's hand, ever cruel so long as it remains on the earth and does harm with its craft. Parents, guard your children well, lest grief of this magnitude should implant itself on your breast.⁷⁴⁵

A modern perspective might be that this child died as a result of illness rather than sorcery. There are many parallels in the Greek and Mesopotamian medical traditions concerning witches and the seizure of children by demons.⁷⁴⁶

Amulets containing stag-horn beetles, coral, amber, malachite and galactitis could keep children safe from a number of perils or illnesses.⁷⁴⁷ One made from a branch of wild fig could prevent skin disease:

There is also one medicinal property of a marvellous nature attributed to the wild fig: if a youth who has not arrived at puberty breaks off a branch, and then with his teeth tears off the bark swelling with the sap, the pith of this branch, we are assured, attached as an amulet to the person before sunrise, will prevent the formation of scrofulous sores.⁷⁴⁸

It is not certain whether the boys prepared the amulets for their own use or for others.⁷⁴⁹

Adults, too, felt the need of magical protection in the form of iconography and

⁷⁴⁴ According to the *Kyranides*, a Greek magical text from the imperial Roman period, it was possible to avert Gello by sleeping on an ass's hide Johnston 2001: 385. For Ovid's account of the activities of Gello and Lamia, see Section 4.2.2. See Dasen 2003: 277 for a discussion of Gello and similar demons.

⁷⁴⁵ *CIL* VI 19747 in Ogden 2002: 119.

⁷⁴⁶ According to the Mesopotamian tradition, parents attached bundles of ass's hairs round the necks of infants to frighten off Lamaštu, a much-feared child-killing demoness Noegel 2007: 30; W. Farber 2007: 137-145. Many demons were known by name and they could strike or seize their victims Biggs 1995: 1913; Scurlock and Andersen 2005: 11. Lamaštu and Alû seized newborns and children who then fell victim to serious diseases like epilepsy Stol 1993: 41. Sorcery was considered to be responsible for many physical and psychological illnesses Abusch 2002: 79; Biggs 1995: 1913.

⁷⁴⁷ Pliny, *HN* 11.34; 32.11; 37.12; 37.36; 37.59.

⁷⁴⁸ *Ibid.*, 23.64. Translated by J. Bostock and H.T. Riley.

⁷⁴⁹ Bradley believes that Pliny's fig tree amulet was intended for the youth himself 2005: 87.

jewellery.⁷⁵⁰ For example, amulets of Samian stone prevented abortion, and the tongue of a chameleon guarded against the perils of childbirth.⁷⁵¹

The majority of children's amulets that have survived into the archaeological record come from burial contexts, although there is some doubt as to whether they were always ones that they had worn during their lifetime.⁷⁵² A poignant example is that of a fourth century AD papyrus amulet written by grieving parents and placed in the grave of their small daughter to protect her from fever, ghosts and demons.⁷⁵³ This indicates that even after death there was a continuing need of protection from sickness and evil forces. This probably explains the presence of large numbers of amulets amongst the grave goods of forty-seven infants buried in the Late Roman cemetery site at Lugnano in Italy.⁷⁵⁴ Another important find was the discovery of large numbers of magical artefacts beneath a Roman period house in the Egyptian village of Karanis. One object was a tiny braided cord that was worn on the wrist or ankle of an infant.⁷⁵⁵

Pliny described many medicinal substances that could prevent children's ailments. Although the majority applied to infants, older children could also benefit. One such example was:

To prevent varicose veins, the legs of children are rubbed with a lizard's blood: but both the party who operates and the patient must be fasting at the time.⁷⁵⁶

⁷⁵⁰ Examples of Pliny's amulets that were suitable for adults and all ages: *HN* 28.29; 29.19. See also Meggitt 2013: 173, 194-195 for descriptions of amulets, iconography and earrings for adults.

⁷⁵¹ Pliny, *HN* 36.40; 28.29.

⁷⁵² Dasen 2003: 276.

⁷⁵³ Ogden 2002: 268.

⁷⁵⁴ Dasen 2003: 275, 288; Carroll 2012: 50. Research has shown that many, if not all, of the infants were malaria victims Lane 1999: 642. It is interesting to note that although the infant cemetery was in use during the mid fifth century AD, their graves contained a variety of magical grave goods.

⁷⁵⁵ Wilburn 2012: 105, 130-131, 163. Assemblages of *materia magica* from Karanis provide proof of the presence of literate and non-literate practices in the locality during the Roman period.

⁷⁵⁶ Pliny, *HN* 30.23. Translated by J. Bostock and H.T. Riley.

There was, perhaps, a note of cynicism in Pliny's claim regarding the miraculous properties of berries from the smilax plant which:

are remarkably efficacious for all kinds of poisons; so much so indeed, that infants to whom the juice of them has been habitually administered, are rendered proof against all poisons for the rest of their life.⁷⁵⁷

Rennet was a useful means of averting diseases in babies. Hare's rennet, smeared onto a nurse's nipples prevented diarrhoea in sucklings.⁷⁵⁸ It also helped to prevent difficulties digesting breast milk:

For infants that are troubled with coagulation of the milk, a grand preservative is lamb's rennet, taken in water; and in cases where the milk has so coagulated, it may be remedied by administering rennet in vinegar.⁷⁵⁹

Ass's liver was another medicine that warded off serious illnesses in infants:

An ass's liver, mixed with a little panax, and dropped into the mouth of an infant, will preserve it from epilepsy and other diseases to which infants are liable; this, however, must be done for forty days, they say.⁷⁶⁰

Pliny's use of the phrase "they say" signifies that it was second-hand information, at least, and that he had some reservations about its efficacy. He also described a supernatural method of preventing this disease:

The magicians take the brains of a she-goat, and, after passing them through a gold ring, drop them into the mouth of the infant before it takes the breast, as a preservative against epilepsy and other infantile diseases.⁷⁶¹

Galen recommended a number of prophylactic measures for preventing recurrent seizures in epileptics. These took various forms and included amulets (see Section 5.4 below).

⁷⁵⁷ Pliny, *HN* 24.49. Translated by J. Bostock and H.T. Riley. Cf. Dioscorides, *MM* 4.144.

⁷⁵⁸ Pliny, *HN* 28.78.

⁷⁵⁹ *Ibid.*, 30.47. Translated by J. Bostock and H.T. Riley.

⁷⁶⁰ *Ibid.*, 28.78. Translated by J. Bostock and H.T. Riley.

⁷⁶¹ *Ibid.*, 28.78. Translated by J. Bostock and H.T. Riley.

Conclusion

Preventative medicine was of paramount importance for the maintenance of health and survival of individuals of all ages. Galen emphasised the key role of regimen from the cradle to the grave. Not all patients would have had access to advice from physicians. There is sufficient evidence to suppose that many would have relied upon supernatural and folk practices for the prevention of sickness. Magic rituals could preserve infants from disease; amulets, above all, were very popular for protecting children from a wide range of range of ailments.

4.4 Treating ailments

One distinguishing feature of children was their total dependence on adults for access to health care.⁷⁶² The *paterfamilias* bore ultimate responsibility for the welfare of all members of his household, and it was his duty to treat them himself or summon appropriate help from others. These might be relatives, neighbours, midwives, nurses or a wide variety of healers, including physicians if he had the means to afford them.⁷⁶³

⁷⁶² Gourevitch remarks that it was unusual for a child to take it upon himself to seek out a physician 2010: 277-278. Galen reported the exceptional case of a teen-aged boy suffering from a parotid fistula. His father brought him to Galen for an initial consultation and surgical treatment. Two months later the boy turned up alone to show Galen how well it had healed *Comp.Med.Gen.* 1.7 (13. 402K).

⁷⁶³ Scarborough 1993: 19; Dixon 1999: 219, 221; Schmitz 2011: 3455; French 1988: 1358; Garland 1990: 59; Bertier 1996: 2217; Hänninen 2005: 54-55; Baker 2010: 160, 168. For a discussion on the legal definition and non-legal understanding of the term, see R. Saller, 1999. 'Pater familias and mater familias, and the gendered semantics of the Roman household.' *Classical Philology* 94(2): 182-197. Pliny the Younger (AD 61-112) described himself as a *paterfamilias* in *Ep.* 9.15.3.

Scholars generally recognise that Roman practitioners made allowances for chronological age or developmental stage when treating children.⁷⁶⁴ They usually rely on Celsus' statement that

in general children ought not to be treated like adults. Therefore, as in any other sort of disease, we must set to work with more caution in these cases.⁷⁶⁵

This was his guiding principle for treating children in all situations. His main criterion was the strength of patients, rather than their age. This applied, for example, when assessing their fitness to undergo venesection.⁷⁶⁶ See Section 4.4.1 below for further details. Celsus and Pliny drew parallels between the bodies of children and the aged, the latter including “persons of a soft and effeminate habit of body or mind, or of a delicate or tender constitution”⁷⁶⁷

Galen took a more comprehensive approach when selecting therapies. He adhered to the Hippocratic principle that when treating an illness it was essential to consider

the age of the patient, the season, the country, the ambient air, the strength of the patient, his complexion, customs.⁷⁶⁸

On several occasions he mentioned that the bodily strength of a patient and, therefore, his fitness to tolerate specific remedies, was of paramount importance. For example:

Strong bodies bear stronger medicines such as the weak could not bear..one drug cannot suit all bodies.⁷⁶⁹

It is necessary to apply strong medications to strong bodies and soft medications to weak bodies.⁷⁷⁰

⁷⁶⁴ Peiper 1966; Bertier 1996: 2167-2168, 2200; Bonet 1998: 194-195; Debru 2002: 80; Mudry 2004: 344, 347; Dasen 2011: 294.

⁷⁶⁵ Celsus, *Med.* 3.7.1, B-C. Translated by W.G. Spencer.

⁷⁶⁶ *Ibid.* 2.10.3. Translated by W.G. Spencer.

⁷⁶⁷ Celsus, *Med.* 1.3.32, 7.7.14B; Pliny, *HN* 25.25. Translated by J. Bostock and H.T. Riley.

⁷⁶⁸ Galen, *MMG* 2.2 (11.80K). Translated by C. Daremberg, Vol.2: 749. Cf. *MM* 10.1 (10.662K).

⁷⁶⁹ *Idem*, *Comp.Med.Gen.* 2.1 (13.467-468K). Author's translation.

⁷⁷⁰ *Idem*, *MM* 6.3 (10.405K). Translated by I. Johnston and G.H.R. Horsley. See also *Comp.Med.Loc.* 6.9 (12.1004K).

The same principles applied to all modalities of treatment, such as phlebotomy. Either the strength or age of a patient determined whether it was safe to perform:

And if you do find this is needed, consider next the strength of the patient and whether he is able to tolerate a complete evacuation..Next consider the age, the nature, the time of year, the place, the way of life, and more important than of all of these, the strength of the patient.⁷⁷¹

Strength was, therefore, the overriding criterion. Weakness and softness were polar opposites of strength and dryness:

Those who are weaker and softer need softer medications and those that are stronger and drier need stronger medications..soft natures simply tolerate none of the strong medications.⁷⁷²

Galen regarded certain kinds of subjects as being weak or strong:

Stronger bodies [such as those of] farmers, sailors, hunters..Weaker, softer bodies are those of women, eunuchs and children having a wet temperament, with a white, soft body.⁷⁷³

Women were cold and wet and lacked the perfection that heat bestowed.⁷⁷⁴ Although children were warm, they were wet, undeveloped and incomplete.⁷⁷⁵ Eunuchs lacked testicles, and so remained in a permanent state of coldness and weakness.⁷⁷⁶ Galen frequently grouped children, women and eunuchs together when discussing milder medicaments.⁷⁷⁷ He extended this category further to include “women, delicate little children, old men..[and] depraved young men.”⁷⁷⁸

Medium-strength medicines suited persons of “the middle temperament” (i.e. humoral complexion), and it was necessary to adjust medicines for those from either side of that

⁷⁷¹ *Ibid.*, 13.11 (10.901, 902K). Translated by I. Johnston and G.H.R. Horsley.

⁷⁷² Galen, *MM* 3.7 (10.205K). Translated by I. Johnston and G.H.R. Horsley.

⁷⁷³ Galen, *Comp.Med.Gen.* 2.1 (13.467-468K). Author’s translation. Galen sometimes included old men within this group because of the slackening of their testicles, *Sem.* 1.5 (4.579K).

⁷⁷⁴ Galen, *Sem.* 2.5.26 (4.631K); *UP* 14.6 (4.296K).

⁷⁷⁵ Galen, *Temp.* 2.2 (1.583-585K).

⁷⁷⁶ All animals became colder after castration, *Sem.* 1.15 (4.571K).

⁷⁷⁷ For examples of children, women and eunuchs, see Galen, *Comp.Med.Gen.* 2.15 (13.530K), 2.21 (13.554K), 4.1 (13.657K), 7.1 (13.949K); *Comp.Med.Loc.* 1.1 (12.400K).

⁷⁷⁸ Galen, *Comp.Med.Gen.* 1.19 (13.455-456K). Translated by the author. Galen quoted from Damocrates’ medical poem entitled *Clinicus*. Damocrates was a physician who lived in Rome during the first century AD. Galen considered old men to be similar to eunuchs because of the slackening of their testicles, *Sem.* 1.5 (4.579K).

divide.⁷⁷⁹ Adolescents possessed the medium temperament since they were “well-balanced in the age of prime.”⁷⁸⁰ Only a small proportion of Galen’s pharmaceutical prescriptions stated that they were suitable for children. It is possible that he expected his readers to exercise their own judgement concerning appropriate adjustments in accordance with the age, strength and temperament of individual patients.

The clinical course and prognosis of a disease sometimes determined the potency of medicines required.⁷⁸¹ When an illness was life-threatening, it was necessary to consider the use of strong therapies. Galen recalled Hippocrates instruction that:

For extreme diseases extreme treatments are the strongest to the highest degree.⁷⁸²

Therefore when a patient was facing death, it was better to fight the disease with such measures than do nothing.⁷⁸³

Conclusion

Celsus stated explicitly that children should be treated differently from adults. In reality, his choice of treatments depended more on the amount of strength patients possessed rather than their chronological age. Galen approached the matter by identifying two classes of individuals destined for stronger or weaker therapies. He considered most adult men to be of the strong variety. He grouped children together with women, the elderly, eunuchs and others who shared soft, weak bodies. Therefore children did not comprise a unique therapeutic category.

The following three sections examine differences in treatment by means of regimen, pharmacology and surgery. The first concerns regimen.

⁷⁷⁹ Galen, *Comp.Med.Gen.* 2.1 (13.468K).

⁷⁸⁰ Galen, *San.Tu.* 6.2 (6.387K). Translated by R.M. Green.

⁷⁸¹ Galen, *MMG* 2.2 (11.80K). *Cf.* MM 10.1 (10.662K).

⁷⁸² Galen, *MM* 5.15 (10.377K). Translated by I. Johnston and G.H.R. Horsley.

⁷⁸³ *Ibid.*, 10.10 (10.720K).

4.4.1 Regimen

Schmitz suggests that “treatment regimens and medicines for this age group [pre-pubertal children] hardly existed in antiquity.”⁷⁸⁴ Many other historians recognised that Roman physicians adapted regimen to suit children of all ages.⁷⁸⁵ Indeed, it has already been shown that the care of newborns was based largely on regimen as a means of ensuring their good health and survival into adulthood. This principle extended to their wet nurses. This thesis will now explore the question of whether physicians adapted regimen to suit the needs of infants and children.

Celsus did not provide a systematic account of dietetic rules according to age. He did, however, recognise the validity of the Hippocratic view that, when attempting to live healthily:

Some particular notice needs to be taken of changes of surroundings and varieties of constitution and sex and age and seasons.⁷⁸⁶

Galen discussed the need for regimen to cater for the requirements of children:

For age, being one of those things that is normal, needs a regimen similar to itself.⁷⁸⁷

In other words, there was a need to adjust regimen to suit the age of an individual. In particular he recognised the need to conserve humidity in infants.⁷⁸⁸ He emphasised that one must preserve “their natural state in bodies according to nature.”⁷⁸⁹ When the child was in a state of good health, it was appropriate to proceed according to the principle of similars “but in disease one must alter and convert it to the opposite.”⁷⁹⁰

⁷⁸⁴ Schmitz 2011: 3455.

⁷⁸⁵ For example, Mudry 2004: 344; Van der Eijk 2008: 299; Vander Stichele and Penner 2009: 68; Baker 2010: 166.

⁷⁸⁶ Celsus, *Med.* 1.3.1. Translated by W.G. Spencer.

⁷⁸⁷ *MM* 8.9 (10.591-592K). Translated by I. Johnston and G.H.R. Horsley.

⁷⁸⁸ Galen, *San. Tu.* 1.7 (6.33, 35K).

⁷⁸⁹ *Ibid.*, (6.35K). Translated by R.M. Green.

⁷⁹⁰ *Ibid.*, (6.35K). Translated by R.M. Green.

Food and drink

The regulation of food intake was important for good health in all Romans. The amount of food that was conducive to good health varied according to the age of individuals.

For an adult:

a surfeit is never of service..He must take food in moderation and such as he can easily digest.⁷⁹¹

The quantities of food individuals required varied according to age, as did their tolerance of abstinence:

The middle-aged sustain hunger more easily, less so young people. And least of all children and old people. The less readily one supports it, the more often should food be taken; one who is growing needs it most.⁷⁹²

Therefore Celsus believed that the old and very young needed to eat regularly. Rufus had a contrary opinion concerning the ability of old people to fast, but agreed that children should consume more:

The elderly are praiseworthy among other men in carrying out fasting from meals..but children are less so in this, and infants lesser so in abstinence than children; in infants there will be a stronger appetite for food and they will have less fasting.⁷⁹³

Galen reinforced Hippocrates' belief that children bore hunger less easily than adults because of their inherent weakness.⁷⁹⁴

When discussing alternating cycles of fasting and feeding for patients suffering from fever, Celsus wrote that “for the first few days there is to be abstinence from food.”⁷⁹⁵

The timing of the re-introduction of food depended on many factors such as:

the kind of disease, the patient's body, the climate, his age, and the time of year; where circumstances differ so greatly, there cannot be an invariable rule of time by any means..Food should also be given sooner to a child than to an adolescent, sooner in summer than in winter.⁷⁹⁶

⁷⁹¹ Celsus, *Med.* 1.3.2; 1.4.4. Translated by W.G. Spencer. Cf. Plutarch, *De tuenda* 4. 21.

⁷⁹² Celsus, *Med.* 1.3.32. Translated by W.G. Spencer.

⁷⁹³ Rufus in Rhazes, Fragment 378, Daremberg and Ruelle: 529. Author's translation from the Latin.

⁷⁹⁴ Galen, *Hipp.Aph.* I Comm. 1.13 (17B.400-401K).

⁷⁹⁵ Celsus, *Med.* 3.4.4. Translated by W.G. Spencer.

⁷⁹⁶ *Ibid.*, 3.4.7-8. Translated by W.G. Spencer.

His main concern was that the patient's strength should be continually under the eye of the attending practitioner.⁷⁹⁷

Infants' appetites varied considerably. Some were greedy; they and their nurses required corrective regimen:

If the infant's body is too heavy and it is short of breath it will be necessary to keep the flesh within bounds in this way; the wet nurse must have fewer not very rich meals and must drink water; while she should give milk to the infant infrequently and should have it exercised by means of a little pushcart. If by nature the infant is gluttonous and desires more food than it can hold, one must divert its mind with entertainments and games [and] must divide the portions and give it pieces of dry bread and make the milk less rich.⁷⁹⁸

Others required coaxing:

If, on the contrary, the infant could hold more food but desires it less, one must tempt it by the variety of the things offered, for the novelty of the dishes stimulates the appetite.⁷⁹⁹

Apart from fuelling the growth and metabolic processes of children, diet played an important part in the fight against disease. It was vital not to overfeed children since those who were overfull or obese were at increased risk from epilepsy, bladder stones and bending deformities of the legs.⁸⁰⁰

Celsus advocated drinks of cold water after meals as an aid to digestion.⁸⁰¹ Galen also pure, recommended cool water as suitable for children, especially when the weather was hot and it came:

from a fresh spring which has no acquired harmful quality.⁸⁰²

It was important to avoid:

stagnant, muddy, malodorous, and salty pools, and in short those which display any unpalatable quality.⁸⁰³

⁷⁹⁷ *Ibid.*, 3.4.7-8. Translated by W.G. Spencer.

⁷⁹⁸ Soranus, *Gyn.* 2.21.48. Translated by O.Temkin: 119.

⁷⁹⁹ *Ibid.* Translated by O.Temkin: 119.

⁸⁰⁰ Epilepsy: Rufus in Baladī, Fragment F (R) 4, Pormann 1999: 62; Galen, *Hipp.Aph.* III.25 (17B. 629-630K). Bladder stones: Rufus in Alexander of Tralles, Fragment 100, Daremberg and Ruelle: 420; Galen, *Hipp.Prog.* 2.74 (18B.227-228K). Bending deformities in the legs: Soranus, *Gyn.* 2.20.43 (Temkin: 115); Galen, *Caus.Morb.* 7.12 (7.27-29K).

⁸⁰¹ Celsus, *Med.* 1.2.10.

⁸⁰² Galen, *San.Tu.* 1.11 (6.56K). Translated by R.M. Green.

It was known that drinking water from certain sources contained silty substances which could engender bladder stones (see Section 3.3.3 above).

There was unanimity among Roman writers that adults benefitted from a moderate consumption of wine:

Wine is not good to be drunk even by adults, except in due moderation..However, to adults wine is useful for the softening and elimination of biliary excrements..wine moistens and nourishes whatever is excessively dry, softens the harshness of bitter bile, and promotes elimination through perspiration and urine.⁸⁰⁴

On the other hand, overindulgence was harmful:

Although one should be wary of all excesses, one will avoid above all that which spreads its bad effects, not only to the body, but also to the soul.⁸⁰⁵

There was considerable disparity in opinions about giving wine to children. Some believed that wine did not suit children.⁸⁰⁶ Celsus thought that alcohol was safe for healthy young persons, although it was best that “wine should be diluted for children.”⁸⁰⁷ On the other hand, he advised that “a wine treatment is not very suitable” for children suffering from pestilential fever and other diseases.⁸⁰⁸

Rufus had a similar view regarding the healthy effects of wine unless it was abused.⁸⁰⁹

He considered that wine was beneficial for bigger children:

It is important to know that at this age wine is preferable to water and..we will not heap fire on fire, but heat on cold, since it is besides more equitable.⁸¹⁰

⁸⁰³ *Ibid.* Translated by R.M. Green. Cf. Galen in Oribasius, *Lib. inc.* 17.1, Daremberg and Bussemaker, Volume 3: 139.

⁸⁰⁴ Galen, *San.Tu.* 1.11 (6.54-55K). Translated by R.M. Green. Celsus recommended that adult males should consume neat or diluted wine according to their constitution, age, the seasons, and whether they had just visited the baths or had become chilled, *Med.* 1.4.5; 1.3.32, 35, 37-38; 1.3.5-5 1.3.10. Plutarch urged adults to drink moderate quantities of diluted wine, *De tuenda* 19.

⁸⁰⁵ Galen in Oribasius, *Lib. inc.* 17.11, Daremberg and Bussemaker, Volume 3: 141. Cf. *San.Tu.* 1.11 (6.55K).

⁸⁰⁶ Pliny, *HN* 23.25.

⁸⁰⁷ Celsus, *Med.* 1.3.32. Translated by W.G. Spencer.

⁸⁰⁸ *Ibid.*, 3.7.1C. Translated by W.G. Spencer.

⁸⁰⁹ Rufus in Oribasius, *Coll. Med.*, Fragment 12, Daremberg and Ruelle: 298-299.

⁸¹⁰ Rufus in Oribasius, *Coll. Med.*, *Lib. inc.* 20.19, Daremberg and Bussemaker, Volume 3: 159.

Nevertheless, he advised caution in its administration to young girls on the verge of womanhood.⁸¹¹ (See below for a discussion).

Galen was exceptional in that he was adamant that one should never give children wine to drink:

As long as possible the child thus brought up should not even taste wine. For wine moistens very little but heats up the body of the drinker, and fills the head with fumes of the moist and warm character, which is that of such children. Moreover it is not good for their heads to be thus filled, nor for them to be moistened and warmed more than normal.⁸¹²

He thought that wine had no medical benefit for children:

for people already adults.[wine will]..evacuate bilious residue..but since children do not have a superabundance of bitter, bilious humours, and they they enjoy an appropriately abundant humidity, there is no need for any of these good effects produced by wine; on the contrary, it has harmful effects.⁸¹³

It could only cause them harm. Galen was exasperated with the decadence of society in his day.⁸¹⁴ The widespread consumption of wine in Roman families may have contributed to his prohibition of alcohol for children.⁸¹⁵ Some of the medical treatises indicate that parents and nurses fed newborns and older infants small quantities of wine. It is, however, difficult to judge the extent to which parents permitted their children to consume alcohol.

Conclusion

Children were not sufficiently strong to withstand therapeutic fasting. Conversely, excessive food consumption was harmful. Children who were obese became susceptible to serious diseases. Moderate wine consumption had positive health benefits for adults. There were considerable divergence in views regarding its administration to infants and

⁸¹¹ Rufus in Oribasius, *Coll. Med., Lib. inc.* 2.16-18, Daremberg and Bussemaker, Volume 3: 85-86.

⁸¹² Galen, *San.Tu.* 1.11 (6.54K). Translated by R.M. Green. *Cf.* Oribasius, *Lib. inc.* 17.10-11, Daremberg and Bussemaker, Volume 3: 140.

⁸¹³ Galen in Oribasius, *Lib. inc.* 17.11, Daremberg and Bussemaker, Volume 3: 141. *Cf.* *San.Tu.* 1.11 (6.55K).

⁸¹⁴ Johnson 2010: 76.

⁸¹⁵ Laes 2011: 81.

children. All the above recommendations were probably for the benefit of the rich clients of elite physicians. Evidence from Section 4.2.3 above indicates that there was no uniformity of breastfeeding and weaning practices at various locations across the Roman world. This indicates that parents may have been unaware of or had no access to this guidance. The same could well be true of all advice concerning food and drink.

Manipulating the regimen of wet nurses

Sucklings depended totally on the breast for nourishment.⁸¹⁶ Milk needed to be wholesome for them to remain healthy. One means of treating sick infants was to improve the regimen of wet nurses in order to improve the quality of their milk. By way of example, one of the causes for outbreaks of cutaneous pustules and ulcerations in infants was:

the bad quality of the milk..The food of the wet nurse should be sound of both food and drink, and let her not be filled [with food and drink], and let her not take what is needed, for satiation corrupts the stomach, and a sparse diet makes milk bitter.⁸¹⁷

Infants were particularly prone to discharging ears, but it was possible to alleviate the condition by omitting night feeds:

In the ears of children there is some moisture, which the ignorant regard as pus, but it is only an excretion of food. When you see this, take care that they are not suckled at night. Then this moisture will largely disappear, and the ear becomes dry.⁸¹⁸

It is debatable whether poor families would have been able to afford to consult physicians, let alone some of the expensive foods they suggested. There was, for example, widespread poverty in rural areas in Roman Italy during the first and second centuries AD.⁸¹⁹ It is also uncertain that all nurses or even mothers would have

⁸¹⁶ Soranus, *Gyn.* 2.11-14, 17, 21; Galen, *San.Tu.* 1.7 (6.36K).

⁸¹⁷ Rufus in Baladī, Fragment F (R) 10a, Pormann 1999: 68.

⁸¹⁸ Rufus in Baladī, Fragment F (R) 5a, Pormann 1999: 63-64. Cf. Fragment F (R) 5b: 64; Fragment 165, Daremberg and Ruelle, 470; Fragment 11, Ullmann 1975: 177.

⁸¹⁹ Dyson 2011: 439.

complied with such instructions in any case.⁸²⁰ It is impossible to know what kind of advice would have been forthcoming from members of the immediate family and community.

Conclusion

Certain ailments in sucklings were amenable to manipulation of the regimen of wet nurses. This was especially the case when nurses' eating and drinking habits were responsible for many of these illnesses in the first place. Medical authorities did not suggest that such diseases occurred in infants who received milk from their own mothers. The reason for this may have been that the vast majority of those families who could afford to consult elite physicians would have employed wet nurses.

Exercise and bathing

It was important to keep the bodies of adults and children clean and in prime condition by means of exercise and bathing. Moderate pursuits for adult males consisted of reading aloud, training in the gymnasium, drill, handball, walking and running, followed by bathing.⁸²¹ According to the first century AD physician, Athenaeus of Attalia, play was an essential activity for infants for the sake of their souls:

One must allow small children who come to be weaned to live at ease and in playing one will accustom them to the repose of the soul accompanied by little diversions and gaiety.⁸²²

Soranus suggested a progressive programme of exercise:

in the form of rocking [that] should be performed in proportion to the condition of the body, at first a little, by shaking the crib or by suspending the cradle or by balancing it upon diagonally opposed stones. Later on the infant should be rocked in a litter; moreover, when it is four months old the wet nurse should hold it on her arms and walk about or be rocked in a carriage drawn by animals.⁸²³

⁸²⁰ Bertier 1996: 2199, 2200. Dasen 2010: 707; 2011: 295.

⁸²¹ Celsus, *Med.* 1.2.7-10; Plutarch, *De tuenda* 16.

⁸²² Athenaeus in Oribasius, *Coll. Med., Lib. inc.* 21.1, Daremberg and Bussemaker, Volume 3: 161.

⁸²³ Soranus, *Gyn.* 2.17.40. Translated by O. Temkin: 113. Cf. Galen, *San. Tu.* 1.8 (6.37K).

Galen directed that exercise should progress in vigour according to a child's age:

Three forms of rocking for babies have been devised by nursemaids, in cradles, in swings, and in their own arms..But children can first move themselves when they begin to creep and even more when they begin to walk..those who have reached the third or fourth year from birth may be permitted a moderate amount of exercise in vehicles and boats. But seven-year-old children tolerate even more violent motions, so that they can learn to ride horseback.⁸²⁴

All these suggestions were clearly for the benefit of a rich clientele who could afford the use of boats, horses and carriages. Although exercise contributed to the general health of individuals, over-exertion could be harmful:

Excessive exercises are not at all good for children, because in hardening the flesh inopportunately, they can prevent the growth of their bodies.⁸²⁵

Physical exercise often played a role in the management of disease in older children. Galen described a carefully constructed programme of moderate exercise at the palaestra for an epileptic boy. This is examined in Section 5.4 below.

Bathing was another important way of maintaining health. Children and the aged needed to bathe in warm water.⁸²⁶ Although daily warm baths were essential for babies, for an older child:

When it is time for him [the child] to go to school, it is not necessary any longer to use constant baths, but it is sufficient, while he is learning sports, to exercise moderately..and for the most part go unwashed.⁸²⁷

Adults attended bath houses. They underwent anointing, massage and progressed through hot and cold rooms.⁸²⁸ Warm baths were more comfortable for some persons and they were possibly more beneficial to the health:

For they do not detract so much from vigour and strength as they help towards health by rendering the food yielding and soft for the digestion, and by providing for the painless dispersion of whatever escapes digestion, at least if it do not remain altogether crude and high up, and soothing any latent feelings of fatigue.⁸²⁹

⁸²⁴ Galen, *San.Tu.* 1.8 (6.37-38K). Translated by R.M. Green

⁸²⁵ Galen in Oribasius, *Coll. Med., Lib. inc.* 17.9, Daremberg and Bussemaker, Volume 3: 140.

⁸²⁶ Celsus, *Med.* 1.3.32.

⁸²⁷ Galen, *San.Tu.* 1.10 (6.53K). Cf. Orib., *Lib. inc.* 17.8, Daremberg and Bussemaker, Volume 3: 140.

⁸²⁸ Celsus, *Med.* 1.3-4.

⁸²⁹ Plutarch, *De tuenda* 17.1. Translated by F.C. Babbitt.

Children between the ages of seven and fourteen could visit public baths, but they should:

not stay too long in the hot room because it macerates the body..[the water] must be of a medium temperature for a body of medium nature..one must not bathe young persons in cold water only, for fear of stopping growth.⁸³⁰

Bathing sometimes formed an integral part of medical treatment. Celsus recommended soaking in hot water as part of the post-operative care of patients following lithotomy for bladder stones: see Section 5.5 below. Another interesting example of this was Galen's treatment of Commodus, the son of Emperor Marcus Aurelius, who was suffering from fever and tonsillitis. Methodist doctors had delayed bathing and feeding him until the end of the three-day period, the *diatritus*, which was due to expire at the eighth hour.⁸³¹ On the morning of that day, Galen examined him, changed his mouthwash and persuaded his tutor, Peitholaus:

to bring him to the bath..to drench all the parts of his body thoroughly except for his head which was to be sprinkled lightly after he had been given food.⁸³²

So, rather than following a rigid programme, Galen relied on his clinical judgement that Commodus had recovered sufficiently to bathe and break his fast. He used this high profile case to seize the opportunity to denigrate Thessalus and the Methodist system of *diatritus*, and to promote the superiority of Hippocrates and his own exceptional knowledge and expertise.⁸³³

⁸³⁰ Galen in Oribasius, *Coll. Med., Lib. inc.* 18.4-15, Daremberg and Bussemaker, Volume 3: 145-149.

⁸³¹ Methodist doctors believed that crises occurred in many conditions at the end of a three-day period (the *diatritus*). This expired at the same hour as the illness began on the first day. The *diatritus* applied to bathing and the re-introduction of food and to the use of other therapies, such as plasters, clysters and phlebotomy Leith 2008: 584. See Section 1.2.5 above for further discussion.

⁸³² Galen, *Praen.* 12.4-5 (14.663K). Translated by V. Nutton.

⁸³³ When Galen examined the boy he observed that his crisis had already passed, and so allowed him to bathe and eat. Unlike Methodist doctors, Galen's treatment of fever patients took into account the variability of the fever cycle; his treatments catered for this and an individual patient's condition and biological characteristics Leith 2008: 599.

Conclusion

The medical treatises describe the ways in which infants and children should exercise. There is serious doubt that the majority of parents and wet nurses would have been in a position to follow them. There may also have been restricted access to bath houses and palaestrae in remote rural areas.

Clysters and blood-letting

Clysters (enemas) were a means of eliminating waste products and noxious substances from the body and treating a variety of medical conditions. It was essential to use restraint since administering them too frequently could endanger the lives of patients:

Now in my opinion..clysters should only be administered occasionally; and I consider that they should not be used to pull to pieces the patient's strength, since the greatest danger is weakness.⁸³⁴

It is likely that the danger would have been even greater for children because they would often have been too weak to tolerate them. Celsus recommended that practitioners should “not readily clyster” when treating children for pestilential fever.⁸³⁵

Clysters contained medicaments of varying potency according to the condition requiring treatment. Pearl-barley was mild and soothing for bowel ailments, but more drastic varieties were available.⁸³⁶ They were a less extreme means of expelling noxious humours when blood-letting was contraindicated. Clysters were an alternative for patients suffering from serious throat disease:

It is right to let blood; and if anything prevents this it is useful to clyster the bowel.⁸³⁷

⁸³⁴ *Ibid.*, 3.4.3-4. Translated by W.G. Spencer.

⁸³⁵ *Ibid.*, 3.7.1B, C. Translated by W.G. Spencer.

⁸³⁶ Celsus described clysters of varying strength: “a drastic one is sea-water or ordinary water with salt added.. A clyster is made more drastic by the addition of olive oil, or soda, or honey: the more drastic the clyster, the more it extracts, but the less easily it is borne” *ibid.*, 2.12.2E. Translated by W.G. Spencer.

⁸³⁷ *Ibid.*, 6.14.1. Translated by W.G. Spencer.

This may have applied to children whose strength would have been rendered even weaker by phlebotomy. On the other hand, the urgency of the child's condition may have dictated which of the two procedures was more appropriate.

Rufus believed that one must not purge all individuals in the same way, and that it was advisable to avoid treating those with a weak physique and complexion.⁸³⁸ Should the use of clysters be unavoidable, it was essential to moderate the force used to inject the enema and:

Take into consideration the age, mode of life, the capacity of the intestines and the gravity of the affection.⁸³⁹

Rufus, presumably, would have thought that less force was desirable for children. He also suggested that suppositories were more appropriate “for illnesses [in those] for reasons of their feebleness cannot support the use of enemas.”⁸⁴⁰

Colón and Colón are in error in their statement that Celsus disapproved of extracting blood from juveniles.⁸⁴¹ Others recognise that he regarded robust, older children as suitable candidates.⁸⁴² Celsus, indeed, made it clear that strength was more important than chronological age. He wrote that blood-letting:

is not an old practice for the same to be tried in children and in the elderly..for indeed the ancients were of opinion that the first and last years could not sustain this kind of treatment.. Practice subsequently showed indeed that in these matters there is no unvarying rule.. For it matters not what is the age..but what may be the patient's strength..But a strong child, or a robust old man, or a pregnant woman in good health, may be so treated with safety.⁸⁴³

He gave some guidance on how to assess the strength of patients in this situation.⁸⁴⁴

⁸³⁸ Rufus in Orib., *Coll. Med.* 7.26. Daremberg and Ruelle: 229-230.

⁸³⁹ Rufus in Orib., *Coll. Med.* 8.24, Fragment 19, Daremberg and Ruelle: 300.

⁸⁴⁰ Rufus in Aetius, 3.160, Fragment 65, Daremberg and Ruelle: 338-340.

⁸⁴¹ Colón and Colón 1999: 54.

⁸⁴² For example, Bradley 2005: 84; Van der Eijk 2008: 297; Baker 2010: 165.

⁸⁴³ Celsus, *Med.* 2.10.1-3. Translated by W.G. Spencer.

⁸⁴⁴ *Ibid.*, 2.10.3-5.

There were safer alternatives for children who were not strong enough to undergo phlebotomy:

But if a child is the sufferer, and not robust enough for blood-letting to be possible, thirst is to be used in his case, the bowels are to be moved by a clyster whether of water of pearl-barley gruel.. [but we should] not readily clyster.⁸⁴⁵

Anonymus Parisinus referred briefly to phlebotomy or scarification and cupping for children and adolescents with the serious bowel disorder known as ileus, but did not mention making allowances for patients who were weak.⁸⁴⁶

Methodist physicians like Soranus employed phlebotomy as a relaxant therapy for a variety of diseases of stricture providing that patients were strong enough to tolerate it.⁸⁴⁷ He thought it permissible to withdraw blood from patients of any age providing they were strong enough to tolerate it.⁸⁴⁸

Practitioners who subscribed to humoral lore regarded blood-letting as a means of evacuating waste and harmful humours, and as part of the treatment of a wide range of acute and chronic diseases. Galen had strong opinions when selecting suitable candidates for venesection. His prime concern was their strength:

consider next the strength of the patient and whether he is able to tolerate a complete evacuation. Let it be the case, first, that the capacity is strong. Next consider the age. If the patient is a child, he [or she] will not tolerate evacuation by phlebotomy.⁸⁴⁹

Children were too weak to tolerate phlebotomy:

owing to their warmth and the dampness of their constitutions, their strength is easily broken down.⁸⁵⁰

⁸⁴⁵ *Ibid.*, 3.7.1B, C. Translated by W.G. Spencer.

⁸⁴⁶ Anonymus Parisinus, *De morbis acutis et chroniis* 14.3.3.

⁸⁴⁷ Soranus, *Gyn.* 3.10.42. Temkin: 165; Caelius Aurelianus, *Ac.* 1.10.70.

⁸⁴⁸ Caelius Aurelianus, *Ac.* 3.159-161.

⁸⁴⁹ Galen, *MM* 13.11 (10.901K). Translated by I. Johnston and G.H.R. Horsley.

⁸⁵⁰ Galen, *HVA* 17 (15.765K). Author's translation.

There was, in any case, no necessity to bleed children on account of their unique temperament:

It is not appropriate to carry out phlebotomy because, in ages that are hot and moist, a great part of the substance of the body flows away and is dispersed every day. As a result, what we might have achieved by phlebotomy occurs spontaneously.⁸⁵¹

Galen judged that patients were sufficiently strong by the time puberty was complete:

children who have already reached puberty do tolerate evacuation by phlebotomy.⁸⁵²

He also stipulated fourteen years as the cut-off point:

[In] a child who has not yet reached the fourteenth year, it is not appropriate to carry out phlebotomy.⁸⁵³

After this age [fourteen], if at any time blood should appear to be accumulating in large quantities, and the time of year is spring and the region temperate, and the nature of the child abounding in blood, you will let blood.⁸⁵⁴

These three statements are, in a sense superfluous since individuals having reached puberty or the age of fourteen were adults in both a biological and legal sense. Although Galen's opinions about blood-letting altered during the course of his career, he was consistent in his opposition to bleeding children.⁸⁵⁵

Adults who were weak or had a fear of phlebotomy should receive alternative treatments.⁸⁵⁶ Galen grouped children and the elderly together as being unsuitable to undergo phlebotomy.⁸⁵⁷ Nevertheless, he contradicted himself by saying that there were variations in its tolerance by old people:

Hence you will not take into account only the sum of years, as some do, but also the habit of the body. Some sixty-year-olds can no longer bear phlebotomy, while some people of seventy still can.⁸⁵⁸

⁸⁵¹ Galen, *MM* 11.14 (10.778K). Translated by I. Johnston and G.H.R. Horsley.

⁸⁵² *Ibid.*, 13.11(10.901K). Translated by I. Johnston and G.H.R. Horsley. Cf. *MMG* 1.15 (11.46K); *HVA* 17 (15.764K).

⁸⁵³ Galen, *MM* 11.14 (10.778K). Translated by I. Johnston and G.H.R. Horsley. Cf. *Cur.Rat.Ven.Sect.* 13 (11.290K).

⁸⁵⁴ Galen, *Cur.Rat.Ven.Sect.* 13 (11.290K). Translated by P. Brain.

⁸⁵⁵ Brain 1986: 150, 102; Bertier 1996: 2201; Hummel 1999: 33; Bradley 2005: 85 n21.

⁸⁵⁶ Galen, *MM* 12.8 (10.861K).

⁸⁵⁷ Galen, *MM* 8.4 (10.565K).

⁸⁵⁸ Galen, *Cur.Rat.Ven.Sect.* 13 (11.291K). Translated by P. Brain.

A wide variety of factors influenced the amount of blood that physicians should withdraw:

You will discover the amount of the evacuation from the amount of the abundance from..the age, the nature, the time of year, the place, the way of life, and more important than all of these, the strength of the patient.⁸⁵⁹

Three cotyles of blood represented a moderate evacuation of one and a half pints from mature adults.⁸⁶⁰

For young adults, Galen suggested that:

Generally you will take up to one cotyle of blood at the first operation; if, after this, you find on examining the patient that the strong state of the faculties is being maintained, you will add a further half by way of epaphairesis [fresh removal of blood].⁸⁶¹

Therefore the optimum safe quantity depended on the age and strength of adult subjects.

Conclusion

The strength of patients was of paramount importance when judging whether they were fit to undergo the administration of clysters and phlebotomy. There was general agreement that clysters were appropriate for subjects with a strong physique. It was essential to exercise caution in their use for children. Safer alternatives, such as suppositories were available. There was almost unanimous opinion regarding the use of venesection or less drastic measures. Strength, again, was the key decisive factor when bleeding subjects of all ages, including children. Galen alone was resolute in his opposition to withdrawing blood from children. These were the views of medical writers, but it is not possible to judge whether other practitioners followed similar guidelines.

⁸⁵⁹ Galen, *MM* 13.11 (10.902K). Translated by I. Johnston and G.H.R. Horsley.

⁸⁶⁰ Galen, *Ven.Sect.Er.Rom.* 8 (11.174K). Three cotyles equated to 1.5 pints or 850 ml in volume Brain 1986: 31n50.

⁸⁶¹ Galen, *Cur.Rat.Ven.Sect.* 13 (11. 290-291K). Translated by P. Brain.

Gender and regimen

Roman texts occasionally refer to different diets and exercise routines for boys and girls. Soranus advised the use of caution when playing with male infants:

For we do not believe in lifting it up upon the shoulders and moving it about, since the testicles, if bruised, sometimes retract into the upper parts, sometimes dissolve and thus some boys become cryptorchids, others eunuchs.⁸⁶²

Galen stated that the formal physical education of boys should commence at the age of eight years and take into consideration their future roles as soldiers, wrestlers, farmers or tradesmen.⁸⁶³ This included the instruction in athletics and gymnastics of boys by sports trainers (*paedotribae*).⁸⁶⁴ He also prescribed daily visits to a palaestra for a boy suffering from epilepsy under the supervision of a master of exercises.⁸⁶⁵ It is uncertain whether girls routinely underwent physical training in gymnasia or elsewhere.⁸⁶⁶ Medical writers are not clear on this, although Soranus referred to gymnastics for girls during puberty (see below).

Rufus paid special attention to the surveillance and regimen for young girls on the verge of puberty. His ostensible aim was to prevent an excessive accumulation of blood, or plethora which led to the development of serious diseases.⁸⁶⁷ He did not specify what these conditions were, but Galen later wrote that plethora, an overfilling of the body with blood, resulted from the retention of menstrual blood or female seed; this caused choking, suffocation and convulsions.⁸⁶⁸

⁸⁶² Soranus, *Gyn.* 2.17.40. Translated by O. Temkin: 113.

⁸⁶³ Galen, *San.Tu.* 1.12 (6.61K).

⁸⁶⁴ *Idem*, *SMT* 2.5 (11.476-539K).

⁸⁶⁵ *Idem*, *Puer.Epil.* 3 (11.361-364K).

⁸⁶⁶ König (2005: 66) states that there is little evidence that Roman girls routinely underwent formal sports training. Mantas (1995: 129, 135) concurs with this view, but provides some examples of women being admitted to gymnasia in the Roman East.

⁸⁶⁷ Rufus in Oribasius, *Coll. Med., Lib. inc.* 2.2, Daremberg and Bussemaker, Volume 3: 82.

⁸⁶⁸ Galen, *UP* 6.5 (3.417K).

Rufus recommended that:

When they are older and growth has all but stopped..then one must give much more continuous attention to their regimen, regulate and moderate their intake of food and not let them touch meat at all, or other foods that are very nourishing.⁸⁶⁹

Indeed, beef “produces blood that is inappropriately thick” and the flesh of the hare “is productive of rather thick blood.”⁸⁷⁰ Rufus was equally concerned with non-medical reasons for dietary regulation:

The quicker she puts on weight, the quicker she becomes nubile, and the quicker her desire to have sexual relations and produce children is aroused.⁸⁷¹

Although the medical treatises conveyed no overt moral messages, it is clear that regimen was a convenient means of controlling girls’ sexual urges in order to preserve their virginity.⁸⁷² This line of reasoning may have been the motive for Rufus’ instruction to reduce their wine consumption:

In an earlier age for little girls it is not bad to introduce wine into their regimen but, on the contrary, when she approaches puberty one must order them to drink water or take small quantities of watered wine for fear that their nature which is already boiling in itself does not increase because of the wine.⁸⁷³

Overheating was probably synonymous with increased desire or the development of a male physique and sexual appetites. The regulation of exercise was equally important for the control of a young virgin. Rufus suggested appropriate activities such as:

Long walks, exercise rolling herself around..[and take part in] choirs for dancing and singing. If young girls play with a ball, this exercise cannot be disagreeable..It is advantageous to make use of these exercises to take the heat of the movement and to warm the body but in such a fashion that they stay women and do not take on a masculine character.⁸⁷⁴

Some forms of exercise were regarded as unsuitable for virgins, such as gladiatorial training programmes which were once popular among girls from elite sections of

⁸⁶⁹ Rufus in Oribasius, *Coll. Med., Lib. inc.* 2.9-10, Daremberg and Bussemaker, Volume 3: 84.

⁸⁷⁰ Galen, *Alim.Fac.* 3.1 (6.661, 664K). Translated by O. Powell.

⁸⁷¹ Rufus in Oribasius, *Coll. Med., Lib. inc.* 2.2, Daremberg and Bussemaker, Volume 3: 82.

⁸⁷² Caldwell 2015: 79.

⁸⁷³ Rufus in Oribasius, *Coll. Med., Lib. inc.* 2.16, Daremberg and Bussemaker, Volume 3: 85.

⁸⁷⁴ *Ibid.*, 2.11-16, Volume 3: 84-85.

society. These, together with wearing masculine forms of dress, were the subject of prohibitive legislation in AD 19.⁸⁷⁵

Soranus defined the kinds of moderate exercise that were appropriate for girls approaching puberty:

from the thirteenth year..her walk should be easy and deliberate, passive exercise prolonged, gymnastics not forced, much fat applied in the massage, a bath taken daily and the mind diverted in every possible way. Now since virgins who have not been brought up wisely and lack education arouse in themselves premature desires, one must not, therefore, trust the appetites.⁸⁷⁶

A good upbringing, strict codes of behaviour and diversionary tactics helped to curb sexual urges in peri-pubertal girls.⁸⁷⁷ Repressive regimen, on the other hand, reflected the “systematic control” of females in a society that was dominated by men.⁸⁷⁸ It is uncertain whether parents from all sections of society were aware of, let alone adopted, the suggestions laid down in the medical treatises.⁸⁷⁹

Conclusion

Regimen formed the foundation for the preservation of health and was an important means of treating illness. There is evidence that Roman doctors adjusted regimen in different individuals according to their physical strength. Strength appeared to be a more important factor than chronological age. Although children and the elderly were generally weaker than adults in their prime, some older children and elderly persons were strong enough to undergo therapeutic fasting, purgation and venesection. Galen was alone in his prohibition of venesection and the consumption of wine for all children until they were past puberty.

⁸⁷⁵ Caldwell 2015: 58.

⁸⁷⁶ Soranus, *Gyn.* 1.5.25. Translated by O. Temkin: 21.

⁸⁷⁷ Harlow and Laurence 2002: 57-58. Alberici and Harlow believe that compliance was not enough for Roman girls since “they needed to be seen to be behaving in an appropriate way” 2007: 196-197.

⁸⁷⁸ Garnsey 1999: 103.

⁸⁷⁹ Garnsey 1999: 103; Alberici and Harlow 2007: 197.

Suckling infants were a special group. Their health depended upon the quality of the milk they consumed. In an ideal situation parents should select the best possible wet nurses, monitor their conduct and regimen, and perform routine testing of their milk. There is some doubt as to whether they always followed this counsel of perfection or found it practicable.

Diet and exercise catered for children according to age and gender. Daughters in elite families required close surveillance as they approached puberty. The medical treatises laid down strict diet and exercise regimes to safeguard their health. Their underlying motives were just as much to do with controlling their sexual orientation and desire. It is uncertain whether lower class families shared these concerns. Few historians have commented on the fears in Roman society of young girls acquiring male characteristics. There is evidence of concerns among physicians about the enlargement of the clitoris and masculine sexual behaviour in some women: this is discussed below in Section 4.4.3.

4.4.2 Pharmacological treatments

Roman *materia medica* falls into three categories: those derived from animals or their products, and plants and minerals. As mentioned above, Galen stated that one medication does not suit all bodies and allowances should be made for the age, humoral complexion, and bodily constitution of individuals.⁸⁸⁰ This thesis now examines medical and pharmacological texts to determine the extent to which physicians altered prescriptions for medicaments to suit the needs of children of different ages and gender.

⁸⁸⁰ Galen, *Comp.Med.Gen.* 2.1 (13.467-468K).

One major problem with this evidence is that medical writers often omitted to provide exact quantities or concentrations of active ingredients.⁸⁸¹ Another is that they did not always stipulate the age of prospective patients.

The treatment of suckling babies was particularly problematic. Dasen maintains that Roman practitioners avoided applying medicaments directly to newborns with the sole exception of honey-based applications to oral ulcers.⁸⁸² This is true in respect of medicines given by mouth, but there is sufficient evidence to refute this statement regarding topical applications. Soranus suggested several such treatments for tonsillitis, exanthemata, itching, wheezing, coughing, diarrhoea and siriasis in newborns.⁸⁸³

Bonet provides a useful discussion of the different ways of altering medicines for infants and children in her survey of Pliny's *Natural History*.⁸⁸⁴ These include changes in quantities given, the frequency and concentration of doses, formulations and routes of administration.

Varying doses

There are relatively few references to variations in drug dosages for juveniles in Roman texts. Celsus acknowledged the need to modify quantities of a narcotic analgesic for ophthalmia in different age groups:

If the affection is so severe as to prevent sleep, for a time one of the remedies which the Greeks call anodyna should be administered, an amount the size of a vetch to a child, that of a bean to a man.⁸⁸⁵

It is not clear by how much beans were larger than vetches, and there is no reason given for choosing a lower dose. Celsus was very precise about the weights of ingredients and

⁸⁸¹ Jackson 1988: 74; King 1998: 116; Cruse 2004: 68.

⁸⁸² Dasen 2011: 294.

⁸⁸³ Soranus, *Gyn.* 2.23, 25-28.

⁸⁸⁴ Bonet 1998: 194-195.

⁸⁸⁵ Celsus, *Med.* 6.6.1L-M. Translated by W.G. Spencer.

method of preparation of one particular recipe for *anodyna* which helped to relieve pain by promoting sleep:

saxifrage, sweet flag, wild rue seed, one drachm each, castory and cinnamon 2 drachms, poppy-tears, panax root, dried mandrake apples, flowers of the round rush, two and a quarter drachms each, and 56 peppercorns. These are first pounded separately, then rubbed up all together, whilst gradually adding raisin wine until the mixture is either swallowed or dissolved in water and taken as a draught.⁸⁸⁶

He did not suggest any reductions for infants or the elderly for this recipe.

Although the *Natural History* is not a medical work, and it emphasises strange and sensational treatments, is worth examining it for indications of treatments for different individuals. A bizarre remedy involving field bugs was a cure for lethargy and snakebite in children:

for this purpose seven of them are administered in a cyathus of water, but in the case of children only four.⁸⁸⁷

He did not explain whether the bugs should be alive or dead at the time of swallowing. In either case, this qualifies as a repugnant remedy according to his criteria; see below for a discussion of such therapies. According to Pliny, the management of obesity required different quantities of ash seeds pounded in wine:

and administered in proportion to the bodily strength; thus, for instance, to a child, five of them are given in three cyathi of wine, but for persons in more robust health, seven are prescribed, in five cyathi of wine.⁸⁸⁸

In this case the main criterion was an individual's strength, rather than his age. Pliny also recorded modifications to another unpleasant remedy for epilepsy according to the strength of a patient:

There have been authorities found to recommend one-and-twenty red flies - and those found dead, too! - taken in drink, the number being reduced where the patient is of a feeble habit.⁸⁸⁹

⁸⁸⁶ Celsus, *Med.* 5.25.3. Translated by W.G. Spencer.

⁸⁸⁷ Pliny, *HN* 29.17. Translated by J. Bostock and H.T. Riley. One cyathus equates to approximately 45ml.

⁸⁸⁸ *Ibid.*, 24.30. Translated by J. Bostock and H.T. Riley.

⁸⁸⁹ *Ibid.*, 30.27. Translated by J. Bostock and H.T. Riley.

It is reasonable to assume that those “of a feeble habit” included children and that at least some of the flies were still alive at the time. It is likely that he relied on second hand information when collecting such recipes.

Dioscorides recommended safe ranges of doses of the toxic purgative drug, elaterium, for adults and children. There is considerable confusion regarding the units some translators quote for juveniles. One edition of Dioscorides’ text states that:

The perfect dose is ten grains, the least five grains, and for children, two *aureola*. If more is taken (as a drink) it is dangerous. It induces purging both downward and upward, expelling phlegm and bile.⁸⁹⁰

Other editions mention *oboloi* and *dichalkoi*. Further examination reveals the relationship between these units.⁸⁹¹ Dioscorides did not say whether *dichalkoi* or *aureolae* were appropriate quantities for all stages of childhood, and he did not explain why children required a lower dose. It is likely that practitioners and druggists would have been familiar with these units which relate to the weight of small coins.

Galen occasionally specified exact quantities of medicaments to suit different patients, for example:

In children supply two cyathi, in women three, in men four.⁸⁹²

This was a recipe for dysentery consisting of an astringent decoction of myrtle berries and blackberries. Galen did not explain why children and women needed smaller quantities in this particular case, but he probably considered this unnecessary for every

⁸⁹⁰ Dioscorides, *MM* 4.155. Translated by T.A. Osbaldeston. The grain was an old English apothecary’s weight. Ten grains were equivalent to one obolos, approximately 0.65G.

⁸⁹¹ Gunther refers to half to one *obolos* for adults and two *aureolae* for children respectively. Wellmann records that children required one δίσχολκος (*dichalkos*), Volume 2: 295. Beck based her translation on that of Wellman and quoted the same units. Sprengel’s Greek text conveys identical information, but his Latin transcription identifies a *dichalkos* as “a fourth part of an obolus” Volume 1: 638.

⁸⁹² Galen, *Comp.Med.Loc.* 9.5 (13.298-299K). Translated by the author.

single prescription. On many other occasions he stressed the need to apply soft medications to weak bodies.⁸⁹³

Bulb-like plants known as squills formed the basis of treatments for a wide variety of diseases.⁸⁹⁴ Galen modified doses of his own recipe for squill medicine in order to reduce the incidence of recurrent attacks of chronic epilepsy. Adults required a large spoonful daily, while one small spoon sufficed for children (see Section 5.4 below).⁸⁹⁵ The vast majority of Galen's prescriptions, however, did not quote different quantities for younger or older patients. This is surprising in view of his insistence that physicians should cater for the needs of weaker individuals such as women and children. It is possible that he expected experienced physicians to be able to judge how much to administer to these patients.

In summary, there is evidence that some practitioners modified doses of medicines according to the physical strength and age of individual patients. Some prescriptions quoted precise quantities for those in different age categories; the majority, however, lacked such details. Section 5.2 below will explore this difficulty in relation to a number of ocular salves.

Different concentrations

There were other ways in which physicians could reduce the quantity of active ingredients in children's medicines. One example was to dilute the concentration of adult preparations. Pliny's remedy for lethargy and snakebite (above) catered for children by reducing the the concentration of field bugs as well as the physical size

⁸⁹³ Galen, *Comp.Med.Loc.* 6.9 (12.1004K).

⁸⁹⁴ Pliny also described medicines derived from the bulbs and leaves of squills for ailments such as dropsy, epilepsy, coughs, sore gums, and gastrointestinal and kidney diseases *HN* 20.38; 23.28.

⁸⁹⁵ Galen, *Puer.Epil.* 6 (11.374-378K).

potion.⁸⁹⁶ Galen recommended a plaster containing the lead compound, litharge, for bleeding leg ulcers. He suggested diluting the remedy by adding castor oil for those of a soft disposition:

This medicine heals bleeding wounds more easily on bodies that are soft, such as those of women, children and eunuchs than on hard bodies, diluted with castor oil.⁸⁹⁷

This is one of many instances when Galen grouped children, women and eunuchs as a joint therapeutic category. Admittedly such references rarely appear in medical texts, but they indicate that some physicians, at least, considered this as a means of delivering smaller quantities of active ingredients to children.

Formulations and routes of administration

Physicians sometimes selected medicines with different formulations or routes of administration to suit patients of different ages. There were several available routes for administering drugs: by mouth, topical application to external surfaces, or by instilling them into orifices such as the ear canals, nostrils, rectum, urethra and mouth. Choices depended on the age of a child, whether it could swallow or gargle, the tenderness of the skin or mucous membranes, the nature of the illness, and the intended site of action of a drug.

Intestinal worms troubled both adults and children. Celsus described remedies to expel the parasites from patients of all ages. For an adult suffering from flat worms (tapeworms) he suggested draughts containing:

a decoction of lupins, or of mulberry bark, to which may be added..either hyssop or vinegar, a cupful of pepper, or a little scammony..It is also of service either to eat lupin or garlic, or administer into the lower bowel a clyster of olive oil.⁸⁹⁸

⁸⁹⁶ Pliny, *HN* 19.17.

⁸⁹⁷ Galen, *Comp.Med.Gen.* 2.12 (13.519-520K). Translated by the author.

⁸⁹⁸ Celsus, *Med.* 4.24.1-2. Translated by W.G. Spencer.

Children were more likely to be infested with round worms. The above remedies were effective vermicides, but milder remedies included:

pounded-up seeds of nettles or of cabbage or of cummin in water, or mint in the same or a decoction of wormwood or hyssop in hydromel or cress seeds pounded up in vinegar.⁸⁹⁹

Adults might also receive a medicine containing a decoction of lupines, together with rue and pepper.⁹⁰⁰ For children an abdominal plaster was a suitable alternative:

For children, also, they are applied to the stomach as a vermifuge, the patient fasting in the meantime and, according to another mode of treatment, they are parched and taken in boiled must or in honey.⁹⁰¹

Medicinal substances would have been less invasive for infants when spread over the abdominal skin.

Iris root was a versatile remedy:

The red iris is better than the white one. It is very beneficial to attach this plant to the bodies of infants more particularly when they are cutting their teeth, or are suffering from cough; it is equally good, too, to inject a few drops of it when children are suffering from tape-worm.⁹⁰²

The same substance was effective both in the form of an amulet and as a rectal instillation.

Purslane was another useful, multipurpose remedy in the same or different forms for adults and children:

Chewed in combination with honey, it is curative of other kinds of sores. It is similarly applied to the region of the brain in infants..as also for defluxions of the eyes, in persons of all ages, being applied to the forehead and temples with polenta.⁹⁰³

Preparations containing nasturtium seeds benefitted hardening of the spleen, but with different excipients for adults and infants:

With vinegar it is employed also as a liniment for affections of the spleen, and with honey it is found to be very useful for the complaints of infants.⁹⁰⁴

⁸⁹⁹ *Ibid.* Translated by W.G. Spencer.

⁹⁰⁰ Pliny, *HN* 22.74.

⁹⁰¹ *Ibid.* Translated by J. Bostock and H.T. Riley.

⁹⁰² *Ibid.*, 21.83. Translated by J. Bostock and H.T. Riley.

⁹⁰³ *Ibid.*, 20.81. Translated by J. Bostock and H.T. Riley.

Adults took a remedy containing the herb meum for a variety of ailments, but external applications were more appropriate for infants:

The root of this plant, pounded or boiled, and taken in water, is diuretic, and..is good..for gripings of the bowels and affections of the bladder: applied with honey to the region of the uterus, it acts as a diuretic; and used as a liniment with parsley, upon the lower regions of the abdomen in infants, it has a similar effect.⁹⁰⁵

A draught containing the burnt excrement of a hare helped to an adult's cough:

The dung of this last animal [the hare], reduced to ashes and taken in the evening, with wine, is good for coughs that are recurrent at night.⁹⁰⁶

Amulets containing dung or red iris could be equally effective for babies:

Ravens' dung, attached to an infant with wool, is curative of cough.⁹⁰⁷

It is very beneficial to attach this plant [the red iris] to the bodies of infants more particularly when they..are suffering from cough.⁹⁰⁸

This would have been less toxic than swallowing dung. See Section 4.4.4 below for magical remedies.

Scribonius Largus prescribed specific remedies for children suffering from eye disease and lienosis.⁹⁰⁹ He also described another eye salve for use “most of all in tender bodies of women and children.”⁹¹⁰

As shown above, Dioscorides recommended smaller oral doses of elaterium for children, but did not mention whether the drug was appropriate for infants. Anonymus Londinensis referred to elaterium as “the Purge.” He explained that the drug was effective when applied to the skin because of its penetrative power and ability to release

⁹⁰⁴ *Ibid.*, 20.50. Translated by J. Bostock and H.T. Riley.

⁹⁰⁵ *Ibid.*, 20.94. Translated by J. Bostock and H.T. Riley.

⁹⁰⁶ *Ibid.*, 28.53. Translated by J. Bostock and H.T. Riley.

⁹⁰⁷ *Ibid.*, 30.47. Translated by J. Bostock and H.T. Riley.

⁹⁰⁸ *Ibid.*, 21.83. Translated by J. Bostock and H.T. Riley.

⁹⁰⁹ Scribonius Largus, *Comp.* 29, 132, 212.

⁹¹⁰ *Ibid.*, 20. Author's translation.

humours through the pores. He considered it to be superior to hellebore and scammony because it purged phlegmatic and bilious material from adults; it was also effective externally when placed in the nostrils or onto the navels of infants.⁹¹¹ The latter, together with a passage by Pliny, confirms that some practitioners administered elaterium topically to babies or small children:

For relaxing the bowels a horse's rennet is used, or else the blood, marrow, or liver of a she-goat. A similar effect is produced by applying a wolf's gall to the navel, with elaterium.⁹¹²

At times it was necessary to disguise the taste or unpleasant medicines. For example, was possible to conceal wormwood leaves inside a dried fig to disguise its bitterness.⁹¹³

In summary, the written sources suggesting ways of modifying the administration medicaments to different individuals. They did not treat all sick children as a single age category, but distinguished between sucklings, weaned infants and older children.

Hazardous and toxic drugs

Certain drugs were known to be very toxic, and some doctors either prohibited their use or advised special precautions when prescribing them for children. One well known example of these was hellebore. Pliny regarded it as efficacious for treating epilepsy and quartan fever, but warned that:

It is universally recommended not to give hellebore to aged people or children, to persons of a soft and effeminate habit of body or mind, or of a delicate or tender constitution.⁹¹⁴

This collection of individuals is remarkably similar to the way in which Galen grouped certain classes of patients just over a century later. Galen was equally reluctant to

⁹¹¹ Anonymus Londinensis, *De medicina* 37.20-25.

⁹¹² Pliny, *HN* 28.58. Translated by J. Bostock and H.T. Riley.

⁹¹³ Pliny, *HN* 27.28. Translated by J. Bostock and H.T. Riley.

⁹¹⁴ *Ibid.*, 25. 25. Translated by J. Bostock and H.T. Riley. This echoes many of Galen's principles of prescribing pharmaceuticals.

consider prescribing hellebore to children. He alluded to this in his letter to the father of an epileptic boy, saying that:

Your son should use the drug prepared from squills which I gave to you..indeed I have cured innumerable children in this way without having to use hellebore.⁹¹⁵

Galen, therefore, had similar reservations about the toxicity of hellebore.

Antyllus, writing in the second century AD, had a different attitude. He was aware of the side-effects of hellebore, but he was prepared to administer the evacuant to children:

One runs the risk of having cramps and an excessive evacuation. One gives an infusion of hellebore to old people, children..to individuals of a feeble character, or who are subject to choking.⁹¹⁶

Galen thought that theriac was even more deadly than hellebore.⁹¹⁷ In his treatise, *On theriac to Piso*, he explained the reasons for his misgivings about administering the drug to children:

In the case of children one must avoid the drug entirely. For it is too strong for their inherent power and easily destroys the body and quenches the inborn breath.⁹¹⁸

That is to say, it would cause a fatal destruction of their *pneuma*. Despite his better judgement, Galen administered theriac to a boy against in the face of resolute insistence by his father. The child was gravely ill with a fever:

I have had experience of a child dying of the untimely use of the antidote. He had chronic fever and his body was all withered and his vitality low and he was greatly struggling to stay alive.. Having taken it he could not digest it, for it had more strength than the one who took it. It undid his whole constitution and gave him diarrhoea and so the child died in the night because of the irrational use of the drug.⁹¹⁹

The boy probably had no hope of survival, but Galen attributed his death to the drug.

⁹¹⁵ Galen, *Puer.Epil.* 6 (11.374K). Translated by O. Temkin. See Section 5.4 below for the treatment of epilepsy.

⁹¹⁶ Antyllus in Oribasius, *Coll. Med.* 8.5, Daremberg, Volume 2: 167-168. Antyllus was a noted surgeon who wrote treatises on surgery, dietetics and therapeutics von Staden 1989: 65.

⁹¹⁷ There were around sixty-four ingredients in theriac, or galenē. They included the flesh of venomous snakes, wine and opium Pinault 1992: 51-52.

⁹¹⁸ Galen, *Ther.* 17 (14.286-297K). Translated by R.A. Leigh.

⁹¹⁹ Galen, *Ther.* 17 (14.286-297K). Translated by R.A. Leigh.

Some applications to external and mucous surfaces such as the skin and buccal cavity could be harmful to children. Gangrenous ulcers in the mouth were dangerous and often required drastic measures. Celsus suggested that for adults with deep lesions it was necessary to apply a mixture of burnt papyrus, orpiment, rock salt and roasted iris or other strong preparations such as salt boiled in vinegar:

But in order that neighbouring spots may not be injured, it is necessary to apply lint dipped in rose oil over these caustic medicaments..But whenever this medicament is applied, the mouth should be washed out both before and after, either with lentil gruel, or with a decoction of vetches or of olives or of vervains, to any one of which a little honey is added.⁹²⁰

He regarded these as highly toxic, caustic substances that required great care when treating adult patients. When the patients were children, rose oil was preferable, but it also required caution in order to prevent damage to their tender mouths:

In order that neighbouring spots may not be injured, it is necessary to apply lint dipped in rose oil over these caustic medicaments.. If it is a child who is attacked, a probe wrapped round with wool is dipped in the medicament and held to the ulcer, lest by accident he should swallow the caustic.⁹²¹

Some substances could irritate the tender skins of babies:

As to exanthemata, blisters and such sores as form on the skin and are very moist, we avoid brine and urine because of their pungency.⁹²²

Other, milder medicaments were more suitable, such as bathing the lesions with a warm decoction of roses or lentils, or of myrtle, mastic, bramble or pomegranate peel.⁹²³

Gender specific remedies

It is difficult to find references in Roman treatises to different pharmacological medicines for children according to their gender. Dioscorides provided a rare example

⁹²⁰ Celsus, *Med.* 6.15.1-3. Translated by W.G. Spencer. According to Spencer, the ash of burnt papyrus contained the caustic substances potash and soda Volume 2: xlvi.

⁹²¹ Celsus, *Med.* 6.15.3. Translated by W.G. Spencer.

⁹²² Soranus, *Gyn.* 2.25.52. Translated by O. Temkin: 122. Burgière *et al.* translate this as “by reason of their irritant character.”

⁹²³ Soranus, *Gyn.* 2.25.52.

in which he wrote that aloe heals the damaged foreskins of boys.⁹²⁴ Scribonius Largus discussed different remedies for boys and girls suffering from epilepsy, while Dioscorides and Galen recorded pharmacological recipes to delay puberty in children of both genders. These are explored further below.

Conclusion

There is sufficient textual evidence to indicate that practitioners appreciated that there was a need to adjust the dose, concentration, route of administration and formulation of medicines to suit children. Some substances were too toxic for children, although there were some differences of opinion in this respect. In the few cases where authors explained why this was necessary to make such changes for children, it was invariably because of their relative lack of strength.

Animal-based drugs

Prescriptions for children's medicines contained ingredients from a variety of sources. Bonet states that animal matter accounted for a large proportion of Pliny's children's remedies.⁹²⁵ This thesis now examines several books of the *Natural History* in order to confirm or refute Bonet's observation. Tables 4.3 and 4.4 below present summaries of the findings in the three chapters entitled 'Remedies for the Diseases of Infants.'

⁹²⁴ Dioscorides, *MM* 3.25.

⁹²⁵ Bonet 1998: 196.

Table 4.3 Animal remedies for infants in Pliny, *HN* Book 28

Reference	Ailment	Ingredients	Drug	Magic
<i>HN</i> 28.78	Dentition	Butter + or - honey	*	
	Mouth ulcer	Butter + or - honey		
	Startled	Wolf tooth amulet		*
	Dentition	Wolf tooth amulet		*
	Dentition	Wolf skin amulet		*
	Diarrhoea	Hare's rennet	*	
	Epilepsy	Ass's liver, panax	*	
	Other infant diseases	Ass's liver, panax	*	
	Fears	Ass's skin blanket		*
	Dentition	Horse teeth amulet		*
	Pains in spleen	Ox spleen + honey	*	
	Running ulcers	Ox spleen	*	
	Mouth ulcers	Calf spleen	*	
	Epilepsy	Goat brains, gold ring	*	
	Other infant diseases	Goat brains gold ring	*	*
	Restlessness	Goat dung amulet		
	Dentition	Goat's milk	*	
	Dentition	Hare's brain	*	

The three chapters deal exclusively with maladies affecting infants. All involve whole animals, or their individual parts or products. This is not surprising since Books 28-32 refer solely to remedies derived from living creatures.

A large number also contained either unusual or disgusting ingredients. Although many of the animals were domestic, a significant number were wild creatures. Some of the latter were particularly ferocious or dangerous, such as wolves and venomous insects, fish and snakes.

Table 4.4 Animal remedies for infants in Pliny, *HN* Books 30, 32

Reference	Ailment	Ingredients	Drug	Magic
<i>HN</i> 30.47	Coagulated milk	Lamb's rennet	*	
	Siriasis	Bones from dog dung		*
	Dentition	Sheep's brain	*	
	Hernia	Lizard bite		*
	Hernia	Lizard bite, gold cloth		*
	Eyelash growth	Slime from snails	*	
	Hernia	Ashes of burnt snails	*	
	Dentition	Grit from snail's horn		*
	Prevent rectal prolapse	Snails, viper amulet		*
	Dentition	Viper brain amulet		*
	Dentition	Serpent teeth amulet		*
	Dentition	Serpent brain amulet		*
	Cough	Raven dung amulet		*
	Incontinence of urine	Boiled mice	*	
	Dentition	Stone, boa head amulet		*
	Dentition	Brain of boa		*
	Dentition	Stone from slug's back		*
	?	Scarab amulet		*
	Ear disease	Goose-grease, herb	*	
	Food stuck in throat	Hairy grub amulet		*
<i>HN</i> 32.48	Dentition	Ashes dolphin's teeth	*	
	Dentition	Touch of dolphin tooth		*
	Prevent frights	Dolphin tooth amulet		*
	Prevent frights	Dogfish tooth amulet		*
	Ulcers ears	Liquor of crabs	*	
	Ulcers other parts	Liquor of crabs	*	
	Other maladies	Rub with crabs	*	
	Ulcers	River crabs	*	
	Siriasis	Cold sponge	*	
	Siriasis	Live frog		*

These three chapters of the *Natural History* describe forty-eight remedies that were specifically for infants. There are a further forty-four references to treatments for juvenile ailments scattered among Books 20-32. This brings the total number of remedies for infants and children to ninety-two.

It is striking that over a half of the recipes listed in the two tables above were for preventing or treating teething problems.

Another interesting feature is that well over half of all measures were preventative, rather than therapeutic in nature. A significant proportion of Pliny's cures for infants entailed the use of amulets or magical ritual, as discussed below.

Table 4.5 below compares the number of vegetal and animal recipes for infants and children in books 20-32 of the *Natural History*.

Table 4.5 Vegetal and animal remedies in Pliny, *HN* Books 20-32

Source of remedies	Number of remedies	% remedies
Vegetal Books 20-27	33	36
Animal Books 28-32	59	64
Total Books 20-32	92	

This table demonstrates that almost two thirds of remedies for infants and children contained animal ingredients. This, indeed, accords with Bonet's remark that a large proportion of Pliny's pharmacopeia for children was derived from animals or animal products.

The significance of the predominance of animal-based medicines for infants in the *Natural History* is the source of some scholarly discourse. Galen regarded children as

beings who were “inferior to people in their prime;” they were unintelligent and incapable of walking. In short, the child was an “incomplete animal.”⁹²⁶ This applied particularly to infants. It follows, then, that animal medicines were appropriate for creatures who shared many of the characteristics of wild beasts.⁹²⁷ There is also a cogent argument for the supposition that medicines which harnessed the strength and power of animals helped infants to combat mysterious and fatal diseases that did not respond to other therapies.⁹²⁸ Soranus implied that it was possible for wet nurses to transmit their intellectual and emotional qualities to sucklings through their milk.⁹²⁹ Therefore, it is reasonable to assume that some Romans would have believed that ‘animal’ medicines could transmit the strength and ferocity of the creatures from which they were derived. Many of Pliny’s animal remedies for children had superstitious or magical connotations. This is because they belonged to the sphere of popular medicine among women and midwives.⁹³⁰ Another reason for their popularity was that dangerous or mysterious diseases required magical powers to avert or cure them.⁹³¹ A discussion of magical remedies for infants and children follows in Section 4.4.4 below.

Roman medical and pharmaceutical texts described many medicines that contained materials from animal and human sources that did not form part of a normal diet.⁹³² Pliny recorded a large number of remedies of this kind, such as flesh from a sea-weasel, or the dung of an ass’s foal taken in vinegar.⁹³³ Some applied specifically to infants and

⁹²⁶ Galen, *Temp.* 2.2 (1.585K). Translated by P.N. Singer.

⁹²⁷ Bonet 1998: 196; Dasen 2011: 293-294.

⁹²⁸ Bonet 1998: 196.

⁹²⁹ Soranus, *Gyn.* 2.12.19.

⁹³⁰ Bonet 1998: 197-198

⁹³¹ Jones 1957: 462.

⁹³² Gordon 2010: 5.

⁹³³ Pliny, *HN* 32.37.

children, for example the ingestion of field-bugs, boiled mice or crocodiles.⁹³⁴ This leads on to the subject of remedies that some Roman authors described as distasteful, disgusting, or even shameful.

Repugnant therapies and *Dreckapotheke*

The authors of some Roman texts expressed feelings of revulsion for certain animal-based pharmacological ingredients. Pliny thought that some plants were offensive because of their smell or taste.⁹³⁵ He condemned the medical use of insects like bugs and beetles which he described as disgusting, revolting, filthy and loathsome.⁹³⁶ Even more horrific was the use of human blood, body parts and faeces.⁹³⁷ Historians often refer to this kind of medicine as *Dreckapotheke*, or filth-pharmacy.⁹³⁸

Human ordure was particularly disagreeable. The owners of gymnasia collected:

the scrapings from the bodies of the athletes..scrapings obtained from the baths..They have even gone so far, too, as to scrape the very filth from off the walls of the gymnasia, and to assert that this is also possessed of certain calorific properties. These scrapings..are applied topically to ulcers upon aged people and children, and to excoriations and burns.⁹³⁹

Pliny described these remedies as “shameless and disgusting..[that] will transcend all belief.”⁹⁴⁰ He regarded the use of human flesh or bones found in a hyena’s belly,

⁹³⁴ *Ibid.*, 29.17; 30.47; 28.28.

⁹³⁵ Pliny described the smell of some plants as “repulsive,” “disgusting” or “offensive” *HN* 15.7; 25.38; 27.59.

⁹³⁶ Pliny, *HN* 29.17, 39.

⁹³⁷ Pliny, *HN* 28.2, 13. Pliny mentioned over seventy recipes involving animal dung: most were for topical application or amulets, but many necessitated consumption by mouth.

⁹³⁸ The term *Dreckapotheke* came into prominence with the publication in 1696 of Paullini’s *Heilsame Dreck-Apotheke* which featured over two hundred medical uses for human and animal excreta Pioreschi 1998: 11, 57, 214

⁹³⁹ Pliny, *HN* 28.13. Translated by J. Bostock and H.T. Riley. Galen also referred to the medical use of scrapings obtained from baths and palaestra, although he did not mention applying them to children, *SMT* 10.2.30 (12.308-309K).

⁹⁴⁰ Pliny, *HN* 28.13. Translated by J. Bostock and H.T. Riley.

menstrual blood, and seminal fluid and a dark, tarry stool passed by the newborn (meconium) as equally deplorable.⁹⁴¹

The drinking of human blood provoked even more intense feelings of disgust. Epilepsy was such a distressing and disabling complaint that sufferers often contemplated extremes measures in order to be cured:

Some have freed themselves from such a disease by drinking the hot blood from the cut throat of a gladiator: a miserable aid made tolerable by a malady still most miserable.⁹⁴²

This was only effective if the unfortunate victims were still alive:

Epileptic patients are in the habit of drinking the blood even of gladiators, draughts teeming with life..And yet these persons, forsooth, consider it a most effectual cure for their disease, to quaff the warm, breathing, blood from man himself, and, as they apply their mouth to the wound, to draw forth his very life.⁹⁴³

Scribonius Largus reported that some epileptics drank human blood from dead mens' skulls or consumed pieces of gladiator's liver. He considered these practices to be outside mainstream medicine "although they may be of use to some extent"⁹⁴⁴ He thought it important not to dismiss them because it was probable that they could cure men, women, boys and girls of the disease.⁹⁴⁵ Since several sources described these practices, it is likely that such accounts contained an element of truth rather than them being just sensational and provocative. As in the case of remedies derived from ferocious wild animals, it is possible that patients expected to obtain strength from the bodies of strong and fearless gladiators.

⁹⁴¹ Pliny, *HN*: 28.7 flesh and bones eaten by hyenas; 28.13 seminal fluid and meconium; 28.23 menstrual blood.

⁹⁴² Celsus, *Med.* 3.23.7. Translated by W.G. Spencer.

⁹⁴³ Pliny, *HN* 28.2. Translated by J. Bostock and H.T. Riley.

⁹⁴⁴ Scribonius Largus, *Comp.* 17. Author's translation.

⁹⁴⁵ Scribonius Largus, *Comp.* 18.

Pliny reported that some human body parts reputedly had pharmacological properties:

Others there are, again, who make the marrow of the leg-bones, and the brains of infants, the objects of their research..the marrow of the leg-bones, and the brains of infants..the skull of a malefactor..the gums with the tooth of a man who has died a violent death.⁹⁴⁶

He described these and other “obscenities and abominations” in the context of drinking the blood of a slain gladiator and similar “monstrous” remedies devised by six named Greek writers.⁹⁴⁷ He may have invented or elaborated on some of these accounts in order to stir up xenophobic feelings against the Greeks.

Galen was rather hypocritical in his condemnation of such medicines. On the one hand, he censured the physician, Xenocrates of Aphrodisias (mid first century AD), for prescribing human organs, tissues and body fluids:

For their horrors are abominable and detestable. Some are even forbidden by law, of which I do not know how it was possible for Xenocrates to write about..He certainly writes with great confidence..[that] the best cures are eating brains or human flesh or liver, or the bones of the head, leg and toes, burnt parts..and finally blood. But drinking sweat or urine or the menstrual discharge of women is abominable and detestable and, first of all of these, faeces that, however, Xenocrates writes about.⁹⁴⁸

This did not deter him from recommending external applications of human urine to cure skin diseases like psoras, lepras, ulcers and achores.⁹⁴⁹ He also wrote that human excrement was a marvellous treatment for angina, dysentery, inveterate ulcers and suffocation.⁹⁵⁰

The urine of a young boy was an excellent lotion for eye complaints.⁹⁵¹ Human urine also benefitted skin rashes on infants:

With stale urine some mix ashes of calcined oyster-shells, for the cure of eruptions on the bodies of infants.⁹⁵²

⁹⁴⁶ Pliny, *HN* 28.2. Translated by J. Bostock and H.T. Riley.

⁹⁴⁷ *Ibid.* Translated by J. Bostock and H.T. Riley.

⁹⁴⁸ Galen, *SMT* 10.1 (12.248-249K). Author’s translation.

⁹⁴⁹ *Ibid.*, 10.1.15 (12.284-285K).

⁹⁵⁰ *Ibid.*, 10.2.18-29 (12.290-309K).

⁹⁵¹ Pliny, *HN* 28.18.

⁹⁵² *Ibid.*, 28.18. Translated by J. Bostock and H.T. Riley.

Pliny recorded around a hundred oral and external remedies containing animal excrement for bowel disorders in adults.⁹⁵³ It is possible that amulets were more suitable for applying dung to infants: Tables 4.3 and 4.4 above refer to three such examples.

There are various theories to explain the inclusion of *Dreckapotheke* in Roman medical literature. One view is that such remedies “rely on the fundamental rule that others’ dirt is filthier than one’s own,” and that their efficacy depended on the degree of repulsion they caused.⁹⁵⁴ There was a long-standing tradition of excremental remedies in ancient Egyptian and Babylonian medicine.⁹⁵⁵ Disease-causing demons possessed anal orifices in place of their mouths and they “were greedy for dung.”⁹⁵⁶ The original role of faeces may have been to expel such demons.⁹⁵⁷ Another hypothesis is that dung helped women to conceive in the same way that it fertilised the land.⁹⁵⁸ Notions of demon-induced disease and the ritual impurity of women may have accounted for the many excremental recipes used for women’s ailments in the Hippocratic gynaecological treatises.⁹⁵⁹ They were applied exclusively to women during the fifth and fourth centuries BC.⁹⁶⁰ In later periods medical treatises described their use for diseases affecting men and women (see below).

⁹⁵³ See, for example, Pliny, *HN* 28.58.

⁹⁵⁴ Gordon 2010: 5.

⁹⁵⁵ Von Staden 1991: 43; Pinch 1994: 82; Geller 2005: 7.

⁹⁵⁶ Pinch 1994: 82.

⁹⁵⁷ Jones 1957: 462.

⁹⁵⁸ Von Staden 1991: 44; Hanson 1998: 89; Totelin 2009: 213; King 2013: 53.

⁹⁵⁹ Von Staden 1991: 43; King 1998: 153-154; Laes 2011: 211. Childbirth, coitus and menstruation were associated with pollution in women: Von Staden 1991: 52. The Hippocratic gynaecological texts include *Diseases of women* 1 and 2, *On barrenness*, *Nature of woman* and *Disease of virgins* King 1998: 23; 2013: 51.

⁹⁶⁰ Von Staden 1991: 44; King 1998: 63; Totelin 2009: 212.

According to the above texts women were wet, soft and spongy.⁹⁶¹ They were also cold but became hot when they suffered from retention of menstrual blood.⁹⁶² Excessive heat, cold, dryness or wetness required changes to their regimen.⁹⁶³ Hippocratic gynaecological recipes were generally directed at uterine problems. Some remedies contained animal dung for use in pessaries, medicinal draughts and vaginal fumigations; their purpose was to increase fertility by softening and dilating the cervix and purging the uterine cavity.⁹⁶⁴ Their ingredients also had ritual or symbolic significance and sexual connotations.⁹⁶⁵

Soranus proscribed some Hippocratic recipes that he regarded as too violent and unsafe to administer.⁹⁶⁶ He believed that most women's ailments were comparable with those affecting men and that they required similar relaxant or constricting treatments (see Section 1.2.4 above).⁹⁶⁷ His *Gynaecology* does not mention the use of excrement at all, and Celsus did not restrict it to women.⁹⁶⁸ Physicians continued to prescribe dung for female complaints throughout the Roman period and beyond.⁹⁶⁹ Dioscorides, for example, listed many uses for animal and even human dung for a wide variety of ailments not peculiar to females.⁹⁷⁰ In the tenth century the Arab physician, Ibn al-

⁹⁶¹ King 1998: 28; Totelin 2009: 197.

⁹⁶² Totelin 2009: 197. See Hipp., *Mul.* 1.1.

⁹⁶³ King 1998: 36-37; Totelin 2009: 198.

⁹⁶⁴ Totelin 2009: 198, 200. For example, fumigation of drugs on cow dung: *Mul.* 2.206; a pessary containing mouse dung for expelling a foetus: *Mul.* 1.78; a drink of wine containing hawk's excrement: *Mul.* 1.89.

⁹⁶⁵ Substances like sulphur, asphalt, bitumen, squill, laurel and animal dung had magical and purificatory properties von Staden 1991: 57-59. Some ingredients had symbolic meanings and sexual connotations Totelin 2009: 197-224.

⁹⁶⁶ Totelin 2009: 269.

⁹⁶⁷ Soranus, *Gyn.* 3.5. Retained menses was a disease of stricture that required relaxant remedies: *ibid.*, 3.136.

⁹⁶⁸ Dung had cleansing, caustic and emollient properties and could draw matter out of inflamed tissues: Celsus, *Med.* 5.5, 5.8, 5.18.15, 5.12.

⁹⁶⁹ Von Staden 1991: 43.

⁹⁷⁰ Dioscorides, *MM* 2.98.

Jazzār, described fumigations of drugs on cow dung to cure gynaecological conditions.⁹⁷¹

Relatively few scholars have studied Greek and Roman gynaecological recipes in any detail. Totelin's in depth examination of recipes in the Hippocratic Corpus (2009) is the first study of its kind. Since over eighty per cent of these were gynaecological treatments, she refers mainly to uterine ailments.⁹⁷² Her references are direct quotations from the treatises and, therefore, the recipes are reliable accounts of the source material. Von Staden's short article (1991) describes six excremental recipes in the Corpus, quoting from Littré. All lists of ingredients correspond with one exception which omits Egyptian salt and honey.⁹⁷³ King describes a treatment for phlegmatic menses by means of a dry diet and exercise, vapour baths, vomiting and purgative pessaries.⁹⁷⁴ The treatment, however, stipulates that the latter should not cause irritation and includes drinking small quantities of pure wine.⁹⁷⁵

Dreckapotheke remedies elicited feelings of revulsion among Roman writers, but they had fewer reservations about the use of certain medicaments to delay or suppress secondary sexual characteristics in children. This would be unacceptable today because of its implications.

⁹⁷¹ Bos 1993: 308, 312.

⁹⁷² Totelin 2009: 111.

⁹⁷³ Von Staden 1991: 45-46. The five complete recipes relate to Hipp., *Mul.* 1.85 (8.210L), 89 (8.214L); *Mul.* 2.177 (8.360L), 192 (8.374L); *Nat.Mul.* 90 (7.408L). The incomplete recipe relates to *Mul.* 1.78 (8.186L)

⁹⁷⁴ King 1998: 36-37.

⁹⁷⁵ Hipp., *Mul.* 1.11 (8. 44-46L).

For this purpose, Dioscorides recommended the application of hemlock to the breasts of females and boys' testicles.⁹⁷⁶ He also suggested that:

Greek beans..plastered on the pubes of children, it keeps them child-like for a long time.⁹⁷⁷

The root [of wild hyacinth] when plastered with white wine on young boys, it is believed to keep them from coming to manhood.⁹⁷⁸

He did not speculate on who would wish to apply these preparations or explain what their intentions might have been. A feasible explanation is that the above subjects were male and female slave children. Laes has studied the role of *delicia* children in affluent Roman households. He concludes that many were kept as pets or companions for their masters and their offspring, but the purpose of some *delicia* children of either gender was to provide sexual services.⁹⁷⁹

Slave-owners with pederastic tendencies preferred boys with immature testes and, above all, those lacking body and facial hair.⁹⁸⁰ Pliny was in no doubt regarding their intentions:

To prevent the arm-pits of young persons from becoming hairy, they should be well rubbed with ants' eggs. Slave-dealers also, to impede the growth of the hair in young persons near puberty, employ the blood that flows from the testes of lambs when castrated.⁹⁸¹

Bats' blood has all the virtues of a depilatory: but if applied to the cheeks of youths, it will not be found sufficiently efficacious, unless it is immediately followed up by an application of verdigrease or hemlock-seed.⁹⁸²

Depilatories are prepared from the blood, gall, and liver of the tunny, either fresh or preserved; as also from pounded liver of the same fish, preserved with cedar resin in a leaden box; a recipe which we find given by the midwife Salpe for disguising the age of boys on sale for slaves.⁹⁸³

Statilius Crito (c.AD 100) was an important source for Galen's pharmacological recipes.⁹⁸⁴ Crito's second book on cosmetic remedies included topical medicaments to

⁹⁷⁶ Dioscorides, *MM* 4.79.

⁹⁷⁷ Dioscorides, *MM* 2.105.2. Translated by L. Beck (2.127 in Gunther's translation).

⁹⁷⁸ *Ibid.*, 4. 63. Translated by L. Beck (4.62 in Gunther's translation).

⁹⁷⁹ Laes 2003: 298-299; 2010: 269.

⁹⁸⁰ Bradley 1987: 115; Williams 1999: 26; Laes 2011: 266

⁹⁸¹ Pliny, *HN* 30.13. Translated by J. Bostock and H.T. Riley.

⁹⁸² *Ibid.*, 30.46. Translated by J. Bostock and H.T. Riley.

⁹⁸³ *Ibid.*, 32.47. Translated by J. Bostock and H.T. Riley.

suppress breast development in girls, to preserve their virginity, and prevent the growth of pubic hair in boys.⁹⁸⁵ The applications of bats' brains had a similar objective:

the blood of a bat, some of them write, if it is smeared on young women's breasts, protects them from enlarging for a long time. And some apply the blood of bats to a boy's pubic region, believing that the parts can be kept immune from puberty for a long time.⁹⁸⁶

Hyacinth roots could also delay the development of pubic hair in boys.⁹⁸⁷ There is, therefore, ample evidence for the repression of sexual maturation in children of both genders by means of pharmaceuticals for non-medical purposes.

Conclusion

The Roman medical treatises describe modifications to pharmacological treatments for children. It is clear that when choosing how to treat individuals, their strength was of far greater importance to medical authors than their chronological age or developmental status. There are indications that physicians tended to administer pharmaceuticals with animal ingredients to children in general, but to infants in particular. Many of these were bizarre, overtly magical in nature or had supernatural overtones. A significant number of child remedies involved the use of blood or excretory products from animal or human sources. These, again, had supernatural connotations. For a further discussion of supernatural medicine, see Section 4.4.4 below.

Textual references to drug treatments for diseases in children of specific gender are rare. Some medical writers described several pharmaceutical methods for delaying or minimising the impact of secondary sexual characteristics. The underlying priorities were to make slave girls more attractive to prospective owners, and to retain the appeal

⁹⁸⁴ Crito was a doctor to Emperor Trajan and wrote *On cosmetics* and two pharmaceutical works Von Staden 1989: 303.

⁹⁸⁵ Galen, *Comp.Med.Loc.* 1.4 (12.444K).

⁹⁸⁶ Galen, *SMT* 10.2.4 (12.258-259K). Author's translation. Cf. Pliny, *HN* 30.46: "bats' brains..the gall of a hedgehog, the ashes, too, of a burnt hedgehog." Translated by J.Bostock and H.T. Riley.

⁹⁸⁷ *Ibid.*, 7.20 (12.146K).

of slave boys for homosexual purposes. Despite their inclusion in medical texts, they reflected social, rather than clinical concerns. Dietetics and pharmacology were important ways in which it was possible to control the sexuality of children as they approached puberty. The following section explores the role of surgery in this respect.

4.4.3 Surgery

Celsus is our best source for surgical interventions in the early empire.⁹⁸⁸ A small number of the operations he described were exclusive to children. One example was the removal of stubborn deciduous teeth:

In children too if a second tooth is growing up before the first one has fallen out, the tooth that ought to come out must be freed all round and extracted; the tooth which has grown up in the place of the former one is to be pressed upwards with a finger every day until it has reached its proper height.⁹⁸⁹

This would have been a safe procedure, but some operations were risky for children. It was safer not to try to deal with congenital blockage (atresia) of the external ear canals:

If deeply there is no yielding pressure made on the probe..[it] should not be touched, lest..a spasm may be set up, and from that may follow danger of death.⁹⁹⁰

Another congenital condition was tongue-tie. This could interfere with speech and the mastication of food:

In such cases the extremity of the tongue is to be seized with a forceps, and the membrane under it incised, great care being taken lest the blood vessels close by are injured and bleeding causes harm.⁹⁹¹

This procedure clearly carried some risk.

There was often a need for urgent and drastic surgery in life-threatening situations. Serious head injuries could cause bleeding and increased pressure on the brain. Surgeons relieved the pressure by making openings, or trepanation orifices, into the

⁹⁸⁸ Galen did not write a treatise on surgery, although he intended doing so Prioreshi 1996: 466.

⁹⁸⁹ Celsus, *Med.* 7.12.1F. Translated by W.G. Spencer.

⁹⁹⁰ *Ibid.*, 7.8.1-2. Translated by W.G. Spencer.

⁹⁹¹ *Ibid.*, 7.12.4. Translated by W.G. Spencer.

skull using gouges and other instruments.⁹⁹² Pseudo-Galen described this operation for those suffering from hydrocephalus. Its aim was to relieve a build up of pressure caused by an accumulation of fluid within the skull.⁹⁹³

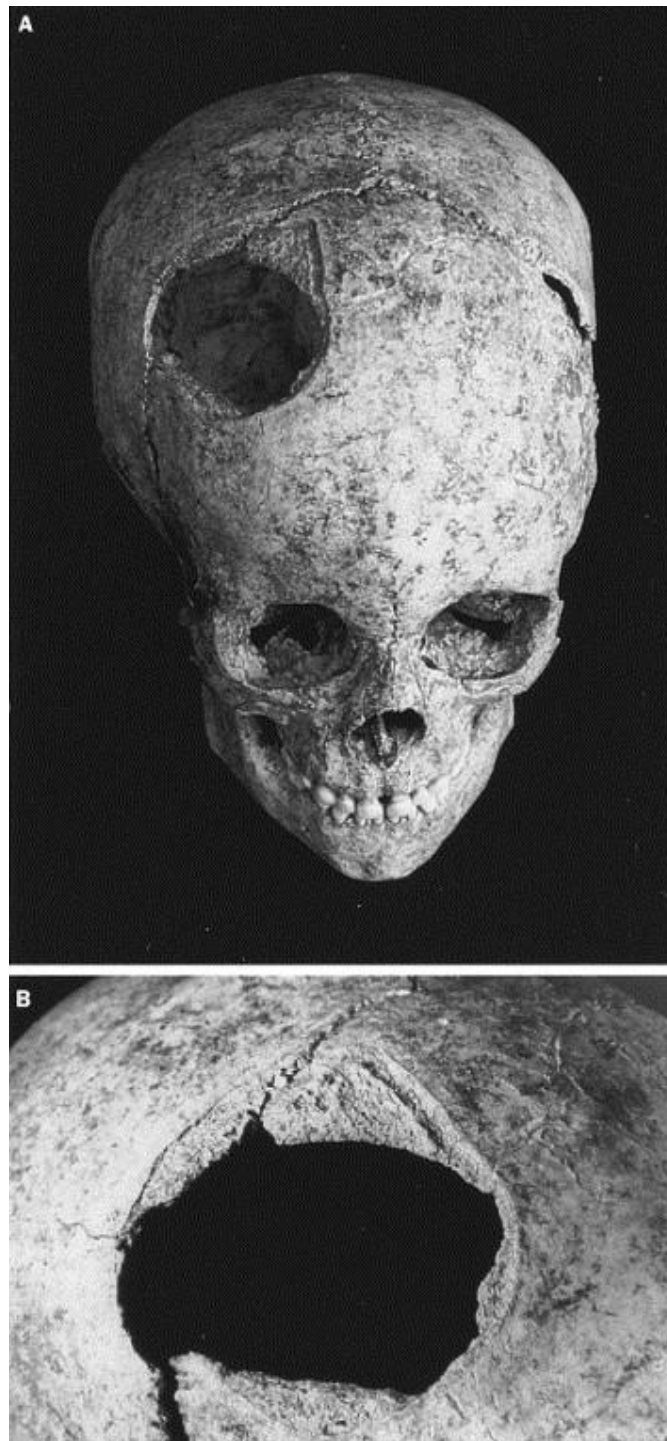
Although Celsus did not refer specifically to children undergoing cranial trepanation, there is archaeological evidence that doctors performed this procedure in juveniles. It is, however, extremely rare to encounter children's skulls showing signs of cranial trepanation.⁹⁹⁴ Prior to 1995, no such examples were known to have survived from the Roman period. In that year archaeologists recovered the well-preserved cranium of a five year old girl from a second century AD burial site at Fidenae near Rome. Figure 4.1 below demonstrates that the child's skull bore the hallmarks of hydrocephalus and signs of a surgical intervention.

⁹⁹² *Ibid.*, 8.3-4; Galen, *MM* 6.6 (10.444-455K).

⁹⁹³ Pseudo-Galen, *Int.* 19.4 (14.783K).

⁹⁹⁴ Jackson 2005: 116; Mariani-Costantini *et al.* 2000: 305.

Figure 4.1 Skull of a Roman child from Fidenae



View A shows the anterior part of the cranium: there is considerable expansion on the right side.

View B shows the external surface of the elliptical trepanation orifice in more detail. It measures 5.4 cm by 4.8 cm, and involves the right frontal and parietal bones. There is a U-shaped incision that is 0.3–0.4 cm wide; this was made by the blade of the surgical instrument having the same width Mariani-Costantini *et al.* 2000: 305.

An examination of the skull revealed bulging of the bone overlying the right cerebral hemisphere due to raised intracranial pressure. This was due to a slow-growing space-occupying lesion. The cause of the underlying condition was not clear: it may have been trauma, infection or a malignant condition. Whatever its aetiology, the situation was so desperate that a surgeon attempted to relieve the effects of raised intra-cranial pressure. The pattern of grooves around the edges of the aperture indicates that he employed a narrow-bladed bone chisel to create an elliptical channel prior to the removal of the portion of bone. A thin rim of newly formed bone demonstrates that the unfortunate child survived for just a few weeks after the operation.⁹⁹⁵

In a sequel to this discovery, Ralph Jackson made a latex mould of the trepanation orifice of the girl's skull. He then examined the blades of ten chisels from a large archaeological assemblage of Roman surgical instruments. These had been recovered from the ruins of a doctor's house at Ariminum (present day Rimini) which had collapsed during a fire in AD 257-258.⁹⁹⁶ Among the bone instruments were a pair of small, narrow-bladed chisels and four iron lenticulars that are specialised types of chisels.⁹⁹⁷ Jackson found that the grooves around the trepanation aperture in the the Fidenae skull corresponded to the cutting edges of the small chisels. This indicated that the surgeon who operated on the child used a similar size and type of tool.⁹⁹⁸

⁹⁹⁵ Mariani-Costantini *et al.* 2000: 305-306.

⁹⁹⁶ Ralph Jackson is Curator of the Romano-British Collection at the British Museum, and a renowned authority on Roman surgical instruments. The ten chisels were among the one hundred and fifty implements recovered from Rimini during the excavation that took place between 1989 and 1997 Jackson 2005: 110.

⁹⁹⁷ These are illustrated in diagrams 3 and 5, Fig. 1 Jackson 2005: 99.

⁹⁹⁸ Jackson 2005: 116.

Galen mentioned the use of a hollow chisel (*cycliscos*) and a lenticular gouge (*phacotos*) in surgery to the head, especially in the case of skull fractures.⁹⁹⁹ Milne believes that the lenticular was held vertically and struck by a small hammer; it had a rounded button on the end that prevented it from injuring the brain.¹⁰⁰⁰

Paul recorded Galen's method of performing the procedure using a type of incisor called a lenticular which had a projection at the extremity. It was his preferred instrument because it was safe to use. The surgeon first scraped a groove marking the perimeter of the aperture with hollow chisels.¹⁰⁰¹ Paul then used Galen's own words:

‘you apply the broad part of the lenticular to the meninx, divide the cranium by striking it with the small hammer..and if anything adhere to the cranium, the round part of the lenticular removes its adhesion without trouble. And behind it follows the incisor or knife itself, dividing the skull, so that it is impossible to discover another mode of operating more free from danger or more expeditious.’¹⁰⁰²

It appears that the surgeon at Fidenae made a similar groove in the surface of the girl's cranium using a narrow-bladed chisel. He then used this channel as a guide for the lenticular which he struck with a small hammer in order to detach the central portion of bone.¹⁰⁰³ The Rimini assemblage of instruments is of great significance for the history of Roman bone surgery because narrow chisels and lenticulars had only been known from descriptions in Roman treatises prior to its discovery.¹⁰⁰⁴ These findings demonstrate the value of archaeological evidence in solving some uncertainties in the practice of medicine. In this particular instance, an interdisciplinary approach made it possible to provide links between ancient texts, signs relating to a specific

⁹⁹⁹ Galen, *MM* 6.6 (10.444-445K).

¹⁰⁰⁰ Milne 1907: 124, illustrated in Plate XL; Jackson 2005: 117.

¹⁰⁰¹ Paul, *Epitome* 6.90.

¹⁰⁰² *Ibid.* Translated by F. Adams (Volume 2: 432). The term ‘meninx’ refers to the dura which was a membrane covering the surface of the brain.

¹⁰⁰³ Jackson 2005: 116-117.

¹⁰⁰⁴ *Ibid.*, 116.

palaeopathological condition in human skeletal remains and extant surgical instruments.¹⁰⁰⁵

Celsus identified several procedures in which surgeons modified their techniques when operating on children. As an example, he described different approaches when treating scrotal hernias in boys and men.¹⁰⁰⁶ These, together with umbilical hernias, are discussed further below in Section 5.9.

Surgery for children of different genders

Bladder stones generally troubled male patients, but surgeons modified their procedures when removing them from females (see Section 5.5 below). There were, however, a number of operations that were peculiar to children of specific gender. Operations for scrotal hernias and hydroceles related only to males. Many procedures on the external genitalia of children were essential for genuine clinical reasons. A case in point was a congenital imperforate hymen or labial fusion which would cause problems in later life. Celsus described the incision that would permit the drainage of menstrual blood and allow coitus:

There are also some troubles which are peculiar to females, especially that occasionally their genitals do not allow of coitus, the orifices having coalesced. If the condition is congenital a membrane obstructs the vulvar orifice. [which]..should be incised along two lines crossing one another like the letter X, great care being taken that the urethra is not injured; then the membrane is to be cut away all round.¹⁰⁰⁷

In contrast with the above, some practitioners performed other non-essential kinds of genital surgery in children or adolescents. These related to the control of their sexual behaviour and fertility at that moment in time or in later life. An example of this was

¹⁰⁰⁵ Mariani-Costantini *et al.* 2000: 307; Jackson 2003: 319.

¹⁰⁰⁶ Celsus, *Med.* 7.20.4-6.

¹⁰⁰⁷ *Ibid.*, 7.28. Translated by W.G.Spencer.

the insertion of a leather thong or fibula (metal clasp) through the end of the prepuce of pre-pubertal boys or adolescents:

The foreskin covering the glans is stretched forwards and the point for perforation marked on each side with ink. Then the foreskin is let go. If the marks are drawn back over the glans too much has been included, and the marks should be placed further forward. If the glans is clear of them, their position is suitable for the pinning. Then the foreskin is transfixated at the marks by a threaded needle, and the ends so this thread are knotted together. Each day the thread is moved until the edges of the perforations have cicatrized. When this is assured the thread is withdrawn and a fibula inserted, and the lighter this is the better.¹⁰⁰⁸

Celsus commented that pinning the prepuce in young boys was “either for the sake of the voice or for health's sake;” he also felt that “this operation is more often superfluous than necessary.”¹⁰⁰⁹ In other words, it was not always medically justified. The reasons for this procedure included the prevention of masturbation and exposure of the glans to public gaze in the gymnasium or baths, and the control of male fertility.¹⁰¹⁰ Celsus’ reference to “the voice” alludes to the belief that sexual activity hastened the deepening of the voice in male choristers while they were undergoing puberty.¹⁰¹¹ It is not clear how infibulation could have brought any health benefits.

Castration had a permanent effect on the fertility of young boys. Slave-traders castrated young slave boys, and there was a brisk and lucrative market in such children. Domitian “prohibited the castration of males” on Roman soil in the late first century AD.¹⁰¹² Nevertheless, his legislation and that of subsequent emperors was ineffective.¹⁰¹³ There are no descriptions in Roman medical treatises of such procedures. Paul of Aegina indicated that he was not in favour of castration for non-medical purposes:

¹⁰⁰⁸ Celsus, *Med.* 7.25.2. Translated by W.G. Spencer.

¹⁰⁰⁹ *Ibid.*

¹⁰¹⁰ Schultheiss *et al.* 2003: 758-761.

¹⁰¹¹ *Ibid.*, 758. Aristotle wrote that “Now this breaking of the voice is the more apparent in those who are making trial of their sexual powers,” *Historia Animalia* 7.1. Translated by D.W. Thompson.

¹⁰¹² Suetonius, *Domitian* 7.1; Statius, *Silvae* 3.4.74. Laes notes that Statius avoided implying that Emperor Domitian was hypocritical in having his own slave-boy, Earinus, castrated by compression of the testicles after passing this legislation 2011: 231-232.

¹⁰¹³ Constantine, Leo I and Justinian reinforced Domitian’s legislation, but the practice continued unabated Taylor 2000: 141.

The object of our art being to restore those parts which are in a preternatural state to their natural, the operation of castration professes just the reverse. But since we are sometimes compelled against our will by persons of high rank to perform the operation, we shall briefly describe the mode of doing it.¹⁰¹⁴

He explained that:

There are two ways of performing it, the one by compression, and the other by excision. That by compression is thus performed: children, still of a tender age, are placed in a vessel of hot water, and then when the parts are softened in the bath, the testicles are to be squeezed with the fingers until they disappear, and, being dissolved, can no longer be felt.¹⁰¹⁵

In spite of the general opinion that this was a ‘safer’ alternative to excision, around two thirds of boys died as the result of the procedure.¹⁰¹⁶ One might assume that slave boys were expendable, but those who survived commanded high prices at auction.

In Greek and Roman culture the possession of an intact prepuce was an important aspect of male health, beauty and decency (see also Section 4.2.1 above). The circumcision of healthy boys would have offended Roman sensibilities. Despite this, at least a third of adult male mummies from the Late Ptolemaic and Roman Kellis 1 cemetery at the Dakhleh Oasis in Egypt showed signs of having undergone circumcision. Since no males below the age of eleven years had been circumcised, it is likely that circumcision was a puberty rite at this location during the early Roman period.¹⁰¹⁷ Strabo visited Egypt in the early first century AD and remarked that the Egyptians and Jews “circumcised the males.”¹⁰¹⁸

There is a great deal of debate about the practice of female circumcision or female genital mutilation (FGM) in Hellenistic and Roman Egypt.¹⁰¹⁹ A papyrus dating to 163 BC from Saqqara records a legal petition concerning the theft of money belonging to a

¹⁰¹⁴ Paul, *Epitome* 6.68.

¹⁰¹⁵ Paul, *Epitome* 6.68. Paul indicated his preference for surgical incision, especially for adults.

¹⁰¹⁶ Laes 2011: 232.

¹⁰¹⁷ Lord 2011: 232- 236.

¹⁰¹⁸ Strabo, *Geography* 17.2. Translated by H.L. Jones.

¹⁰¹⁹ Juliussen-Stevenson 2008: 38; Lord 2011: 237.

girl named Tathemis. She had accumulated this to finance preparations for her forthcoming marriage which included genital surgery:

Sometime after this, Nephoris defrauded me, being anxious that it was time for Tathemis to be circumcised, as is the custom among the Egyptians. She asked that I give her 1,300 drachmae from what [Tathemis] had paid me..to clothe her..and to provide her a marriage dowry, and [she promised that] if she didn't do each of these or if she did not circumcise Tathemis in the month of Mecheir..she would repay me 2,400 drachmae on the spot.¹⁰²⁰

It is not clear how radical the procedure was.¹⁰²¹ A number of Roman sources recorded that circumcision was commonplace among the indigenous Egyptian population. For example, Strabo wrote that the Egyptians also “excised females.”¹⁰²² This ritual may have possibly been undertaken by non-medical personnel and within a temple setting.¹⁰²³ Pseudo-Galen also made the brief remark concerning the *nymphê* (clitoris), saying that:

the *nymphê* that, as a result of its prominence, the Egyptians decide to excise in young girls.¹⁰²⁴

Whereas Aetius implied that this was the case in his day (see below), Paul passed no comment about its prevalence in Egypt. There is some academic debate as to whether the ritual procedure of nymphotomy was, indeed, “customary among the Egyptians.”¹⁰²⁵

Greek and Roman writers did not advocate any kind of preventative surgery. They did, however, describe the removal of an already hypertrophied clitoris in a grown woman.

¹⁰²⁰ Oxyrhynchus Papyrus 24, Kenyon 1893: 31-32 (see also Knight 2001: 330).

¹⁰²¹ The procedure may have involved excision of the hood of the clitoris which would have been equivalent to First Degree mutilation according to the classification by the World Health Organisation. It is more likely from Aetius’ description that Egyptian girls would have undergone total removal of the clitoris. See Knight 2001: 323 for illustrations.

¹⁰²² Strabo, *Geography* 17.2. Translated by H.L. Jones. See Huebner 2009: 159; Knight 2001: 328, 333 for discussions of the validity of the testimony of Strabo and other sources. Other witnesses were Diodorus Siculus who visited Egypt between 60 and 56 BC, Philo Judaeus (early first century AD) and Ambrose, Bishop of Milan, who died in AD 397.

¹⁰²³ Knight 2001: 319, 329.

¹⁰²⁴ Pseudo-Galen, *Int.* 10.9 (14.706K). Translated by C. Petit.

¹⁰²⁵ Huebner (2009: 160) takes issue with Montserrat’s argument (1996: 42-44) that “it seems improbable that female genital mutilation was widespread in Græco-Roman Egypt.” Knight points out that a number of issues make it difficult to come to a satisfactory conclusion on the matter 2001: 319.

Soranus wrote a chapter entitled *On an excessively large clitoris*, but this has not survived in its original Greek form. Caelius Aurelianus' Latin version states that affected women were disturbed about the ugly appearance of an enlarged clitoris. His account of the operation was very brief:

The woman is placed in a supine position with her thighs slightly together..Then the superfluous amount should be held with a forceps and an appropriate amount cut off with the scalpel.¹⁰²⁶

Aetius was also concerned about the feelings of shame resulting from an enlarged clitoris. The continual rubbing of clothes caused irritation and an increased desire for sex. Aetius confirmed that in his day (during the sixth century AD) it was still customary for Egyptian girls to undergo pre-emptive nymphotomy shortly before marriage.¹⁰²⁷ He provided a full account of the operation whereby a male operator seized the organ with a pair of forceps. He then stretched and excised the 'excess' tissue, making sure that he did not remove too much as this could result in the formation of a urinary fistula.¹⁰²⁸

Soranus was the source for the Byzantine surgeon, Paul of Aegina, on the matter.¹⁰²⁹ Their concern was that affected women not only developed an increased desire for sex, but penetrative sex. Paul was a little more explicit:

some women have had erections of this part like men, and also venereal desires of a like kind.¹⁰³⁰

¹⁰²⁶ Soranus, *Gyn.* 4.9, preserved in Caelius Aurelianus, *Gynaecia* 2.112. Translated by Drabkin and Drabkin.

¹⁰²⁷ Aetius, *Tetrabiblon* 16.103, 105. See also Knight 2001: 327.

¹⁰²⁸ *Ibid.*

¹⁰²⁹ Knight 2001: 325.

¹⁰³⁰ Paul, *Epitome* 6.70. Translated by F. Adams. Soranus wrote that such women "acquire an appetite like men, and the [clitoris] is so driven, they come into venery, *Gyn.* 4.9, preserved in Caelius Aurelianus, *Gynaecia* 2.112. Translated by Drabkin and Drabkin. Knight suggests that this version is more reliable in this matter than Mustio's sixth century Latin translation, 2001: 322, 324.

There is some scholarly disagreement about the sexual behaviour and orientation of Roman women who had clitoral hypertrophy.¹⁰³¹ The comments by Soranus and Paul leave no doubt that Roman authors feared that such women might exhibit assertive sexual behaviour or even homoerotic tendencies. This fear, perhaps, may have been the motive behind Rufus' warning that girls approaching puberty could develop a "masculine character" through excessive exercise (see Section 4.4.1 above).

It appears, then, that Roman doctors reserved this procedure for reducing the size of an enlarged clitoris in mature females and for the relief of any attendant discomfort. An underlying agenda may have to prevent unrestrained and what they regarded as deviant sexuality in women. Roman sources attest the ritual genital mutilation of indigenous Egyptian females around the age of puberty during the Roman period. The procedure involved the amputation of the clitoris in order to prevent it becoming enlarged later in adult life and to ensure sexual continence in females. There is no evidence of the use of 'prophylactic' FGM in Roman females in Egypt or elsewhere in the Roman Empire.

Conclusion

Roman doctors regarded surgery as inherently dangerous for persons of all ages, but certain operations were especially perilous for children. Procedures that involved the correction of congenital abnormalities of children were essential for medical reasons. Medical writers disapproved of male infibulation and the castration of infants and children for sexual purposes. Neither did they advocate pre-emptive clitoridectomy for

¹⁰³¹ Brooten believes that Soranus was primarily concerned with controlling tendencies of some women to indulge in homoerotic behaviour 1996: 163-171. An opposing view is that although the condition increased their desire for sex, it did not lead to women seeking to penetrate other females: T.C. Brennan, 1997 Review of Brooten, 1996. *Bryn Mawr Classical Review* 97.5.7. See also King 1998: 14-20 for a discussion on the controversial view of Isaac Baker Brown (1812-1873) that clitoridectomy controlled masturbation and licentious behaviour in women; he based his authority on Hippocratic lore.

Roman girls around the age of puberty. There is some evidence that surgeons modified their techniques to take into account the age and physical strength of juveniles. Sections 5.5 and 5.9 below explore these in the context of case studies relating to urinary catheterisation, lithotomy and operations for umbilical and scrotal hernias.

4.4.4. Supernatural and folk healing

Anxious parents could turn to a range of therapies when their children fell sick. Supernatural, popular and folk practices flourished alongside learned medicine.¹⁰³² The boundaries between magical, religious healing and mainstream medicine were indistinct.¹⁰³³ Romans would have regarded these as equally valid components of a complete therapeutic spectrum, and many doctors recommended the use of magical devices such as amulets.¹⁰³⁴ Supernatural and folk remedies were often the only sources of healing available to the poor or those living in remote rural areas. Some parents may not have had much faith in the kind of treatments available from physicians.¹⁰³⁵ In addition, doctors were often reluctant to treat children suffering from incurable conditions.¹⁰³⁶

Pliny recorded a vast corpus of magical and folk remedies, acknowledging that professional medicine was not always effective against some diseases:

in the treatment of quartan fevers, clinical medicine is, so to say, pretty nearly powerless; for which reason we shall insert a considerable number of remedies recommended by professors of the magic art.¹⁰³⁷

¹⁰³² King 1997: 90, 92; Lane 1999: 645; Bradley 2005: 87; Vuolanto 2010: 135; Baker 2010: 168-169.

¹⁰³³ Jones 1957: 459; Lane 1999: 645; Bradley 2005: 87.

¹⁰³⁴ Jones 1957: 459; Lane 1999: 645.

¹⁰³⁵ Jones 1957: 468.

¹⁰³⁶ Ferngren and Amundsen 1996: 2958-295.

¹⁰³⁷ Pliny, *HN* 30.30. Translated by J. Bostock and H.T. Riley.

Desperate parents may well have contemplated consulting physicians or drug vendors in addition to making supplications to the deities, engaging in magical rituals or attaching healing amulets to their children.¹⁰³⁸

Religious healing

There are few literary accounts of parents pleading with the gods to cure their sick children. Horace (65 – 8 BC) described the plea of a mother whose son was ill with quartan fever:

‘O Jupiter, who givest and takest away sore afflictions,’ cries the mother of a child that for five long months has been ill abed, ‘if the quartan chills leave my child, then on the morning of the day on which thou appointest a fast, he shall stand naked in the Tiber.’¹⁰³⁹

This was a satirical account rather than a true story, but it illustrates the anguish of parents of ailing children and the prayers they may have uttered for divine healing. An Egyptian papyrus dating to the third century AD provides firm evidence that people prayed for the recovery of sick children. It consists of a letter from Aurelius Demareus to his sister, saying that he had prayed to all the gods, especially “the great god Serapis,” for her health and that of their child and other family members.¹⁰⁴⁰

Emperor Marcus Aurelius (AD 121-189) acknowledged that men offered prayers to the gods to preserve the lives of their children. He advised that it was best, instead, to pray to them for the strength to bear the loss of their offspring:

One man prays thus..How shall I not lose my little son? Thou thus: How shall I not be afraid to lose him? In fine, turn thy prayers this way, and see what comes.¹⁰⁴¹

This was in keeping with his personal Stoic philosophy.¹⁰⁴²

¹⁰³⁸ Flemming 2000: 39.

¹⁰³⁹ Horace, *Satires* 2.3.288. Translated by H.R. Fairclough.

¹⁰⁴⁰ *P. Oxy.* VII 1070. *The Oxyrhynchus Papyri*. Part VII. Translated by A.S. Hunt 1910. London: Egyptian Exploration Fund, 227.

¹⁰⁴¹ Marcus Aurelius, *Meditations* 9.40. Translated by G. Long.

¹⁰⁴² Long 2003: 189.

Archaeologists have recovered a large number of votive deposits of stone images of children from Gallo-Roman healing sanctuaries in the Burgundy region of France. Important examples of these are the cult centres of Fontanes Sequanae and Apollo Belenus at Sainte Sabine. Some images depict child pilgrims between the ages of seven and twelve years, while others portray infants wrapped in swathing bands.¹⁰⁴³ There are different explanations for the reasons why parents deposited such images. One interpretation is that swaddled infants represented a desire for pregnancy and a safe delivery or gratitude for a happy outcome.¹⁰⁴⁴ Another is that parents left votives as inducements to the deities to heal their sick children.¹⁰⁴⁵ Oberhelman believes that they had no connection with health matters.¹⁰⁴⁶ Derks points out that a normal practice would have been for parents or other interested parties to promise such gifts *after* the deities healed their offspring.¹⁰⁴⁷ It is not possible to be sure of the motives of individuals who placed these kinds of objects in healing shrines. Given the healing nature of the shrines, the most likely explanation is that such votives represented requests or thanks for pregnancy and the health of babies and children. A possibility that has received no consideration so far is that they represented general concerns about high levels of disease occurring in juveniles within the local community.

Roman Egypt is another source of evidence for the religious healing of children. It is difficult to find confirmation that children sought or received cures at Asklepian shrines

¹⁰⁴³ Aldhouse-Green: 1999: 11, 16, 33, 94. Other sites in France include Halatte, Le Tremblois, while Trier is just one example in Germany Derks 2014: 50-57.

¹⁰⁴⁴ Laes 2011: 56; Graham 2013: 225.

¹⁰⁴⁵ Aldhouse-Green 1999: 16, 9; Deyts 2004: 237; Carroll 2012: 49.

¹⁰⁴⁶ Oberhelman 2014: 57.

¹⁰⁴⁷ Derks 2014: 59-62.

during the Roman period.¹⁰⁴⁸ There is epigraphic evidence of a young female visiting a Romano-Egyptian temple with her parents. According to an inscription dating to *c.*AD 113, the family visited the chapel of Queen Hathshepsut at Deir el Bahari in Egypt. It does not record the daughter's age, but a reference to feasting indicates that she was, at the very least, an older child.¹⁰⁴⁹ The purpose of the visit was to undergo medical incubation.¹⁰⁵⁰ It is likely that children received divine healing in person at Romano-Egyptian temples or as a result of adults appealing on their behalf.¹⁰⁵¹

The much-loved dwarf god, Bes, enjoyed a cult following from pharaonic times through to the Christian era.¹⁰⁵² He safeguarded the health of mothers and children, and each year parents gathered at the Temple of Hathor at Denderah to seek his aid for the well-being of their young.¹⁰⁵³ Ammianus Marcellinus (fourth century AD) confirmed that there was another Bes cult centre at Abydum where ancient ceremonials took place.¹⁰⁵⁴ The many surviving examples of stone and faience Bes figures, tablets and amulets from the Roman period are proof of his popularity.¹⁰⁵⁵

¹⁰⁴⁸ The cult of Asklepios spread across the Mediterranean in the fourth century BC. A few testimonies, or *iamata*, from this early period at Epidaurus mention the healing of boys. The cult arrived in Rome in 291 BC Ferngren 2014: 50-53.

¹⁰⁴⁹ According to Inscription 117, the family worshipped and feasted there for three days in the sixteenth year of Emperor Trajan Łajtar 2006: 53, 199-200. Pilgrims left deposits of Roman coins, some of which date to the fourth century AD Frankfurter 1998: 136-137.

¹⁰⁵⁰ Romano-Egyptian healing centres offered incubation in common with Asklepian temples throughout the Mediterranean region Łajtar 2006: 53. Frankfurter notes that the syncretisation of native Egyptian with classical deities began in the Hellenistic period and thrived during the Roman era 1998: 161. The cult of Isis was popular among all sections of society in Egypt from the late second century AD. Her centres at Canopus survived until around AD 389 and into the fifth century at Menouthis *ibid.*, 41, 106-107, 136, 163. In addition to incubation, priests offered herbal treatments, magical rites and remedies *ibid.*, 46. See Nunn 1997: 208 concerning the increasing interaction between Egyptian and Greek medical traditions.

¹⁰⁵¹ Łajtar 2006: 51.

¹⁰⁵² Pinch 1994: 170; Dasen 2013: 58.

¹⁰⁵³ Frankfurter 1998: 124, 127, 128; Dasen 2013: 74.

¹⁰⁵⁴ Ammonius Marcellinus, *History* 19.12.3.

¹⁰⁵⁵ British Museum: stone statue Inv. no. EA 463. Museum of Fine Arts, Boston: amulets 11.796, 11.1098, 11.1106. The Egyptian Museum, Cairo: terracotta figure POT.LL.00403. Bibliotheca Alexandrina Antiquities Museum: sandstone tablet BAAM Serial 0494.

In summary, evidence for the religious healing of children is largely circumstantial. There is, however, some literary and archaeological support for the assumption that parents offered prayers to the deities for help in maintaining good health in their offspring or in curing their ailments.

Folk practices and magic

Folk or popular medicine is easier to describe than to define. It was an oral tradition handed down through generations and consisted of a mixture of pharmacology, superstitious beliefs, and magical and religious healing.¹⁰⁵⁶ Female carers, such as midwives and nurses were largely responsible for the treatment of ailments of infants and children. They, together with local wise women, engaged in superstition and folk healing.¹⁰⁵⁷ Many of their traditions involved the use of magic practices “depending for their effect on forces or powers in the world beyond human understanding.”¹⁰⁵⁸

Unfortunately these women left no written records, and it is only possible to gain an occasional insight into their world. One notable example is Soranus’ disapproval of the superstitious practices of some nurses when attempting to cure small infants suffering from tonsillitis:

The nurses..seizing both legs with one hand, they place the child head downwards in the doorway and make the bregma [crown] touch the threshold of the house; and this they do seven times.¹⁰⁵⁹

Certain odd numbers brought luck for Romans, especially three and its multiples, and seven and nine.¹⁰⁶⁰ References to the number seven and the liminal nature of the

¹⁰⁵⁶ Jones 1957: 464; Stannard 1982: 12; Riddle 1993: 118; Gordon 1995: 363; Anderson 2006: 2, 175. Riddle distinguishes between “low medicine” and “high medicine,” i.e. folk practices as opposed to learned medicine 1993: 117.

¹⁰⁵⁷ Bonet 1998: 196-198; Dasen 2011: 293; Laes 2011: 60.

¹⁰⁵⁸ Keyser 1997: 175.

¹⁰⁵⁹ Soranus, *Gyn.* 2.23.50. Translated by O. Temkin: 121.

threshold mark this bizarre practice out as a magical ritual.¹⁰⁶¹ (See Section 5.7.1 below for a case study of treatment of inflamed tonsils).

Pliny commented on the widespread use of magical healing in his day:

It is clear that there are early traces still existing of the introduction of magic into Italy.¹⁰⁶²

This was during the first century AD, but there is archaeological evidence that the use of magic survived in rural areas of Italy until the mid fifth century AD. In the late 1980s archaeologists excavated an infant cemetery in an abandoned villa at Poggio Gramignano near Lugnano, situated seventy km north of Rome. They recovered the skeletons of forty-seven infants and foetuses. Grave goods included protective amulets and items such as frogs and ravens' claws; these and the decapitated and severed remains of dogs and puppies all had strong magical connotations.¹⁰⁶³ Christianity mainly held sway in urban areas and it is likely that had not yet gained dominance in the countryside where local communities held onto the remnants of pagan beliefs.¹⁰⁶⁴

Scribonius Largus reported that a Roman matron recommended a remedy for children suffering from epilepsy. It called for daily doses of ivory dust, Attic honey and animal blood for thirty days. Number magic was an essential ingredient of the administration of this remedy. Alternate cycles of increasing and decreasing doses of odd numbers of spoonfuls commenced when the moon was on the wane. Another magical aspect of this remedy was the use of the blood of turtles or doves. It was necessary to use the blood of male creatures for boys, whereas the blood of female animals was more suitable for

¹⁰⁶⁰ Tavenner 1916: 46, 119; Lane 1999: 639-640.

¹⁰⁶¹ Burgière *et al.* 2000: 115 n266. Pliny referred to these numerals, questioning why Romans believed in their power, *HN* 28.5. For the magical significance of doorways, see M.B. Ogle, 1911. 'The house-door in Greek and Roman religion and folk-lore.' *The American Journal of Philology* 32 (3): 251-271.

¹⁰⁶² Pliny *HN* 30.3. Translated by J. Bostock and H.T. Riley.

¹⁰⁶³ Lane 1999: 633, 647. There was a long tradition of the use of puppies for magical healing and purification in parts of Italy Soren 1999: 619-621.

¹⁰⁶⁴ Lane 1999: 647.

girls.¹⁰⁶⁵ This is a rare example of gender differences in the prescription of magical medicines.

Over the past few decades, scholars have shown interest in the mythological, astrological, magical and folk aspects of Greek and Roman herbal lore.¹⁰⁶⁶ Nutton argues that the employment of drugs by physicians and magicians reflects the overlap between pharmacological and supernatural healing.¹⁰⁶⁷ Some plants also had links to the heavenly bodies, such as heliotrope, squill, peony, violets, crocuses and hellebore.¹⁰⁶⁸ A good example of this is the peony which had links with magic and the moon goddess, Selene.¹⁰⁶⁹ It had a role in the treatment of epilepsy and bladder calculi (see Sections 5.4 and 5.5 below).

Another marker of the magical attributes of plants was the colour purple.¹⁰⁷⁰ This is especially relevant to children's medicine since Roman pharmaceutical texts mentioned its significance on several occasions. Pliny and Dioscorides remarked on the use of purple-flowered plants in apotropaic amulets and magical rituals to cure fevers.¹⁰⁷¹

¹⁰⁶⁵ Scribonius Largus, *Comp.* 16. The drug was sealed in a wooden box until required. The schedule of daily doses was measure in spoonfuls; three on the first day, followed by five, seven, nine, eleven, nine, seven, five, three. This was repeated until the end of the treatment period of thirty days.

¹⁰⁶⁶ See especially, Stannard 1982; Scarborough 1991; Lane 1999: 638-639; Ducourthial 2003; Nutton 2013b.

¹⁰⁶⁷ Nutton 1991: 18.

¹⁰⁶⁸ Ducourthial 2003, Lowe 1929: 24-25; Stannard 1982: 17-22. Cassia and crocus expelled bladder calculi Celsus, *Med.* 5.20.6. Although squill (scilla) too possessed anti-convulsive properties (see Section 5.4), Pliny drew attention to its magical properties, remarking that "a squill, suspended at the threshold of the door, effectually shuts all access to evil spells and incantations," *HN* 20.39. Translated by J. Bostock and H.T. Riley. Pliny and Galen described broadly similar methods of preparing medicine from squills that involved steeping them in vinegar and leaving them to mature in the summer sun Pliny, *HN* 20.39; Galen, *Puer.Epil.* 6.

¹⁰⁶⁹ Stol 1993: 124; Ducourthial 2003: 295, 304. Dioscorides noted that the male peony was also known as selenion, *MM* 3.15.

¹⁰⁷⁰ Lowe 1929: 24.

¹⁰⁷¹ Pliny believed that amulets containing heliotropes protected wearers from the stings of scorpions; the magi also administered three or four of its seeds to cure tertian and quartan fevers, *HN* 22.29. He also reported that the aster "for the cure of inguinal complaints, it is recommended that it should be gathered with the left hand, and attached to the body near the girdle. It is of great service also, worn as an amulet, for sciatica" *HN*, 27.19. Translated by J. Bostock and H.T. Riley. Dioscorides provided identical

Children, in particular, benefitted from cures derived from such plants. Heliotrope leaves healed infants suffering from siriasis when applied to their heads.¹⁰⁷² Dioscorides described three ‘purple remedies’ for convulsions and epilepsy occurring in children. They involved swallowing thistle seeds and petals from purple asters or violets in draughts of water.¹⁰⁷³ Practitioners would probably have looked upon the above plants simply as cures.¹⁰⁷⁴

In summary, there is evidence that magical healing continued to thrive throughout the Roman period and beyond. Whereas rational thought formed the basis of orthodox medicine, magic depended on the mysterious powers of unseen forces. Folk medicine and magical practices were especially popular among those caring for children. It is often difficult to separate the medical, magical and astronomical properties of plants. The colour purple held a special significance in the medico-magical management of epileptic disorders of childhood. There were also strong magical connotations of remedies containing animal parts and their derivatives (see below and Tables 4.3, 4.4 and 4.5 above).

Amulets

These were in widespread use by Romans of all ages. Many were made from perishable materials such as leather, cloth and string; others were fashioned from metals and semi-precious stones. The contents were often derived from plants, animals or minerals.¹⁰⁷⁵

information regarding these amulets and those containing purple thistle seeds which drove away venomous creatures, *MM* 4.120; 3.14.

¹⁰⁷² Pliny, *HN* 22.29; Dioscorides, *MM* 4.193.

¹⁰⁷³ Dioscorides, *MM* 3.14; 4.120, 122.

¹⁰⁷⁴ Jones 1957: 459.

¹⁰⁷⁵ Dickie 2001: 305, 306.

They served a variety of purposes, such as protecting children from evil influences.¹⁰⁷⁶ They could also avert diseases, as discussed in Section 4.3 above, or heal sick children. Around a fifth of the devices Pliny described were intended for infants. Red iris, when attached to the bodies of infants cured their coughs.¹⁰⁷⁷

Many amulets for infants and children were made from animal materials. Several were concerned with dentition, as shown in Section 4.2.4 above. The rationale behind their use was that they worked by sympathetic magic.¹⁰⁷⁸ There is no way of knowing whether Romans really believed that they were effective. On the other hand, Galen occasionally endorsed the use of amulets. One prime example of this was peony root which served as a remedy for epilepsy: this is discussed in detail in Section 5.4.¹⁰⁷⁹ This was despite his protestations that his method of medicine was scientific and devoid of superstition and magic. He was critical of the Egyptians who made incantations while gathering herbs since he felt that these practices belonged to the realm of superstition and did not constitute ‘proper medicine.’¹⁰⁸⁰

Sympathetic magic was also important for adults. Pliny suggested that they wore amulets containing bones found in animal dung for the relief of toothache:

it is a well-known fact, too, that there are bones generally found in the excrements of that animal [the wolf]; these bones, attached to the body as an amulet, are productive of advantageous effects.¹⁰⁸¹

It is possible that this made use of the strength of the wolf as well as that of the animals that it had consumed. This may also have been true of a similar remedy that Pliny recommended for infants suffering from siriasis:

¹⁰⁷⁶ Dasen 2011: 311.

¹⁰⁷⁷ Pliny, *HN* 21.83.

¹⁰⁷⁸ Stannard 1982: 14; Lane 1999: 642; 2013: 7-8.

¹⁰⁷⁹ Galen, *SMT* 6.3.10 (11.859-860K).

¹⁰⁸⁰ Galen, *SMT* 6 proemium (11.792K).

¹⁰⁸¹ Pliny, *HN* 28.49. Translated by J. Bostock and H.T. Riley.

The inflammation called siriasis, to which infants are liable, is cured by attaching to them the bones that are found in the dung of dogs.¹⁰⁸²

In addition to the many written accounts of children's amulets, they feature prominently in the archaeological record. Parents employed healing amulets for male and female children of all ages, but it is not always possible to know their socio-economic status.¹⁰⁸³ Most extant specimens come from burial contexts, but those made from perishable materials would not have survived.¹⁰⁸⁴ Amulets made from costly materials and the affluence of the cemetery sites and tombs would indicate the status of children's families. There is some disagreement about whether or not children were invariably interred with amulets they had worn during life.¹⁰⁸⁵ Some may have been obtained specifically for funerary purposes. There is insufficient information available to arrive at a satisfactory conclusion on this matter. There is ample iconographic evidence of the appearance of amulets. A poignant example is a first to second century commemorative marble bust that shows a life-like image of a sleeping baby with a string of amulets diagonally across his chest.¹⁰⁸⁶ Romano-Egyptian mummy portraits often depict children wearing amulets.¹⁰⁸⁷

Conclusion

Amulets were popular for all age groups and in all sections of Roman society. A large number were believed to alleviate or cure specific ailments, such as epilepsy, bladder

¹⁰⁸² *Ibid.*, 30.47. Translated by J. Bostock and H.T. Riley. According to Pliny, "bones which have been voided by the animal.. are looked upon as counter-charms to magic spells" *ibid.*, 28.27

¹⁰⁸³ Lane 1999: 642; Dasen 2003: 277, 279.

¹⁰⁸⁴ Dasen 2003: 276, 280.

¹⁰⁸⁵ Lane (1999: 642) thinks that children who suffered from prolonged illnesses would have gone to their graves wearing the amulets they wore in life. According to Dasen (2003: 276), this was not necessarily the case.

¹⁰⁸⁶ British Museum Inv. no. 1805, 0703.110.

¹⁰⁸⁷ A mummy portrait from Fayum in Egypt in the J. Paul Getty Museum in Malibu depicts a boy wearing amulets. It dates to between AD 150 and 200.

stones, ophthalmia and tonsillitis. Their healing role is discussed further in the context of specific case studies of diseases in the following chapter.

Sacrificial and scape animals

Table 4.5 above demonstrates that almost two thirds of medicines and amulets for infants and children that Pliny described in his *Natural History* were derived from animals. Some folk or magical treatments involved bizarre rituals which entailed the cruel suffering and death of animals. These often entailed blinding them or burning them alive.¹⁰⁸⁸ Pliny is our main source on this matter and, although his accounts lack comments on the morality of such cures, he expressed his scepticism about some of the more extreme cures. One such example was the unlikely suggestion that the bite of a green lizard could heal hernias in infants.¹⁰⁸⁹ Pliny described another dubious remedy for infants:

a frog applied, the back part to the head, is a most efficacious cure for siriasis in infants. When the frog is removed, it will be found quite dry, they say.¹⁰⁹⁰

Both of these treatments called for the sacrifice of animals. It is possible that there was a belief that these animals somehow absorbed harm from the sick children.¹⁰⁹¹ This is borne out by Pliny's implication that the evil causing infants' hernias or siriasis passed into the bodies of these animals. This principle applied to the attachment of ducks and blind puppies to the sick; these animals died as the maladies passed into them.¹⁰⁹²

¹⁰⁸⁸ Sympathetic magic underlay the blinding of puppies and swallows to cure eye complaints: see Pliny, *HN* 29. 38. Bowel disorders responded to ashes from snails that were burnt alive *ibid.*, 30.20.

¹⁰⁸⁹ *Ibid.*, 30.47.

¹⁰⁹⁰ *Ibid.*, 32.48. Translated by J. Bostock and H.T. Riley.

¹⁰⁹¹ Bonet 1998: 197.

¹⁰⁹² Pliny, *HN* 30.20.

Cuneiform tablets and iconography from Mesopotamia in the third millennium BC demonstrate the long history of the role of dogs in healing in the Ancient Near East.¹⁰⁹³ Puppies are prominent among votive deposits at the Gallo-Roman sanctuary of Sequana Fontanes in the Burgundy region. Many of the figurines depicted children carrying small dogs or puppies, and in one case a puppy lay beside a sleeping infant. Gourevitch suggests that this signifies that they fulfilled the purpose of scape dogs.¹⁰⁹⁴ Aldhouse-Green draws the more reasonable conclusion that the presence of dogs at this site and Lydney in Britain reflects the healing role of dogs in Greek and Roman Asklepieia.¹⁰⁹⁵ It is most likely that puppies present in the graves of infants at Lugnano were scape animals, absorbing harm from their occupants even after death.¹⁰⁹⁶

Conclusion

Although there is a scarcity of written confirmation from the sources, there is reason to believe that parents approached the deities for healing their offspring. The outcome of their prayers is unknown. Magical healing played a major role in the treatment of children throughout the Roman period. It is impossible to know whether parents believed they were effective. A large number of pharmacological plants had magical or

¹⁰⁹³ The special relationship of dogs with healing is attested from as early as the twenty-first century BC at the cult centre of the goddess Gula (also known as Ninisina or the Lady of Isin), in Uruk. Neo-Babylonian iconography depicts Gula accompanied by her dog, and cuneiform texts indicate that dogs officiated as priests at the Isin 'dog temple.' There was a nearby dog cemetery where the animals were interred with great ceremony and care c 2004: 13-14. The presence of a dog temple and cemetery at Samos is evidence of the cross-pollination of medical ideas between Mesopotamians and Greeks during the eighth and seventh centuries BC. Noegel demonstrates links between dog temples in the Ancient Near East and the establishment of Asclepeian healing centres 2007: 30.

¹⁰⁹⁴ Gourevitch 1968: 256.

¹⁰⁹⁵ Aldhouse-Green 1999: 94. Lydney was a cult site of the syncretic Romano-British god Mars/Nodens. It was a place of healing, as attested by the presence of instruments, oculists' stamps and a dozen figurines of dogs. See also M. Aldhouse-Green, 2004. 'Gallo-British deities and their shrines.' In M. Todd (ed.), *A Companion of Roman Britain*. Malden, MA, Oxford: Blackwell, 193-219 (especially 208-209).

¹⁰⁹⁶ Gourevitch 1968: 256. In the Graeco-Roman tradition, dogs were thought to possess magical powers and were linked with Hecate who safeguarded the souls of dead children Soren 1999: 619-622. Soren also points out the existence of a dog cemetery at Ashkelon in Israel with many hundreds of burials of dogs, puppies and human foetuses, 1999: 621.

astrological properties, thus affirming the pluralistic nature of medicine in the Roman world. It is not always certain whether practitioners utilised their scientific or supernatural powers in any specific circumstance.

4.5 Conclusion

Celsus believed that children should not be treated in the same way as adults, and Galen wrote that remedies must cater for all ages, bodily constitutions and humoral complexions. This thesis has examined the written evidence to ascertain whether Roman practitioners modified treatments for children according to their age, developmental stage, biological and psychological characteristics, and gender.

The care and nurturing of infants and children was unique to the early stages of life. Medical treatises provided guidance with the aim of producing children with healthy and attractive bodies. There was also a need to shape them so that they grew up well equipped for their future roles as adults. The process of manipulating their bodies, minds and souls began shortly after birth and continued relentlessly throughout childhood. It involved massage, moulding, swaddling, regimen, control over their emotions and moral training. The moulding and bandaging of newborns required considerable skill and a significant investment of time and effort. The sources stated that some nurses were negligent or ‘cut corners’ to make their lives easier. They directed their instructions at midwives and elite families, but there is no information on whether nurses or mothers from lower sections of society complied with or were even aware of the counsels of perfection described in the texts.

Medical writers also provided strict guide lines for the selection and regulation of wet nurses. They thought that quality of their milk had a major impact on the health and survival of infants. They also provided advice on breast feeding and weaning schedules. There is some disagreement whether this represented best practice or described actual feeding customs. The evidence from isotopic studies of human skeletal remains supports the view that breast feeding and weaning practices varied significantly across all regions of the Roman world. It indicates that, as in the case of child care in general, the guidance given in medical treatises was prescriptive rather than descriptive.

The prophylaxis of disease was a high priority, especially for the infant category. Regimen was the chief means of preventing illness in infancy and childhood, although apotropaic amulets were also useful. The active treatment of disease involved all components of medicine.

In spite of the above statement by Celsus, it is clear from his discussions of regimen, purgation, blood-letting and pharmacology that his over-riding concern was not the age of individuals but whether they possessed sufficient physical strength to tolerate these therapies. Since children and the elderly were generally weaker than men in their prime, they were more likely to require adjustments to their medicines and regimen. He recommended less vigorous or alternative measures in the use of fasting, bathing, purgation, venesection and alterations to the dosage and routes of administration of drugs.

Galen took into account the age, constitution and humoral complexion of patients as well as local and climatic conditions when treating patients. On many occasions he reinforced his general recommendation that strong treatments were appropriate for

strong, dry individuals, while weak medicines suited soft, moist, weak bodies. Adult males in their prime belonged to the first group. Women, children, eunuchs, the elderly and dissipated or effeminate men formed the latter class. Therefore he did not recognise children as a discrete therapeutic category; they were members of a group of physiologically inferior persons. He did, however, state that the Hippocratic doctrine of treatment of opposites with opposites did not apply to children. They were naturally humid beings that required humid regimen and medicines that preserved their moisture. Sucklings comprised another special group because they were difficult to treat successfully other than by manipulating the regimen of their wet nurses.

Dioscorides, Scribonius Largus, Rufus and Pliny described variations in dosages, concentrations, formulations and routes of administration of medicines for children. Largus devised an eye salve for women and children, while on a few occasions Pliny grouped women, children and the elderly together.

There is little information about surgery for children apart from the writings of Celsus. He described modifications of techniques for some operations on children, and on rare occasions imposed specific age limits. The unreliability of textual evidence and iconographical ambiguities makes it difficult to assess the true extent of religious healing for Roman children. Magical and folk practices for infants and children feature in several medical texts and, above all, the *Natural History*. If Pliny is to be believed, his bizarre remedies were symptomatic of the helplessness and desperation of parents in the face of serious diseases that struck their offspring.

This thesis has established that Roman children did not form a distinct epidemiological category in the strictest sense. It is also evident that children belonged to a class of

weak persons who required mild treatments; others included women and the aged. Therefore children were not members of a separate therapeutic category.

Case studies of treatments for nine collections of diseases will now examine these matters further and explore several other issues.

CHAPTER 5: CASE STUDIES

5.1 Introduction

This thesis has demonstrated that physicians often took into account the chronological age, stage of development, constitution and gender of children when treating their illnesses. The most important factor, however, was their weakness compared with robust adult males. It now examines treatments for nine commonly occurring disorders or groups of diseases. Wherever possible it will compare children's remedies with typical adult therapies and determine whether there were differences in healing for children of both genders. This is a novel approach in academic research on Roman children's medicine.

All of the nine groups of diseases affected children and adults, although the scale of their prevalence and clinical presentations varied. Some of the ailments targeted specific organs, while others affected the entire body. Many conditions produced effects that were easily visible to observers, whereas others were mysterious, unseen illnesses. Previous studies of Roman children's medicine have tended to focus on 'scientific medicine,' that is to say regimen, pharmacology and surgery. This thesis places equal weight on supernatural and folk remedies. Another innovation in this thesis is an analysis of data concerning the uptake of different treatment modalities for childhood maladies across the full spectrum of Roman healing. This kind of research is only made possible by examining series of case studies. The first group concerns ophthalmological conditions which occurred with great frequency in the Roman world.

5.2 Ocular diseases

Medical authors devoted a considerable amount of attention to the treatment of eye complaints. This, together with the many references to eye specialists in medical literature and numerous extant archaeological artefacts, reflects the ubiquitous presence of ophthalmic diseases in Graeco-Roman antiquity.¹⁰⁹⁷ Roman Gaul is especially rich in finds of ophthalmological instruments, eye votives, collyrium stamps, and oculists' tombstones.¹⁰⁹⁸

Medical texts mentioned an array of ocular symptoms, syndromes and diseases.¹⁰⁹⁹ These are often difficult to interpret due to uncertainties in the terminology they employed. It is also difficult to reconcile descriptions of ocular disease in Roman medical texts with modern nomenclature.¹¹⁰⁰ This case study focuses on two ocular ailments, cataracts and ophthalmia, and seeks to find evidence for differences in treatments for children and adults.

Ophthalmia was particularly prevalent in the Roman world:

they properly call ophthalmia the most frequent eye affection.¹¹⁰¹

Celsus described a range of symptoms of ophthalmia, also known as *lippitudo*, whose intensity varied according to the gravity of the condition. When the condition was mild,

¹⁰⁹⁷ Dollfus 1966; Boon 1983; Feugre *et al.* 1985; Jackson 1990: 12-13; Baker 2011; Trentin 2013: 96. See Celsus, *Med.* 6.6; Galen, *Comp.Med.Loc.* 4, 5.1-2 (12. 378-822K), *Diff.Feb.* 2.8 (7.363K) for protracted discussions on eye diseases.

¹⁰⁹⁸ Duval 1989: 1167. A cache of instruments from the first to second century AD was recovered from the river-bed at Montbellet (Saône-et-Loire, France); it contained a specialist syringe and needle for breaking up and aspirating opaque eye lenses Jackson 1990: 8; Künzl 2002: 82-83.

¹⁰⁹⁹ For example, Celsus mentions ophthalmia, aspritudo, xerophthalmia, scabrous eyes and mydriasis, *Med.* 6.6.1, 28, 29, 31, 37.

¹¹⁰⁰ For the terminology of eye diseases, see Boon 1983: 10; Fronimopoulos and Lascaratos 1991: 369-375; Trentin 2013: 96n22.

¹¹⁰¹ Galen, *Comp.Med.Loc.* 4.3 (12.711K). Author's translation.

patients suffered from “lacrimation, swelling of the eyelids and a thick rheum.”¹¹⁰² The disease could affect one or both eyes, and become more acute or progressed into chronic forms. Acute symptoms included severe pain, ulceration of the eyelids and globe, hot and profuse tears, swelling, adhesion of the inner surface of eyelids to the eyeball. The most alarming consequence was the possibility of a ruptured eyeball.¹¹⁰³ It is possible that the symptoms and signs Celsus described within the umbrella of ophthalmia may, in fact, have been a collection of different pathological conditions. There are written references to children suffering from ophthalmia and running eyes.¹¹⁰⁴ Their susceptibility to other ocular ailments is unknown.

Celsus believed that regimen played an important role in treating eye complaints. He recalled that:

According to Hippocrates, the oldest authority, the treatment of the eyes included blood-letting, medicaments, the bath and wine.¹¹⁰⁵

Massage, food and abstinence, rest, clysters and venesection were also for severe cases.¹¹⁰⁶ His criteria for their use depended on the clinical features and severity of the disease.¹¹⁰⁷ As already demonstrated, he had reservations about the use of fasting, venesection and clysters for child patients as they could seriously undermine their strength (see Section 4.4.1 above). He recommended drugs to relieve the pain that usually accompanied ophthalmia. It could be very severe and often required the use of an opiate, such as the *anodyna* mentioned in Section 4.2.2 above. Children required a

¹¹⁰² Celsus, *Med.* 6.6.1A. Translated by W.G. Spencer.

¹¹⁰³ *Ibid.*, 6.6.1A-D.

¹¹⁰⁴ For example, Celsus, *Med.* 6.6.1M; Pliny *HN* 29.11; 20.57.

¹¹⁰⁵ Celsus, *Med.* 6.6.1E. Translated by W.G. Spencer.

¹¹⁰⁶ *Ibid.* 6.6.1E-F.

¹¹⁰⁷ Celsus, *Med.* 6.6.1E-G . Galen also mentioned phlebotomy as a treatment for some cases of eye disease *Cur.Rat.Ven.Sect.* 17 (11.301K).

reduced dose of this.¹¹⁰⁸ Celsus recorded a large number of salves for ophthalmia which required relatively bland applications.¹¹⁰⁹ In contrast to many other diseases:

The more severe the inflammation, the milder should the application be made, by adding to it white of egg or woman's milk.¹¹¹⁰

Rufus advised treating ophthalmia with bathing, massage, giving wine, washing the eyes with egg white, evacuating the whole body with purgatives and clysters, and an assortment of salves.¹¹¹¹ He gave no indication of any therapies that were appropriate for children, but urged a cautious approach when administering clysters (see Section 5.10 below). Pliny and Dioscorides described both simple and compound drugs. Parsley was efficacious for discharging eyes:

defluxions of the eyes, in persons of all ages, being applied to the forehead and temples with polenta.¹¹¹²

Pliny appears to have been a reasonably reliable source for pharmacological remedies since many of his recipes resembled those of Dioscorides and other writers. Cumin was also useful for the same complaint, although the method of administration depended on the age of the subject:

used by itself, it is good for defluxions of the eyes. Combined with honey, it is used also for swellings of the eyes. With children of tender age, it is sufficient to apply it to the abdomen.¹¹¹³

It is not clear how cumin produced a healing effect on the eyes when spread on the abdomen. Although Pliny implied that it was difficult to cure babies with serious eye problems, he suggested applying simple ingredients to the eyes:

For ophthalmia in infants there is hardly any remedy to be found, except white of egg mixed with fresh butter.¹¹¹⁴

¹¹⁰⁸ Celsus, *Med.* 6.6.1L-M. Translated by W.G. Spencer.

¹¹⁰⁹ *Ibid.*, 6.6.16A.

¹¹¹⁰ *Ibid.*, 6.6.8C. Translated by W.G. Spencer.

¹¹¹¹ Rufus in Rhazes, Fragment 144.8-20, Daremberg and Ruelle: 464-465.

¹¹¹² Pliny, *HN* 20.81. Translated by J. Bostock and H.T. Riley.

¹¹¹³ *Ibid.*, 20.57. Translated by J. Bostock and H.T. Riley.

¹¹¹⁴ *Ibid.*, 29.11. Translated by J. Bostock and H.T. Riley.

He described around ninety other simple eye salves for patients of unspecified age.¹¹¹⁵ Scribonius Largus regarded two of his twelve eye salves as particularly effective for epiphora, or running eyes. One involved bathing them four or five times a day, and sponging the head and immersing it in warm water “most of all for the tender bodies of children and women.”¹¹¹⁶ The second preparation was equally suitable for children. It combined one denarius of opium, two of saffron, and four each of Indian aloes and gum in three cyathi of plantain juice.¹¹¹⁷ The latter is a rare example of a recipe containing precise directions about the concentration of the active ingredients.

The third century AD Gallo-Roman oculist, Severus, took into account the temperament of small children and recognised the need to keep them adequately hydrated when treating them for eye complaints. An appropriate salve of his was one containing split stone, haematite, copper ores, myrrh, ammoniacum thymiatum, silphium, antimony, hyoscyamus seeds, gum, and opium.¹¹¹⁸ He referred to the condition as *ophthalmia* and *trachoma*, and noted that it caused inflammation and thickening of the eyelids. This corresponded more closely to Celsus’ description of *aspritudo* or trachoma rather than that of *ophthalmia*.¹¹¹⁹ This discrepancy illustrates the difficulties encountered when trying to interpret descriptions of eye diseases in Roman medical literature.¹¹²⁰ Galen recommended several similar collyria for *aspritudo*; these contained copper compounds

¹¹¹⁵ Herbal remedies in Pliny *HN*: onion juice 20.20; roses 21.10; crocomagma (saffron) 21.82; ashes of date-stones 23.51; juice from the leaves of glaucion 27.59. Milk was efficacious for *ophthalmia* *HN* 28.33. Human milk was particularly powerful, especially that of “a woman delivered of a male child..and still more so if she has had male twins,” *HN* 28.21, translated by J. Bostock and H.T. Riley. Egg whites, whey, honey and cheese were also useful ingredients 29.11, 28.47. Mineral treatments included ‘scum of silver’ and cadmia *HN* 33.35; lead, calcined copper 34.23; verdigris 34.26, 27; chalkitis from Cyprus 34.32; chalcantum 34.27; chrysocolla (hydrated copper silicate) 33.28; antimony 34.27.

¹¹¹⁶ Scribonius Largus, *Comp.* 20. Author’s translation.

¹¹¹⁷ *Ibid.*, 29.

¹¹¹⁸ Fragment of Severus, preserved by the Byzantine physician, Aetius (7.44). Ammoniacum and silphium were herbs; misy, or stibium, was antimony.

¹¹¹⁹ Celsus, *Med.* 6.6.27.

¹¹²⁰ See Spencer, Celsus, *Med.*, Volume II: 184-183, note a.

and haematite, with or without split stone, and myrrh, opium and gum. He did not assign these recipes to any particular age groups.¹¹²¹

Collyria were the mainstay of topical pharmacological treatments for ocular diseases.¹¹²² These were available in the form of liquids, semi-liquids or convenient dried sticks or blocks which were reconstituted with water or wine.¹¹²³ The addition of gum helped to prevent the dried preparations from breaking up.¹¹²⁴ Manufacturers or dispensers used stone stamps to impress their own names and descriptions of the medicaments and ailments they cured onto collyrium sticks as they dried. Over three hundred have survived to the present day from sites in Gaul, Germany and Britain.¹¹²⁵

Celsus recorded around twenty salves that bore descriptive titles or the names of individual oculists. He commented that:

There are many salves devised by many inventors, and these can be blended even now in novel mixtures, for mild medicaments and moderate repressants may be readily and variously mingled.¹¹²⁶

Celsus did not explain whether any of these were particularly suitable for children. Nevertheless, a recent study has shed some light on the matter. Draycott examined an unprovenanced recipe from a Greek papyrus from Egypt dating to the second or third century AD. She found that it was remarkably similar to one of Celsus' eye salves

¹¹²¹ Galen, *Comp.Med.Loc.* 4.7 (12. 775-776K).

¹¹²² Galen also described dry medicaments for eye disease in *Comp.Med.Loc* 4.6,7.

¹¹²³ Künzl 2002: 86-87. Doctors applied collyria, but they could be often purchased from the marketplace for home use Jackson 2011: 261.

¹¹²⁴ Celsus, *Med.* 6.6.3.

¹¹²⁵ Archaeologists have recovered collyrium stamps almost exclusively from Gaul, Germany and Britain; it is likely that their use reflected local medical practices and Roman customs duties in these regions Feug re *et al.* 1985: 474-476; Jackson 1990: 12; Künzl 2002: 86; Baker 2011: 160-161; Trentin 2013: 96. They were used to imprint the surfaces of semi-solid ophthalmic ointment sticks. One example is a stone stamp from Kentchester in Britain, dating to the first to fourth century AD, British Museum accession number 00033467001. It has the name of the maker of the eye-ointment, Titus Vindiacus Ariovistus. Other marks bear the name of the healer, Senior, who used it. Other facets provided the names of different types of ointment; 'nard oil salve,' 'green salve,' 'infallible salve' and 'frankincense salve.'

¹¹²⁶ Celsus, *Med.* 6.6.2. Translated by W.G. Spencer. Among these, for example, were Philo, Dionysius, Cleon, Theodotus, *ibid.*, 6.6.3, 4, 6; Euelpides 6.6.8A, 17, 20-22. There is little information available about these three oculists.

whose original source was Theodotus.¹¹²⁷ It belonged to a group of remedies that some called *achariston*.¹¹²⁸ This thesis takes the matter a stage further by including data from another of Celsus' prescriptions from Euelpides and three from Galen, two of which he recommended specifically for children.¹¹²⁹ These are compared in Table 5.1 below.

¹¹²⁷ Draycott 2011: 187, citing Youtie *SB* 14.12086/ P. *Prince*. 3.155. Lign-aloes is a medicinal tree oil resin; it has no connection with the aloe plant.

¹¹²⁸ The name *achariston* signified that patients were unthankful since the medicine gave them such fast relief that they believed their afflictions had been trivial. Spencer, Celsus, *Med.* Volume II, 194n; Draycott 2011: 187.

¹¹²⁹ "Euelpides, the most famous oculist of our time" Celsus, *Med.* 6.6.8; Galen, *Comp.Med.Loc* 4.8 (12.748-750K).

Table 5.1 Comparisons between eye salves according to source

	Celsus	Celsus	P. Prince	Galen	Galen	Galen
Source	Theodotus	Euelpides	Unknown			
Title			XIV 12086		<i>In alio puerile</i>	<i>Quo ipse usus</i>
Description	<i>Achariston</i>	<i>Trygodes</i>	-	<i>Achariston</i>	<i>Achariston</i>	<i>Achariston</i>
Reference	<i>Med. 6.6.6</i>	<i>Med.6.6.8</i>		<i>Comp.Med. Loc. 4.8</i>	ditto	ditto
Kühn	-		-	12.749-750K	12.748K	12.750K
Recipient	-	-	Child	Child	Child	-
Ingredients	(Drachms)					
Castoreum	1	1/3				
Indian nard	1	1				
Lycium	1/6	1				
Saffron	3	4				
Lign-aloes	3	4				
Lead	3					
Copper	8	9	4	8	12	4
Zinc	8	12	6 - 8	16	12	16
Antimony	20	12				
Poppy/opium	1/6	1	2 - 4	4	4	2
Myrrh	2	4	2 1/3	4	4	1
Erica	0		2	4	0	2
Acacia	20	38	6	8	32	6
Gum	18	38	6	16	32	8

Seven ingredients from Celsus' remedies in Table 5.1 correspond with those from Papyrus *Prince*. Even more striking are the similarities between the latter and Galen's three *achariston* salves. The information presented here indicates that it is not safe to assume that topical ocular remedies were intended exclusively for adult patients if they lacked directions for their use in children.

Galen identified a total of five or six collyria for children. Table 5.2 below compares the constituents of these and six similar salves for patients of unspecified age. There are some points to note about these salves. First of all, none of these formulae is identical to any other, so it is difficult to make exact comparisons. Another is the lack of any apparent underlying rationale concerning the amounts of mineral or plant-based components between prescriptions. Looking at opium, for example, the absolute amounts as well as proportions vary greatly in these remedies, and children's doses are not uniformly smaller than those that do not specify age categories. Another interesting issue concerns the individual ingredients identified in the children's eye salve in Tables 5.1 and 5.2. When Dioscorides discussed these materials he passed no comment about any particular age categories of patients.¹¹³⁰ This adds weight to the supposition that medical texts did not always stipulate that certain pharmaceuticals were suitable for children even if it was likely that they were.

¹¹³⁰ Dioscorides, *MM* : nard 1.6; saffron 1.25; acacia juice 1.33; lycium juice 1.52; myrrh 1.77; frankincense 1.81; Erica juice 1.117; egg white 2.55; castoreum 2.26; ammoniacum 3.98; hyoscamus seeds 4.69; cadmia 5.84; burnt brass 5.87; stibium 5.99; split stone 5.145.

Table 5.2 The composition of eye salves in Galen's *Comp.Med.Loc.* 4

Sources	Antig	-	-	-	Philox	Antig	Pacc	SL	Bery	Mar	Serg	Ter
Description	Little lion	Croc.	<i>Pueris</i>	<i>Puer</i>	<i>Aliud</i>	<i>Aliud</i>						
Comp	4.8	4.8	4.7	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
MedLoc	773	770-1	734-5	748	748-9	773-4	772	774	749	750-1	751	766
Kühn vol. 12: page												
Age range	Child	Child	Child	Child	?Child	Child	NS	NS	NS	NS	NS	NS
Ingredients												
Spodium Cypri	48				12							
Spodium pompholygis		16				80		32	16		4	4
Cadmia				12						4	4	
Aeris				12	3			32	16	4	4	
Squama aeris			1									
Haematite	12					12		10				
Stibium			16									
Lead			8									
Saffron	24	16	1			40			12	2	2	4
Myrrh	12		1	4	3	20		6	2			
Opium	12	16		4	3	20		6	16	2	2	4
Pepper grains	60		1			60		40				
Gum	80			32	7	80	12	40	16	6	6	4
Tragacanth		8										
Nard			1				4	6				
Frankincense			1									
Acacia				32	7				16	4	4	
Date stones			10									
Rose blooms			1				4					12
Water		*		*	*				*	*	*	*
Egg		4			*		*		*			
Wine	*					*	*	*				

Weights are in drachms. Abbreviations: NS: age not specified; Antig: Antigonus; Philox: Philoxenus; Pacc: Paccius; SL: Scribonius Largus; Bery: Berytus; Mar: Marcus; Serg: Sergius; Ter: Terentius.¹¹³¹ For further information on the drugs, see Spencer, Celsus, *Med.*, List of Medicamenta, volume II: xv- lx.

¹¹³¹ The astronomer and physician, Antigonus, lived during the late second century BC; Paccius was famed for his collyria in the early first century AD; Sergius was an oculist from Babylon; The Graeco-Egyptian surgeon, Philoxenus, flourished in the first centuries BC and AD. Little is known about Cleon, Euelpides, Theodotus, Straton, Berytus, Marcus and Terentius.

A key study of Galen's sources is that of Caius Fabricius, *Galens Exzerpte aus älteren Pharmakologen*. Berlin, New York: Walter de Gruyter (1972). Informative modern works on the subject include H. von

A further consideration is that although the recipes in Tables 5.1 and 5.2 prescribed exact quantities of dry ingredients, none stated the volume of excipient to be used (e.g. wine or water). Therefore, it is difficult to draw conclusions about the concentrations of the active ingredients in these collyria.

Celsus noted that a cataract (Greek: *hypochyma*, Latin: *suffusio*) “sometimes interferes with the vision of the eye.”¹¹³² He suggested regimen, blood-letting, cautery of blood vessels for early cases in adults, and surgery when the condition was more advanced:

When it has become long established it is to be treated surgically..In its earliest stages it may be dispersed occasionally by certain measures: it is useful to..cauterize the temporal blood vessels.. when it is more chronic it requires treatment by surgery.¹¹³³

Roman surgeons occasionally performed surgery to ‘couch’ opaque cataracts in order to clarify vision.¹¹³⁴ Celsus described this as “one of the most delicate operations.”¹¹³⁵ It was essential to make sure that the patient remained still:

The assistant from behind holds the head so that the patient does not move; for vision can be destroyed permanently by a slight movement. In order also that the eye to be treated may be held more still, wool is put over the opposite eye and bandaged on.¹¹³⁶

His account of the procedure was detailed. The surgeon took a pointed needle:

and it is to be inserted straight through the two outer tunics at a spot intermediate between the pupil of the eye and the angle adjacent to the temple..When the spot is reached, the needle is to be sloped against the suffusion itself and should gently rotate there and little by little guide it below the region of the pupil; when the cataract has passed below the pupil it is pressed upon more firmly in order that it may settle below. If it sticks there the cure is accomplished.¹¹³⁷

Staden, *Herophilus. The Art of Medicine in Early Alexandria*. Cambridge: Cambridge University Press (1989). L.M.V. Totelin, ‘And to end on a poetic note: Galen’s authorial stratagem in the pharmacological books’. *Studies in History and Philosophy of Science* 43(2): 307-315 (2012); N. Everett, *The Alphabet of Galen: Pharmacy from Antiquity to the Middle Ages. A Critical Edition of the Latin Text with English Translation and Commentary*. Toronto: Toronto University Press (2012).

¹¹³² Celsus, *Med.* 6.6.35. Translated by W.G. Spencer.

¹¹³³ *Ibid.* Translated by W.G. Spencer.

¹¹³⁴ Spencer interprets *suffusio* or *hypochyma* as cataract (Celsus, *De medicina* volume III: 349).

¹¹³⁵ Celsus, *Med.* 7.14.C-D. Translated by W.G. Spencer.

¹¹³⁶ *Ibid.*, 7.7.13A. Translated by W.G. Spencer.

¹¹³⁷ *Ibid.*, 7.7.14.D-E. Translated by W.G. Spencer.

The aim was to detach the opaque lens and move it to a position below the iris so that it no longer obstructed vision. This procedure was not appropriate for all age groups.

There were cogent reasons for excluding elderly persons:

Old age is not favourable for treatment, since apart from this lesion, sharpness of vision is naturally dulled; neither is childhood favourable, but rather intermediate ages.¹¹³⁸

There is no explanation why children were unsuitable candidates for cataract surgery. Celsus may have been concerned that children's eyes were too small to operate on since he remarked that "neither a small nor a sunken eye is satisfactory for treatment."¹¹³⁹ An even more likely possibility is that it would have been impossible for children to keep still during the procedure and this would have resulted in them being blinded. Galen's brief comment that "the cataract is couched and brought down" did not comment on the kinds of patients he considered appropriate for surgery.¹¹⁴⁰ Celsus' description of cataract surgery is the only detailed account to have survived from the early imperial period.¹¹⁴¹

When discussing severe cases of ophthalmia, Celsus alluded to divine help when he remarked that one must pray that the eyeball became ulcerated rather than it ruptured.¹¹⁴² Discoveries of large numbers of anatomical eye votives at Roman shrines provide evidence of the involvement of the deities in the cure of eye diseases. Notable examples of these sites are Ponte di Nona and Gabii near Rome.¹¹⁴³ It is not possible to know whether any of the votives that pilgrims deposited were associated with children's eye ailments. A large number of magic rituals and amulets were available to prevent or

¹¹³⁸ *Ibid.*, 7.7.14B. Translated by W.G. Spencer.

¹¹³⁹ *Ibid.* Translated by W.G. Spencer.

¹¹⁴⁰ Galen, *Caus.Symp.* 1.2.2 (7.89K). Translated by I. Johnston.

¹¹⁴¹ Pseudo-Galen provided only a very brief outline of cataract surgery *Int.* 19.7 (14.784.4-9K). The Byzantine compiler, Paul of Aegina (6.21), provided a full account of the couching procedure.

¹¹⁴² Celsus, *Med.* 6.6.1D.

¹¹⁴³ Boon 1983: 3-5; Künzl 2002: 77-78; Baker 2011: 167; Trentin 2013: 97; Oberhelman 2014: 55.

cure eye diseases. Pliny devoted three entire chapters to these; they chiefly involved the use of animal material. Examples of apotropaic practices and amulets include the consumption of stork chicks, wearing the head or an eye of a serpent, and blinding a lizard.¹¹⁴⁴ Some amulets were curative and contained spiders' webs or the eyes of frogs and crabs.¹¹⁴⁵ There were other curative rituals that also worked by sympathetic magic; some of these were bizarre and disgusting and involved the suffering of animals.¹¹⁴⁶ Although he did not comment on whether these were for adults or children, it is uncertain whether parents would have considered using them for their offspring.

Conclusion

Acute ophthalmia was a painful condition and patients were at risk of blindness. There are several examples of modifications to the treatment of infants and children medicaments in the treatises. This involved regimen, oral drugs, external applications and topical eye salves. The use of fasting, venesection and clysters was problematic for juveniles suffering from medical complaints in general, not just ocular disease. The primary concern was to conserve their strength. The sole reference to the physiological characteristics of children concerned the need to maintain their humidity. Cataract surgery was not feasible in children for reasons of safety and practicality. There were, therefore, different criteria for selecting or rejecting therapies for children, and are no apparent grounds for supposing that children formed a separate therapeutic category with regard to the treatment of ophthalmic diseases.

¹¹⁴⁴ Pliny, *HN* 29.38.

¹¹⁴⁵ *Ibid.*, 29.38; 32.24

¹¹⁴⁶ *Ibid.*, 29.38.

5.3 Mouth ulcers and aphthae

The prognosis of mouth ulcers depended on their clinical features and the age of affected individuals (see Section 3.3.2 above). These factors helped to determine the most appropriate kinds of therapies.

According to Celsus, adults with inflamed or purulent red ulcers should exercise by walking, avoid acrid food, and they:

are best treated by the medicaments made from pomegranates..pearl barley gruel to which a little honey has been added is to be often held in the mouth..As soon as the ulcerations begin to clean, a bland liquid..is held in the mouth..then the ulcers should be dusted over with split alum, to which about half as much again of unripe oak-galls has been added. If the ulcers are encrusted..those compositions are to be applied which the Greeks call antherae..galingale, myrrh, sandarach, and alum.¹¹⁴⁷

The vegetal substances were astringent, the minerals were caustic and honey was soothing. Other suitable remedies were dusting powders containing various combinations of saffron, myrrh, iris, split alum, sandarach, galingale, oak-galls and rose leaves.¹¹⁴⁸

It was important to improve the general state of health of adults suffering from gangrenous ulcers prior to treatment.¹¹⁴⁹ The choice of topical drugs depended on the appearance of the lesions:

if the disease is superficial, it is sufficient to use a powdered anthera to dust on the ulcer if moist; if the ulcer is rather dry, to smear it on mixed with a little honey; for somewhat deeper ulcerations, apply burnt papyrus two parts, and orpiment one part; if the mischief penetrates very deeply, burnt papyrus three parts, orpiment one part, or equal parts of rock salt and roasted iris, or copper ore, quick-lime and orpiment, likewise equal parts.¹¹⁵⁰

¹¹⁴⁷ Celsus, *Med.* 6.11.1-2. Translated by W.G. Spencer.

¹¹⁴⁸ *Ibid.*, 6.11.2.

¹¹⁴⁹ Celsus, *Med.* 6.15.1. Celsus recognised the value of regimen in increasing the general health of patients, *Med.* 1.1-4.

¹¹⁵⁰ Celsus, *Med.* 6.15.1. Translated by W.G. Spencer.

These substances were very caustic, and the mucosal lining of the mouth required protection:

But in order that neighbouring spots may not be injured, it is necessary to apply lint dipped in rose oil over these caustic medicaments..whenever this medicament is applied, the mouth should be washed out both before and after, either with lentil gruel, or with a decoction of vetches or of olives or of vervains, to any one of which a little honey is added.¹¹⁵¹

Even more radical therapies were necessary for adults with phagedaenic black ulcers, such as drastic surgery and cauterisation:

If it is the gums which are involved, and some teeth are loose, they should be extracted, for they greatly hinder treatment. If these medicaments do no good, the ulcers are to be cauterized. But this procedure is not necessary for any ulcer on the lips since excision is more convenient. Indeed such an ulcer, except by adopting surgical measures, whether cauterizing or excising, cannot be replenished with new flesh. But the bones, which are inert, continue bare after the cauterization; for no flesh grows up afterwards.¹¹⁵²

These procedures must have been excruciatingly painful for patients and probably resulted in considerable disfigurement even if they survived.

Since Soranus regarded the ulcers that affected newborns as superficial and benign, he prescribed gentle treatments. Honey was beneficial, but lesions with moist crusts required:

poultices having an astringent effect, like those prepared from lentils and pomegranate peel. Moreover..one should apply to the ulcer the “anthera remedy,” or the tender blossom of roses, or cyperus, or the fruit of tamarisk. When the ooze has been conquered to some extent, one should use medications for the mouth made of black mulberries and of poppy heads and of plantain, with honey..Iris with honey is also helpful..chopped leaves of roses, the blossom of roses, saffron, a little myrrh, oak gall, frankincense and the bark of the frankincense tree..mixed with honey; and in addition to these honey water and the juice of sweet pomegranate.¹¹⁵³

He did not suggest any modifications to the regimen of wet nurses. Soranus mentioned a disease he termed *phagedaena*, which could affect the teeth and gums. Treatments for adults included vomiting, cupping and purging with hellebore.¹¹⁵⁴ He also described a condition he called *stomachicum* that mainly affected the gullet, but it could also spread

¹¹⁵¹ *Ibid.*, 6.15.2-3. Translated by W.G. Spencer.

¹¹⁵² *Ibid.*, 6.15.3-4. Translated by W.G. Spencer.

¹¹⁵³ Soranus, *Gyn.* 2.24.51. Translated by O. Temkin: 121-122.

¹¹⁵⁴ Caelius Aurelianus, *Chr.* 3.3.46-48.

into the mouth. Since it was a disease of stricture, it was necessary to apply relaxant therapies such as heat and oil. The patient fasted for the three days of the *diatritus*.¹¹⁵⁵ He then received mild friction to the joints, hot fomentations, poultices, cupping and phlebotomy, but none of the more drastic measures that other authorities described.¹¹⁵⁶

De Medicina contains detailed instructions for different kinds of ulcers occurring in younger age groups. Celsus believed that sucklings were the most difficult group to cure because for them “there is then less possibility of its conquest by any remedy.”¹¹⁵⁷ This statement appears to conflict with Galen’s opinion that it was easy to cure aphthae in sucklings by applying moderately astringent drugs to the ulcers.¹¹⁵⁸ It becomes apparent further on in the same passage that he regarded aphthae as “superficial ulcerations that arise in the mouth.”¹¹⁵⁹ These clearly corresponded to Soranus’ innocuous infantile ulcers. In an extract preserved by Oribasius, Galen also described aphthae as ulcers that could be white, red or black covered with eschars which were sloughs of dead tissue.¹¹⁶⁰ In other words, there is ambiguity in Galen’s terminology. This is an important point to note because such discrepancies can make it difficult to compare treatments for supposedly similar lesions.

For infants with ulcers, treatment began with adjustments to the regimen of their nurses:

it is most important that the nurse should be made to take exercise both by walking and by doing work which moves her arms; she should be sent to the bath, and ordered when there to have hot water poured over her breasts; moreover, she should have bland, easily digestible food; and for drink, if the infant is feverish, water; if free from fever, diluted wine. And if the nurse is constipated, her bowels are to be moved by a clyster.¹¹⁶¹

¹¹⁵⁵ Caelius Aurelianus, *Chr.* 3.2.21.

¹¹⁵⁶ *Ibid.*, 3.2.22-24.

¹¹⁵⁷ Celsus, *Med.* 6.11.4. Translated by W.G. Spencer.

¹¹⁵⁸ Galen, *Comp.Med.Loc.* 6.9 (12.988K).

¹¹⁵⁹ *Ibid.* Author’s translation.

¹¹⁶⁰ Galen in Oribasius, *Lib. inc.* 25.1. Daremberg and Bussemaker, Volume 3: 193.

¹¹⁶¹ Celsus, *Med.* 6.11.4-5. Translated by W.G. Spencer.

Following this, topical ointments were applied directly to the lesions:

The child's ulcers are to be anointed with honey, to which is added sumach, which they call Syrian, or bitter almonds; or a mixture of dried rose leaves, pine-cone seeds, mint, young stalks, and honey, or that medicament which is made of mulberries, the juice of which is concentrated in the same way as pomegranate juice to the consistency of honey; similarly too there is mixed with it saffron, myrrh, alum, wine and honey; nothing should be given which can provoke spittle.¹¹⁶²

Rufus described a remedy for black mouth ulcers:

As to the remedies for this disease..Treat him with roots of iris with some honey. Blow also dry iris into the mouth of the child, for it is appropriate, and dry rose leaves, saffron flowers, myrrh, galls, and frankincense..All I have described..[should be] with some honey..let the child drink after his having been treated with this remedy honey mixed with tepid water and sweetened pomegranate juice.¹¹⁶³

A milder remedy sufficed for white ulcers:

crushed roots of iris or dried roses, saffron, pepper, myrrh, gall nuts and frankincense are sprinkled into children's mouths. This simple compound is beneficial for the infant. It is helpful to add honey to it. After the child has been treated with it, he is given mixed honey or sweetened pomegranate juice to drink.¹¹⁶⁴

More aggressive options were available for an older child; Celsus recommended that:

he should generally gargle..If the milder medicaments do little good, the caustic materials which induce crusts upon the ulcers should be applied, such as split alum or copper ore or blacking. Even hunger is beneficial and the greatest possible abstinence is to be ordered. The food ought to be bland; for cleansing the ulcers, however, sometimes cheese with honey is appropriately given.¹¹⁶⁵

The instruction about rigid fasting conflicts with his opinion that children did not tolerate fasting well because it could compromise their strength.¹¹⁶⁶ There is the possibility that the use of abstinence and caustics was in response to the fear that the ulcers might become gangrenous. Blacking, known as *chalcantum* or *atramentum*

¹¹⁶² *Ibid.*, 6.11.5. Translated by W.G. Spencer.

¹¹⁶³ Rufus in Baladī, Fragment F (R) 7a = Oribasius, *Coll. Med., Lib. inc.* 43, Pormann 1999: 64-65.

¹¹⁶⁴ Fragment of Rufus in Rhazes. Translated by F. Rosenthal 1975: 201.

¹¹⁶⁵ Celsus, *Med* 6.11.6. Translated by W.G. Spencer.

¹¹⁶⁶ Celsus, *Med.* 1.3.32.

sutorium, was used to colour shoe leather. It also healed skin and mouth ulcers, induced scarring and arrested bleeding.¹¹⁶⁷

It was necessary to exercise even greater caution when applying highly caustic substances to the tender mouths of children:

If it is a child who is attacked, a probe wrapped round with wool is dipped in the medicament and held to the ulcer, lest by accident he should swallow the caustic.¹¹⁶⁸

Two fragments from Rufus list topical treatments for infants according to the severity of the condition. The first contained herbal ingredients, milk and honey:

a gargle made with styptic things, such as a decoction of myrtle and holy thorn, roses and hypocistis if it is itself cooked with wine.. But if the disease is bad, persist with a gargle of a decoction of calamint and mint and the like; and cleanse well with nasturtium mixed with other medicines..And nightshade juice..juice of olive leaves or lycium leaves; and a gargle made from the first milk of an ass; and..pounded liquorice root or dry roses with a little saffron, myrrh, oak gall and frankincense.¹¹⁶⁹

For more serious ulcers the added sharpness of gall and grape juice was beneficial:

gall of marine turtle is effective for severe, acute ulcers in the mouths of infants. Running mineral water..oak gall..sharp grape juice..masticated twigs and leaves..alum mixed with honey.. the testicles of a large dog if desiccated and pounded for a malignant ulcer.¹¹⁷⁰

Rufus possibly relied on the animal ingredients to confer additional potency to combat a potentially lethal condition.

Neither of the two compounds Scribonius Largus recorded for gangrenous ulcers mentioned the age of patients. One consisted of burnt antimony, honey and washes made from tree bark. The second was a recipe containing herbal and mineral ingredients.¹¹⁷¹ Looking at recipes that other authorities dedicated to children, either of

¹¹⁶⁷ See Celsus, *Med.* 5.2, 20.2; Pliny, *HN* 34.23, 32. Also Galen, *Comp.Med.Gen.* 5.12 (13.834K); *SMT* 9.2 (12.238-241K). This substance was derived from chalcitis (copper ores) mixed with oak bark or galls; see Spencer, Celsus, *Med.* Volume 2: xvi.

¹¹⁶⁸ Celsus, *Med.* 6.15.3. Translated by W.G. Spencer.

¹¹⁶⁹ Rufus in Rhazes, Fragment 179, Daremberg and Ruelle: 474-475. Author's translation from the Latin.

¹¹⁷⁰ Rufus in Rhazes, Fragment 178, Daremberg and Ruelle: 474. Author's translation from the Latin.

¹¹⁷¹ Scribonius Largus, *Comp.* 62, 63.

the above would have suited them. Dioscorides described two recipes of olives and butter specifically for benign ulcers affecting children.¹¹⁷² In common with Rufus, he suggested applying bile from a turtle for lesions that had already spread into surrounding tissues.¹¹⁷³

Galen devoted a lengthy chapter to the treatment of oral ulcers. This possibly reflected their prevalence and grave prognosis for younger patients. He listed medicaments for ulcers of different degrees of severity, many of which he derived from earlier authorities.¹¹⁷⁴ For example, he referred to Andromachus' criteria for selecting medicaments:

two kinds of medicaments for aphthas..for those that have nothing malignant, medicines with moderate strength components, for those already malignant, stronger.¹¹⁷⁵

He graded some medicines according to their strength and biting nature:

Sharp and erodent and strongly drying medicaments are verdigris, blackberry, Cyprus, lentils, and they have little astringent power. Oak galls are the most strongly astringent and of the opposite strength is pig and goose fat.¹¹⁷⁶

Gangrenous ulcers required preparations containing caustic forms of aluminium, copper, lead and sulphur.¹¹⁷⁷

Galen made it clear that the colour of the lesions indicated the vigour and prognosis of the condition. The colour, therefore, determined which treatment was most appropriate.¹¹⁷⁸ They generally took the form of mouth rinses, gargles and local applications. His rationale for treating the lesions was clear and systematic. He decreed

¹¹⁷² Dioscorides, *MM* 1.137; 2.81. Pliny recorded over thirty remedies for mouth ulcers but he only suggested one for children, and that was to apply butter to the lesions, *HN* 28.78.

¹¹⁷³ Dioscorides, *MM* 2.78.4. Translated by L. Beck.

¹¹⁷⁴ Galen, *Comp.Med.Loc.* 6.9 (12.998-1007K); *Comp.Med.Gen.* 5.13 (13.841-843K). Galen's sources were Mantias, Heraclides, Heras, Andromachus, Aesclepiades, Crito, Menecrates, Herophilus, Archigenes and Apollonius the Herophilean.

¹¹⁷⁵ Galen, *Comp.Med.Loc.* 6.9 (12.990K). Author's translation.

¹¹⁷⁶ *Ibid.*, 12.1002K. Author's translation.

¹¹⁷⁷ Galen, *Comp.Loc.* 6.9 (12.991K); *Comp.Med.Gen.* 5.13 (13.841-843K).

¹¹⁷⁸ Galen, *Comp.Loc.* 6.9 (12.993K).

that when prescribing treatments for mouth ulcers, a practitioner should assess patients and:

consider the physical natures, as to whether they are soft and moist as it were, in children, eunuchs and women.¹¹⁷⁹

This was consistent with his principle of children belonging to a group of individuals who shared similar biological traits and required weaker therapies.

Nurslings deserved special care:

I further offer to infants who consume food from wet nurses, lentils with little morsels of bread and deer or calf marrow. I also mix into the food quince. And I add wild pear, sorbus and medlar and cornel. Sometimes even masticated lettuce into the food and seride and nightshade, and purslane in food if the aphtha is inflamed.¹¹⁸⁰

Sometimes the ulcers made it too painful for them to suckle:

Where a little child has aphthas, the infant must chew fine flour cooked with beef marrow if he cannot feed from the breast.¹¹⁸¹

Badly affected infants may have been unable chew anything at all. Galen did not discuss changing the regimen of wet nurses, but defined their role in treating sucklings. They were to leave any major therapies to physicians and could only administer minor remedies such as applications of iris and honey or dried herbs.¹¹⁸²

Galen mentioned nine other preparations that catered specifically for infants and children. He stated that for aphthae, Crito:

wrote some of the simplest [medicaments], most of all for children. The simplest medicine is purslane steeped in honey and a rinse with masticated olive leaves, and similarly of white myrtle.¹¹⁸³

Pitch pine and small pieces of ox marrow with bitter almonds and honey were equally suitable for infants.¹¹⁸⁴ Galen designated one particular group of remedies as being

¹¹⁷⁹ *Ibid.*, 12.1004K. Author's translation.

¹¹⁸⁰ *Ibid.*, 12.1004-1005K. Author's translation.

¹¹⁸¹ *Ibid.*, 12.999K. Author's translation.

¹¹⁸² Galen in Oribasius, *Lib. inc.* 25.3, Daremberg and Bussemaker, Volume 3: 193-194.

¹¹⁸³ Galen, *Comp.Loc.* 6.9 (12.993K). Author's translation.

“especially for children.” They included a topical application of red rhus ground up with honey, and gargles of ass’s milk or oak galls, nightshade and vinegar, or white violets pounded in honey.¹¹⁸⁵ He considered two of Asclepiades’ medicines gentle enough for an infant to tolerate. The first consisted of smearing the lesions with fat blended with warmed honey, and the second was an ointment of honey mixed with pig’s lard.¹¹⁸⁶

Another of Galen’s sources was Apollonius the Herophilean who lived during the first centuries BC and AD. His remedy for infants with white aphthae was:

Rubbing chalcitis with olive oil, you smear it all over with a feather..this relieves immediately.. and when it has been made clean, you smear it all over with ground tamarisk fruit and you give [him] a drink of honey and milk or diluted wine, especially use [this] in infants.¹¹⁸⁷

It is surprising that Galen did not register his disapproval of this use of wine in the light of his own prohibition for children. An almost identical recipe from Archigenes did not stipulate any particular age group:

chalcitis with oil, spread on with a feather.. But after they have been cleansed smear them with tamarisk fruit with water and honey or wine.¹¹⁸⁸

Another moderate remedy from Andromachus the Younger (*fl.* AD 70-80) for general use consisted of:

roasted split alum two drachms, erica fruit one, oil as an excipient and press it in place with a finger.¹¹⁸⁹

All of the above therapies contained minerals, fruit and olive oil.

¹¹⁸⁴ *Ibid.*, 12.991-992K. Asclepiades recommended that children should consume warmed beef marrow, *ibid.*, 995K.

¹¹⁸⁵ *Ibid.*, 12.992-993K.

¹¹⁸⁶ *Ibid.*, 12.995K.

¹¹⁸⁷ *Ibid.*, 12.995-996K. Author’s translation. Galen, Soranus, Caelius Aurelianus and many other authorities held Apollonius in high esteem: von Staden 1989: 540-541; Prioireschi 1996: 502. Chalcitis was basic copper carbonate and sulphate Spencer, Celsus, *Med.* Volume 2: xvi.

¹¹⁸⁸ Galen, *Comp.Loc.* 6.9 (12.1001K). Author’s translation.

¹¹⁸⁹ *Ibid.*, 12.990K. Author’s translation.

The most serious ulcers were the necrotic, black variety, otherwise known as *nomae* or Egyptian boils and ulcers. They frequently led to the death of infants and children.¹¹⁹⁰

Galen approved of Apollonius' recipe for these:

I spread grape pips ground up with anise and honey, and in another blacking ground up in honey..[rinse] with dry black and mildly astringent wine. I rinse with olive leaves cooked in wine. Similarly use white myrtle leaves cooked in wine. These washes do no harm for they are moderate and suit the majority.¹¹⁹¹

Apollonius also described an effective gargle for adults made from verdigris in wine, followed by wine for rinsing the mouth. He recommended the following which he described as strong remedy: it the application of equal parts of:

olive brine and vinegar, then wash with wine, and afterwards honey water, then water; in children, however, use oil washes.¹¹⁹²

Oil rinses would have been safer for young children who may have swallowed some of the highly caustic brine and vinegar.

Regarding lesions of different colours, Galen reported that:

even for infants I smear on medicaments, if I see reddish aphthae; in the beginning use what is moderately astringent or cooling, then on the other hand those that are less than biting [but] dispersing, if I see a yellowish colour, use the same but more cooling; if white astringent; if blackened generously dispersant.¹¹⁹³

Ulcers that were sordid or purulent also needed strong preparations such as triturated verdigris or chalcitis with wine or honey wine. In general, however, it was sufficient to use rose blossoms and moderately astringent washes for children.¹¹⁹⁴ For older children it was appropriate to use the same kinds of applications and to boost their strength. It was also possible to alter the astringent properties of stibium by diluting it with more or less wine.¹¹⁹⁵

¹¹⁹⁰ Galen in Oribasius, *Lib. inc.* 25.1, Daremberg and Bussemaker, Volume 3: 193.

¹¹⁹¹ Galen, *Comp.Loc.* 6.9 (12.996K). Author's translation.

¹¹⁹² *Ibid.*, 12.996K. Author's translation.

¹¹⁹³ *Ibid.*, 12.1005K. Author's translation.

¹¹⁹⁴ *Ibid.*, 12.1006K.

¹¹⁹⁵ *Ibid.*, 12.1005K.

There is no mention at all of supernatural and folk remedies for oral aphthae in Roman medical literature. Even Pliny and Dioscorides remained silent on the matter. This is also true of the Late Roman and Byzantine medical writers.¹¹⁹⁶ This is extraordinary because magical and traditional practices were popular for preventing and alleviating ulcers in the throat. Ulcers could spread from the mouth into the throat and lesions in the two locations shared the same characteristics and, most probably, a common pathology.

Conclusion

Roman texts contain a considerable amount of material concerning the management of oral ulceration. This is in spite of there being lacunae in the available information from some authors. There was a general consensus that choices of medication depended on the colour, depth and invasive potential of ulcers for all age groups. Mild medicaments were sufficient for simple lesions, while gangrenous, spreading ulcers required strong drugs and drastic measures.

The age of individual patients was another factor that determined the most appropriate treatments for them. There is evidence that physicians generally prescribed milder treatments for infants and children suffering from mouth ulcers. They also identified specific remedies for infants and children, or modified adult recipes and methods of administration. Sometimes the latter was necessary for practical reasons, but a particular concern was to take precautions so that children did not swallow caustic substances and that there was no damage to areas surrounding the ulcers. Galen alone addressed the issue of the anatomical and physiological characteristics of children

¹¹⁹⁶ Oribasius (fourth century AD), *Synopsis* 5.10; Cassius Felix (*fl.c.*AD 450), *De medicina* 36; Aetius (sixth century AD), 8.39-43; Paul of Aegina (seventh century AD), *Epitome* 1.10. Most of them cite Galen as their sources.

suffering from aphthae. In common with women and eunuchs, they were soft and moist and required weaker medicines for the disease. They, therefore, did not belong to a separate therapeutic group.

It is not certain why there are no accounts of magical practices to prevent or cure aphthae. One reason might have been that they were easily visible and there were plenty of natural aetiological explanations for their appearance: they were not at all mysterious. On the other hand, the disease was particularly lethal for infants, and one might have expected them have had a great need of supernatural assistance.

5.4 Epilepsy and convulsions

Although epilepsy affected Roman children and adults alike, Roman writers regarded it as a childhood disorder. While Methodist physicians identified it as a disease of stricture, other physicians explained it in terms of noxious humours and *pneuma*; see Section 3.3.1 above. It is important to bear these and other factors in mind when trying to understand the rationale underlying the kinds of treatments that were on offer.

Galen's letter to Caecilianus, the father of an epileptic boy, is an outstanding contribution to our understanding of Galen's systematic and comprehensive approach to the management of childhood epilepsy.¹¹⁹⁷ There are major lacunae in the writings of other Roman sources. Celsus did not specify the age of patients undergoing therapies, but it is apparent that they related to adults since they mentioned avoiding venery (see below). Only a few fragments have survived from Rufus on the treatment of the disease in juveniles. The testimony of Soranus survives solely in the works of later authors,

¹¹⁹⁷ Galen, *Puer.Epil.*

such as Caelius Aurelianus. He described the care of unweaned infants, but did not mention treatments for older infants and children. Although Aretaeus recognised that children frequently suffered from epilepsy, he only discussed how to revive them during acute paroxysms and did not deal with their long-term management.¹¹⁹⁸

In contrast, therapies for adult patients are well represented:

Indigestion is to be avoided; in addition he should avoid sunshine, the bath, a fire, all heating agents; also cold, wine, venery, overlooking a precipice, and everything terrifying, vomiting, fatigue, anxiety.¹¹⁹⁹

Following a seizure, the practitioner shaved the patient's head and administered a clyster or black hellebore. He then starved until the third day and then receive "food materials of the middle class" on alternate days for fourteen days.¹²⁰⁰ If the patient had recurrent fits, then the malady was judged to be chronic:

then there is to be used either blood-letting, or clystering, or purgation by black hellebore.. If the malady has not been brought to an end..recourse should be had to white hellebore, administering it three or four times, without many days between..On awakening in the morning, his body should be lightly rubbed with old oil..he should then walk as straight and as far as he can; after the walk he should be rubbed vigorously for a long while in a warm place..next plenty of cold water should be poured over his head; he should take a little rest; rest; again before night take a walk; and once more be vigorously rubbed.¹²⁰¹

Sometimes treatments were unsuccessful, and there was a need for more drastic therapies:

If not freed by these measures, his head should be shaved; anointed with old oil, to which vinegar and nitre have been added; have salt water poured over it; next upon an empty stomach he should take castoreum in water; no water should be used for drinking unless it has been boiled. Some have freed themselves from such a disease by drinking the hot blood from the cut throat of a gladiator.¹²⁰²

¹¹⁹⁸ Aretaeus, *SD* 1.4, *CA* 1.5. His description of the treatment of chronic epilepsy applied only to adults, *CD* 1.4.

¹¹⁹⁹ Celsus, *Med.* 3.23.3. Translated by W.G. Spencer.

¹²⁰⁰ *Ibid.*, 3.23.3-4. Translated by W.G. Spencer. Foods of the middle class included herbs, hares, and all birds and fish: see Celsus, *Med.* 2.18.2-3 for examples of the strongest and weakest foods.

¹²⁰¹ *Ibid.*, 3.23.4-6. Translated by W.G. Spencer.

¹²⁰² *Ibid.* 3.23.7-8. Translated by W.G. Spencer. Castoreum, derived from the genitals of a beaver and taken orally, was used as a stimulant: W.G. Spencer, *Celsus Med.* volume 2: xxv.

Although Celsus expressed his disgust about the latter, he did not comment on its efficacy. Other writers reported a variety of other bizarre and repugnant remedies for the affliction, and they generally avoided the issue of whether there was any evidence of them bringing any relief.¹²⁰³ Scribonius Largus believed that although such measures lay outside the profession of medicine, they would have helped some sufferers.¹²⁰⁴ The ingestion of human blood has been explored in Section 4.4.2 above.

There were certain treatments of last resource for intractable cases:

To let a little blood from both legs near the ankle, to incise the back of the scalp and apply cups, to burn in two places with a cautery, at the back of the scalp and just below where the highest vertebra joins the head, in order that the pernicious humour may exude through the burns. If the disease has not been brought to an end by the foregoing measures, it is probable that it will be lifelong. To mitigate it to some extent all you can do is to use exercise, plenty of rubbing, and the food which has been mentioned above, particularly avoiding what we have declared to be harmful.¹²⁰⁵

For adults, then, Celsus advocated exercise, massage, purgation, venesection, incision and cupping of the scalp, and cautery to the back of the head. He did not offer advice on bathing or the use of drugs apart from hellebore. Neither did he mention treatments for children, even though he acknowledged that they suffered from “spasms” when cutting their teeth.

Other writers recommended regimen for controlling epilepsy. Aretaeus’ advice on diet and exercise was similar to that of Celsus.¹²⁰⁶ Methodists like Soranus believed that dietary regulation, warm massages, cupping and scarification, phlebotomy and clysters

¹²⁰³ For reports of bizarre cures for epilepsy: see Aretaeus (*CD* 1.4) regarding blood from the wounds of slaughtered men; Galen (*SMT* 12.342K) and Pliny (*HN* 28.23) described draughts containing burnt human bone and rubbing the soles of the feet with menstrual blood.

¹²⁰⁴ Scribonius Largus, *Comp.* 17.

¹²⁰⁵ Celsus, *Med.* 3.23.7-8. Translated by W.G. Spencer. Celsus advised that epileptics should not take “gruels, other soft and easily digested food, nor meat, least of all pork” *ibid.*, 3.23.3. Patients should choose foods of the middle class which included herbs, hares, and all birds and fish: see *ibid.*, 2.18.2-3 for examples of the strongest and weakest foods.

¹²⁰⁶ Aretaeus, *CD* 1.4.

helped by relaxing the state of stricture.¹²⁰⁷ He deplored dangerous and disgusting procedures such as deep incisions into the scalp, trephination and the ingestion of human blood and flesh.¹²⁰⁸

Galen believed that a ‘thinning diet’ was beneficial to epileptics. He explained that:

thinning means its effects on the humours of our bodies can cut through the thickness of humours..any food which irritates or bites the senses is sharp and can cut through the thickness of humours..it will completely cure minor or incipient cases of epilepsy.¹²⁰⁹

There was a general consensus among the sources concerning the need to evacuate the body. Galen advocated venesection, vomiting and purgation to eliminate noxious humours.¹²¹⁰ The use of clysters and cupping had a similar effect.¹²¹¹

If all the above measures failed, doctors could employ more desperate measures.

Aretaeus thought that cranial trephination could bring about a complete cure:

we must perforate the bone as far as the diploe, and then use cerates and cataplasms until the meninx separate from the bone. The exposed bones are to be perforated with the trepan if still any small portion prevent its spontaneous removal, when the meninx there is found black and thickened; and when, having gone through the process of putrefaction and cleansing under the bold treatment of the physician, the wound comes to complete cicatrization, the patients escape from the disease.¹²¹²

His account was more detailed than that of Celsus. He disapproved of bizarre practices such as consuming weasels, vultures’ brains, human liver and the blood of gladiators.¹²¹³ Galen reported that some sufferers swallowed draughts of burnt human bones.¹²¹⁴ Supernatural preventatives and cures were popular for subjects of all ages.

¹²⁰⁷ Caelius Aurelianus, *Chr.* 1.4.74, 75, 77, 81, 89.

¹²⁰⁸ *Ibid.*, 1.4.118-119.

¹²⁰⁹ Galen, *Vict.At.* 1.2. Translated by P.N. Singer.

¹²¹⁰ Galen, *Purg.Med.Fac* 5 (11.341K); *Loc.Aff.* 3. 9, 10 (8.175, 192K); *Cur.Rat.Ven.Sec.* 19 (11.307K). Pseudo-Galen recommended purgation of the stomach by vomiting, *Int.* 13.24 (14.740K).

¹²¹¹ Rufus from an Arabic source, Fragment 71 in Pormann 2008: 71-73; Anonymus Parisinus, *De morbis acutis et chroniis* 3.3.1-5; 3.1.1; Aretaeus, *CD* 1.4.

¹²¹² Aretaeus, *CD* 1.4 Translated by F. Adams.

¹²¹³ *Ibid.*

¹²¹⁴ Galen, *SMT* 11.1.18 (12.342K).

They mostly involved superstitious and magical rituals, amulets, and the consumption of animal blood and body parts.¹²¹⁵

In summary, there is considerable correspondence between the accounts of Celsus and other Roman authors concerning the treatment of adults with dietetics, drugs, purgation and phlebotomy. There were, nevertheless, different attitudes towards more drastic measures.

As with adults, the prevention of epilepsy in children depended on the elimination of predisposing factors and triggers. Soranus indicated that the earliest opportunity to reduce the risk of infants having convulsions arose during the selection of a wet nurse; he advised that parents should choose one who was self-controlled with regard to drinking because:

The wet nurse is harmed in soul as well as in body and for this reason the milk is also spoiled..[since] too much wine passes its quality to the milk and therefore the nursling becomes sluggish and comatose and sometimes even afflicted with tremor, apoplexy and convulsions.¹²¹⁶

He warned that “the majority of those [infants] who are fed carelessly are seized by convulsions” and that “if the milk becomed spoiled and sour, the nervous system suffers and epilepsy and apoplectic attacks take place.”¹²¹⁷ It was essential for nurses to ensure that their milk remained wholesome and that they fed children at the correct time and avoided giving them too much food since:

more serious conditions like convulsions and epilepsy when one bathed children before digestion was complete or after cramming them with a large quantity of food.¹²¹⁸

¹²¹⁵ For example, Pliny, *HN* 28.7, 10, 17, 23, 63. Pliny described two amulets: a dragon’s tail and deer’s sinews wrapped in gazelle skin, and another containing grits from a swallow’s crop, tied to the left arm, *ibid.* 30.27.

¹²¹⁶ Soranus, *Gyn.* 2.12.19. Translated by O.Temkin: 93.

¹²¹⁷ Soranus, *Gyn.* 2.14.27; 2. 17.38. Translated by Temkin: 101, 110.

¹²¹⁸ Rufus in Oribasius, *Coll.Med., Lib. inc.* 20.8, Daremberg and Bussemaker, Volume 3: 156.

Rufus also advised that the nurse should keep an infant's head raised above the rest of its body while lifting it from the bath; picking it up by the feet could precipitate a convulsion.¹²¹⁹

As discussed in Section 3.3.1, prolonged crying, anxiety, fear, frights and other kinds of mental distress could precipitate seizures in young children. For this reason it was advisable to keep babies calm and avoid anything that could make them agitated.¹²²⁰

The nurse should comfort and soothe a distressed infant.¹²²¹ Galen suggested that it was also helpful to be able to anticipate the needs of the child and:

provide this before increasing distress throws the body and mind into excess of activity, and if ever the increasing distress escapes his notice, to try to provide immediately the thing desired or to remove the annoyance either by rocking in the arms or by modulation of the voice.¹²²²

Children were likely to be exposed to a variety of triggers that provoked seizures. For, Caecilianus' epileptic son:

These one must avoid as far as possible. Sometimes, however, he will necessarily encounter frost and violent heat, strong winds and strenuous baths, repulsive food and whirling wheels, lightning and thunder, sleeplessness and indigestion, distress and anger and weariness and similar things of which the chief characteristic is that they stir up and trouble the body violently, and produce a paroxysm.¹²²³

From the context of Galen's letter, the boy appears to have been an older child.

When a small infant suffered a convulsion, Soranus took a gentle approach:

In the case of an infant avoid severe measures because of the patient's limited strength. Have a nurse foment the baby with olive oil, wrap it up and keep the body straight. If any foam appears at the mouth give it well-diluted honey a few drops at a time. Have the baby go without bathing. On the third day bathe it in the house and foment it with warm olive oil.¹²²⁴

Its lack of strength, therefore, reduced the number of available options. The only other feasible therapy was to adjust the regimen of its wet nurse:

¹²¹⁹ Rufus in Oribasius, *Coll. Med., Lib. inc.* 20.7, Daremberg and Bussemaker, Volume 3: 155-156.

¹²²⁰ Rufus in Oribasius, Fragment 30, Daremberg and Ruelle: 303.

¹²²¹ Soranus, *Gyn.* 2.17.40. Cf. Caelius Aurelianus, *Chr.* 1.4.77. See also Rufus in Oribasius, *Lib. inc.* 20.26-28, Daremberg and Bussemaker Volume 3: 160-161.

¹²²² Galen, *San. Tu.* 1.8 (6.43K). Translated by R.M. Green.

¹²²³ Galen, *Puer. Epil.* 2 (11.360K). Translated by O. Temkin.

¹²²⁴ Caelius Aurelianus, *Chr.* 1.4.77-79. Translated by M.F. and I.E. Drabkin.

Try also to treat the baby through the nurse..get her to abstain from bathing, from drinking wine and eating meat. Have her take walks and develop the upper arms and shoulders and light exercise. She is to eat food that is easily digested.¹²²⁵

It was also helpful to smear the nurse's nipples with honey when the infant suckled because it relaxed the nerves in its body.¹²²⁶

Diet played a crucial role in the management of epilepsy. Rufus believed that certain types of food could reduce the risk of convulsions during childhood:

The epileptic must use drying food, facilitating the flow from the belly, and preventing the body from being full and fat.¹²²⁷

Galen directed that it was essential to limit some foods or avoid them altogether since they generated an excess of phlegm which caused convulsions:

I recommend abstinence from daily or immoderate use of such food as engenders unhealthy humours, or as causes constipation or flatulence and is hard to digest..the dietetic remarks would be equally valid for many other diseases; it is, however, peculiar and special to this disease that one must chiefly beware of food which engenders phlegmatic humours. Therefore it, is not to partake habitually of things which..have a viscous or cold or thick juice.¹²²⁸

Examples of food that were harmful were:

orach, blite and marrow..Gourds..cucumber, apples and pears even more so, and finally the so-called mushrooms, the worst of all foods with a phlegmatic, thick and viscous juice. From these I advise complete abstinence, just as from turnips and all other things with an edible root..He..[must avoid]..wine, mustard, parsley, parsnips, onions and smyrnion..Above all, he must abstain from eating quadrupeds..oysters are all bad..cartilaginous fish, bulbous roots, snails, cheese, mushrooms, beef and boiled eggs.¹²²⁹

Many foods were safe to eat freely, moderately, or just on occasions:

He may eat some vegetables, or salted fish, or barley-gruel, or olives, together with a third of his daily ration of bread..I do not prescribe the avoidance of lettuce, or mallow, or orach, or blite altogether..Beets and cabbage belong to the same category, for of these too one must partake moderately..He may eat the meat of almost all birds except water-fowl. Above all, he must abstain from eating quadrupeds, but..he may eat the stomach of the domestic pig and such parts that are not fleshy, while of the wild pig he may eat all the fleshy parts too. He may also have a taste of kid and hare.¹²³⁰

¹²²⁵ *Ibid.* Translated by M.F. and I.E. Drabkin.

¹²²⁶ *Ibid.*, 1.4.78.

¹²²⁷ Rufus, in Rhazes, Fragment 133.2, Daremberg and Ruelle: 461. Author's translation from the Latin.

¹²²⁸ Galen, *Puer.Epil.* 4 (11.357K). Translated by O. Temkin.

¹²²⁹ Galen, *Puer.Epil.* 4, 5 (11.367-368, 372-373K). Translated by O. Temkin.

¹²³⁰ *Ibid.*, 4, 5 (11.365-366, 372K). Translated by O. Temkin.

The nature of the foods Galen discussed in his letter demonstrated the family's elite status. Many of the above foods, especially fresh meat and fish, would not have been available to most Romans.¹²³¹ One is left to speculate on the kinds of treatments that were available to children from the lower classes.

Galen directed that the boy should undergo a programme of physical exercise. This and the squill remedy mentioned below were the two most important components of his treatment.¹²³² Each morning he should rise at dawn and take a moderately lengthy walk, then attend his lessons. Afterwards he should walk to the *palaestra* and receive instruction from his master of exercises.¹²³³ However:

As regards the number of exercises, the master must bear in mind to stop the boy before he becomes exhausted and, on the other hand, to make the whole body warm and adequately to rid it of superfluous substances.¹²³⁴

The purpose of these exercises was to:

make the whole body warm and adequately rid it of superfluous substances..[but] the moment that adequate excretion of the superfluous material has taken place the body has become sufficiently warm, and if at this moment the exercises are discontinued, one is just in time to prevent exhaustion.¹²³⁵

Phlegm was a cold humour and heat helped to disperse it. Massage would also be beneficial for the boy's well-being:

Rubbing is as good as exercise, especially for weaker bodies..At first one must impart to the body a red appearance by rubbing downwards gently with muslin. One starts with the arms and hands, proceeds in the same way to the chest and abdomen, and then rubs the legs a little more in order to draw something from the upper parts of the body in this direction. Finally, one will attack the head.¹²³⁶

He required a more moderate regimen because Galen classed him as a weaker individual. He should also be purged annually:

¹²³¹ Cereals, olives and wine formed the major part of the diets of the urban masses. Pork was generally the only meat available for consumption, but all meat and fish were in very short supply Garnsey 1999: 13-17.

¹²³² Galen, *Puer.Epil.* 3 (11.362K).

¹²³³ Galen, *Puer.Epil.* 3 (11.361-362K).

¹²³⁴ *Ibid.*, 3 (11.362K). Translated by O. Temkin.

¹²³⁵ *Ibid.*, 3 (11.361-363K). Translated by O. Temkin.

¹²³⁶ *Ibid.*, 3 (11.365K). Translated by O. Temkin.

My instructions are to purge the boy moderately when spring approaches, for thus one may succeed in moving diseases caused by obstructions.¹²³⁷

It is reasonable to assume that these obstructions were accumulations of thick phlegm that blocked the passage of *pneuma* within in the brain. Galen did not state why spring was the optimum season in the letter to Caecilianus. In his commentaries on the Hippocratic *Aphorisms*, he wrote that spring was generally a safer time of year for epileptics. Purgatives heated the body, and so it was best to avoid them at the height of summer.¹²³⁸ Another possible explanation is Celsus' observation that:

In spring those diseases are usually to be apprehended which are stirred up anew by movement of humour."¹²³⁹

According to Galen, the purpose of purgation and venesection was to rid the body of excess or corrupt humours; wine could also help to evacuate them.¹²⁴⁰ Since he banned phlebotomy and wine consumption during childhood, regimen and purgation would have been the only medical means of expelling excess phlegm from children's bodies.

One important dietary element of the management of Caecilianus' son was a special dish that dispelled humours:

The boy should take vinegar-honey with all confidence..Capers can be taken with it and some salted fish, adding a little olive oil..This dish is a kind of remedy for the disease, particularly if the vinegar has been prepared with squills.¹²⁴¹

¹²³⁷ *Ibid.*, 3 (11.361K). Translated by O. Temkin.

¹²³⁸ Galen, *Hipp.Aph.* III.16, 20 (17B.601-609, 616K); *Hipp.Aph.* IV.5 (17B.664K); *Hipp.Aph.* 6.47 (18A.78K). Hippocrates believed that it was best to avoid certain periods around the time of the solstices and the rising of various constellations such as the Dog Star at the height of summer, *Morb.Sacr.* 18. He also thought it was best to avoid the dog days and to bleed or purge patients in the spring, *Aphorisms* 6.47. Rufus wrote that "the best seasons for purging are spring and autumn," in Oribasius, Fragment 17, Daremberg and Ruelle: 299-300.

¹²³⁹ Celsus, *Med.* 2.1.6. Translated by W.G. Spencer.

¹²⁴⁰ Galen, *Hipp.Aph.* 6.47 (18A.79K).

¹²⁴¹ Galen, *Puer.Epil.* 4 (11.368K). Translated by O. Temkin. See also *ibid.*, 6 (11.375K).

Galen's final recommendation was that the boy:

Should use the drug prepared from squills..He should use it every day before leaving for the palaestra, and if the disease is not very severe..it may be hoped that it will cede completely in forty days through this drug; indeed I have cured innumerable children in this way without having to use hellebore.¹²⁴²

It is apparent from his remark that he was aware of the lethal potential of hellebore (see Section 4.4.2 above), but he did not rule out its use for children in whom epilepsy proved resistant to all other therapies.

Aretaeus provided a systematic and detailed scheme for managing a child suffering from an acute paroxysm. The first step was to make him vomit food or phlegm by dipping feathers into an ointment of iris and applying it to the tonsils. Then the child should be laid face downwards and his lower abdomen pressed gently.¹²⁴³ It was also essential to soothe and protect his body:

If the lower jaw be convulsed or distorted, or if the hands and legs be tossed about, and if the whole face be fixed, the limbs are to be soothed by gentle rubbing with oil, and the distortions of the countenance rectified; the straight parts are to be gently bound, so that they may not become distorted.¹²⁴⁴

The cold parts of the body were then to “be fomented with unscoured wool, or with old rags.”¹²⁴⁵ Attention then turned to the child's anus which:

is to be rubbed with honey along with the oil of rue, or with natron and liquid resin along with these things; and they are to be gently pushed within the anus, for they expel flatus, and children pass flatus in this disease.¹²⁴⁶

Once the child was able to swallow he was given a drink of honeyed-water containing cardamom and copper. Then he was encouraged to take some linctus made from cardamom, mustard, hyssop, iris root, natron and pepper.¹²⁴⁷ Finally the child received a powerful emetic of herbs and copper mixed with honey; its purpose was to arouse him

¹²⁴² Galen, *Puer.Epil.* 6 (11. 374-375, 377-378K). Translated by O. Temkin. Cf. Galen in Oribasius, *Synopsis* 8.4.5-6, Bussmaker and Daremberg, Volume 5: 406-408.

¹²⁴³ Aretaeus, *CA* 1.5.

¹²⁴⁴ *Ibid.* Translated by F. Adams.

¹²⁴⁵ *Ibid.* Translated by F. Adams.

¹²⁴⁶ *Ibid.* Translated by F. Adams.

¹²⁴⁷ *Ibid.*

from the seizure.¹²⁴⁸ Aretaeus considered this treatment plan “proper for infants, and for young persons the same are applicable.”¹²⁴⁹

The overall impression gained from accounts of the treatment of epilepsy is that Roman physicians prescribed milder remedies for infants and children. They avoided the use of toxic drugs wherever possible, and eschewed drastic procedures like deep cautery to the scalp and trephination. Apart from the dangers associated with such measures, doctors may have deliberated on the prognosis for juveniles with the disease. The outlook for small babies with epilepsy was poor; many of them were destined to die in any case. If they survived early infancy their prognosis improved dramatically, and the disease often resolved spontaneously at puberty (see Section 3.3.1).¹²⁵⁰ This may have led doctors to adopt a pragmatic attitude towards the fate of tiny infants and an expectation that relatively mild therapies for children might ‘tide them over’ until they outgrew the condition.

Many of the pharmacologically active plants for treating epilepsy, such as peonies, squills, violets and hellebore also had magical properties.¹²⁵¹ Rufus praised the pharmacological effects of peony which was especially good for children:

If the epileptic child's body is anointed with peony used powdered and mixed with rose oil, this works wonderfully.¹²⁵²

Galen personally witnessed the magical effects of an amulet containing peony root worn by a little epileptic boy. The boy had remained free of convulsions for eight

¹²⁴⁸ *Ibid.*

¹²⁴⁹ *Ibid.* Translated by F. Adams.

¹²⁵⁰ Celsus, *Med.* 2.8.11.

¹²⁵¹ Lowe 1929: 24-25; Ducourthial 2003: 295-311; Stannard 1982: 17-22.

¹²⁵² Rufus, in Rhazes: Fragment 133, Daremberg and Ruelle: 461.

months while he was wearing the root suspended from his neck.¹²⁵³ When this became detached:

once again convulsions seized him, and later when it was suspended in its place the convulsions corrected. And it seemed to me to be best to remove it once more for a more certain experiment. I did this and the boy would again become convulsed.¹²⁵⁴

Galen then conducted a clinical trial to test the efficacy of the plant:

We suspended a large portion of fresh root from his neck and the effect was that the boy was completely healthy and not convulsed afterwards. It is reasonable therefore that something runs down from the root and then inhaled through inspiration to cure the affection in the same place, or the air was constantly changed and altered by the root.¹²⁵⁵

Another explanation was that the peony dried up the phlegm associated with his disease.¹²⁵⁶ It appears that Galen was trying to justify his acceptance of this apparently magical cure on scientific grounds.¹²⁵⁷ A cynical but highly plausible view is that Galen ‘invented’ this explanation to preserve his reputation as a rational physician even though he occasionally recommended the use of magical remedies.¹²⁵⁸

Galen recalled a child who controlled his epilepsy by taking a dose of medicament containing aloes two or three times a year.¹²⁵⁹ He continued, saying that:

I have known in the past a small child who had no access at all so that he carried, suspended from his neck, a large piece of peony root.¹²⁶⁰

He did not comment on its efficacy, but one must suppose that he thought it beneficial. It is possible that the child was the same individual who was the subject of Galen’s clinical trial.

¹²⁵³ Galen, *SMT* 6.3.10 (11.859-860K).

¹²⁵⁴ *Ibid.*, Author’s translation.

¹²⁵⁵ *Ibid.*, Author’s translation.

¹²⁵⁶ *Ibid.*, 860-861K.

¹²⁵⁷ Temkin 1971: 25.

¹²⁵⁸ Bertier 1996: 2204.

¹²⁵⁹ Galen in Oribasius, *Synopsis* 8.4.9-10, Bussmaker and Daremberg Volume 5: 406-408.

¹²⁶⁰ *Ibid.* Bussmaker and Daremberg Volume 5: 406-408.

Other Roman authors suggested remedies for children with epilepsy. Dioscorides prescribed remedies for epilepsy that were derived from plants with purple flowers. This colour had magical connotations.¹²⁶¹ Gall from a tortoise and seeds from the purple thistle were also effective against the disease when instilled into children's nostrils.¹²⁶² These seeds could be taken in drinks for the same purpose.¹²⁶³ Decoctions of the purple petals of asters and violets were also said to be efficacious for children.¹²⁶⁴

Fresh anise mixed with polenta was effective for infants suffering from seizures.¹²⁶⁵ Dripping ass's liver blended with 'all-heal' into the mouth of a baby was supposed to protect it from epilepsy and other diseases.¹²⁶⁶ Another animal remedy was goat's brain; it was an essential ingredient in a magic ritual:

The magicians take the brains of a she-goat, and, after passing them through a gold ring, drop them into the mouth of the infant before it takes the breast, as a preservative against epilepsy and other infantile diseases.¹²⁶⁷

Many ancient cultures linked the goat with epilepsy.¹²⁶⁸ Greek and Roman authors thought that goats were especially prone to epilepsy.¹²⁶⁹ There was a popular belief that linked the animals with Hekate, and they were known to be sacred to the moon goddess, Selene.¹²⁷⁰ Apart from this association, goat remedies probably operated on the

¹²⁶¹ See Section 4.4.4 above.

¹²⁶² Dioscorides, *MM* 2.96.

¹²⁶³ Dioscorides, *MM* 3.14.

¹²⁶⁴ Dioscorides, *MM* 4.120, 122.

¹²⁶⁵ Pliny, *HN* 20.73; 21.76.

¹²⁶⁶ *Ibid.*, 18.78. See Spencer, Celsus, *Med.* xlv: all-heal or panaces was prepared from several different plants and believed to be efficacious against a variety of diseases.

¹²⁶⁷ Pliny, *HN* 28.78. Translated by J. Bostock and H.T. Riley.

¹²⁶⁸ Mesopotamian cuneiform texts state that these animals especially prone to the disease. A Sumerian text mentioned that epilepsy was prevalent in goats, and children born under the Goat-Fish constellation were 'seized' by *bennu* (epilepsy) Stol 1993: 150.

¹²⁶⁹ Hippocrates, *Morb.Sacr.* 11; Plutarch, *Roman Questions* 111 (290A). Hippocrates was sceptical about claims by the Magi that contact with goats or their skins, or the consumption of their flesh should be avoided for fear of precipitating fits *Morb.Sacr.* 1.14, 17.

¹²⁷⁰ Temkin 1971: 11.

principle of simliars. Galen credited goat's liver with anti-convulsant properties.¹²⁷¹ Although he did not specify its use for children, he described goat's flesh as a natural dessicant that could dry up phlegm.¹²⁷²

Scribonius Largus recorded a gender-specific magical cure for children suffering from epilepsy that he obtained from a worthy Roman matron. This is described above in Sections 4.4.2 and 4.4.4. It entailed boys swallowing potions containing blood from male turtles and doves, while girls received the blood of females.¹²⁷³ Aretaeus disapproved strongly of some physicians who urged young boys with chronic epilepsy to indulge in precocious sexual activity in the hope of hastening the onset of puberty, and so alleviating their disease. He wrote that they “have done violence to the nature of children” and that “they offend against the nature of the disease.”¹²⁷⁴

Conclusion

Although the medical treatises contain a great deal of information about treatments for epilepsy in adults, there are far fewer references regarding infants and children. In spite of this, there is sufficient evidence to make comparisons between therapies for different age groups. For children who survived early infancy there was an expectation that puberty might bring about a natural resolution of the disease. If the disorder arose or persisted into adulthood the outlook was much poorer. These thoughts probably influenced strategies for dealing with epileptic patients.

¹²⁷¹ Galen, *SMT* 11.1.11 (12.336K).

¹²⁷² *Ibid.*, 11.1.1 (12.320K).

¹²⁷³ Scribonius Largus, *Comp.* 16.

¹²⁷⁴ Aretaeus, *CD* 1.4. Translated by F. Adams.

A typical scheme for controlling the disease in adults entailed dietetics, drugs, purgation, cupping, clysters and phlebotomy. For refractory cases there were extreme measures, such as deep incisions and cautery to the head, severing of blood vessels, cranial trephination and a variety of bizarre and repugnant cures. The doctrinal beliefs of doctors informed their rationale for treating epilepsy. Methodists generally preferred to administer mild measures, but all physicians employed similar dietetic and pharmaceutical remedies.

The physical strength of juveniles was the most important indicator of the kind of therapies they could tolerate. Owing to their weakness, very mild treatments were best for tiny babies, and the principal approach was through the regimen of their nurses. Regimen was the cornerstone of the management of older children: controlled diet, exercise, massage and occasional purgation served to eliminate phlegm. It was important for Caecilianus' son not to exhaust himself while exercising in order to preserve his strength. Children, women and eunuchs were weak persons who required weaker remedies. Therefore it was necessary for the boy to receive a reduced dose of squill medicine. Galen was reluctant to administer hellebore to children and banned the use of venesection. His experience with the toxic drug, theriac, had been a salutary lesson.

Physicians generally withheld the most drastic treatments and the use of disgusting ingredients in their remedies in children. One exception was the magical potion containing animal blood that Scribonius Largus recorded for boys and girls suffering from epilepsy. Magical and animal-based therapies for epileptic children reflected their vulnerability and the mysterious nature of the disease. It is fair to conclude that physicians modified remedies for infants and children suffering from epilepsy,

principally on account of their limited strength. There is no evidence that doctors regarded children as an exclusive therapeutic category when treating them for epilepsy.

5.5 Bladder stones

Galen regarded bladder lithiasis as a true disease of childhood since it arose during the earliest years of life. Soranus and other Methodist physicians believed it to be a disease of stricture.¹²⁷⁵ Theories regarding its pathogenesis included spoilt breast milk and the action of heat on silt or thick humours present within a cold bladder (see Section 3.3.3 above).

There are a number of deficiencies in written accounts of the treatment of bladder stones. All that remains of Aretaeus' chapter on the cure of chronic affections of the bladder is the title.¹²⁷⁶ Although Galen described many pharmacological recipes to disperse calculi, he left no surviving accounts of surgical operations to remove them. Pseudo-Galen wrote a very brief and sketchy outline of lithotomy.¹²⁷⁷ Soranus discussed the management bladder problems but merely mentioned the purpose of lithotomy.¹²⁷⁸ Rufus provided much information on regimen and drugs, but the layman, Celsus, is the most significant source for the removal of stones. There are relatively few references to children's therapies, especially for regimen and drugs. As with other diseases, there was a tendency for Roman authors to omit details of the age groups they prescribed for. This limits our knowledge of how practitioners treated children.

¹²⁷⁵ Caelius Aurelianus, *Chr.* 5.4.64.

¹²⁷⁶ Aretaeus, *CD* 2.4.

¹²⁷⁷ Pseudo-Galen, *Int.* 19 (14.787-788K).

¹²⁷⁸ Caelius Aurelianus, *Chr.* 5.4.77.

In order to ensure that the milk sucklings consumed was wholesome, it was necessary to monitor the regimen and conduct of wet-nurses. It was also a wise precaution to filter drinking water to minimise the accumulation of silty matter in the bladder.¹²⁷⁹ Another preventative measure was to administer ten or twelve red peony seeds in order to:

avert the starting of stones when children drink or eat them.¹²⁸⁰

It is uncertain whether Dioscorides was relying on the plant's pharmacological or magical properties, or even a combination of both. Amber also protected infants from strangury when worn as an amulet.¹²⁸¹

Doctors treated patients suffering from bladder calculi with regimen, drugs and surgery. When the action of heat was responsible for their formation, it was necessary for them to vomit after meals and avoid 'heating' foods that could inflame the bladder. When cold was the cause, it was advisable for them to avoid coarse food and overeating. Drinking sparkling wine or water from pure springs, and vigorous exercise in front of a fire were beneficial.¹²⁸² Soranus gave patients cold drinks and small meals after fasting during the *diatritus* which is described in Section 1.2.5.¹²⁸³ Anointing and rubbing the body to generate heat, poultices on the lower abdomen, cupping and applying leeches relieved the underlying state of stricture.¹²⁸⁴ Rufus and Soranus most likely had adults in mind for these cures.

¹²⁷⁹ Rufus, *Ren. Ves.* 13.1-3, Daremberg and Ruelle: 53.

¹²⁸⁰ Dioscorides, *MM* 3.140. Translated by L. Beck (3.157 in Gunther). A more unlikely remedy from Pliny was "The flesh of a hedge-hog is agreeable eating, they say, if killed with a single blow upon the head, before it has had time to discharge its urine upon its body: persons who eat this flesh, it is said, will never by any possibility suffer from strangury, *HN* 30.21. Translated by J. Bostock and H.T. Riley.

¹²⁸¹ *Ibid.*, 37.12.

¹²⁸² Rufus, *Ren. Ves.* 13.8-9, Daremberg and Ruelle: 56.

¹²⁸³ Caelius Aurelianus, *Chr.* 5.4.67, 73, 74.

¹²⁸⁴ *Ibid.*, 5.4.75, 76.

Several pharmaceuticals were reputed to drive out or ease the symptoms of bladder calculi. Rufus identified a number of bland herbs that expelled them.¹²⁸⁵ Pastilles that served the same purpose were made from substances such as cassia, crocus, myrrh, nard, cinnamon and hypericum juice.¹²⁸⁶ According to Galen, oxymel, a mixture of honey and vinegar, had the power to fracture calculi. He also listed nine compound herbal potions that had the same effect.¹²⁸⁷ The benign nature of these pharmaceuticals probably made them suitable as children's remedies.

Pliny, as to be expected, recorded several bizarre and repugnant animal remedies involving earthworms, snails, snakes, scorpions, various types of doves and dung from mice, ring-doves and turtle doves.¹²⁸⁸ Again, there was no mention of children. One remedy that did specifically target children was a mixture of red and black peony seeds.

They not only prevented stones from forming, but were also:

very useful..in cases where children are troubled with calculi, being employed at the crisis when strangury first makes its appearance.¹²⁸⁹

Should medical treatments prove unsuccessful, it might be necessary to contemplate a variety of interventions. Beginning with calculi that were not impacted:

it suffices to lift them by shocks by turning the patient lying on his back from one side to the other, because in this way the stone detaches itself from the orifice and he can then urinate.¹²⁹⁰

Galen described similar manoeuvres for a child, stating that it was often necessary to repeat the process with increasing force.¹²⁹¹ If a stone became impacted, it might

¹²⁸⁵ According to Rufus, horehound seeds, horse fennel root, mugwort and fragrant chamomile expelled stones. For some patients with soft stones that resulted from the action of heat, he recommended cold diuretics, like cucumber, hyacinth seeds, asparagus, gillyflower seeds, saffron and violet leaves. When the cold was to blame, warm diuretics, such as iris, cumin, balasam fruit, cinnamon and fennel were preferable Rufus, *Ren. Ves.* 12.1, 13.7-8, Daremberg and Ruelle: 49-50, 55-56.

¹²⁸⁶ Celsus, *Med.* 5.20.6.

¹²⁸⁷ Galen, *Loc.Aff.* 6.4 (8.409K); *Comp.Med.Loc.* 10.1 (13.324-331K).

¹²⁸⁸ Pliny, *HN* 30.21.

¹²⁸⁹ Pliny, *HN* 27.60. Translated by J. Bostock and H.T. Riley.

¹²⁹⁰ *Ibid.*

become free with the introduction of a sound (probe) into the urethra.¹²⁹² A catheter could also dislodge a stone or blood clot and relieve urinary retention:

this treatment is needed not only for men but sometimes also for women. For this purpose bronze tubes are made, and the surgeon must have three ready for males and two for females, in order that they may be suitable for every body, large and small: those for males should be the longest, fifteen finger-breadths in length, the medium twelve, the shortest nine; females, the longer nine, the shorter six. They ought to be a little curved, but more so for men.¹²⁹³

Celsus may well have included children among those having “small bodies.” He described two other relatively minor techniques:

either by an earscoop or by the instrument with which a stone is drawn out in the course of lithotomy. If this cannot be done, the foreskin is drawn as far forwards as possible over the glans and tied there by a thread. Then to one side of the penis a longitudinal incision is to be made and the stone taken out.¹²⁹⁴

The treatment of last resort was lithotomy which involved delivering a calculus through an incision made into the perineum:

it is most inadvisable to undertake it hastily, since it is very dangerous. This operation is not suitable for every season or at any age or for every lesion, but it must be used in the spring alone, in a boy who is not less than nine years of age and not more than fourteen, and if the disease is so bad that it cannot be relieved by medicaments, or endured by the patient without shortly bringing his life to a close.¹²⁹⁵

Celsus gave no explanation for the choice of season and age limits, although he believed that children recovered more readily than older persons and that “the most opportune time for healing is the spring.”¹²⁹⁶ The procedure would certainly have been significantly more difficult and risky for individuals over the age of fourteen years. Mature males would have been at risk of irreparable trauma to the urethra, prostate

¹²⁹¹ Galen, *Loc.Aff.* 1.1 (6.10-11K).

¹²⁹² Rufus, *Ren.Ves.* 12.3. Daremberg and Ruelle: 50.

¹²⁹³ Celsus, *Med.* 7.26.1A-B. Translated by W.G. Spencer. Celsus recognised that “the woman's urethra is both shorter and straighter” *ibid.*, 7.26.1C. Cf. Rufus, *Ren.Ves.* 3.6-7; Soranus *Gyn.* 1.3.18. Aretaeus also suggested using a catheter to “push away the calculus and draw off the urine,” but made no reference to children, *CA* 2.9. Translated by F. Adams.

¹²⁹⁴ Celsus, *Med.* 7.26.1B-C. Translated by W.G. Spencer.

¹²⁹⁵ Celsus, *Med.* 7.26.2A. Translated by W.G. Spencer. It is likely that mortality rates were around fifty per cent Herr 2008: 1214.

¹²⁹⁶ Celsus, *Med.* 5.26.6. Translated by W.G. Spencer.

gland and neighbouring structures.¹²⁹⁷ The above extract implies that some men were desperate enough to undergo lithotomy despite all the risks associated with it.

Celsus frequently referred to the patient undergoing the procedure as “the boy.” His account of the operation was very lengthy and detailed. First of all, it was necessary for up to four strong men to keep the child still and hold him in the correct position. The boy sat on the lap of a male attendant and with his legs drawn up. Once he was suitably restrained, the surgeon examined him internally in order to find the exact location of the calculus.¹²⁹⁸ Then it was:

guided downwards with special care..then the skin over the neck of the bladder next to the anus should be incised by a semilunar cut..then a little lower down in that part of the incision which is concave, a second cut is to be made under the skin, at a right angle to the first, to open up the neck of the bladder.¹²⁹⁹

The surgeon grasped the stone and manipulated it with his fingers so that it became visible through the wound. If it was small, it would be possible to grasp it with the fingers of both hands and draw it out.¹³⁰⁰ Stones varied in size and shape. It was necessary to use a special instrument known as a lithotomy scoop to extract large calculi.¹³⁰¹ Celsus’ frequent references to “the surgeon” and his use of the passive voice indicate that he did not perform the operation himself.

Surgical mistakes could prove fatal. For example, carelessness and haste could injure the bladder, causing “spasm with danger of death.”¹³⁰² It was also unsafe to search

¹²⁹⁷ Shelley 1958: 51-52; Andreoiu 2001: 33; Herr 2008: 1214.

¹²⁹⁸ Celsus, *Med.* 7.26.C.

¹²⁹⁹ *Ibid.*, 7.26.2C, E, F. Translated by W.G. Spencer.

¹³⁰⁰ *Ibid.*, 7.26.2K. Translated by W.G. Spencer.

¹³⁰¹ *Ibid.*, 7.26.2K-M.

¹³⁰² *Ibid.*, 7.26.2F. Translated by W.G. Spencer.

around the bladder cavity for rough, spiny stones as this would cause added damage the lining and result in death in the same way.¹³⁰³ Even in the case of soft stones:

In such a prolonged search the bladder is injured and fatal inflammation is set up.¹³⁰⁴

There were a number of possible post-operative complications following lithotomy. Some patients were left with a permanent urinary fistula.¹³⁰⁵ Others might develop inflammation, haemorrhage, ‘spasm’ of the sinews and bilious vomiting, and septic ulceration with fatal gangrene.¹³⁰⁶

Rufus wrote a much shorter description of the procedure:

After laying the patient on his back, flexing his legs as much as possible..push the fingers of the left hand as far into the rectum as you can; explore the bladder with the fingers, while an assistant presses the lower abdomen until you arrive on the stone. It is sufficient to put a finger in the rectum, if the doctor is familiar with this manoeuver, if his fingers are long, if in the case of a child, if the stone is not of an extraordinary volume.¹³⁰⁷

There are several differences between his and Celsus’ account. For example, there was only one attendant and the child lay in a supine position. There are also implications that some surgeons were inexperienced and that patients might be adults as well as children. Rufus made no reference to age limits, and the operation itself appears to have been simpler:

After having seized the stone, having pushed it towards the opening of the urethra, where one holds it firm so that it does not escape, one makes a transverse incision into the perineum; if the stone is within reach, it is removed with the handle of an instrument; but it is necessary to press it, for the handle is roughened, and the extremity is curved in the way which best suits the operation..one has recourse to the instrument invented for this circumstance.¹³⁰⁸

This implement was similar to the lithotomy scoop described by Celsus, but in the above operation the surgeon made a single, transverse perineal incision.

¹³⁰³ *Ibid.*, 7.26.2M.

¹³⁰⁴ *Ibid.*, 7.26.3C. Translated by W.G. Spencer.

¹³⁰⁵ *Ibid.*, 7.26.2I. Cf. Rufus, *Ren. Ves.* 12.13. Daremberg and Ruelle: 53.

¹³⁰⁶ *Ibid.*, 7.26.2I; 7.26.5A-B, G, I; 7.27.1-4.

¹³⁰⁷ Rufus, *Ren. Ves.* 12.9-11, Daremberg and Ruelle: 5152.

¹³⁰⁸ *Ibid.*, 12.11-13, Daremberg and Ruelle: 52-53.

In a short chapter on bladder therapies, Aretaeus wrote that if the pain of acute retention of urine due to a stone was excruciating:

we must make an incision in the part under the *glans penis*, and the neck of the bladder, in order to procure an outlet for the stone and the expulsion of the urine. And we must particularly endeavour to cure the part by bringing the wound to cicatrization. But if not, it is better that the patient should have a flux of urine for the remainder of his life, than that he should die most miserably of the pain.¹³⁰⁹

Females were occasionally troubled by bladder stones. If they were small it was often possible to remove them from the urethra using a scoop.¹³¹⁰ When the stones were larger, surgery was inevitable, although Celsus modified his technique for females of different ages:

In the case of a virgin the fingers are passed as in males, in the case of a woman into the vagina. Then the incision is to be made in a virgin just under the left labium, in a woman between the urethra and the pubic bone, and in both instances by a transverse wound.¹³¹¹

He did not impose an upper age limit for lithotomy in females, presumably because of the lesser degree of complexity and vulnerability of their urogenital anatomy. Celsus did not distinguish between the post-operative care of males and females. He did, however, advise that when sitting in a hot bath, “a boy should not be put so often into the hot water nor kept in so long as an adolescent.”¹³¹² This was because there was a risk that it would have seriously impaired his strength and recuperation.

Archaeologists have made many finds of lithotomy instruments from various sites across the Roman world.¹³¹³ These artefacts bear witness to the technical advances made in the manufacture of surgical tools, the frequency with which surgeons removed

¹³⁰⁹ Aretaeus, *CA* 2.9. Translated by F. Adams.

¹³¹⁰ Celsus, *Med.* 7.26.4. Translated by W.G. Spencer.

¹³¹¹ *Ibid.* Translated by W.G. Spencer.

¹³¹² *Ibid.*, 7.26.5F. Translated by W.G. Spencer. Celsus warned that patients continued to be in danger during the recovery phase from inflammation, spasm, haemorrhage, weakness, difficulty in breathing, clot retention of urine, wound suppuration and bilious vomiting *ibid.*, 7.26.5A-I.

¹³¹³ Jackson 1990: 11.

bladder stones and the specialist nature of lithotomy in the Roman period.¹³¹⁴ Celsus described the lithotomy scoop that was made specifically for extracting calculi:

This is thin at the end, beaten out into a semicircular shape, smooth on the outer side, where it comes into contact with the body, rough on the inner where it touches the stone. The scoop must be rather long, for a short one has not the strength to extract.¹³¹⁵

This description is sufficiently detailed to confirm the identification of several lithotomy scoops or hooks that have survived into the archaeological record.¹³¹⁶ An assemblage from the grave of Hygeinos Kanpylius contained lithotomy knives and forceps, hooks, scoops and raspers. The handle of one scalpel is embellished with the figure of a mouse, an animal that had an association with the healing god Apollo.¹³¹⁷

There were a number of magical remedies that removed stones or relieved symptoms. Pliny and Dioscorides described several that come under the category of *Dreckapotheke*.¹³¹⁸ Pliny knew of an amulet that was reputed to help sufferers:

A stone, it is said, that has been voided by a patient suffering from calculi, if attached to the body above the pubes, will alleviate the pains of others similarly afflicted.¹³¹⁹

¹³¹⁴ The fifth paragraph of the Hippocratic Oath states that “I will not use the knife, not even, verily, on sufferers of the stone, but I will give place to such as are craftsmen therein.” Translated by W.H.S. Jones. Several scholars have debated its significance. Carrick summarises the opinions of Nittis and Edelstein. He concludes that Edelstein was more correct in saying that the Oath was a Pythagorean concept. The physicians who were followers of Pythagoras did not conduct any forms of surgical procedures, but were content to refer patients to surgeons and craftsmen 2001: 86-88. See S. Nittis, 1939. ‘The Hippocratic Oath in reference to lithotomy. A new interpretation with historical notes on castration.’ *Bulletin of the History of Medicine* 7: 719-728; L. Edelstein, 1967. *Ancient Medicine: Selected Papers of Ludwig Edelstein*. Baltimore: John Hopkins University Press, especially 26-30). During the Roman period physicians were more willing to undertake lithotomy, aided by the development of specialist instruments Jackson 1990: 6; Diamandopoulos 1999: 3; Sachs 2003.

¹³¹⁵ Celsus, *Med.* 7.26.2K. Cf. Rufus, *Ren. Ves.* 12. 9-12, Daremberg and Ruelle: 51-53.

¹³¹⁶ Jackson 1990: 7. Several lithotomy scoops have survived; one is on display at the Science Museum of London, Inv. No. A622584. The concave surfaces of the curved ends were roughened for increased grip on the stone Jackson 2003: 320. For bladder instruments from Marcianopolis, Asia Minor and Rome, see Jackson 1995: 196, 197, 204; Kirova 2002: 76, 197. For an illustration depicting lithotomy, see Künzl 2002: 74.

¹³¹⁷ Künzl 1983a.

¹³¹⁸ Dioscorides suggested drinking boar’s urine, *MM* 2.99. Pliny recorded that, when eaten, the bladder of the same animal was effective, *HN* 28.60. Other remedies involved rubbing the abdomen with mouse dung and consuming the ashes of snails’ shells, grits from poultry gizzards, and the dung of ring-doves and turtle-doves.

¹³¹⁹ Pliny, *HN* 28.9. Translated by J. Bostock and H.T. Riley.

This would have worked by sympathy and may have been useful for persons of all ages.

He also mentioned that amber:

is good for any age, as a cure for strangury, either taken in drink or attached as an amulet to the body.¹³²⁰

Two points worth noting are that amber amulets could both prevent and relieve strangury, and that amber was a popular pharmacological remedy for a wide variety of diseases which included strangury and calculi.¹³²¹

Conclusion

Bladder calculi caused intense suffering and could prove fatal. Unlike accounts of some other diseases, there are no ambiguities about the nature of this disease or the problems they caused. Although the medical texts contain a large amount of information about their prevention and treatment, there are some noticeable gaps in the amount of detail they provide. One of the difficulties is that most references to regimen and drug remedies applied to male adults in their prime. It is a matter of conjecture whether any individual treatments would have been appropriate for juveniles. There is, nevertheless, a reasonable body of evidence to suggest that children received special consideration, particularly in the matter of surgical interventions.

First of all, attention to the regimen of nurses and the use of amulets afforded infants some protection from calculus formation, and peony seeds conferred the same benefit

¹³²⁰ *Ibid.*, 37.12. Translated by J. Bostock and H.T. Riley.

¹³²¹ Roman writers used different terms for amber, such as *sucinum* or *succinum* (Latin), or the Greek *electron*, and *lignourion*, *lyncurion* or *lyngourion*. Pliny recorded many different theories about its origin. One concerned the latter two terms which referred to lynx's urine. After the animal had urinated it buried it in the ground where it solidified. Others thought it was formed from pine tree resin, *HN* 37.11. Dioscorides mentioned one form of amber derived from black poplar resin, *aigeiros*, and another, *lyngourion*, which cured diarrhoea, *MM* 1.83; 2.81. Amber was a popular medicinal substance in classical antiquity that cured a variety of disorders, such as consumption, suppuration, internal bleeding, oral infections, dysentery, jaundice, pains in the throat, vesical calculi and strangury Riddle 1973: 7-9; Duffin 2015: 43-49.

on children. Ear scoops and small catheters were useful for dislodging small stones from the urethra, and there is one reference to shaking children to free impacted stones. Celsus is our best source for lithotomy. The amount of detail regarding male anatomy, operative techniques and dangers demonstrate that his unknown Greek source was a highly skilled and experienced doctor.

Celsus used the term *puer* for a boy undergoing lithotomy. From the context of his descriptions of the surgery, he meant ‘boy’ rather than ‘child’ since he described separate modifications for women and girls. Most sufferers were, in any case, boys on account of the male urethra being longer and narrower than that of the female. Anatomical differences between children and adult males accounted for Celsus’ safe upper age limit of fourteen years for surgery. In his treatise on kidney and bladder diseases, Rufus gave a very brief description of an operation that was simpler than Celsus’ procedure, and he did not mention any age limits or surgical risks. This is surprising in the view of his renowned expertise in the field.

None of the above-mentioned authorities referred to altering treatments for children on account of their humoral complexion. On one occasion Celsus referred to boys lacking enough strength to tolerate sitting in hot baths. The anatomical characteristics of girls and boys dictated the size and shape of suitable urinary catheters, and the chronological age of boys determined their fitness to undergo lithotomy. There is no reason to suppose that physicians regarded children as an exclusive therapeutic group in the context of bladder calculi.

5.6 Dermatological disorders

Although the medical treatises refer to a variety of dermatological treatments, it is often difficult to link remedies with specific diseases. This is due to inconsistencies in the nomenclature of skin lesions and the use of a number of synonyms for the same pathological condition. There is further confusion owing to the fact that ailments Roman writers knew as erysipelas, psoriasis and lichen, do not correspond to modern diseases bearing the same names.¹³²² This thesis is not concerned with the ‘true’ identity of the diseases in question, but to look for evidence of differences in the management of skin conditions with similar clinical features in various age categories.

Another problem arises from the limited number of sources of information for the treatment of skin disorders from the early empire. Celsus and Galen were the only authors who dealt with adults and children. Soranus wrote a lengthy chapter on various cures for dermatological ailments in infants, and there are just four extant fragments on children’s remedies from Rufus. There are no discussions of skin diseases in the surviving works of Aretaeus and Caelius Aurelianus.

Irritated skin

A newborn infant’s skin was vulnerable to irritation and chafing. In order to minimise this, it was essential for the nurse or midwife to exercise great care when swaddling infants and to apply clean, dry bands that were free from natron that was an irritant. She

¹³²² See comments by W.G. Spencer in Celsus, *De medicina*, volume III: 590 that earlier texts defined erysipelas as redness of the skin associated with raised lesions and ulceration; W.H.S. Jones in Pliny, *Natural History* Volume VI: viii that psoriasis was a form of vitiligo, while impetigo denoted a collection of four kinds of disease, and the term lichen encompassed several different conditions.

must also apply soft woollen bandages to prevent chafing and bruising.¹³²³ For an infant who developed a rash, a soothing emollient often sufficed:

For itching of the body application of heat is helpful, as well as plenty of ointment made of refined olive oil to which a little wax is added.¹³²⁴

Soranus' reference to heat and olive oil indicates that the infant required therapies to loosen the state of stricture.¹³²⁵ Celsus' mild ointment containing zinc oxide, ebony, gum, egg white, milk and tragacanth would have been equally suitable for newborns.¹³²⁶

Many practitioners believed that unhealthy breast milk caused sucklings to develop dermatological diseases. The first step in curing them was to make sure that wet nurses had a healthy diet and took only moderate amounts of food and drink.¹³²⁷

Pustular lesions

The treatment of all kinds of skin pustules depended on the age of the patient. Humoral lore is implicit in Celsus' advice about to dietary changes for sucklings and their nurses:

Food must be diminished, all things acrid and thinning avoided; and the same treatment should be applied to nursing women, if the baby is so affected.¹³²⁸

As mentioned above in Section 5.4, 'thinning' foods were those that reduced the viscosity of thick humours within the body. It is most likely that Celsus intended their diets to consist of 'neutral' foods that had no effect on the humours.¹³²⁹

¹³²³ Soranus, *Gyn.* 2.9.14.

¹³²⁴ Soranus, *Gyn.* 2.25.52. Translated by O. Temkin: 122.

¹³²⁵ Caelius Aurelianus, *Ac.* 2.11.

¹³²⁶ Celsus, *Med.* 5.9.13.

¹³²⁷ Rufus, in Baladī, Fragment F (R) 10a, Pormann 1999: 68-69. Cf. Fragment 3a, Ullmann 1975: 173-174.

¹³²⁸ Celsus, *Med.* Translated by W.G. Spencer.

¹³²⁹ Galen explained that "the thinning diet is healthy and the thickening morbid, and that the diet which has no particular effect in either direction, but leaves things in the body as it finds them, is between the two," *Vict.At.* 11. Translated by P.N. Singer: 322.

Celsus also advised applying an ointment directly to the skin:

For the pustules which affect infants apply: pyrite stone..mixed with fifty bitter almonds, and..oil added. But first the pustules should be anointed with white-lead, then smeared with the above.¹³³⁰

Soranus advised a sweet diet for the nurse and putting “the infant itself on a diet, not satiating it nor..starving it.”¹³³¹ The rationale behind this is not clear.

Pustular lesions varied in size and gravity, and good regimen was an important initial therapy for adults affected by smaller lesions:

The treatment first is much walking and exercise; and if anything prevents these, then rockings. Next food must be diminished, all things acrid and thinning avoided..Moreover, the patient who is robust, if the pustules are small, ought to go to the bath and sweat, and at the same time to dust the pustules with soda and to mix wine with oil and anoint himself, after which he goes down into the hot bath.¹³³²

The reference to robusticity precluded children. If adults failed to respond to the above therapy:

or if the pustules are of the larger kind, lentil meal should be applied, and after the upper skin has been detached, we must pass on to soothing medicaments.¹³³³

Soothing medicaments included plasters whose main active constituents were white lead, animal fat and olive oil.¹³³⁴

Phymata were large swellings that resembled boils. When they occurred in children, they generally responded well to treatment.¹³³⁵ One gentle remedy was made from:

myrrh, ammoniac salt, incense, resin both liquid and dried, crocomagma, wax..[and] the stone called pyrites.¹³³⁶

¹³³⁰ Celsus, *Med.* 5.28.15E. Translated by W.G. Spencer. Pyrite stone is iron sulphide.

¹³³¹ Soranus, *Gyn.* 2.25.52. Translated by O. Temkin 123-124.

¹³³² Celsus, *Med.* 5.28.15D. Translated by W.G. Spencer.

¹³³³ *Ibid.* Translated by W.G. Spencer.

¹³³⁴ Celsus, *Med.* 5.19.23-28.

¹³³⁵ Celsus, *Med.* 5.28.9.

¹³³⁶ *Ibid.*, 5.18.16. Translated by W.G. Spencer. Ammoniac was a mixture of common salt, together with calcium and magnesium chloride; it would have drawn fluid from inflammatory lesions Spencer, Celsus, *Med.* Volume 2: lii.

Another consisted of:

Galbanum, mistletoe juice, ammoniacum, turpentine-resin..beef-suet..[and] burnt wine-lees.¹³³⁷

These would almost certainly have been suitable for children. A third recipe for phymata was more drastic:

An emollient containing quicklime, soda-scum, round pepper..galbanum..salt..which are taken up in a cerate made of rose oil.¹³³⁸

Quicklime was highly caustic while soda scum had erodent properties.¹³³⁹ The presence of these two substances probably rendered this ointment unsuitable for tender young skins.

Two fragments from Rufus discussed the treatment of pustules on children's skin. These were preserved by Al Baladī, a renowned tenth century Arab physician. One was a direct quotation from Rufus, and the other is a supposedly a verbatim account in Paul of Aegina's *Therapy of Children*. They gave directions for washing or bathing children in water containing decoctions of roses and lentils or myrtle, or twigs from the mastic-tree, or roses and oil of roses.¹³⁴⁰ Ointments were also helpful, such as one containing cadmia, burnt copper and various herbal materials, and another with white lead and oil of roses.¹³⁴¹

Plasters of white pepper were effective and mild enough for non-specific exanthemata in "old men, children and women with soft flesh."¹³⁴² This is an example of Galen's grouping of such weak individuals who had need of milder medicaments. According to

¹³³⁷ Celsus, *Med.*, 5.18.23. Translated by W.G. Spencer.

¹³³⁸ *Ibid.*, 5.18.20. Translated by W.G. Spencer.

¹³³⁹ Spencer, Celsus, *Med.* Volume 2: xxiv.

¹³⁴⁰ Rufus in Baladī, Fragment 14, Pormann 1999: 46 = Orib., *Coll Med., Lib. inc.* 42; Rufus in Baladī, Fragment F (R) 10a, Pormann 1999: 68-69.

¹³⁴¹ Rufus in Baladī, Fragment 14, Pormann 1999: 46 = Orib., *Coll Med., Lib. inc.* 42; Rufus in Baladī, Fragment F (R) 10a, Pormann 1999: 68-69. *C.f.* Fragments 3a, 3b, Ullmann 1975: 173-174.

¹³⁴² Galen, *Comp.Med.Gen.* 1.14 (13.421K). Author's translation.

Dioscorides, around thirty mainly vegetal medicaments were useful for healing inflammatory and pustular lesions. He did not specify their use for children, but mentioned one using pitch pine which healed boils on those with tender skins.¹³⁴³

It is difficult to assess cures for 'lichen' because this term embraced a collection of dermatological diseases. Galen recommended a preparation which contained sulphur, Cimolian earth, copper ore, alcyonium, split alum, foam of soda, frankincense and myrrh.¹³⁴⁴ He may have intended this for adults alone on account of its erosive and caustic properties. This contrasted with his simple cure for lichen on children's heads using a mixture of vinegar and plum tree resin.¹³⁴⁵ He acknowledged Dioscorides as his source.¹³⁴⁶

Celsus applied compounds containing galbanum to boils, but carbuncles required cauterising early on; he did not link them with specific categories of patients.¹³⁴⁷ Neither did Galen when he recommended mild plasters containing cooked lupin seeds for pustules and phymata, but they may have suited all age groups.¹³⁴⁸

Skin ulceration

Ulcers could occur as a primary skin ailment or develop from existing pustules. It is not clear whether the following ointment was intended for adults and children alike:

Ulcerations caused by the pustules are relieved by litharge mixed with fenugreek seeds, rose-oil and endive juice.¹³⁴⁹

¹³⁴³ Dioscorides, *MM* 1. 86.

¹³⁴⁴ Galen, *Comp.Med.Loc.* 5.4 (12.835-836K). Foam of soda was a mixture of sodium and potassium carbonates and nitrates which had erosive properties; alcyonium was quicklime derived from incinerated coral: Spencer, Celsus, *Med.* Volume 2: lii, xviii.

¹³⁴⁵ Galen, *SMT* 7.10.35 (12.32-33K).

¹³⁴⁶ Dioscorides, *MM* 1.174.

¹³⁴⁷ Celsus, *Med.* 5.28.8; 28.1B-C.

¹³⁴⁸ Galen, *SMT* 6.7.3 (11.855-856K).

¹³⁴⁹ Celsus, *Med.*, 5.28.15E. Translated by W.G. Spencer.

An interesting point to note is that Soranus suggested similar remedies for ulcers on the skins of newborns (see below).

Judging by the length of Soranus' description of their management, skin ulcers frequently affected newborns. If the lesions were clean and dry, the first step was to bathe the infant:

with a warm decoction of roses or lentils, and if we need a more stringent effect with myrtle or mastic or bramble or pomegranate peel.¹³⁵⁰

If the ulcers were more severe, they needed further treatment:

We poultice..with plantain and bread, or with endive, or with a powder of barley and purslane, or of houseleek or of navelwort, or with dried roses or fresh roses boiled with melilot or dates; and we use ointments of litharge, white lead, alum, vinegar, and myrtle oil, or rose oil or mastic oil.¹³⁵¹

When inflammation was present

We resort to bathing with a warm mixture of water and olive oil [or] with a decoction of linseed or fenugreek or the roots of the wild mallow, and we anoint the sores with white of egg beaten and mixed with moist wax salve..if some impurity remains we clean it away with honey boiled down moderately.¹³⁵²

Finally, when the sores were clean:

we fill up the cavities..by means of a smooth litharge or white lead..[and] for the sake of cicatrisation we apply the remedy of gum ladanum or of eggs or barleycorn or that of cadmia smeared on together with rose oil. Moreover, one should gently cleanse with natron for the child will not tolerate stronger remedies.¹³⁵³

Soranus did not specify the nature of the stronger remedies that might cause distress to the child and damage his skin.

Rufus' remedies for children's skin ulcers had many ingredients in common with those of Soranus. For lesions that were moist and weeping, it was important to dry them by applying salt to the exudates. There then followed washes with natron, roses and lentils, decoctions of myrtle and pomegranate peels or those derived from the mastic tree with

¹³⁵⁰ Soranus, *Gyn.* 2.25.52. Translated by O.Temkin: 122-123.

¹³⁵¹ *Ibid.*, 2.25.53 Translated by O.Temkin: 123.

¹³⁵² *Ibid.* Translated by O.Temkin: 123.

¹³⁵³ *Ibid.* Translated by O.Temkin: 123.

oil of roses. There was an assortment of soothing applications; some contained white lead or lead slag with black nightshade and oil of roses.¹³⁵⁴

Galen described a vast number of plasters of different colours for many different conditions, and cutaneous ulcers featured prominently among them. His aim was to fill the cavities and promote healing. It was essential to take into account the patient's age, the season, the region, the quality of the ambient air, his complexion and customs, and the severity of the disease.¹³⁵⁵ The majority of his plasters for skin ulcers did not stipulate the age of patients, but he designated three as being particularly suitable for children. Damocrates' white plaster contained lead salts, wax, frankincense and terebinth. It was for all ages, but especially "women, delicate little children and depraved young men."¹³⁵⁶ Two others promoted the cicatrisation of ulcers. Their ingredients included litharge, and he intended them respectively for effeminate men and eunuchs, or for "children, women and eunuchs and all persons with tender flesh."¹³⁵⁷

According to Celsus, chilblains were inflamed, ulcerated lesions that affected the hands and feet of children during the winter. He recommended that:

The ulcers are to be fomented freely with a hot decoction of turnips, or..ervain. If there is not yet an open ulcer, copper scales as hot as can be borne are to be applied. If there is already an ulceration, then apply equal parts of alum and frankincense pounded together with the addition of wine.¹³⁵⁸

Pliny and Dioscorides both described over twenty cures for chilblains for use by unspecified persons. These included vervain, alum and frankincense that Celsus

¹³⁵⁴ Rufus in Baladī, Fragment 14, Pormann 1999: 46 = Orib., *Coll Med., Lib. inc.* 42; Rufus in Baladī, Fragment F (R) 10a, Pormann 1999: 68-69.

¹³⁵⁵ Galen, *MMG* 2.2 (11.80K).

¹³⁵⁶ Galen, *Comp.Med.Gen.* 1.19 (13.422-423K). Author's translation.

¹³⁵⁷ *Ibid.*, 2.10, 15 (13.511, 530-531K). Author's translation.

¹³⁵⁸ Celsus, *Med.* 5.28.6. Translated by W.G. Spencer.

mentioned above.¹³⁵⁹ This is one of many examples of Roman writers identifying specific remedies that were appropriate for infants and children while others omitted to mention whether they suited particular patients.

There are relatively few references to magical or folkloric practices for dermatological complaints in Roman medical literature. Dioscorides did not describe any, but Pliny recorded seven remedies for curing boils; three were purely magical, one was medico-magical and three involved the use of repugnant material.¹³⁶⁰

Conclusion

There are a number of difficulties that limit the understanding of how doctors treated dermatological conditions in the first few centuries AD. Firstly, information concerning adults and children is available in the works of just a few Roman authors. There are also uncertainties about the identity of individual diseases and a general lack of details about the kinds of patients needing treatment. It is likely that medical writers assumed that their readers would have known how to adjust therapies to suit the young. In spite of these problems, there is evidence that Roman doctors took into account the stage of development and certain characteristics of those suffering from skin complaints.

Roman medical texts described remedies for skin disorders for three age groups: sucklings, older infants and children, and adults. Unweaned infants were a special group that required amendment of their own diet and that of their nurses. A chief concern when treating infants and children was to avoid applying any medicaments that could damage their skins, such as highly caustic substances. Another was to preserve

¹³⁵⁹ Vervain (also for skin ulcers): Pliny, *HN* 26.64, 79. Alum: Pliny, *HN* 35.52; Dioscorides, *MM* 5.123. Frankincense: Dioscorides, *MM* 1.81.

¹³⁶⁰ Pliny, *HN* 22.69; 28.23, 70; 29.39; 30.34.

the bodily strength of children and other weak individuals. Galen associated dry, hard constitutions with strength. Women, children, old men, eunuchs, and effeminate or depraved men had soft, moist flesh and were weak. As such, they required weaker dermatological ointments and plasters than did strong, dry adult males. Since children were members of a large group of other weak individuals they did not constitute a separate therapeutic category.

Very few dermatological remedies involved the use of repugnant ingredients or magical practices. It is difficult to be certain why this was so. One possible reason was that skin lesions were clearly visible and doctors felt that there were no mysterious forces at work.

5.7 Diseases of the throat

Roman medical texts described a variety of conditions affecting the tonsils, uvula and surrounding soft tissues. These took the form of induration, ulcers and inflammation.

Galen explained the nomenclature of some of the conditions affecting the throat:

Staphylai, *paristhmia*, and *antiades* are again nothing more than inflammatory swellings, *staphylai* being swellings of the uvula (*gargarion*), *antiades* being swellings of the glands [tonsils] which lie opposite one another at the entrance to the pharynx, and *paristhmia* being swellings of the tissue in the pharynx. It seems that Hippocrates did not call every inflammatory swelling of the uvula (*kion*) *staphyle*, but only the type in which the end of the uvula resembles a grape.¹³⁶¹

This is somewhat confusing. See section 3.2.1 for the terminology of these and other forms of uvular disease. Apart from causing pain and difficulty in swallowing, throat ailments occasionally gave rise to serious complications, some of which were fatal.

¹³⁶¹ Galen, *Tum.Pr.Nat.* 17 (7.731-732K). Translated by D.G. Lytton and L.M. Resuhr. Cf. Aretaeus' descriptions of diseases of the uvula and tonsils, *SA* 1.8, 9.

The four main sources of information on therapies for diseases of the throat in infants and children were Celsus, Rufus, Soranus and Galen. Other writers did not distinguish between adult and child treatments. This makes it difficult to compare the management of different age groups.

5.7.1 Conditions affecting the tonsils

Children were especially prone to tonsillitis.¹³⁶² Not all Roman authors described treatments for this condition in infants and children. Some measures would not have been appropriate for babies or young children, for example:

externally the painful part should be fomented by steam; the patient is to take walking exercise freely..repressive gargles should be used..It is useful to anoint them gently with certain medicaments. Food..should be bland..the bowels should be moved by a clyster, and the gargle of fig and honey wine used; the tonsils are to be smeared with honey and omphacium; internally steam is to be inhaled..until the tonsils suppurate and spontaneously open.¹³⁶³

Older children might have tolerated the above, although the frequent use of clysters would have weakened their bodies.¹³⁶⁴ Dioscorides suggested a variety of ointments and gargles for soothing sore throats, although he did not comment on whether they suited particular patients.¹³⁶⁵

Soranus advised the following for newborns suffering from tonsillitis:

If the tonsils are inflamed we make use of the same things and instil honey and juice of barley.¹³⁶⁶

¹³⁶² Celsus, *Med.* 2.1.19; Galen, *Hipp.Aph.* III.26 (17B.632K).

¹³⁶³ Celsus, *Med.* 6.10.1-3. Translated by W.G. Spencer. An alternative gargle was prepared from boiling crushed liquorice root in raisin or honey wine, and an ointment containing saffron, myrrh, split alum, wine, honey and pomegranate juice.

¹³⁶⁴ *Ibid.*, 3.4.3-4.

¹³⁶⁵ Dioscorides, *MM* 1.132: lyceum; 1.180: mulberry, honey, alum, oak galls, myrrh, saffron, frankincense; 1.13: gargles containing figs; 2.101: honey; 2.77: junket; 2.96: gall from bulls and tortoises.

¹³⁶⁶ Soranus, *Gyn.* 2.23.50. Translated by O. Temkin: 121.

The ‘same things’ he referred to were remedies for easing painful gums during dentition:

One should apply soft and clean pieces of wool upon the neck, head, and jaws, and moisten these with warm sweet olive oil..[and] poultices of the finest meal, or fenugreek or linseed and fomentations with sea sponges.¹³⁶⁷

The application of warm olive oil was a Methodist remedy for loosening the state of stricture associated with such diseases. Soranus condemned the use of salt and cummin:

The nurses, however, poultice the throat with roasted cumin mixed with water, rub the tonsils with salt and old olive oil..and the rubbing in itself exacerbates inflammation and even more so on account of the pungency of the salt. Cummin..also leads to a congestion of the head.¹³⁶⁸

He also disapproved of superstitious or magical means for curing babies suffering from tonsillitis:

The nurses..seizing both legs with one hand, they place the child head downwards in the doorway and make the bregma touch the threshold of the house; and this they do seven times. This position leads to a congestion of the little head and consequently of the tonsils too.¹³⁶⁹

For further discussion of this ritual, see Section 4.4.4 above.

Galen considered it reasonable to treat diseases of the tonsils and uvula in broadly similar ways.¹³⁷⁰ Several remedies were often helpful, beginning with simple astringent gargles of honey and herbal materials.¹³⁷¹ He also recommended gargles of sweet nut juice and honey for sore and ulcerated throats.¹³⁷² Stronger ingredients, such as oak galls, salt and pitch, were necessary for severe cases.¹³⁷³

¹³⁶⁷ *Ibid.*, 2. 22.49. Translated by O. Temkin: 120.

¹³⁶⁸ Soranus, *Gyn.*, 2.24.50. Translated by O. Temkin: 121.

¹³⁶⁹ Soranus, *Gyn.* 2.24.50. Translated by O. Temkin: 121.

¹³⁷⁰ Galen, *Comp.Med.Loc* 6.8 (12. 976K). Galen also recommended a number of *stomatika* (remedies for diseases in the mouth) which were suitable for those affecting the tonsils and uvula or even angina, *ibid.*, 6.6 (12.928-929, 938-942K).

¹³⁷¹ *Ibid.*, 6.8 (12.972K). For example, gargles containing dates, vine tendrils, quince apples or pyrethrum cooked with rose blooms, together with honey.

¹³⁷² *Ibid.*, 6.2 (12. 907K). Galen prescribed this recipe on its own or combined with nitrum or saffron and myrrh.

¹³⁷³ *Ibid.*, 6.8 (12.974-975K). Cooked oak galls, wild olive root. If the condition became worse, he advised gargles of liquid or dry pitch and salt, hot washes, and gargles containing ptisane juice, liquorice root decocted with passum and hyssop or fig wine.

The sole reference by Galen to inflamed tonsils in children was an account of his treatment of Commodus, son of Marcus Aurelius, around AD 173. The boy developed a fever after returning from wrestling school, and Galen made a diagnosis of tonsillitis. His initial prescription of a medicament proved to be too astringent for the boy. He substituted it with a milder preparation containing a decoction of roses, rhus and honey. On the third day the boy's fever and inflammation had abated, and Galen instructed his tutor to bathe him with copious amounts of water. When Annia Faustina visited her nephew, Commodus, she praised Galen for his clinical skills, and this acclamation proved to be a turning point in his career.¹³⁷⁴ It also presented an opportunity for him to denigrate the Methodist physicians who initially attended Commodus. Although tonsillitis chiefly affected children, there is relatively little information about its treatment in young patients.

Sometimes tonsils became ulcerated. Aretaeus acknowledged that the prognosis of ulcers affecting the tonsils depended on their colour and whether they were invasive:

some, indeed [are] of an ordinary nature, mild and innocuous; but others of an unusual kind, pestilential, and fatal. Such as are clean, small, superficial, without inflammation and without pain, are mild; but such as are broad, hollow, foul, and covered with a white, livid, or black concretion, are pestilential. Aphtha is the name given to these ulcers. The land of Egypt especially engenders it..hence they have been named Egyptian and Syrian ulcers.¹³⁷⁵

These ulcers corresponded to aphthae that arose in the mouth that could spread downwards into the pharynx. It is very likely, then, that they all formed part of the same disease process. Children were prone to ulcers on the tonsils until they reached puberty, one of the reasons being their tendency to shout loudly and in anger.¹³⁷⁶ The inclusion of anger is interesting in the light of Galen's belief that strong emotions could result in

¹³⁷⁴ Galen, *Praen.* 11, 12 (14.660-662K).

¹³⁷⁵ Aretaeus, *SA* 1.9. Translated by F. Adams.

¹³⁷⁶ *Ibid.*

an excess of phlegm and bile.¹³⁷⁷ These humours generated epilepsy and other diseases, including ulcers in the throat.¹³⁷⁸ Certain medicines were essential for combating pestilential or invasive ulcers in the pharynx:

we must use medicines resembling fire to stop the spreading and also for the falling off of the eschars: these are alum, gall, the flowers of the wild pomegranate, either in a dried state or with honeyed-water. And the same medicines may be blown in by means of a reed, or quill, or a thick and long tube, so that the medicines may touch the sores. The best of these medicines is calcined chalcitis, with cadmia triturated in vinegar..We must, therefore, sprinkle them in a dry state with a quill.¹³⁷⁹

Aretaeus did not mention whether these medicaments were suitable for children.

Therapies for adults included hot plasters and fomentations to the neck, gargles, massage and regimen.¹³⁸⁰ These may, possibly, have benefitted older children, but

Celsus considered a particular unguent to be appropriate for children. It consisted of:

Saffron,..split alum and myrrh,..sandarach,..galingale..smeared on with honey added, and used not only for ulcerations of the mouth, but also of the tonsils.¹³⁸¹

Rufus applied several compound drugs to ulcers of the mouth, uvula and tonsils in infants and children. He graded these according to the gravity of the lesions. ‘Forceful’ remedies, for example, were made from mint, calamint and nasturtium, juice of nightshade, olive leaves and ass’s milk. Severe, acute ulcers benefitted from the astringent and erosive properties of gall of tortoises or sharp juice from grapes and pomegranates. Malignant ulcers required ingredients such as the desiccated testicles of large dogs.¹³⁸² It is not possible to know how the latter might have been effective. Malignant ulcers carried a poor prognosis for small children. It may be that their chances of survival were increased through the powerful strength residing in dogs’

¹³⁷⁷ Galen, *San.Tu.* 1.8; *MM* 12.5 (10.841K). See Section 4.2.2 above.

¹³⁷⁸ Galen, *Hipp.Prog.* 3.15 (18B.263K).

¹³⁷⁹ Aretaeus, *CA* 1.10. Translated by F. Adams.

¹³⁸⁰ Celsus, *Med.* 4.9.1-3.

¹³⁸¹ *Ibid.*, 6.11.2-3, 5-6. Translated by W.G. Spencer.

¹³⁸² Rufus in Rhazes, *Fragments*, 178, 179. Daremberg and Ruelle: 474-475.

testes. Other possible, but perhaps less likely reasons were the association of dogs with Asklepios and magical remedies (see Sections 4.4.2 and 4.4.4 above).¹³⁸³

Galen referred to two compound remedies for ulcers of the mouth, tonsils and uvula. The active ingredients of the first were verdigris, split alum and oak galls, while the second contained lycium, wine, fruit of erica, dry roses and honey.¹³⁸⁴ He also remarked that stronger drugs, such as verdigris, split alum and oak galls, were effective against malignant ulcers of the mouth and tonsils.¹³⁸⁵ Again, these remedies were not for any specific age groups. They were, however, broadly similar to medicaments he recommended for children suffering from oral aphthae (see above).¹³⁸⁶

Supernatural remedies for tonsillar disease are poorly represented in medical texts. There were two magical cures for throat ailments in patients of unknown age. Pliny reported that ‘some people’ thought that the touch of the hand of a dead person of the same sex as the patient cured throat disease.¹³⁸⁷ Dioscorides recommended amulets of cinquefoil for relieving hardening of the tonsils.¹³⁸⁸

In summary, there are indications that physicians tended to use less astringent or caustic medicines for tonsillitis occurring in infants and children. Tonsillar ulcers were strikingly similar to aphthae in that they ranged from innocuous forms to sinister, invasive kinds. Physicians increased the strength of medicaments according to the severity of the lesions. The majority of remedies mentioned in the texts were for

¹³⁸³ Pliny listed eleven remedies involving animal testes. Two were cures for epilepsy, another disease that was often fatal in small babies, *HN* 28.63, 30.27.

¹³⁸⁴ Galen, *Comp.Med.Loc.* 6.9 (12.991K).

¹³⁸⁵ *Ibid.*, 12.989-991K.

¹³⁸⁶ Galen described typical recipes for oral ulcers that contained honey and erodent, astringent or caustic materials such as red rhus, oak galls, juice of nightshade, vinegar, white violets, chalcitis, split alum, erica fruit and olive brine (see Section 5.3 above).

¹³⁸⁷ Pliny, *HN* 28.11.

¹³⁸⁸ Dioscorides, *MM* 4.42.

patients of unspecified age, but many of these may have suited adults or older children. Several topical lotions and balms corresponded with children's medicaments for oral aphthae, so it is reasonable to assume that they would have been appropriate for ulcers arising in the tonsils.

5.7.2 The uvula

Aretaeus identified four different kinds of diseases of the uvula. One particular form, *Lorum*, affected the membranes and tended to occur in infancy and puberty.¹³⁸⁹ Celsus advised gargles of cold water or herbal and mineral ingredients, clysters, blood-letting and starvation for an inflamed uvula.¹³⁹⁰ It would have been impossible for infants and young children to gargle and they would not have had the strength to tolerate clysters, fasting and phlebotomy.¹³⁹¹ The above therapies would therefore have been more appropriate for adults. Pliny, Scribonius Largus, Dioscorides and Galen recommended topical medicaments for the same disease without commenting on the age of patients.¹³⁹²

Ulcers could appear on the uvula as well as in other parts of the pharynx. Rufus and Galen regarded the above-mentioned gargles and ointments for ulcers on the tonsils as equally efficacious for lesions affecting the uvulae of infants and children.¹³⁹³

¹³⁸⁹ Aretaeus, *SA* 1.8.

¹³⁹⁰ Celsus, *Med.* 6.14.

¹³⁹¹ Celsus thought that children tolerated starvation less easily than adults (*Med.* 1.3.32), but he regarded strong children as suitable candidates for phlebotomy, *ibid.* 2.10.2.

¹³⁹² For example, Pliny, *HN* 23.80, 31.45, 34.32; Scribonius Largus, *Comp.* 64, 65, 71; Dioscorides, *MM* 1.94, 3.32, 4.94; Galen, *Comp.Med.Loc.* 6.8 (12.956-961, 972-987K).

¹³⁹³ Rufus in Rhazes, *Fragments*, 178, 179. Daremberg and Ruelle: 474-475; Galen, *Comp.Med.Loc.* 6.8 (12. 976K).

If conservative treatments did not heal the ulcers and they became chronic, it was sometimes necessary to resort to surgery. Roman surgeons frequently resorted to amputating the uvula:

There is no better way than to seize it with a small forceps and below this to cut off as much as we wish.¹³⁹⁴

Celsus made no comments on whether this was reserved for adults, but it is hard to imagine that doctors performed this on babies and small children. Haemorrhage was a particular risk of the procedure due to the vascular nature of the organ.¹³⁹⁵ In order to minimise the danger, a surgeon first crushed the uvula using a toothed forceps known as the *staphylagra*.¹³⁹⁶ Galen referred briefly to such surgery and the application of caustic substances to the uvula.¹³⁹⁷ Unfortunately there is no textual evidence linking these procedures with specific groups of individuals, but they were most likely only safe for adults. There is also no mention of supernatural treatments for uvular disease in Roman children, although there is one report of an amulet that prevented its recurrence in an adult.¹³⁹⁸

Although children were susceptible to two varieties of inflammation of the uvula, it is disappointing that the medical treatises contain few references to treatments that applied specifically to them. Practitioners probably employed a range of gargles and washes for

¹³⁹⁴ Celsus, *Med.* 7.12.3B. Other authors mentioned the operation without giving any details: Aretaeus, *SA* 1.8, *CA* 1.8; Galen, *MM* 14.13 (10.990K); Pseudo-Galen, *Int.* 19 (14.785K).

¹³⁹⁵ Bliquez 2015: 246-247.

¹³⁹⁶ *Ibid.*, 244. These forceps have been excavated from find spots across the Roman world. One example from Somerset is on display at the British Museum, Accession number SOM – 6EA483.

¹³⁹⁷ Galen, *MM* 14.13, 14 (10.988, 990K). Instruments known as *staphylocaustes* had spoon-shaped ends that held caustic materials closely against the surface of the uvula; several of these have survived into the archaeological record, including the Rimini assemblage Jackson 2003: 315; Bliquez 2015: 246-247. Caustic substances included salt, chalcitis, dung, verdigris, stibium, burnt papyrus and chrysocola Spencer, Celsus, *De medicina*, volume II: xv-lx.

¹³⁹⁸ Pliny wrote about the magical properties of this amulet that contained purslane: “one of the principal personages of Spain..is in the habit of carrying the root of it suspended by a string from his neck, except when he is taking the bath, for an incurable affection of the uvula; a precaution by which he has been spared all inconvenience” *HN* 20.81. Translated by J. Bostock and H.T. Riley.

children, but they may have avoided more drastic therapies such as clysters, starvation and uvulectomy.

5.7.3 Angina and suffocation

Angina was “a fatal and acute disease [that] has its seat in the throat.”¹³⁹⁹ Celsus wrote that the Greeks recognised two different varieties, namely synanche and cynanche:

For sometimes no redness or swelling is apparent..this they [the Greeks] call synanche. Sometimes the tongue and throat are red and swollen..that they call cynanche: the signs in common are, that the patient cannot swallow food, and his breathing is obstructed. It is a slighter case when there is merely redness and swelling, not followed by the other symptoms; this they call parasynanche.¹⁴⁰⁰

Soranus and Aretaeus made similar distinctions between these forms.¹⁴⁰¹ Aretaeus explained that in those suffering from cynanche, the throat and tongue became so inflamed and swollen that:

they protrude the tongue outside the teeth, owing to its abnormal size; for it fills the whole of the mouth, and the protuberance thereof extends beyond the teeth. This species is called Cynanche, either from its being a common affection of those animals, or from its being a customary practice for dogs to protrude the tongue even in health.¹⁴⁰²

Synanche was a more sinister condition because it led to a potentially lethal collapse of the organs in the upper respiratory tract and an intense feeling of suffocation and great difficulty in breathing.¹⁴⁰³ Galen wrote that “synanche is most terrible and carries off quickly” and that it “sometimes happens to children more than to adults.”¹⁴⁰⁴ A different opinion from Soranus was that the condition attacked children and old men less often than males in their prime and women.¹⁴⁰⁵

¹³⁹⁹ Celsus, *Med.* 4.7.1-2. Translated by W.G. Spencer.

¹⁴⁰⁰ *Ibid.* Translated by W.G. Spencer.

¹⁴⁰¹ Caelius Aurelianus, *Ac.* 3.1.1; Aretaeus, *SA* 1.7.

¹⁴⁰² Aretaeus, *SA* 1.7. Translated by F. Adams.

¹⁴⁰³ Aretaeus, *SA* 1.7, *CA* 1.7; Anonymus Parisinus, *De morbis acutis et chroniis* 6.1-2.

¹⁴⁰⁴ Galen, *Loc.Aff.* 4.6 (8.238, 247-248K). Author’s translation.

¹⁴⁰⁵ Caelius Aurelianus, *Ac.* 3.1.4.

According to Aretaeus, synanche was caused by a diseased state of the *pneuma* “which has undergone a morbid conversion to a hotter and drier state.”¹⁴⁰⁶

Soranus recognised several overt antecedent causes for this disease of stricture.¹⁴⁰⁷ He employed relaxant therapies such as fasting, fomentations, massage, steam, gargles, clysters, cupping, scarification and venesection.¹⁴⁰⁸ Humoral physicians believed that an imbalance of humours, especially phlegm, was responsible for angina.¹⁴⁰⁹ The primary objective of purgation, blood-letting, medicaments and surgery was to expel or release noxious humours from the body. In spite of Galen’s statement about the prevalence of synanche, there is little written evidence for its treatment in children. Celsus, Rufus, Aretaeus, Anonymus Parisinus and Galen supported the use of clysters for angina, although they did not comment on their use for children.¹⁴¹⁰ Rufus, Anonymus Parisinus and Scribonius Largus suggested scarification and cupping, again with no reference to age.¹⁴¹¹

As discussed in Section 4.4.1, Galen was implacably opposed to bleeding children under any circumstances.¹⁴¹² For other authorities bodily strength rather than chronological age was the key factor for determining fitness to undergo venesection. Celsus believed that for all forms of angina “blood must be let if strength permits.”¹⁴¹³

¹⁴⁰⁶ Aretaeus, *SA* 1.7. Translated by F. Adams. Contributory factors were “exposure to cold, and, less frequently, to heat; blows; fish-bones fixed in the tonsils, cold draughts, intoxication, repletion, and the ills from respiration,” *ibid.* Translated by F. Adams. He also blamed enlargement of the uvula and the spread of Egyptian ulcers into the lower respiratory tract, *CA* 1.8; *SA* 1.9.

¹⁴⁰⁷ Antecedent causes included wine-drinking and shouting loudly Caelius Aurelianus, *Ac.* 3.1.4; 3.2.10.

¹⁴⁰⁸ Caelius Aurelianus, *Ac.* 3.3.11-20; 3.4.25.

¹⁴⁰⁹ Rufus, in Rhazes, Fragments 180, 182, Daremberg and Ruelle: 475-476.

¹⁴¹⁰ Celsus, *Med.* 4.7.2; Rufus, Fragment 182 from Rhazes, Daremberg and Ruelle: 476; Aretaeus, *CA* 1.7, 8; Anonymus Parisinus, *De morbis acutis et chroniis* 6.3; Galen, *Comp.Med.Loc* 6.8 (12. 976, 978-979K).

¹⁴¹¹ Rufus in Rhazes, Fragment 182, Daremberg and Ruelle: 476; Anonymus Parisinus, *De morbis acutis et chroniis* 6; Scribonius Largus, *Comp.* 67.

¹⁴¹² For example, Galen, *MM* 13.11 (10.901K).

¹⁴¹³ Celsus, *Med.* 4.7.2. Translated by W.G. Spencer.

He considered some older children sufficiently robust to undergo phlebotomy.¹⁴¹⁴

Anonymus Parisinus suggested bleeding patients according to their strength, but did not qualify his remark.¹⁴¹⁵ It is not clear whether Aretaeus meant children or young adults when he wrote about the timely use of venesection in order to relieve suffocation caused by an inflamed uvula:

If, then, the patients be young, we must open the vein at the elbow, and evacuate copiously by a larger incision than usual for such an abstraction frees one from suffocation.¹⁴¹⁶

When describing the prevalence of different forms of uvular inflammation, he used the term ‘the young’ to distinguish between children and adults:

The columella is common in old persons, the uva in the young and in adults.¹⁴¹⁷

It could, therefore, be argued that he was in favour of withdrawing blood from children, but there is insufficient evidence to resolve the question.

An attack of synanche often led to suffocation and death.¹⁴¹⁸ Once a patient began to suffocate, death from apnoea followed very swiftly.¹⁴¹⁹ References to treatments for angina rarely mentioned specific age groups. They included fomentations, gargles and topical applications of honey and other drugs.¹⁴²⁰ They often contained astringent drugs that expelled phlegm from the body.¹⁴²¹ Hummel maintains that Galen did not prescribe

¹⁴¹⁴ *Ibid.*, 2.10.3.

¹⁴¹⁵ Anonymus Parisinus, *De morbis acutis et chroniis* 6.3.

¹⁴¹⁶ Aretaeus, *CA* 1.8. Translated by F. Adams.

¹⁴¹⁷ Aretaeus, *SA* 1.8.

¹⁴¹⁸ Aretaeus, *SA* 1.7.

¹⁴¹⁹ Galen, *Hipp.Aph.* 4.34 (17B.702-703K). In apnoea there is a complete cessation of breathing.

¹⁴²⁰ Treatments for angina or those in imminent danger of suffocation: moist fomentations, cataplasms (poultices), sponging with hot oil: Celsus, *Med.* 4.7.2; Dioscorides, *MM* 3.30; Aretaeus, *CA* 1.7. Simple or compound medicaments smeared onto the mouth and throat: Rufus in Rhazes, Fragments 180, 181, Daremberg and Ruelle: 475- 476; Aretaeus, *CA* 1.7; Dioscorides, *MM* 1.94; Galen, *Comp.Med.Loc* 6.6, 7 (12. 936, 942, 956K). Electuaries (medicinal pastes): Pliny, *HN* 33.28. Gargles: Aretaeus, *CA* 1.7; Anonymus Parisinus, *De morbis acutis et chroniis* 6.3. Dioscorides, *MM* 3.30, 3.94, 5.21. Oral medicines: Scribonius Largus, *Compostiones* 66, 67, 68; Dioscorides, *MM* 4.122; Galen, *Comp.Med.Loc* 6.8 (12. 976, 978-979K).

¹⁴²¹ Rufus, Fragment 180 from Rhazes, Daremberg and Ruelle: 475-476; Aretaeus, *CA* 1.7.

any medicines for children suffering from angina.¹⁴²² This is true for all Roman authors *except* Galen. He, in fact, recommended sulphur, iris and honey for children and the elderly if suffocation was imminent.¹⁴²³

Surgery was the last resort for patients close to death from respiratory obstruction. Celsus described deep incisions into the neck, palate and beneath the tongue.¹⁴²⁴ Galen instructed that one must “first [cut the veins] in the arms and second those under the tongue” in addition to cupping and scarifying the neck.¹⁴²⁵ These measures underlined the gravity of the disease and the desperation that physicians must have felt. Antyllus recorded an even more heroic measure, tracheotomy, in which an opening into the trachea allowed the passage of air into the lungs.¹⁴²⁶ Aretaeus expressed reservations about its practicability, and Soranus condemned Asclepiades who supposedly performed ‘laryngotomy’ in the first century BC.¹⁴²⁷ The medical treatises did not suggest any of the above procedures for children, possibly because physicians may have been pessimistic about their prospects.¹⁴²⁸ It is also likely that infants and younger children would have perished so rapidly with the onset of suffocation that any attempts to resuscitate them would have been futile.

There is a complete absence in Roman literature, even in the *Natural History*, of references to supernatural interventions for preventing or curing angina and respiratory obstruction. It is therefore impossible to know whether parents and carers prayed to the

¹⁴²² Hummel 1999: 154.

¹⁴²³ Galen, *Comp.Med.Loc* 6.8 (12. 977K).

¹⁴²⁴ Celsus, *Med.* 4.7.2-3.

¹⁴²⁵ Galen, *MM* 13.11 (10.904K). Translated by I. Johnston and G.H.R. Horsley. *Cf. Comp.Med.Loc* 6.8 (12. 976-977K).

¹⁴²⁶ Antyllus in Paul, *Epitome* 5.42.

¹⁴²⁷ Aretaeus, *CA* 1.7; Caelius Aurelianus, *Ac.* 3.3.35, 39.

¹⁴²⁸ The Byzantine compiler, Paul of Aegina, wrote that for children, synanche was “incurable and not to be meddled with,” 3.27. Translated by F. Adams.

gods or used magical rituals or devices to prevent or cure this dangerous condition in children.

Conclusion

Information about the management of Roman infants and children with various throat complaints is patchy and sparse at times. This makes it difficult to compare treatments of specific diseases for individuals at different stages of the life cycle. There is, however, enough evidence to indicate that practitioners generally prescribed milder therapies for children. It is possible that authors who did not distinguish between different age groups would have expected practitioners to modify or select treatments to suit the needs of infants and children.

As in the case of *apthae*, the severity of ulcers affecting the tonsils and uvula influenced decisions about their treatment for all age groups. The prognosis for infants suffering from *synanche* or gangrenous ulceration of the fauces was very grave, and physicians may have doubted whether it was worth attempting to treat them. Other considerations would have been whether children were capable of gargling or the potential of strong medicaments to damage the mucosal lining of their throats.

Discussions of the anatomical and physiological characteristics of infants and children did not feature in existing literature on therapies for throat diseases. Galen linked children with the elderly when attempting to prevent suffocation, but did not refer to their weakness or that of other individuals such as women and eunuchs. There were also no textual references to subjecting to children to clysters, fasting, venesection, cupping, scarification or surgical procedures. It is not known whether doctors deliberated on the matter and decided that affected infants and children would not have had the strength to

tolerate them. As mentioned previously, several authorities laid down general ground rules about the use of the first three measures in children or weak individuals.

There is no reasonable explanation for there being very few references to magical protection and cures for diseases of the throat in Roman treatises. This is in direct contrast with dermatological ailments, epilepsy and fever.

5.8 Fevers

Celsus and Galen are the main sources of information on the treatment of febrile diseases. Even so, they only addressed pestilential and quotidian fevers in child patients. There is only a single chapter on the causes of ardent fever in adults among the surviving works of Aretaeus.¹⁴²⁹ Other authors such as Rufus, Soranus, Dioscorides and Pliny did not differentiate between therapies for adults and children. In addition to these lacunae, there are difficulties caused by uncertainties in the nomenclature of some kinds of intermittent fevers.

Galen defined fever as follows: “if the heat is spread to the whole body the disease is called fever.”¹⁴³⁰ Fevers (Latin, *febres*, and Greek, *puretoi*) constituted “a class of disease which..is exceedingly common.”¹⁴³¹ Some kinds of fevers were dangerous, and the medical writers described them in some detail. The terminology they used is often vague and perplexing, making it difficult to interpret these diseases.¹⁴³² To add to the

¹⁴²⁹ Aretaeus, *SA* 1.4.

¹⁴³⁰ Galen, *Caus.Morb.* 2.2 (7.4K). Translated by I. Johnston.

¹⁴³¹ Celsus, *Med.* 3.3.1. Translated by W.G. Spencer.

¹⁴³² Burke 1996: 2257; Mattern 2008a: 64; Draycott 2011: 202.

confusion they occasionally made conflicting statements. Galen, for example, identified three basic forms of fever:

there are three main types of them, and their names are ephemeral, hectic and those that are caused by corruption of the humours.¹⁴³³

He also stated that ephemeral fever resulted from corruption of the humours.¹⁴³⁴

Furthermore, he regarded a fever having a humoral cause as a disease in its own right.¹⁴³⁵

Several sources classified intermittent fevers according to their periodicity. The three most commonly mentioned varieties were quotidian, tertian and quartan.¹⁴³⁶ According

to Soranus and Galen quotidian fever occurred very frequently in the city of Rome.¹⁴³⁷

The prevalence of intermittent fevers is reflected in the frequency with which Roman literary authors discussed them.¹⁴³⁸ The treatises also referred to ‘hybrid’ types, for

¹⁴³³ Galen, *Prop.Plac.* 4.5. Translated by V. Nutton. Galen described ephemeral fevers as lasting typically for one day; they were the least serious kind, although he believed that they could transform into the more deadly hectic and and putrefactive varieties, *MM* 9.1 (10.599K).

¹⁴³⁴ Galen, *MM* 10.1 (10.661-662K).

¹⁴³⁵ Galen, *MMG* 1.4 (11.17K). Pseudo-Galen remarked that this was a common belief among ‘the ancients’ but, according to Erasistratus and certain other modern physicians, it was merely a symptom, *Int.* 13.5 (14.729K).

¹⁴³⁶ Celsus and Galen wrote at length about intermittent fevers. Celsus described their periodicity. Tertian fever normally “affords one free day and recurs on the third day,” *Med.* 3.2. In quartan fever “there are two days free; thus on the fourth day it recurs,” *ibid.* 3.3.1. Quotidian fevers generally struck every day, but they were more complex since they “vary and have many forms. For some begin straightaway with a feeling of heat, others of chill, others with shivering..some desist so that complete freedom follows, others so that there is diminution of the fever, yet none the less some remnants persist until the onset of the next paroxysm; and others often run together so that there is little or no remission, but the attacks are continuous” *ibid.*, 3.3. Translated by W.G. Spencer. Galen devoted five treatises to different types of fevers, *De febrium differentiis*, *De morborum temporibus*, *De typis*, *De totius morbi temporibus* and *Adversus eos qui de typis scripserunt* (7.273-512K). In the latter work he listed thirty-nine forms of intermittent fevers according to their periodicity, from quotidian in which fever occurred once every twenty-four hours to quinquagesimanus in which it occurred once every seven weeks 8 (7.490-493K).

¹⁴³⁷ Caelius Aurelianus, *Ac.* 2.10.63-64; Galen, *De morborum temporibus* 8 (7.435K).

¹⁴³⁸ Terence, Horace, Juvenal, Josephus and Cicero, especially, wrote much about intermittent fevers Retief and Cilliers 2004: 133.

example semitertian or hemitritiaion fever which was an especially virulent and dangerous combination of quotidian and tertian forms.¹⁴³⁹

There were conflicting views about the cause of fever and its treatment, even among fellow Methodists.¹⁴⁴⁰ Asclepiades believed that heat was generated by the passage of blood through narrow pores in the body and this resulted in fever.¹⁴⁴¹ Soranus implied that fever was a condition of laxity that required astringent therapies, unless it was a symptom that accompanied other diseases. If the underlying condition was one of stricture it was necessary to apply relaxants.¹⁴⁴² Humoral physicians associated particular forms of fever with specific humours. Excess phlegm was responsible for quotidian fever.¹⁴⁴³ Tertian and quartan fevers resulted from yellow and black bile respectively.¹⁴⁴⁴ It is important to note this since treatments for febrile conditions depended largely on correcting the imbalance of these three humours.

Children were subject to slight fevers when teething, and protracted fevers around the time of puberty.¹⁴⁴⁵ Galen wrote that although quotidian fever struck persons of all ages, it was more frequent in individuals having a humid and phlegmatic temperament, and “children, above all the smallest.”¹⁴⁴⁶

¹⁴³⁹ Celsus identified a second kind of tertian fever that “is far more pernicious; and it does indeed recur on the third day, yet out of forty-eight hours, about thirty-six, are in fact occupied by the paroxysm, nor does the fever entirely cease in the remission, but it only becomes less violent. This class most practitioners term *hemitritiaion*” *Med.* 3.3.2. Translated by W.G. Spencer. Galen referred to this as semitertian fever, *Typ.* 3, 4 (7.463-474K); *Diff.Feb.* 2.8 (7.363K).

¹⁴⁴⁰ Draycott 2011: 204.

¹⁴⁴¹ Galen, *Trem.Palp.* 6 (7.614-615K).

¹⁴⁴² Soranus, *Gyn.* 3.2.24. He was critical of Themison of Laodicea (*fl.* first century BC) who employed astringent therapies for inflammation accompanied by fever; he maintained that he should have treated the inflammation with relaxants. Phrenitis was such a disease in which fever was a significant feature Caelius Aurelianus, *Ac.* 1.8.55.

¹⁴⁴³ Rufus in Alexander of Tralles, Fragment 11.3, Daremberg and Ruelle: 437-438; Galen, *MMG* 1.7 (11.23K), Daremberg, Volume 2: 718-719.

¹⁴⁴⁴ Yellow bile: Galen, *MMG* 1.10 (11.32-35K), Daremberg, Volume 2: 723-725. Black bile: *Hipp.Prog.* 3.32 (18B.289-280K); *MMG* 1.12 (11.37-40K), Daremberg, Volume 2: 726-728.

¹⁴⁴⁵ Celsus, *Med.* 2.1.18, 20; Galen, *Hipp.Aph.* III.25, 27 (17B: 629-630, 637-638K).

¹⁴⁴⁶ Galen, *MMG* 1.7 (11.23K), Daremberg, Volume 2: 718-719.

It was important to administer moderate and speedy treatments for febrile patients.¹⁴⁴⁷

A particular concern of Celsus was that treatments should not compromise the strength of patients. Therefore, “medicinal draughts and clysters should only be administered occasionally,” for frequent use of these reduced their strength and “the greatest danger is from weakness.”¹⁴⁴⁸ It was also:

not enough for the practitioner to pay attention merely to the actual fevers, but also he must look to the habit of the body as a whole, and direct treatment to that, whether patients have superabundance or deficiency of strength.¹⁴⁴⁹

Strength was, therefore, the prime consideration when treating all patients suffering from fevers.

The periodicity of intermittent fevers largely governed the timing of cycles of feeding, fasting, thirst, rest, sleep and exercise, bathing, vomiting, purgation and bloodletting.¹⁴⁵⁰

There was some flexibility in these timings because:

the patient's body, the climate, his age, and the time of year; where circumstances differ so greatly, there cannot be an invariable rule of time by any means.¹⁴⁵¹

Therefore age and, presumably, the strength of the patient's body were particular concerns. Adults with quotidian fever would normally starve on alternate days in order to bring down their fever but allow their strength to recover.¹⁴⁵² Celsus believed that the age of the patient was another important factor so that:

Food should also be given sooner to a child than to an adolescent.¹⁴⁵³

He did not explain why, but it is likely because adolescents had greater strength than children.

¹⁴⁴⁷ Celsus, *Med.* 3.4.1.

¹⁴⁴⁸ *Ibid.*, 3.4.3. Translated by W.G. Spencer.

¹⁴⁴⁹ *Ibid.*, 3.5.11. Translated by W.G. Spencer.

¹⁴⁴⁹ *Ibid.*, 3.5.3.

¹⁴⁵⁰ *Ibid.*, 3.4.2-18.

¹⁴⁵¹ *Ibid.*, 7-8. Translated by W.G. Spencer.

¹⁴⁵² *Ibid.*, 3.5.3.

¹⁴⁵³ *Ibid.*, 7-8. Translated by W.G. Spencer.

Celsus thought that bloodletting was the ideal treatment for pestilential fever, but there were alternatives for all but the strongest children:

But if a child is the sufferer, and not robust enough for blood-letting to be possible, thirst is to be used in his case, the bowels are to be moved by a clyster whether of water or of pearl-barley gruel; then and not before he is to be sustained by light food.¹⁴⁵⁴

Once a child began to recover it was still necessary to exercise caution:

After the remission of the fever a vomit is to be elicited, then food of the lightest nature is given, after which let the child sleep; next day, if the fever persists, let the child be kept without food, and on the third day return to food as above. Our aim should be, as far as possible to sustain the child, by food when suitable, with abstinence in between when suitable, omitting all else.¹⁴⁵⁵

Celsus gave no special recommendations for managing juveniles suffering from tertian and quartan fevers.¹⁴⁵⁶ There are few surviving fragments from Rufus on the treatment of intermittent fevers and none mentioned therapies for children. The same applied to the writings of Soranus preserved by Caelius Aurelianus. Dioscorides prescribed over thirty remedies for fever but gave no details about the age of patients.¹⁴⁵⁷

It was important to prescribe diets according to the age and natural temperament of each subject. Hippocrates stated that patients who were febrile required moist diets, especially if they were children.¹⁴⁵⁸ Galen endorsed this view, adding that for children it was “from the indication of similars.”¹⁴⁵⁹ He also believed that children tolerated periods of fasting less readily than adults.¹⁴⁶⁰ Although adults suffering from fever

¹⁴⁵⁴ *Ibid.*, 3.7.1B-C. Translated by W.G. Spencer.

¹⁴⁵⁵ *Ibid.*, 3.7.1C. Translated by W.G. Spencer.

¹⁴⁵⁶ For Celsus on the management of tertians, see *ibid.*, 3.14; quartans 3.15; double quartans 3.16.

¹⁴⁵⁷ Dioscorides, *MM* for general fevers: 2.68 spiders' webs; 2.150 purslane; 3.81 fennel. Intermittent fevers: myrrh; 3.123 trifolium; 3.171 hypericum; 4.14 pericyclamen; 4.42 cinquefoil; 4.128 bugloss; 4.193 heliotrope. Pliny recorded around a hundred herbal remedies. For unspecified fevers: *HN*: 20.23 garlic, silphium; 20.34 cabbage; 26.71 bettony. For tertians: 22.29 heliotrope; 26.71 sideritis, ladanum, cinquefoil, vervain; 27.91 polygonos. For quartans: 20.73 aniseed, fennel; 22.29 heliotrope; 26.71 plantago, cinquefoil, vervain, hypericon; 27.91 polygonos.

¹⁴⁵⁸ *Hipp., Aph.* 1.16.

¹⁴⁵⁹ Galen, *MM* 8.9 (10.591-592K). Translated by I. Johnston and G.H.R. Horsley. Cf. *San.Tu.* 1.7 (6.33-34K); *Hipp.Aph.* 16 (17B.425-427K).

¹⁴⁶⁰ Galen, *Hipp.Aph.*, I.13 (17B.401K).

should imbibe wine, it was not appropriate for children.¹⁴⁶¹ Regarding the management of quotidian fevers, Galen wrote that it was important to thin and eliminate abnormal phlegm and bile, bearing in mind the nature and age of the patient, the time of the year and the climate and region.¹⁴⁶² As discussed in Section 4.4.1, Galen directed that a child “will not tolerate evacuation by phlebotomy.”¹⁴⁶³ Furthermore, it was unnecessary to bleed children.¹⁴⁶⁴

Doctors were often at a loss when trying to establish which of the various forms of intermittent fevers their patients suffered from.¹⁴⁶⁵ They also found them hard to treat.¹⁴⁶⁶ Celsus referred to these difficulties regarding the pernicious form of tertian fever, hemitritiaion:

great care is required to avoid a mistake, for it has a number of frequently recurring paroxysms and remissions, so that it can appear to be some other class of disease..And it is exceedingly important not to give food except in that remission which is a real one..Many die suddenly from error one way or the other on the part of the practitioner.¹⁴⁶⁷

Uneducated Romans were inclined to believe that demons or deities inflicted fever on mankind.¹⁴⁶⁸ For this reason many patients and parents resorted to supernatural methods for averting or treating fevers. There are few references in Roman literature to divine intervention for individuals suffering from fever. One rare instance is Horace’s satirical account of the involvement of Jupiter in curing a child with quartan fever: see Section 4.4.4 above. Valerius Maximus (*fl.* AD 14-37) wrote that three temples stood in the city in honour of the goddess Febris. Worshippers entreated her to deliver them from fever,

¹⁴⁶¹ Galen, *MMG* 1.3 (11.14K), Daremberg, Volume 2: 714; *QAM* 10 (4.810K);

¹⁴⁶² Galen, *MM* 10.1, 2 (10.661-2, 660-670K).

¹⁴⁶³ *Ibid.*, 13.11 (10.901K). Translated by I. Johnston and G.H.R. Horsley. *Cf. ibid.*, 8.4 (10.566K): “If [the patient] is either a child or an old person, phlebotomy is ruled out. But between these ages, when bodily strength is present, you must carry out phlebotomy.” See also *MMG* 1.15 (11.46K).

¹⁴⁶⁴ Galen, *MM* 11.14 (10.777-778K). Translated by I. Johnston and G.H.R. Horsley.

¹⁴⁶⁵ Prioreschi 1998: 172.

¹⁴⁶⁶ Caelius Aurelianus, *Ac.* 2.10.61-62.

¹⁴⁶⁷ Celsus, *Med.* 3.8.2. Translated by W.G. Spencer.

¹⁴⁶⁸ Sallares 2002: 52, 50.

and successful supplicants deposited redundant fever amulets in her shrines.¹⁴⁶⁹ Pliny mentioned a temple on the Palatine Hill and the cults of other fever goddesses, Tertiana and Quartana.¹⁴⁷⁰ Neither writer mentioned whether children visited these premises.

Pliny remarked on the inability of doctors to cure quartan fevers, and this was the reason why he included in his work:

a considerable number of remedies recommended by professors of the magic art.¹⁴⁷¹

Magical cures and preventatives for a wide range of fevers were scattered throughout his work. They involved the use of amulets, various rituals, animal parts, *Dreckapotheke*, and the transfer of disease to other persons.¹⁴⁷² Other cures depended on sympathetic remedies and number magic. Pliny expressed his incredulity about the alleged virtues of colocynth which was

really a marvellous thing to speak of! the seeds of it, in even numbers, attached to the body in a linen cloth, will cure, it is said, the fevers to which the Greeks have given the name of "periodic."¹⁴⁷³

By 'even numbers' he meant three seeds for tertian fevers and four for quartans, this being a typical example of sympathetic magic.¹⁴⁷⁴ Quintus Serenus Sammonicus mentioned that some parents relied on superstitious cures for fever in their children. He also gave instructions on how to construct an amulet against tertian fever based on the word ABRACADABRA.¹⁴⁷⁵

¹⁴⁶⁹ Valerius Maximus 2.5.6. See also Lane 1999: 639; Dickie 2001: 126; Sallares 2002: 50.

¹⁴⁷⁰ Pliny, *HN* 2.5. He also remarked it was a sign of human weakness and folly to believe in divine healing for disease.

¹⁴⁷¹ Pliny, *HN* 30.30. Translated by J. Bostock and H.T. Riley.

¹⁴⁷² For example, amulets: Pliny, *HN*. 22.16; 22.29; 24.107; 27.91. Rituals: 21.94; 22.29; 24.107; 26.71; 28.11. Whole animals or body parts: 28.28, 29, 66; wool from a black sheep against quartans which were caused by black bile, 28.28; 28.29. *Dreckapotheke*: 28.9; 28.12; 28.66; 28.86. Transfer of disease: 28.23.

¹⁴⁷³ Pliny, *HN* 20.8. Translated by J. Bostock and H.T. Riley. See also *HN* 20.82; 21.04; 22.29; 25.41; 26.71. Dioscorides described colocynth as a purgative that could drive out phlegm *MM* 4.178.

¹⁴⁷⁴ Lane 1999: 639.

¹⁴⁷⁵ Quintus Serenus Sammonicus, *Liber medicinalis* 50.923-931; 51.935-940. The word was written on successive lines omitting the final letter in the line above. This produced a 'vanishing amulet' in which the last line of an inverted triangle consisted of the letter A.

It is not possible to gauge the extent to which parents resorted to magical cures for fevers in their offspring from textual evidence alone. The archaeological record provides supporting evidence for the widespread use of different kinds of amulets to prevent or combat fevers.¹⁴⁷⁶ Some were ostensibly for infants and children.¹⁴⁷⁷ Section 4.4.4 has established how excavations of a fifth century AD infant cemetery at Lugnano revealed evidence of magical practices.¹⁴⁷⁸ The cemetery, which was situated in an abandoned villa in a remote rural area close to marshes and lakes, contained forty-seven infant burials but no adults.¹⁴⁷⁹ The choice of its location may have been to reduce the risk of fever spreading to the wider community.¹⁴⁸⁰ The oldest infant was buried with heavy stones on the hands and feet, perhaps as a ritual to prevent a fever demon from escaping.¹⁴⁸¹ Several graves contained the remains of dogs and puppies; they, together with the presence of ravens, toads and wooden dolls in the cemetery, may also have served to protect the deceased from witchcraft.¹⁴⁸²

Scholars link descriptions of intermittent fevers in Greek and Roman texts with malaria.¹⁴⁸³ Archaeologists suspected that the infants buried at Lugnano were the victims of an outbreak of malaria caused by the mosquito-borne protozoan parasite, *Plasmodium falciparum*. They based their hypothesis on the unusually large number of

¹⁴⁷⁶ Bradley 2005: 89; Draycott 2011: 219; Wilburn 2012: 113, 128.

¹⁴⁷⁷ A third-century AD rolled lead amulet recovered in the ruins of a house in Karanis in the Egyptian Fayum would have been attached to a small child's ankle or wrist Wilburn 2012: 131.

¹⁴⁷⁸ Lane 1999: 633-642.

¹⁴⁷⁹ Soren *et al.* 1999: 480, 516, 526-527.

¹⁴⁸⁰ Soren 2015: 247.

¹⁴⁸¹ Soren *et al.* 1999: 518; Sallares *et al.* 2004: 321.

¹⁴⁸² Soren *et al.* 1999: 519; Soren 2015: 245.

¹⁴⁸³ Prioreschi 1998: 172; Lane 1999: 633; Sallares 2002; Nutton 2013a: 31-33. *Plasmodium vivax* causes benign tertian malaria, *P. falciparum* malignant tertian, and *P. malariae* quartan Draycott 2011: 205-206. See also Scheidel, W. 2006. 'Germs for Rome.' In C. Edwards and G. Woolf (eds). *Rome the Cosmopolis*. Cambridge: Cambridge University Press: 158-176. Retief and Cilliers believe that although the best accounts of intermittent fevers probably portrayed malaria, several other diseases had similar periodicities in antiquity 2004: 129.

infant burials that took place within a very short space of time. Another factor was the tendency for *P. falciparum* to cause abortions and perinatal deaths. Researchers subsequently extracted malarial DNA from the skeleton of the oldest infant aged about two years. They cannot be certain that malaria was the cause of the child's death, and attempts to extract material from the remains of other infants were unsuccessful. It is likely, then, that the occupants of the cemetery died as the result of malignant tertian malaria, but there is no irrefutable proof of this.¹⁴⁸⁴

Conclusion

Fevers were ever-present in Graeco-Roman antiquity, and infants and children were frequent victims. The medical treatises dealt almost exclusively with the treatment of adults or persons of unspecified age. References to juveniles are largely limited to pestilential and quotidian fevers. Therefore it is only possible to establish general guidelines and compare child and adult therapies for these two conditions.

Galen attributed quotidian fever to excess phlegm in humid and phlegmatic subjects such as infants and children. Treatments aimed to expel or reduce the viscosity of phlegm, but it was essential to maintain the natural moisture of children. An even more important criterion was the amount of strength patients possessed. It was essential to avoid destroying the strength of those suffering from pestilential or quotidian fevers. All children were weaker than adults, and infants were the most vulnerable group. Fasting, thirst, clysters and phlebotomy could cause them serious harm, and it was safer to use milder alternatives. Children needed special care as did all weak individuals, but

¹⁴⁸⁴ Sallares *et al* 2004: 321. The magnitude of ribosomal DNA extracted and replicated indicates that the child probably suffered from a massive infection with *P. falciparum*: *ibid.*

there is no indication that the authors of Roman medical treatises regarded them as a distinct therapeutic group.

There is abundant evidence of magical and folk practices for preventing and curing fevers in all age groups. Excavations at Lugnano have provided confirmation of magical interventions aimed at protecting infants from evil forces during their afterlife. There were also signs of the importance of taking steps to protect the living members of the community from disease and malevolent spirits.

5.9 Hernias and hydroceles

Galen defined hernias as displacements of body parts and tissues out of their normal position.¹⁴⁸⁵ These occurred when weaknesses in muscles or tissue layers allowed organs or tissues to bulge through into spaces they would not normally occupy. According to the medical treatises, hernias could arise in the navel (umbilicus), groin or scrotum at any age.

Celsus is the most prolific source for the management of hernias and hydroceles in all age categories during the early Empire. It is likely that he acquired his information from one of his medical sources. Galen also provided some descriptions, but with much less detail. There is a limited amount of data from Pseudo-Galen and Dioscorides, and Pliny recorded examples of magical treatments.

¹⁴⁸⁵ Galen, *Morb.Diff.* 10 (6.870K).

5.9.1 Umbilical hernias

Umbilical hernias were unsightly protrusions of intestine, omentum or fluid beneath the skin at the navel. They tended to reduce when patients lay on their backs.¹⁴⁸⁶ According to Galen:

If the swelling occurs at the umbilicus, some physicians refer to those with this condition as exemphaloi..Umbilical [hernias] are conditions of [the aponeurosis of] the transverse abdominal muscles.¹⁴⁸⁷

In fact they result from failure of the umbilical ring to close; this is the channel through which placental blood vessels pass into the foetus.¹⁴⁸⁸

It was sometimes possible to avoid surgery by employing conservative treatments:

abstinence should first be tried, a clyster to induce a motion, and the following applications to the umbilicus: hemlock and soot..washed white lead..two eggs; to these nightshade juice also is added. This ought to be kept on for a long time, the patient meanwhile lying up, and taking food in such moderation that all flatulence is avoided.¹⁴⁸⁹

Evacuating the bowel might have eased the pressure within the hernia. The use of clysters and thirst were more suited to adults, as discussed in previous sections. Around AD 100, Crito applied medicated bandages to children's umbilical hernias. One recipe directs:

Take yemenite alum..wine..galls..Pulverize everything with old, cooked wine, and apply it onto the navel. Put upon it a sponge that has been soaked in vinegar, and wrung.¹⁴⁹⁰

Two dressings suitable for infants from Pliny contained purslane and honey or plantain, while Dioscorides suggested plantain and vinegar.¹⁴⁹¹

¹⁴⁸⁶ Celsus, *Med.* 7.14.1-4. The greater omentum is a fatty pouch that overlies the intestines.

¹⁴⁸⁷ Galen, *Tum.Pr.Nat.* 16 (7.731K). Translated by D.G. Lytton and L.M. Resuhr. An aponeurosis is a broad, flat layer into which a tendon fuses.

¹⁴⁸⁸ Umbilical hernias are common in newborns, but usually close spontaneously during the first year of life Beasley 1998a: 767.

¹⁴⁸⁹ Celsus, *Med.* 6.17. Translated by W.G. Spencer.

¹⁴⁹⁰ Crito from Paul in Baladī, Fragment F 20, Pormann 1999: 53-54. The lost fourth book of Crito included hernias, hydroceles and prolapsed anus. See Galen, *Comp.Med.Loc.* 1.3 (12.449-450K).

¹⁴⁹¹ Pliny, *HN* 20.8, 26.49; Dioscorides, *MM* 4.70.

Surgery was an option if medicines failed to produce a cure. Celsus is the only source for the excision and repair of umbilical hernias. He described various techniques which involved tying off the protruding sac and allowing the tissues to mortify.¹⁴⁹² Surgeons:

cut into the protrusion along a marked line and excised it: in order that they might more easily insert a finger and push back whatever had ruptured into the sac; then at length they tied the ligatures..to compress the tumour with the fingers.¹⁴⁹³

In order to close the wound:

the umbilicus is drawn forwards, and tightly constricted with flaxen thread along the marks of the ink; next the part beyond the ligature is either burnt with caustics or with the cautery, until it mortifies, after which the wound is dressed like other burns.¹⁴⁹⁴

Celsus was clear about the selection of suitable candidates for this operation. The most important factor was the chronological age of the patient:

For neither an infant nor a robust adult nor an old man is suited to this treatment, but a child between seven and fourteen years of age.¹⁴⁹⁵

The child should have a sound body and a clear skin, and it was also only safe operate if the hernia was small in size. Moreover, it was best performed in spring or summer.¹⁴⁹⁶

One reason was that excessively hot or cold weather delayed the healing of wounds.¹⁴⁹⁷

There was clearly a risk for those in poor health or old men whose abdominal tissues were likely to be weak and not heal well. Adults were more likely to have had inoperable, irreducible hernias. The strong abdominal muscles of a robust man may possibly have exerted a strain on the wound closure. Infants would have been difficult to restrain and, because of their size and inability to keep still, surgery would have been difficult. Another factor was that surgeons may have understood that the condition often

¹⁴⁹² Celsus, *Med.* 7.14.5.

¹⁴⁹³ *Ibid.*, 7.14.6. Translated by W.G. Spencer.

¹⁴⁹⁴ *Ibid.*, 7.14.7. Translated by W.G. Spencer.

¹⁴⁹⁵ *Ibid.*, 7.14.7. Translated by W.G. Spencer.

¹⁴⁹⁶ *Ibid.*, 7.14.8.

¹⁴⁹⁷ Celsus, *Med.* 5.26. He was very firm about the choice of season for the removal of a pterygium from the eyeball and surgical operations in general, *ibid.*, 7.7. See also Section 5.5 which demonstrates that lithotomy should only take place in springtime.

resolved spontaneously by late infancy. Adults were more likely to develop large hernias that were irreducible or inoperable. Celsus is the only source for the procedure; Galen did not describe the operation, and Pseudo-Galen's account was exceedingly brief:

All patients whose navel protrudes are called exomphali..A double thread is passed through the navel with a needle and tied around it.¹⁴⁹⁸

In summary, medicated bandages were appropriate for all age groups, but fasting and the use of clysters were more suited to adults for reasons stated in previous sections. Restricting surgery to children between seven and fourteen years would have been a matter of safety and technical feasibility rather than the bodily strength or chronological age of individuals.

5.9.2 Inguinal and scrotal hernias

Medical writers did not refer to women suffering from inguinal hernias, possibly because they were more prevalent in males so that they would have encountered very few affected females.¹⁴⁹⁹ Male children and adults suffered from visible swellings in the groin that could extend into the scrotal sac:

If the swelling forms in the groin, it is called an inguinal hernia..[and]..inguinal hernias are conditions of..the oblique abdominal muscles.¹⁵⁰⁰

According to Soranus, excessive crying caused “a slipping down of the intestines into an infant's scrotum.”¹⁵⁰¹

¹⁴⁹⁸ Pseudo-Galen, *Int.* 19.11 (14.786K). Translated by C. Petit.

¹⁴⁹⁹ Fitzgibbons and Forse 2015: 756.

¹⁵⁰⁰ Galen, *Tum.Pr.Nat.* 16 (7.731K). Translated by D.G. Lytton and L.M. Resuhr.

¹⁵⁰¹ Soranus, *Gyn.* 2.17.39. Translated by O. Temkin: 111. The appearance of a hernia is often related to bouts of crying or straining Beasley 1998a: 764.

Galen had extensive anatomical knowledge he acquired from dissecting animals, especially monkeys, and occasionally humans.¹⁵⁰² He provided a convincing explanation of how intestinal hernias arose:

the channel which leads from the peritoneum to the testes is altogether dilated and sometimes disrupted, so that some part of the intestine slips down into the channel itself, or into the tunica vaginalis testiculi. The intestines leave their usual position and, whenever the peritoneum has been divided, they prolapse.¹⁵⁰³

He also blamed loosening of the peritoneum and attachments to the pubic bone and stated that a hernia might contain intestine (enterocele), omentum (epiplocele) or water (hydrocele).¹⁵⁰⁴ The latter is explored separately below.

There were around seventy suggestions of vegetal remedies from Pliny and Dioscorides, but most gave no details about patients.¹⁵⁰⁵ Pliny, however, recorded a few pharmacological cures for hernias in infants:

Betony, too, is very good..for hernia, applied topically or taken in drink..[and]..Juice of peucedanum is employed for hernia in infants.¹⁵⁰⁶

Ashes of burnt snails, applied with frankincense and juice of white grapes, are a cure for hernia [in infants], if applied for thirty days consecutively.¹⁵⁰⁷

It is difficult to believe that these remedies had any merit.

As with umbilical hernias, it was better to try conservative measures before embarking on surgery for children with intestinal prolapse. Celsus described how it was possible to apply bandages in such a way that they pushed the herniated bowel back into the abdominal cavity.

¹⁵⁰² Nutton 2013a: 188, 237-238.

¹⁵⁰³ Galen, *Caus.Morb.* 10.1 (7.36K). Translated by I. Johnston. Testes normally descend from the abdomen into the scrotum before birth within a canal. If this does not become obliterated an inguinal hernia or hydrocele may develop Beasley 1998a: 764.

¹⁵⁰⁴ Galen, *Caus.Morb.* 10.1 (7.36-37K); *Tum.Pr.Nat.* 16 (7.730-731K). See Celsus, *Med.* 4.1.10 for a description of the omentum which is a fatty sheet of tissue that overlies the intestines.

¹⁵⁰⁵ For example, in Pliny, *HN*: purslane 20.81; lily root 21.74; linseed 20.92; cypress leaves 24.10; betony 26.49. Dioscorides, *MM*: bdellion 1.80; cypress 1.102; asphodel 2.199; juice of gentian 3.3; hog's fennel 3.93.

¹⁵⁰⁶ Pliny, *HN* 26.49. Translated by J. Bostock and H.T. Riley.

¹⁵⁰⁷ *Ibid.*, 30.47. Translated by J. Bostock and H.T. Riley.

This, in effect, was equivalent to a truss:

bandaging should be tried before the knife. For this a strip of linen is taken, to one end of which is stitched a ball of rags which is placed on the prolapse itself so as to push back the intestines: then the rest of the strip of bandage is firmly tied all round; under this the intestines are often forced inside and the tunics become agglutinated together.¹⁵⁰⁸

It might have obviated or postponed the need for surgery.

If this failed and the hernia had descended into the scrotum, it was possible to perform a simple form of surgery through an incision into the groin:

as soon as the incision made in the groin reaches the middle tunic, this must be seized near the margins by a couple of hooks, when, after drawing down all the fine membranes the surgeon sets it free..the middle tunic has been thus drawn down, it is slit open from the groin to the testicle, but so as not to injure the latter; then it is cut away.¹⁵⁰⁹

Celsus wrote that “this treatment is only admissible in boyhood and when the trouble is limited.”¹⁵¹⁰ Men required a more radical procedure in which an incision was made through the skin of the scrotum and into the membrane surrounding the testis; this was pushed out of the way and:

Any little membranes in the way are divided with a scalpel until now the entire tunic comes into view. After cutting away what has to be excised, and replacing the testicle, a rather broad strip is to be pared off from the edges of the wound in the groin, so that by making the wound broader it may form more flesh.¹⁵¹¹

The final part of the operation would have tightened the wound and promoted a wider scar, perhaps forming a buttress to reduce the likelihood of a recurrence. It would not have been safe to operate on older persons with large, irreducible or incarcerated hernias. They required palliative measures instead, such as venesection, fasting, bathing in hot water and linseed plasters.¹⁵¹² There are no accounts of operations for intestinal hernias in Galen’s works. He did, however, comment on the immediate post-operative

¹⁵⁰⁸ Celsus, *Med.* 7.20.1-2. Translated by W.G. Spencer.

¹⁵⁰⁹ *Ibid.*, 7.20.4-5. Translated by W.G. Spencer.

¹⁵¹⁰ *Ibid.*, 7.20.5. Translated by W.G. Spencer.

¹⁵¹¹ *Ibid.*, 7.20.5-6. Translated by W.G. Spencer.

¹⁵¹² *Ibid.*, 7.20.2-3.

care of all wounds.¹⁵¹³ Pseudo-Galen mentioned seven kinds of hernias and swellings of the scrotum but gave virtually no details about surgical procedures.¹⁵¹⁴

There is no mention of religious healing for hernias, but Pliny recorded a particularly bizarre remedy for unspecified hernias in infants:

Hernia in infants is cured by letting a green lizard bite the child's body while asleep, after which the lizard is attached to a reed, and hung up in the smoke; by the time the animal dies, the child will be perfectly cured, it is said..but it must be a male lizard, a thing that may be ascertained by its having but one orifice beneath the tail. The method of proceeding is for the lizard to bite the part affected through cloth of gold, cloth of silver, and cloth dyed purple; after which it is tied fast in a cup that has never been used, and smoked.¹⁵¹⁵

He expressed his incredulity concerning such rituals:

It is hardly possible to preserve one's seriousness in describing some of these remedies, but as they have been transmitted to us, I must not pass them in silence.¹⁵¹⁶

This was a magical cure that involved the transfer of disease from the infant into the lizard that then died. See Section 4.4.4 above regarding ‘scape animals.’ It is not clear why it was essential to sacrifice a male lizard, unless, perhaps, there was a perception that intestinal hernias only affected male babies. Pliny gave no clue as to whether this was a widespread practice among Romans, but mentioned four magical cures featuring lizards for other conditions.¹⁵¹⁷ There is no mention of the use of amulets to prevent or cure hernias of any kind in Roman texts.

¹⁵¹³ See Galen, *Ars Med.* 35 (1.403K). Galen described the immediate irrigation of wounds and the application of plasters containing chalcitis, *Comp.Med.Gen.* 1.4 (13.379-380, 384K).

¹⁵¹⁴ Pseudo-Galen, *Int.* 19.13 (14.788K).

¹⁵¹⁵ Pliny, *HN* 30.47. Translated by J. Bostock and H.T. Riley.

¹⁵¹⁶ *Ibid.*, 30.47. Translated by J. Bostock and H.T. Riley.

¹⁵¹⁷ *Ibid.*, 30.5. See also 30.12 for throat ailments; 30.17 splenic disease; 30.30 amulets.

5.9.3 Hydroceles

Aqueous fluid sometimes accumulated between the membranous layers within the scrotum to form a hydrocele.¹⁵¹⁸ Celsus noted that:

The Greeks..call it hydrocele..We learn that there is fluid underneath, if the swelling never disappears entirely although it is at times less, whether from fasting or feverishness, and especially in boys.¹⁵¹⁹

The term (ὕδροκλήλη) is derived from the Greek words, water (ὕδωρ) and hernia (κλήλη).¹⁵²⁰

Sometimes hydroceles disappeared spontaneously as boys grew older.¹⁵²¹ Galen believed that the watery fluid they contained was not a natural substance of the body.¹⁵²² There are no references in the medical texts to non-invasive therapies.

The surgical management of hydroceles depended on the size of the swelling and the age of the subject:

in boys an incision is to be made in the groin, unless in their case too the large quantity of liquid prevents it..when the tunics have been drawn forwards the humour must then be evacuated there.¹⁵²³

in men, and when there is a large amount of fluid, a scrotal incision is made.. and if the trouble is immediately beneath, there is nothing to do but to let out the fluid and cut away any membranes which are keeping it in.¹⁵²⁴

In general, then, boys required simple drainage of the fluid, while it was necessary to trim the membranous layers in an adult scrotum. Galen acknowledged that the fluid could be evacuated by dispersing medicines, puncture and aspiration or surgery, but did not describe any procedures.¹⁵²⁵ Pseudo-Galen instructed that:

¹⁵¹⁸ Celsus, *Med.* 7.18.6.

¹⁵¹⁹ *Ibid.*, 7.18.6-7. Translated by W.G. Spencer.

¹⁵²⁰ Spencer Celsus, *Med.*, Volume 3, 394 note c; Liddell and Scott: Greek-English Lexicon.

¹⁵²¹ Hippocrates, *Aer.* 4.

¹⁵²² Galen, *MM* 14.13 (10.987K).

¹⁵²³ Celsus, *Med.* 21.2. Translated by W.G. Spencer.

¹⁵²⁴ *Ibid.*, Translated by W.G. Spencer.

¹⁵²⁵ Galen, *MM* 14.13 (10.987-988K).

For patients affected with hydrocele one must incise the scrotum and, at the most vascularised location, when one meets the tunic full of fluid, remove the excess tunic.¹⁵²⁶

This description is similar to Celsus' procedure for men.

There are no written accounts of any magical cures or amulets for hydroceles. Pliny recorded a remedy for hydroceles in which patients consumed roasted spotted lizards, but was understandably doubtful about its efficacy.¹⁵²⁷

Conclusion

Few Roman treatises described treatments for hernias and hydroceles in any depth, and Celsus is the best source for their treatment in all age groups. Conservative therapies were sometimes tried initially for infants and children, but were alternatives for adults who were unsuitable for surgery. Children alone were candidates for umbilical hernia operations, probably for technical considerations and risk factors rather than their chronological age. Children required less radical surgery for inguinal hernias than adults, and surgeons made different incisions into hydroceles according to the size of the swellings and the age of the subject.

There are no written references to differences in treatments for hernias and hydroceles for children on account of their bodily strength or humoral make-up. Decisions about therapies depended on whether patients were fit to undergo surgery, the size of hernias and hydroceles, whether they were operable and various other practical considerations. This was the underlying reason for the stipulation of chronological age for umbilical hernia surgery; it was not safe for infants or the aged and inadvisable for adults in their

¹⁵²⁶ Pseudo-Galen, *Int.* 19.13.5-9 (14.788K). Translated by C. Petit.

¹⁵²⁷ Pliny, *HN* 30.22.

prime; that only left children between seven and fourteen years. Children were not an exclusive therapeutic group.

5.10 Lower gastrointestinal disease

Gastro-intestinal disorders were ubiquitous in the Roman world.¹⁵²⁸ In common with many of the above case studies, the nomenclature of bowel diseases in Roman texts is confusing. Although some modern bowel conditions have names that are similar to those appearing in Roman texts, they are entirely different diseases. This is particularly the case for coeliac disease and cholera.¹⁵²⁹ There was also inconsistency in the use by Greek and Roman physicians of terminologies for diarrhoea (Greek, *diarrhœa*; Latin, *deiectio*, *defluxio*), dysentery (Greek, *dysenteria*; Latin, *tormina*) and cholera (Greek, *cholericos*; Latin, *cholera*). Ancient physicians regarded these three complaints as components of a single continuum of disease that varied in virulence and gravity, whereas modern medicine distinguishes between them according to their cause.¹⁵³⁰ There is evidence to support this view since Celsus and Soranus believed that an episode of diarrhoea or cholera could develop into dysentery.¹⁵³¹ Rufus also admitted that the differential diagnosis of bowel complaints was often difficult, so that physicians risked making errors when treating patients.¹⁵³² A further source of frustration relates to the use of vague descriptions in some texts, such as ‘intestinal disease.’

This thesis makes no attempt to match current clinical terminology with conditions mentioned in Roman medical literature; instead it focuses on the treatments of four

¹⁵²⁸ Scheidel 2009: 7.

¹⁵²⁹ Prioreshi 1998: 460.

¹⁵³⁰ Grant 1997: 176; Powell 2003: 20-21.

¹⁵³¹ Celsus, *Med.* 2.8.30; Caelius Aurelianus, *Ac.* 3.22.222, *Chr.* 4.6.84. See also Paul, *Epitome* 3.42.

¹⁵³² Rufus in Aetius, 9.1, Fragment 111.2-4, Daremberg and Ruelle: 433-435.

ailments as Roman writers understood them – simple constipation and diarrhoea, dysentery and ileus. There is little written information concerning treatments for children suffering from other intestinal conditions.

5.10.1 Constipation

Roman practitioners relieved constipation in children in order to alleviate their discomfort and prevent serious consequences. Children with sluggish bowels were prone to convulsions, especially when they were teething.¹⁵³³

Sucklings suffering from constipation were amenable to medicaments and alterations to the regimen of their nurses:

If the stomach is constipated in children..then it is necessary to soothe it with honey [mixed with] cooked [wine] that forms suppositories, and pulverized basil being fragrant, kneaded together with honey, also made into a clyster. The wet-nurse should stick to food, drink, and a [general] regimen that is specific for soothing the constitution.¹⁵³⁴

Rufus did not provide details of the specific regimen he had in mind for nurses. He believed in the exercise of caution when administering purgatives and clysters to children; it was harmful to use force and suppositories were a safer alternative.¹⁵³⁵ See Section 4.2.2 above for a discussion. Celsus also believed that care was essential since the frequent use of clysters weakened patients, especially children.¹⁵³⁶

Soranus advised targeting wet-nurses in order to tackle the problem in newborns:

When the infant remains without bowel movement, we give the wet nurse things which loosen the bowels.¹⁵³⁷

¹⁵³³ Rufus in Baladī, Fragment 8.5, Ullmann 1975: 177; Celsus, *Med.* 2.1.18-19. Cf. Galen, *Hipp.Aph.* III.25 (17B.629-630K).

¹⁵³⁴ Rufus in Baladī, Fragment F (R) 9, Pormann 1999: 67. Ullmann (Fragment 8, 1975: 177) cites a similar remedy in another fragment from Baladī.

¹⁵³⁵ Rufus in Rhazes, Fragment 230.25, Daremberg and Ruelle: 490; in Oribasius, *Coll.Med.* 8.24, Fragment 19, Daremberg and Ruelle: 300; in Aetius 3.160, Fragment 65, Daremberg and Ruelle: 338-340.

¹⁵³⁶ Celsus, *Med.* 2.12.1B; 3.7.1C.

¹⁵³⁷ Soranus, *Gyn.* 2.28.56. Translated by O.Temkin: 126. Burgière *et al.* (1990: 64) translate this as “we give her a laxative regimen.”

Milk was beneficial for children, both as a preventive and a cure for constipation:

The ancients held it as one of their grand secrets, to administer to children, before taking food, a semisextarius of asses' milk, or for want of that, goats' milk; a similar dose, too, was given to children troubled with chafing of the rectum at stool.¹⁵³⁸

Celsus recognised that natural bowel habits differed at various stages in life:

Those who when young are relaxed, when old are generally costive; those constipated in youth are often relaxed when old. It is better to be rather relaxed when young, rather costive when old.¹⁵³⁹

It was possible to overcome constipation by means of regimen:

The bowels are rendered loose: by increasing the length of the walk, more food and drink; by moving about after the meal; by frequently drinking during the meal. This too should be recognized, that a vomit relaxes them [the bowels] when costive..a vomit immediately after the meal confines the bowels, later it relaxes them.¹⁵⁴⁰

Certain foodstuffs had laxative properties, such as bread, fruit and fowl, spelt porridge, cabbage and cheese.¹⁵⁴¹

Sometimes it was necessary to give oral purgatives to relieve constipation:

But purgatives also, whilst necessary at times, when frequently used entail danger; for the body becomes subject to malnutrition, since a weakened state leaves it exposed to maladies of all sorts.¹⁵⁴²

Subjects with a weak constitution, for example children, would have been at even more risk than adults. Elaterium was a particularly powerful drug, and children generally received a quarter of the normal adult oral dose, but it was not possible to administer it by mouth to babies.¹⁵⁴³ Anonymus Londinensis proposed that it should be “taken in by

¹⁵³⁸ Pliny, *HN* 28.33. Translated by J. Bostock and H.T. Riley. A semisextarius corresponded to around 250ml Spencer, Celsus, *Med.* Volume 2: lxvi. Dioscorides also remarked on the laxative effects of milk from cows, mares and asses, *MM* 2.75.

¹⁵³⁹ Celsus, *Med.* 1.3.33. Translated by W.G. Spencer.

¹⁵⁴⁰ Celsus, *Med.* 1.3.30-31.

¹⁵⁴¹ *Ibid.*, 2.12A; 2.29.

¹⁵⁴² *Ibid.*, 1.3.25. Translated by W.G. Spencer. Celsus disagreed with Asclepiades who rejected the use of purgatives. He thought that “such measures..are not to be dispensed with entirely, because regard for different constitutions and times can make them necessary, provided that they are employed in moderation and only when needed” *ibid.*, 1.3.18. Translated by W.G. Spencer.

¹⁵⁴³ Dioscorides, *MM* 4.155. See also Section 4.4.2 regarding variations in doses of drugs for children.

the nostrils or placed upon the navels of infants.”¹⁵⁴⁴ His prime concern in this instance was the expulsion of bile, but Pliny also mentioned relieving constipation “by applying a wolf’s gall to the navel, with elaterium.”¹⁵⁴⁵ (See also Section 4.2.2 above).

Conclusion

Regimen, pharmacology, suppositories and clysters helped to relieve constipation for patients of all ages. Sucklings were a special group since they required treatment through laxative regimen and medicines for their wet nurses. Strong purgatives and enemas were appropriate for adults. Milder drugs or alternatives therapies, such as suppositories, were more suitable for weaned infants and children. The key criterion when judging which remedies were safe for juveniles was whether they were strong enough to tolerate them. The main priority of physicians was to avoid administering anything that caused them harm by undermining their bodily strength.

5.10.2 Simple diarrhoea

Galen thought it natural for “children [to] defaecate more frequently than those in their prime.”¹⁵⁴⁶ Diarrhoea, however, was an abnormal condition defined as the painless passage of liquid stools.¹⁵⁴⁷ It was a common problem for all age groups, but especially for children while they were teething.¹⁵⁴⁸ As for its causes, Aretaeus recognised that “children are subject to continued diarrhoea from an ephemeral intemperance of food.”¹⁵⁴⁹ Galen similarly thought it was the consequence of over-filling of the

¹⁵⁴⁴ Anonymus Londinensis, 37.20-25. Translated by W.H.S. Jones.

¹⁵⁴⁵ Pliny, *HN* 28.58. Translated by J. Bostock and H.T. Riley.

¹⁵⁴⁶ Galen, *Caus.Symp.* 10.5 (7.258K). Translated by I. Johnston.

¹⁵⁴⁷ Caelius Aurelianus, *Ac.* 3.22.222.

¹⁵⁴⁸ Galen, *Hipp.Aph.* 3.25.

¹⁵⁴⁹ Aretaeus, *SD* 2.7. Translated by F. Adams.

stomach.¹⁵⁵⁰ Methodist physicians regarded diarrhoea as a disease of flux and that it often resulted from the corruption of food.¹⁵⁵¹ It is not clear whether they thought that the food was tainted before its consumption or by processes occurring within the body.

Under normal circumstances diarrhoea was a self-limiting disease which required no treatment:

flux from the bowel for one day is often salutary, and even for several days, provided that fever is absent and it subsides within seven days. For the body is purged, and whatever is about to cause a complaint inside is evacuated with advantage. But persistence is the danger.¹⁵⁵²

The prognosis was far less favourable for young children since they were likely to die if diarrhoea was prolonged and accompanied by fever.¹⁵⁵³

Celsus suggested that an adult suffering from severe, persistent diarrhoea should receive treatment by regimen and drugs. After initial fasting and bathing he should:

be rubbed all over vigorously except the abdomen, sit with his loins and shoulder-blades before a fire; take food of an astringent kind, and a little undiluted wine. If on the fourth day the flux persists, he should eat more but provoke a vomit afterwards.¹⁵⁵⁴

There were many different foods and pharmacological recipes that combatted diarrhoea, such as pease or lentil porridge, and astringent fruits like sharp apples and myrtle berries.¹⁵⁵⁵ Mulberries were particularly beneficial.¹⁵⁵⁶ Galen explained that an astringent “contracts, constricts and cools” and that “astringent things..always restrain

¹⁵⁵⁰ Galen, *Nat.Fac.* 3.5 (2.158K).

¹⁵⁵¹ Caelius Aurelianus, *Ac.* 3.22.221.

¹⁵⁵² Celsus, *Med.* 4.26.1. Translated by W.G. Spencer.

¹⁵⁵³ *Ibid.*, 2.8.30.

¹⁵⁵⁴ Celsus, *Med.* 4.26.2-3. Translated by W.G. Spencer. *Cf.* Galen, *SMT* 7.12.16 (12.75-76K); *San.Tu.* 6.10 (6.431-432K).

¹⁵⁵⁵ *Ibid.*, 4.26.5-8.

¹⁵⁵⁶ Galen, *Alim.Fac.* 2.11 (6.587K).

evacuation.¹⁵⁵⁷ This equated to the Methodist concept of employing astringent therapies to constrict the laxity that characterised diarrhoea.¹⁵⁵⁸

Nurslings, as always, required special consideration. It was, supposedly, possible to protect them from the ailment:

A hare's rennet, applied to the breasts of the nurse, effectually prevents diarrhoea in the infant suckled by her.¹⁵⁵⁹

Hare's rennet was also a remedy for older patients when "boiled, in quantities the size of a chick-pea, and taken in wine."¹⁵⁶⁰ This is surprising in view of Pliny's statement that horse rennet relaxed constipated bowels (see above). He did not account for this apparent contradiction or suggest that rennet from various animals possessed different properties. Dioscorides solved the matter explaining the dual action of rennet that:

Congeals substances that have been dissolved and dissolves substances that have been congealed.¹⁵⁶¹

Rufus instructed that a nursling with diarrhoea should have frequent warm baths. His feeds should be reduced and also "that the wet-nurse sticks to the appropriate food and drink."¹⁵⁶² He also suggested soothing the child's bowels

with honey that forms a sort of suppository, since it is sufficient for the removal of some of the superfluities each day.¹⁵⁶³

His recommendation of honey suppositories for diarrhoea is curious since he also prescribed them for constipation (see above). Soranus also used a combination of therapies for infants:

We omit bathing and passive exercise. Instead we apply astringent plasters, and we inject a cyath of the juice of plantain or of something of this kind by means of a small ear syringe: in general things which we likewise approve for adult patients, so long as strength permits.¹⁵⁶⁴

¹⁵⁵⁷ *Ibid.*, 1, 21 (6.477, 596K).

¹⁵⁵⁸ Caelius Aurelianus, *Ac.* 3.22.222.

¹⁵⁵⁹ Pliny, *HN* 28.78. Translated by J. Bostock and H.T. Riley.

¹⁵⁶⁰ *Ibid.*, 28.58. Translated by J. Bostock and H.T. Riley.

¹⁵⁶¹ Dioscorides, *MM* 2.75. Translated by L. Beck.

¹⁵⁶² Rufus in Baladī, Fragment F (R) 8a; Pormann 1999: 66-67.

¹⁵⁶³ *Ibid.*

Their strength was a major concern. For nurslings:

we put the wet nurse on a regimen corresponding to the affliction of the infant, ordering her to abstain from bathing, to drink water and to take astringent foods, for its quality is carried upward [to the breast] so that the child gets a greater share of it.¹⁵⁶⁵

Once children had been weaned they could benefit directly from astringent diets.¹⁵⁶⁶

Soranus and Rufus prescribed medicated bandages and dietetic changes for wet-nurses, but Soranus omitted baths and favoured rectal injections of plant juice rather than honey suppositories.

Conclusion

Regimen and vegetal remedies were central to the management of diarrhoea for patients of all ages, but physicians prescribed milder therapies for infants and children. As with constipation, for nurslings it was important to adjust the regimen of their nurses. The medical texts did not refer to adjusting treatments according to the physiological traits of children, but they emphasised the importance of avoiding any medicaments that might compromise their strength.

Dysentery 5.10.3

Dysentery was a potentially fatal disease which produced fever, severe griping pains (tormina) and passed frequent, liquid stools. Another hazard was rectal bleeding from ulcers in the mucosal lining of the bowel.¹⁵⁶⁷ The ulcers ranged from mild, shallow lesions to deep, phagedaenic and gangrenous ulcers. Patients with black ulcers passed black stools, and they invariably died. Such patients were also at risk of death from

¹⁵⁶⁴ Soranus, *Gyn.* 2.28.56, 57. Translated by O. Temkin: 125-126.

¹⁵⁶⁵ *Ibid.* Translated by O. Temkin: 125-126.

¹⁵⁶⁶ *Ibid.*

Celsus, *Med.* 2.8.31; Caelius Aurelianus, *Chr.* 4.6.85; Galen, *Loc.Aff.* 2.5, 6.2 (8. 85, 381-382K).

brisk internal haemorrhage.¹⁵⁶⁸ Dysentery was associated with exposure to the cold, indigestion, cold drinks, and eating onions, garlic and rotten meat.¹⁵⁶⁹ Soranus described the malady as intestinal catarrh with ulcers and classed it as a disease of flux.¹⁵⁷⁰ In Galen's view, ulcers formed in the lining of the bowel due to the abrasive action of yellow and black bile. Dysentery arising from black bile was incurable and deadly.¹⁵⁷¹

Aretaeus stated that "diarrhoea attacks children and adolescents; but dysentery adults and young adults."¹⁵⁷² This may account for the relative paucity of references to juveniles suffering from dysentery. Galen evidently encountered cases occurring in children since he prescribed a suitable remedy for them (see below). Adults were more likely to recover from the illness, but the prognosis of dysentery was grave in young children since it killed "mostly children up to the age of ten."¹⁵⁷³

There are considerable gaps in Roman medical literature from the first few centuries AD concerning the therapeutics of dysentery. A major loss is Aretaeus' chapter on its treatment, and surviving fragments from Rufus contain no information about the disease.¹⁵⁷⁴ Caelius Aurelianus gave brief summaries of several of his predecessors' remedies, but gave no indication of Soranus' opinions.¹⁵⁷⁵

¹⁵⁶⁸ Aretaeus, *SD* 2.9.

¹⁵⁶⁹ *Ibid.*

¹⁵⁷⁰ Caelius Aurelianus, *Chr.* 4.6.84-87, 90-91.

¹⁵⁷¹ Galen, *Nat.Fac.* 2.9.131; *Loc.Aff.* 2.5 (8.85K); *Hipp.Aph.* 3.30, 4.24 (17B.646, 688K). *Cf. De atra bile* 5 (5.122K).

¹⁵⁷² Aretaeus, *SD* 2.9. Translated by F. Adams.

¹⁵⁷³ Celsus, *Med.* 2.8.30. Translated by W.G. Spencer.

¹⁵⁷⁴ A single fragment refers to the use of clysters containing poppy juice, Rufus in Rhazes, Fragment 230.19, Daremberg and Ruelle: 491. Daremberg notes that Rhazes' source may have been Galen rather than Rufus.

¹⁵⁷⁵ Caelius Aurelianus summarised herbal potions and rectal injections from Diocles, Praxagoras, Erasistratus and Themison, but did not mention any of Soranus' cures, *Chr.* 4.6.89-91.

For adults, the principal treatments were rest, fasting, astringent food and drink, abdominal plasters, and rectal injections of egg whites, butter and various herbal drugs.¹⁵⁷⁶ Celsus made no mention of children, but it is likely that his remarks about avoiding the use of abstinence and frequent clysters for child patients would have applied in this circumstance.

Galen's forty-nine compound remedies for dysentery contained ingredients such as poppy juice, saffron, and astringent herbs.¹⁵⁷⁷ One particular rectal infusion that suited all ages was a decoction of myrtle and red rhus cooked in wine. Doses varied according to individual patients; two cyathi were sufficient for children, while women required three and men four.¹⁵⁷⁸ There is no other information in Roman texts about treatments for dysentery in children. Some of Galen's herbal drinks contained uncooked wine, and he would have ruled these out for children for previously stated reasons.¹⁵⁷⁹ His oral compounds included up to nineteen ingredients.¹⁵⁸⁰ Many rectal infusions contained caustic substances such as ashes of papyrus and auripigmentum (orpiment or lead trisulphide).¹⁵⁸¹ Their object would have been to promote healing of the intestinal ulcers. It is debatable whether any would have been suitable for the young. Galen stipulated two recipes that were for men only, but suggested modifications of another for weak or debilitated patients.¹⁵⁸²

¹⁵⁷⁶ Celsus, *Med.* 4.22.2-5.

¹⁵⁷⁷ Galen, *Comp.Med.Loc.* 9.5 (13.288-319K).

¹⁵⁷⁸ *Ibid.*, 9.5 (13.298-299K). One cyathus was equivalent to forty-two cubic centimetres W.G. Spencer, Celsus, *Med.* Volume 2: lxvi.

¹⁵⁷⁹ Galen, *Comp.Med.Loc.* 13.288-289, 289-290, 291, 294K.

¹⁵⁸⁰ One remedy contained fifteen individual ingredients and another nineteen, *ibid.*, 13.292, 293K.

¹⁵⁸¹ *Ibid.*, 13.295-298, 304-305K.

¹⁵⁸² For men: *ibid.*, 13.295-296, 300K; for weak or debilitated persons: 13.297-298K.

Pliny recorded over one hundred and thirty herbal cures.¹⁵⁸³ Twenty-seven involved the use of animal substances, and a few qualified as *Dreckapotheke*.¹⁵⁸⁴ Dioscorides and Scribonius Largus also prescribed several botanical remedies.¹⁵⁸⁵ These three writers did not specify the kinds of patients who received them, and so it is a matter of speculation whether any of their treatments would have been appropriate for juveniles.

Conclusion

This section illustrates some familiar problems faced by scholars trying to reconstruct therapies for Roman patients other than adult males in their prime. There are lacunae in information from several sources about the treatment of dysentery due to lost or incomplete texts. In common with fevers and ocular and dermatological complaints, there are uncertainties about the nomenclature of diseases of the large intestine in Roman medical treatises.

It is only possible to identify one medicament that catered specifically for children with dysentery. It is, however, likely that practitioners would have selected treatments they considered appropriate for individual patients or adapted others to suit them. Roman doctors thought that dysentery was mainly a disease of adults, and this probably explains the virtual absence of written evidence of therapies for Roman children. Since Roman writers regarded diarrhoea and dysentery as two gradations of the same disease within, it is possible that physicians treated children suffering from dysentery in much the same way as if they had diarrhoea. There is no evidence in support of this

¹⁵⁸³ For example: Pliny, *HN*: pomegranate blossoms 23.60; root of alcea 27.6.

¹⁵⁸⁴ Pliny, *HN*: frogs boiled with squills 32.31; ashes of burnt horse dung, kid's rennet and blood 28.58; liniment containing goat's blood 28.58; camel dung 28.26; hyena dung 28.27; swine and pigeon dung 30.19.

¹⁵⁸⁵ Dioscorides, *MM* 1.51, 77, 101, 126, 132, 171; 2.81, 124; 3.163, 4; 4.7, 8, 36, 40, 66; 5.23. Scribonius Largus prescribed vegetal pastilles and clysters for tormina, *Comp.* 111-115.

supposition, and it is impossible to make a satisfactory comparison of remedies for juveniles and adults for this disease.

5.10.4 Ileus

This disease was also known as ileos, chordapsus, volvulus and tormentum.¹⁵⁸⁶ It was an acute and dangerous condition involving the small intestine.¹⁵⁸⁷ Methodist doctors classified it as a disease of stricture in which the bowel twisted and became blocked.¹⁵⁸⁸ As a result of the obstruction, flatus and partially digested food were unable to pass through the small intestine and enter the large bowel. The principal features included severe, griping abdominal pains (tormina), the inability to pass stools even with the aid of enemas, and faecal vomiting which was a sign of impending death.¹⁵⁸⁹ Patients could die rapidly as a result of the pain they suffered and if a twisted segment of bowel became gangrenous:

then again, the intestine having become black and putrified, has separated, and thus the patients have died.¹⁵⁹⁰

Gangrene occurred as a result of the occlusion of intestinal blood vessels.

Ileus had a number of antecedent causes, such as persistent indigestion, eating unaccustomed food, drinking cold water or wine to excess, and strangulation of scrotal

¹⁵⁸⁶ Aretaeus: ileus, volvulus, chordapsus, *SA* 2.6. Celsus: chordapsos, eileos, *Med*, 4.20.1. Galen: ileos, *Hipp.Aph.* IV.44 (18A.68K); volvulus, chordapsus, *Loc.Aff.* 6.2 (8.388K). Caelius Aurelianus: ileos, tormentum, chordapsus, *Ac.* 3.17.138, 144.

¹⁵⁸⁷ Celsus, *Med*, 4.20.1; Scribonius Largus, *Comp.* 118; Rufus in Rhazes, Fragment 258, Daremberg and Ruelle: 497; Aretaeus, *SA* 2.6; Galen, *Hipp.Aph.* IV.44 (18A.68K). Celsus explained that the terminology of bowel obstruction had changed over time. Diocles of Carystus (fourth century BC) termed obstruction of the small intestine chordapsos, and ileus applied to the colon. During Celsus' time they were known as ileus and colicos respectively, *Med*, 4.20.1

¹⁵⁸⁸ Caelius Aurelianus, *Ac.* 3.17.138, 141, 146. Modern medical science describes ileus as an obstruction of the intestine or absence of peristaltic waves that convey its contents downwards Beasley 1998b: 322.

¹⁵⁸⁹ Celsus, *Med*, 2.7.6, 2.8.35, 4.20.1-2; Scribonius Largus, *Comp.* 118; Rufus in Rhazes, Fragment 258, Daremberg and Ruelle: 497; Aretaeus, *SA* 2.6; Pliny, *HN* 30.20; Anonymus Parisinus, *De morbis acutis et chroniis* 14.1.5; Pseudo-Galen, *Int.* 13.17 (14.737K); Caelius Aurelianus, *Ac.* 3.17.141. See also Galen, *Nat.Fac.* 3.13.1 (2.192K); *Hipp.Aph.* IV.44 (18A.68K); *Loc.Aff.* 6.2 (8.387); *Comp.Med.Loc.* 8.3 (13.148K).

¹⁵⁹⁰ Aretaeus, *SA* 2.6. Translated by F. Adams.

hernias.¹⁵⁹¹ Others were impacted, hard faeces, inflammation of the bowel and the accumulation of phlegmatic and coagulated humours.¹⁵⁹² Galen associated intestinal obstruction with tumours, abscesses and viscous humours.¹⁵⁹³ He did, however, feel that the latter would not have been thick enough to block the lumen of the intestine entirely.¹⁵⁹⁴

Galen noted that the condition “most often occurs in children.”¹⁵⁹⁵ In contrast with the elderly, children were more susceptible to ileus but were less likely to die as a result:

This affection is customary with children, who are subject to indigestion, and they more readily escape from the mischief, owing to their habits and the humidity of their intestines, for they are loose.¹⁵⁹⁶

The reference to their habits probably signified their appetite for immoderate quantities of food and drink.¹⁵⁹⁷ This would have accounted for loose, watery bowel motions.

Celsus recommended measures to relieve the blockage:

blood-letting or cupping in several places..[and]..clyster the bowels..The treatments..are: the application of hot plasters, put on from the breasts to the groins, and back to the spine, and often rubbing of the arms and legs; immersing the patient all over in hot oil. If the pain is not relieved, there is injected into the bowels from below three or four cupfuls of hot oil.¹⁵⁹⁸

Other writers suggested broadly similar plans.¹⁵⁹⁹ Soranus’ therapies included massages with warm oil, rest, silence and abstinence until the *diatritus*, then fomentations, poultices, phlebotomy and cupping to relieve the stricture.¹⁶⁰⁰ Aretaeus thought it essential to provide as much pain relief as possible with narcotics and anaesthetics; if

¹⁵⁹¹ Aretaeus, *SA* 2.6; Rufus in Rhazes, Fragment 266, Daremberg and Ruelle: 498.

¹⁵⁹² Anonymus Parisinus, *De morbis acutis et chroniis* 14.7-14.

¹⁵⁹³ Galen, *Comp.Med.Loc.* 8.3 (13.154K); *Loc.Aff.* 6.2 (8.387K);

¹⁵⁹⁴ Galen, *Hipp.Aph.* IV.44 (18A.68K).

¹⁵⁹⁵ Galen, *Comp.Med.Loc.* 8.3 (13.154K). Author’s translation.

¹⁵⁹⁶ Aretaeus, *SA* 2.6. Translated by F. Adams.

¹⁵⁹⁷ *Ibid.*, 1.9.

¹⁵⁹⁸ Celsus, *Med*, 4.20.2, 3. Translated by W.G. Spencer.

¹⁵⁹⁹ Aretaeus, *CA* 2.5; Galen, *Comp.Med.Loc.* 8.3 (13.149, 150, 158K); Pseudo-Galen, *Int.* 8.17 (14.737K).

¹⁶⁰⁰ Caelius Aurelianus, *Ac.* 3.17.147-151.

the pain became unbearable, it was a mercy to extract blood from patients until they lost consciousness.¹⁶⁰¹ Several pharmacological recipes were also thought to be helpful.¹⁶⁰²

Although ileus most commonly affected children, there is little information in Roman medical treatises on their management. Anonymus Parisinus, our sole source for the condition from the first and second centuries AD, was prepared to let blood from children:

for ileus bleed boys and adolescents without delay..otherwise apply cupping-glass and scarification..and..use bandages after warming the extremities..if pains press, in boys use enemas with rue and oil, and if they tolerate it also applications of cupping glasses and scarification.¹⁶⁰³

It is uncertain whether his opinion reflected the general view of his contemporaries. As previously discussed, Galen prohibited phlebotomy in children, and Celsus and Soranus reserved it for strong individuals. Furthermore, the use of very warm or hot clysters was contraindicated for children, the elderly and persons having dry bodies.¹⁶⁰⁴ These prohibitions and restriction would have ruled out most, if not all, children. The Byzantine compiler, Paul of Aegina, was emphatic that when treating ileus:

children are to be cured by embrocations, cataplasms, clysters, suppositories and fomentations as described when treating dysentery. But young persons and adults are to be bled without delay.¹⁶⁰⁵

Theophanes Nonnus, a tenth century AD Byzantine physician, wrote that Greek and Roman doctors treated children suffering from ileus with embrocations, poultices and

¹⁶⁰¹ Aretaeus, *CA* 2.5. Aretaeus did not condone terminating their lives by these means.

¹⁶⁰² A decoction of leaves of nightshade, mallow, cassia, almond oil taken as a drink, Rufus in Rhazes, Fragment 266, Daremberg and Ruelle: 498. Willow leaves pounded into small pieces and taken in a drink with a little pepper and wine, Dioscorides, *MM* 1.136. Scribonius Largus suggested three remedies: pills of galbanum; ointments containing seeds of daucus, root of panaces, beaver's gall and wild rue cooked in honey; fenugreek or rue with saltpeter by means of clysters, *Comp.* 116-118.

¹⁶⁰³ Anonymus Parisinus, *De morbis acutis et chroniis* 14.3.3, 9. Translation by B. Fuchs, in Garofalo 1997: 95-97. Fuchs interpreted *παῖς* as 'boy,' but the term may have signified a child of either gender.

¹⁶⁰⁴ Rufus in Rhazes, Fragment 230.25, Daremberg and Ruelle: 490.

¹⁶⁰⁵ Paul, *Epitome* 3.44. Translated by F. Adams.

fomentations.¹⁶⁰⁶ In spite of there being meagre direct evidence, it is likely that Roman children received milder therapies than older individuals. Another consideration is Aretaeus' statement that the prognosis of ileus was generally favourable for children. Therefore children may have had less need of drastic therapies.

Evidence for the supernatural healing of ileus is sparse. Pliny recorded a single magical remedy for the disease:

it may be combatted, they say, by tearing a bat asunder, and taking the blood, or by rubbing the abdomen with it.¹⁶⁰⁷

He gave no description of those being cured. Another magical practice for unspecified intestinal maladies involved the transfer of disease from the patient into a blind puppy.¹⁶⁰⁸ There are only three other overtly supernatural interventions for any bowel complaints in the *Natural History*, and these were for colic.¹⁶⁰⁹

Conclusion

It is most likely that the authors of medical treatises had adult patients in mind when prescribing vigorous therapies, such as venesection, cupping, and enemas of hot oil for combating ileus. Although ileus affected children most often, this is not reflected in the volume of references to its treatment in younger age groups. Anonymus Parisinus was the sole writer from the early empire who recommended venesection for children, together with cupping and scarification, if they could tolerate it. He did not mention whether it was important to consider their size, age or robusticity. Circumstantial evidence from Byzantine writers lends weight to the supposition that the majority of

¹⁶⁰⁶ Theophanes Nonnus, *Epitome de curatione morborum* 171. In his comment on Paul's therapy for ileus, Adams notes that Paul was Theophanes' source for this disease: 427-428.

¹⁶⁰⁷ Pliny, *HN* 30.20. He also suggested the use of various herbs *ibid.*, 20.13, 23, 51, 53, and mutton suet and castoreum *ibid.*, 27.28; 30.19.

¹⁶⁰⁸ *Ibid.*, 30.20.

¹⁶⁰⁹ *Ibid.*, 30.20.

Roman physicians administered milder therapies. Judging by comments on the treatment of juveniles for other diseases, their bodily strength would have been the most important deciding factor concerning the use of venesection, clysters and cupping for the disease.

There are lacunae in Roman medical texts concerning the treatment of patients of various ages who suffered from constipation, diarrhoea, dysentery and ileus. It is sometimes only possible to guess what individual authors might have advised in accordance with their own general rules. In spite of this, there is evidence that physicians modified therapies for children.

Nurslings were a special group for whom it was necessary to alter the regimen of their nurses if they suffered from constipation or diarrhoea. The prescribing of drugs to infants and children was influenced by their developmental stage and practical issues. The prime consideration, however, was the physical strength of infants and children and their ability to tolerate treatments. This was especially important regarding fasting, enemas and venesection. The physiological characteristics of children did not influence choices of remedies. Rufus prohibited forceful or hot enemas for children, the aged and other weak individuals on account of their lack of strength to endure them. Looking at this group of diseases, there is no reason to conclude that children belonged to a distinct therapeutic category.

It is not possible to know how relatives and carers and the greater majority of Roman doctors who did not write learned treatises would have handled infants and children suffering from these four bowel conditions. Pliny recorded a single account of a

magical cure for ileus. There is no obvious explanation why only five magical interventions in total are recorded for the above-mentioned intestinal diseases.

5.11 Overview of case studies of treatments

This thesis has investigated nine case studies of treatments for Roman children and adults. It enhances the evidence presented in the previous chapter that physicians modified treatments for infants and children. It has also shown that the criteria they used to select the most appropriate therapies varied according to the nature of the disorders under consideration. This innovative case study approach has also presented an opportunity to determine whether there were differences in the patterns of therapeutic modalities used across the range of diseases. Table 5.3 below presents a summary of the findings: it highlights several issues that merit further discussion. Blank spaces in the table represent either a lack of sufficient information or indicate that doctors did not employ particular therapies for certain conditions.

Table 5.3 Therapies by disease and age category

	Ocular	Aphthae	Epilepsy	Stones	Skin	Throat	Fevers	Hernias	Bowel
Nurse regimen		I	I		I				I
Dietetics	C A	I C	I C A	NS	I C A	A	C	A	A
Topical	C A	I C A			I C A	I C A		I C A	
Other external	C A	I C A	C A	C A	I C A	C A	C A	I C A	I C A
Oral	C A	I C A	C A	NS				A	I C A
Caustics		C A			C A	A		A	A
Venesection	A	A	A			A	A	A	C A *
Cupping		A	C A	A		A			C A *
Scarification			A			A			C A *
Purges	A C		A C				A		C
Clysters	A		A			C A	C A	A	C
Cautery	A	A	A					C	
Surgery	A	A	C A	C A		NS		C A	
Religion	NS						C NS		
Magic	NS		C A	I NS		I	I C NS	I	NS
<i>Dreckapotheke</i>	NS		C A	NS		NS	NS		NS
Animal cruelty	NS							C	
Gender			C	C A					

Key: I = infants; C = children; A = adults; NS = age categories not specified.

* denotes Anonymus Parisinus' possibly anomalous treatments for children with ileus.

The supposition that unwholesome milk contributed to the pathogenesis of certain disorders in sucklings accounted for changes to the regimen of wet-nurses as a treatment for aphthae, epilepsy, and skin and intestinal diseases. It was convenient for parents to blame nurses when infants were affected, even though they themselves were

responsible for selecting and supervising wet-nurses, and for monitoring their regimen and the quality of their milk. The same applied when infants developed skeletal deformities due to faulty swaddling, or epilepsy because nurses allowed them to become angry and distressed. It is likely that physicians would have hesitated to offend wealthy clients by attributing any fault to them.

Dietetics featured strongly in all of the above case studies. Medical authorities often made recommendations for amendments that obviously related to adults and gave no instructions for diseases affecting infants and children. Topical medicaments were used widely to treat persons of all ages, including infants and children. They were applied to readily accessible parts of the body such as the skin, eyes, mouth and throat. Lotions, poultices, ointments and plasters had a variety of purposes that included cooling or warming the body and were regarded as an alternative means of administering drugs, especially to infants. Caustic substances were applied to ulcers affecting the mouth and skin of children and as clysters to the bowel for adults suffering from dysentery. These required special care in order to avoid irritation and damage to the skin and mucosal linings of the mouth and pharynx.

Adults underwent phlebotomy in most of the case studies, but physicians had divergent views about letting blood from children. Anonymus Parisinus alone recommended the use of venesection and cupping and scarification for children suffering from ileus. He may have felt them justified in this circumstance, although other authorities regarded children at less risk than adults. Purgation and clysters were not widely used for children since suppositories were a milder and safer alternative. Children were rarely subjected to cautery, and the only example in Table 5.3 is the removal of redundant tissue during an operation to repair an umbilical hernia.

Religious healing is only attested for eye complaints and fevers in Table 5.3, but it is impossible to know the extent to which parents and carers sought help from the deities to cure sick children for any diseases. One reason might be that they prayed privately to the gods within the home.

There is, in contrast, ample evidence for magical devices and practices for most of the groups of diseases, particularly for epilepsy and fevers. It is easy to understand how parents might have turned to magic to prevent or cure these two serious and mystifying conditions. There are no written references to its use for skin diseases or aphthae even though identical ulcers affected the mouth and throat. It is difficult to imagine why this was the case. Pliny's magical cure for eye disease involved blinding a lizard and another for a child's hernia also resulted in the death of a lizard. It is curious that there were no other such remedies featured in Table 5.3, but Pliny had a taste for the sensational and so his testimony was, perhaps, not completely reliable.

Table 5.3 records two instances of healing according to gender, the magical cure for epilepsy in boys and girls involving the blood of male and female creatures, and modifications to lithotomy to suit the anatomy of girls and women. Hydrocele and scrotal hernia surgery was necessarily only applicable to boys.

5.12 Conclusion

The previous chapter identified some of the ways in which practitioners modified specific therapies for individuals at various stages of the life cycle and different gender. Some medical treatises provided explicit guidelines concerning regimen, drugs, enemas, phlebotomy and surgery. There was, however, some disparity in their views. This chapter has attempted to determine not only how, but why, children's therapies differed

from those of adults. It has also examined the criteria that different physicians used to determine how best to treat children.

This thesis has already established that there is no convincing evidence that children formed a separate epidemiological group. There are a number of problems that make it difficult to address the matter of whether Roman doctors regarded children as a distinct therapeutic group. A frustrating obstacle is the complete or partial loss of some medical texts. Some written references to children's treatments may be unreliable because of their fragmentary nature and transmission through the works of one or more Byzantine or Arab physicians. There are, therefore, several lacunae in the available evidence. Another hindrance is that Roman medical texts often describe treatments without specifying the age groups they catered for. Some obviously related to adult male patients, but there is considerable doubt about others. The lack of a clear and consistent medical terminology in texts from the early Empire is a further complication: therefore it was not always clear who was being treated and for what condition.

Another significant gap is the shortage of information about the ways in which doctors other than medical authors, together with various other kinds of practitioners, treated patients of differing age. Female relatives and carers provided the bulk of medical treatment for infants and children, and they also left no records of their views and practices. It is occasionally possible to glean such data in the works of Pliny, Dioscorides and Soranus.

In spite of all these uncertainties, it is often possible to compare and contrast treatments for some diseases of children with those of adults. Roman medical treatises described how some physicians modified remedies to suit the needs of sick infants and children. It

is useful to consider why they did so and what criteria they used when prescribing treatments for the above nine groups of diseases.

The doctrinal views of physicians influenced their rationale for treating patients. Methodist doctors had a relatively simplistic view. The three communities of disease required remedies according to the principle of opposites. Humoral and pneumatic physicians took into account the nature and cause of illnesses and the balance of the four qualities and humoral complexion of the sick. It was essential to preserve the natural humidity of infants and children, especially those suffering from fevers and ophthalmia. Galen divided patients into two main groups. The first consisted of those with dry, strong bodies, namely adult males in their prime who required strong treatments. Other individuals had soft, moist flesh as weak persons who had need of weaker medicines. They included children, women, eunuchs, and effeminate or depraved young men. Galen recommended such medicaments for aphthae, epilepsy and dermatological ailments.

Roman texts referred most frequently to the physical strength of patients as a major criterion of suitability to receive certain remedies. It was especially necessary for doctors to decide whether infants and children were robust enough to endure them without endangering their health. This applied particularly to fasting, exercise, purges, clysters and phlebotomy for those suffering from aphthae, epilepsy, and pestilential and intermittent fevers. There was, however, a lack of consensus about extracting blood from children.

Roman surgeons tended to avoid performing operations on children unless it was strictly necessary. Celsus, who was the major source for surgery during the early

Empire, considered it too risky to undertake cataract couching in children. On the other hand, he imposed age limits for males undergoing lithotomy. There were other restrictions regarding surgical treatments for umbilical hernias, and modifications to procedures for boys with scrotal hernias and hydroceles, and lithotomy in females. These rules and variations related to issues of safety and practicality rather than a child's age *per se*.

Celsus stated that children should not be treated in the same way as adults. Both he and Galen believed that medical treatments must cater for the age, bodily constitution, gender and humoral complexion of each patient as well as several external factors and the nature of the diseases that affected them. Age was, therefore, just one of many considerations. Furthermore, Galen identified children as one of five groups of soft, moist and weak individuals who must receive weak medicines. For these reasons and the above case study investigation, it is reasonable to conclude that children did not constitute a distinct therapeutic category.

CHAPTER 6: CONCLUSION

This thesis has investigated whether there were significant differences between child and adult medicine in the early imperial period. It has also examined whether Roman doctors believed that children belonged to distinct biological, epidemiological and therapeutic groups. Unlike existing literature on the subject, it has compared the different experiences of disease and its treatment in children and adults, and male and female children at various stages of development. Another innovation is the series of case studies which have provided the opportunity to examine specific ailments and therapies in some depth and explore a number of issues arising from them. These include the retrospective diagnosis of rickets, compliance with feeding and weaning guidelines in Roman texts, and the control of the bodies and minds of children from the moment of birth to puberty.

Medical historians have, in the past, tended to focus on regimen, pharmacology and surgery. This thesis has placed equal emphasis on all components of the spectrum of medicine which incorporated supernatural, astrological and folk remedies. It has presented evidence from medical treatises and other literary genres from the early imperial period. In contrast with existing surveys of children's medicine, this thesis has included modern medical and scientific information and a substantial amount of archaeological data. This has resulted in a comprehensive and up-to-date overview of children's medicine in imperial times.

The plurality of medicine in Roman times

Medicine was not a homogeneous tradition in antiquity. The elite male authors of medical texts were not typical of the vast majority of physicians: they varied in status,

and levels of literacy and medical education. A wide range of non-professional practitioners, together with midwives, nurses, wise women, drug sellers and magicians offered a variety of different services. In addition to regimen, pharmacology and surgery, many Romans relied on supernatural and superstitious remedies and self-help. Learned treatises, therefore, only reflect a small proportion of Roman medical practice. There are many problems associated with the integrity and reliability of these texts. Not all have survived intact and there are major difficulties about the evidence that is available. These include inconsistencies and ambiguities in the terminology of childhood and diseases, and frequent omissions about the applicability of treatments for specific age groups.

The biological and physiological traits of children

Hummel writes that Roman children had their own physical and psychological traits and weaknesses that distinguished them from adults. Medical authors described infants and young children as small, helpless, immature and weak individuals. They were also irrational, emotionally labile and prone to fears and bouts of anger which could cause harm to their bodies and souls. There is, therefore, sufficient evidence to justify her statement. As children aged they grew and passed through a series of developmental stages until they became more like adults. Not all Roman authors subscribed to complex theoretical speculations on workings of the human body and pathogenesis of disease, but a large proportion explained the physiology of the human body on the basis of the four qualities, humours and *pneuma*. Their theories influenced their understanding of the ways in which diseases affected individuals at different stages of the life cycle and informed their choices of appropriate therapies.

Epidemiology

Roman children were more at risk from sickness and death than adults. Many diseases occurred more often at particular stages in the life cycle, but they were not exclusive to infants and children. This included the so-called specific diseases of childhood such as epilepsy, bladder calculi and aphthae. Medical texts described a number of conditions that took on different forms in infants and children, but they almost certainly represented separate pathological entities. The gravity and prognosis of certain illnesses also varied among specific age groups. Many diseases were more serious or even lethal for infants, but this was not invariably the case. Infants and children might fare better or worse than adults. For all these reasons, this thesis does not concur with the supposition that Roman children belonged to a distinct epidemiological group.

Infant care

There have been no suggestions from scholars that Roman children comprised a separate therapeutic group. This thesis has examined available evidence to refute or confirm this possibility for the sake of completeness. The care and nurturing of infants and children was unique to the early stages of life. It fell under the remit of parents and female attendants, but some medical treatises provided guidance on the handling and feeding of infants. It is not certain how many parents were aware of or even heeded this advice. Scientific analyses of infant skeletal remains indicate that actual breastfeeding and weaning customs across the Empire did not correlate with the advice given by Rufus, Soranus and Galen. This was prescriptive rather than descriptive. This may have been true for aspects of infant care, especially massage and swaddling which were difficult and time-consuming. These authors believed that ignorance and carelessness on the part of nurses had serious consequences for their charges.

Therapeutics

Celsus wrote that children should not be treated in the same manner as adults. Both he and Galen emphasised the need to consider the age, gender, habits, physical strength and constitution of patients when treating ailments. There is evidence to suggest that children generally received milder treatments than adults across a range of therapies. Regarding regimen, doctors were reluctant to prescribe fasting, vomiting, purgation and clysters for children, and they used milder alternatives where possible. Venesection was either banned outright for children or restricted to adults and older children.

Doctors modified drug remedies for children by adjusting dosages, formulations and routes of administration. Several substances were either too toxic to administer to children or required the use of special precautions. Surgeons sometimes imposed age limits for certain operations or believed that they were too risky to contemplate for children. In general they used less force and fewer radical procedures. These prohibitions and modifications related to issues of safety and practicality rather than a child's age *per se*.

There are few literary references to religious healing for children, but the use of magical preventatives and cures is well attested. In general, doctors administered gentle remedies for mild illnesses, but grave diseases required stronger measures to combat them. Sometimes the prognosis of a particular illness also had a bearing on how a doctor would treat the patient. Sucklings depended heavily on changes to the regimen of their nurses; weaning was a medical milestone since it opened up the possibility of a wider range of efficacious treatments for infants.

A number of considerations influenced physicians' decisions about the suitability of therapies for children. Doctors belonging to medical sects had different therapeutic objectives. Methodists were concerned with the status of diseases, but made allowances for the age and strength of patients. Humoral and pneumatic physicians took into consideration the causes and pathogenesis of diseases, and environmental and seasonal factors. They also assessed modified treatments in terms of their patients' age, stage of development, customs and habits, constitution and their balance of the four qualities and humours.

Galen divided subjects into two main groups. The first consisted of those with dry, strong bodies, namely physically active adult males in their prime. In contrast, there were others who had soft, moist flesh whom he regarded as weak persons. They included children, women, eunuchs, and effeminate or depraved men. Patients were therefore either strong or weak, and they required strong or weak medicines respectively. Galen did not recognise children as a discrete therapeutic category: they were merely members of a group of weak and inferior persons. Strength was not only a key criterion for Galen, but for other Roman authorities too. Celsus was clear about this, especially with regard to fasting, purges, clysters and phlebotomy. Patients needed to be robust enough to endure them, especially the elderly and small children who might suffer a fatal weakening of their strength. The age of a patient was an important consideration but, above all, strength was the key determinant of fitness to receive treatment by regimen, pharmaceuticals and surgery.

In summary, this thesis has investigated the validity of Hummel's assertion that Roman children possessed unique physical and psychological traits and weaknesses. It has found sufficient evidence in support of this and recognises that they were also

physiologically distinct according to the views of humoral physicians. Children became more like adults as they grew and advanced towards puberty. A second suggestion by Bertier, Dasen and Bradley is that children were members of a separate epidemiological category. This thesis concludes that there are not enough grounds to substantiate this proposition. There is even less reason to suppose that children belonged to a distinct therapeutic group. Age was subordinate to the strength of individuals as the crucial factor when making choices about treatments. Children were members of a range of weak persons. Boys would expect to gain strength when they attained manhood, but girls remained weak throughout their life span.

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