

Health and wellbeing in the ancient world



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Week 1: What is health?

Using the evidence

Introduction

Welcome to Week 1 of this free course, *Health and wellbeing in the ancient world*.

In this exciting course you will engage directly with voices and objects from the ancient Greek and Roman worlds to find out what people in the past thought about their health, and to consider how healthy they would have been. You'll be looking at the body from head to toe, exploring aspects including sight, digestion, reproduction and body image.

You'll also learn how to evaluate fragmentary evidence of different kinds, setting a variety of sources in context and bringing them together to make a better picture of the past.

1 Defining health

An ancient medical writer wrote: 'A wise man should consider that health is the greatest of human blessings'. This course will give you a 'from head to toe' approach to the body, and think about how health in the past can be studied now.

You will begin your study by watching a video which introduces two ancient images of healthy bodies and then go on to look at how to define 'health'.

Activity 1

Watch the following video which features two athletes wrestling and some female figures now known as the 'bikini girls'. How can they be used as evidence for ancient health?

After watching the video note down your thoughts on what you – and the ancient Greeks and Romans – understand to be meant by 'health'.

Video content is not available in this format.

Video 1 Images of health



Table 1 What is health?

My definition of health today

Provide your answer...

How the ancient Greeks and Romans might define 'health'

Provide your answer...

1.1 How healthy are you?

How healthy do you feel at the moment? What aspects of your life or your body do you consider when making that decision? Would you recite your blood pressure and heart rate? Do you monitor your health regularly, for example by weighing yourself or using an activity tracker? Why do you monitor your health? Or, if not, why don't you?

Activity 2

Measure your pulse or someone else's pulse now. If you need a guide, follow the advice in this video from the British Heart Foundation.

Video content is not available in this format.

Video 2 Taking your pulse



Comment

Did you already know how to measure a pulse? How did you know? Was it because of your own job, or because it's been done to you before, or because you've seen it on TV or in a film? When you did it, did you count the beats while looking at your watch or clock, or did you just feel them?

Today, the pulse mainly refers to the beats per minute, although the strength or weakness of the beat is also seen as significant. You will see later how these featured in ancient medicine.

Measuring the pulse against a watch or clock only started in the 15th century, and it was not until the 17th century that a pulse watch was developed by John Floyer. However, in the third century BCE, Doctor Herophilus is reported to have used a portable clepsydra, a water-clock, to measure the frequency of the pulse, adjusting this according to the age group of the patient. As well as speed, he was also interested in what he called the pulse's size, rhythm and strength. In this course, you'll be weighing up the similarities, as well as the differences, in how health was imagined in the ancient Greek and Roman worlds.

1.2 Talking about health

In this next video, Helen King, professor of Classical Studies at The Open University speaks to Mathijs Lucassen, from the Faculty of Wellbeing, Education and Language Studies at The Open University, about how to find out what counts as 'health', both today and in the past. Their discussion introduces debates over how health is defined, and addresses the term 'wellbeing' and why it is used.

Video content is not available in this format.

Video 3 Talking about health



Next you will look at another difference between past and present understandings of health, and explore how health in the ancient Greek and Roman worlds encompassed religion as well as medicine.

1.3 Health and the gods

When you think about whether you are healthy, or what health is, you may think in terms of medicine rather than religion. But in the past, the lines between these two areas were drawn differently from today. The gods and goddesses were involved in health and healing, as they were with every aspect of daily life in the ancient Greek and Roman worlds.



Figure 1 The Hope Hygieia, Roman 140–160 CE

Figure 1 shows Hygieia, the goddess of health in both Roman and Greek mythology. In fact, the ancient Greek word *hygieia* means 'health'. Hygieia was the Greek idea of health personified and she was worshipped in Greece from the fifth century BCE. In a hymn written to her by Ariphron in around 400 BCE, she was addressed as follows:

Health, greatest of the blessed gods, may I live with you
For the rest of my life, and may you be a willing inmate of my house.

(Ariphron, *Hymn to Hygieia*, 813)

In mythology, Hygieia was one of the daughters of Asclepius, a man whose mother was a mortal woman, Coronis, but whose father was the god Apollo. Asclepius was a doctor who, in some versions of the myths about him, eventually tried to cure death itself using the blood of a Gorgon, or special herbs. Hygieia is often shown with a snake – as she is here – an animal which, because it sheds its skin, was a symbol of immortality. Snakes were also found in the temples of Asclepius, where people would go for healing, and there are stories of them licking suppliants while they slept at the temple.

The medicine of the temples was not entirely separate from the medicine of doctors, and it is known that some temples of Asclepius had resident doctors. One of the most famous doctors in the ancient world was Hippocrates, who is supposed to have worked in the fifth–fourth centuries BCE. Around 70 works attributed to him survive, although it is probable that none of them were actually by him; instead, works of other doctors were classified under his name because he was so famous. One such document, the ‘Hippocratic Oath’, originally included swearing by ‘Apollo the doctor, Asclepius, Hygieia and Panacea and all the gods’ that the doctor would respect his medical instructors and keep patient confidentiality. Panacea, which literally means ‘all-heal’, was another daughter of Asclepius.

Hygieia is shown as a young woman, modestly dressed – quite unlike the ‘bikini girls’ – and she sometimes carries a vase, which may contain medicine. She often features in art standing beside her father, and neither appear as anything other than well-fed, strongly built figures. This is not true of all gods: for example Hephaistos, the blacksmith of the gods, was portrayed as lame.

Health or healing could be obtained from other divine beings, not just Asclepius and his family. The goddess Athene also had the epithet ‘hygieia’. When an Athenian workman fell from a height while working on the gateway to the Acropolis in around 430 BCE, Athene appeared to the person responsible for the building project – the Athenian general Pericles – and told him how to treat the injured workman. When the workman recovered, he set up a statue of Athene Hygieia.

Activity 3

The English ‘hygiene’ comes from *hygieia*. In Latin, the main word for ‘health’ is *salus*, from which the word ‘salubrious’ is derived.

Does your language contain words that come from ancient Greek or Latin terms for health? What other similar words are there in your language, and what does this tell you about ideas of health? Use the internet or a dictionary to find out the origin of the word ‘health’ itself. Make a note of your findings here.

Provide your answer...

1.4 What is health? Ancient answers

What would people in the ancient world consider when thinking about whether they were healthy or not? As it is now, health was a matter of everyday conversation and, like us, the

ancient Greeks would drink to each other's health. Furthermore, Roman letters often began with 'I hope you are well' or ended with 'Take care of your health, as best you can'.



Figure 2 Galen and Hippocrates, fresco from Anagni, Italy

Here is Celsus, a first century CE Roman, writing about the distant past in the introduction to his *On Medicine*, part of an otherwise lost encyclopaedia:

It is probable that with no aids against bad health, none the less health was generally good because of good habits, which neither indolence nor luxury had vitiated: since it is these two which have afflicted the bodies of men, first in Greece, and later amongst us; and hence this complex Art of Medicine, not needed in former times, nor among other nations even now, scarcely protracts the lives of a few of us to the verge of old age.

(*Prooemium*, 4–5)

In other words, health in the past must have been good because lifestyles were better, and this is still the opinion of many.

Scholars disagree about whether Celsus was a doctor or a wealthy amateur but, as the head of a Roman household, he would in any case have been responsible for the health of his own family, slaves and animals. The first book of his section on medicine opens with: 'A man in health, who is both vigorous and his own master, should be under no obligatory rules, and have no need, either for a medical attendant [medicus], or for a rubber and anointer [iatrolipta].'(Celsus, *On Medicine* 1.1) This, Celsus explains, is because such a man should have enough variety in his life to have a balanced body. Balance was a key concept in ancient health, whether this was in terms of the different constituents of the body, the relationship between food and activity, or between the body

and its environment. Celsus said that a healthy person should move between town and country, and between exercise and rest, and will eat twice a day rather than once a day. The ancient doctor Galen, the most famous of all ancient medical writers, because of the amount he wrote and its later influence, worked in the second century CE. He wrote:

I see all men using the nouns *hygieia* and *nosos* thus ... For they consider the person in whom no activity of any part is impaired 'to be healthy', but someone in whom one of them is impaired 'to be sick'.

(On the Therapeutic Method, 22)

Nosos is the ancient Greek word for 'disease'. How far do you think Galen meant to go when writing 'any part'? If the activity of a leg is to walk, then a person can't be healthy if the leg can't walk. If the activity of a womb is to develop a foetus, then an infertile woman can't be healthy. But a leg is also used for balance; if you can stand up, but your walking is slightly impaired, are you then 'healthy'? A womb's functions include expelling blood from the body – women's flesh was thought to be more spongy than that of men, absorbing more fluid from their diet and needing to lose it regularly to maintain health – so if a woman was menstruating but had never conceived, was she 'healthy'? You will return to these questions later in the course.

1.5 Who is telling us this?

In a book on how to manage your household, Xenophon of Athens has a man called Ischomachus explain:

I begin by worshipping the gods, and try to conduct myself in such a way that in answer to my prayers I may have health and physical strength, esteem in the city, the affection of my friends, safety with honour in war, and wealth increased by honest means.

(Oikonomikos, 11.8)

Later he gives his opinion on how to stay healthy:

For if a man has plenty to eat, and works it off properly, I think he both insures his health and adds to his strength.

(Oikonomikos, 10.12)

Diet, which you will study in Week 3, was often seen as the key to health. In another work attributed to Xenophon, the philosopher Socrates asks Euthydemus whether he knows the difference between good things and evil things. Euthydemus concentrates on diet, answering:

Euthydemus: 'Well, that's a simple matter. First health in itself is, I suppose, a good, sickness an evil. Next the various causes of these two conditions—meat, drink, habits—are good or evil according as they promote health or sickness.

Socrates: 'Then health and sickness too must be good when their effect is good, and evil when it is evil.'

Euthydemus: 'But when can health possibly be the cause of evil, or sickness of good?'

Socrates: 'In many cases. For instance, a disastrous campaign or a fatal voyage: the able-bodied who go are lost, the weaklings who stay behind are saved'.

(*Memorabilia*, 4.2.31–32)

This suggests that health is not always a good thing, as at least the sick don't have to go into battle! You will return to the health of the army in Week 6.

Activity 4

Search for 'Xenophon of Athens' on the internet and find out details about his life and works. If you use Wikipedia, make sure you check the sources the article uses.

Do you think Xenophon is a reliable source for views on health in the ancient world?

Provide your answer...

Next you will look how health is defined today.

1.6 What is health? Modern definitions

Figure 3 shows an advertisement for a calcium preparation. Derived from lime, calcium was first isolated as an element in 1808. Its name comes from the word *ca/x*, which means 'lime' in Latin.

Calcium has important roles in health, for example in bones, nerves, heart contractions and blood clotting, although, of course, none of this was known in the ancient world. To take just one example, some people thought that bones were made from the father's sperm.



Figure 3 Advertisement for a calcium preparation

The ancient texts you have encountered so far in this course suggest that everyone knew and agreed on the meaning of 'health'. Today, however, there are competing definitions and different ideas on how to 'measure' health.

Still influential is a definition proposed by the World Health Organization (WHO) in 1948:

Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.

(World Health Organization, 2006)

This was offered as an alternative to an earlier definition: 'health is the absence of disease'. Key features of the 1948 version are:

- health is not simply 'not being ill'
- health is defined by positive, not negative, aspects

- health is not merely physical
- no ideal body weight, body mass index, blood pressure or cholesterol level is given.

When this definition was written in 1948, things were very different from today. The main health issue then was acute illness – a disease with an abrupt onset and, usually, a short course – but since then, standards of diet and hygiene have improved, and so have medical interventions.

These changes have led to a revised definition. In 2011 an international group of health experts proposed that the WHO definition was ‘no longer fit for purpose given the rise of chronic disease’ (Huber et al., 2011). They didn’t like the word ‘complete’ – who is ever completely healthy? Furthermore, just because test results show some abnormality, this doesn’t mean it will ever make you ill. They questioned how health is measured: what is important, how many years you live, or how fully you can take part in society until you die? Their suggested definition of health was ‘the ability to adapt and to self manage’.

1.7 Other definitions of health

What other definitions of health are there? Complete the research activity in Activity 5 now to find out.



Figure 4 Herbalists and scholars of medicinal lore ‘Herophilus and Erasistratus’

Activity 5

Go online and see what other definitions of health you can find, paying particular attention to their origins. Are they written by patients or doctors? Do they come from a background of mainstream or alternative medicine? Are they produced by people from a particular branch of medicine? Are they trying to sell a product?

Select one definition. Could the definition you found be applied to ancient Greece or Rome?

Provide your answer...

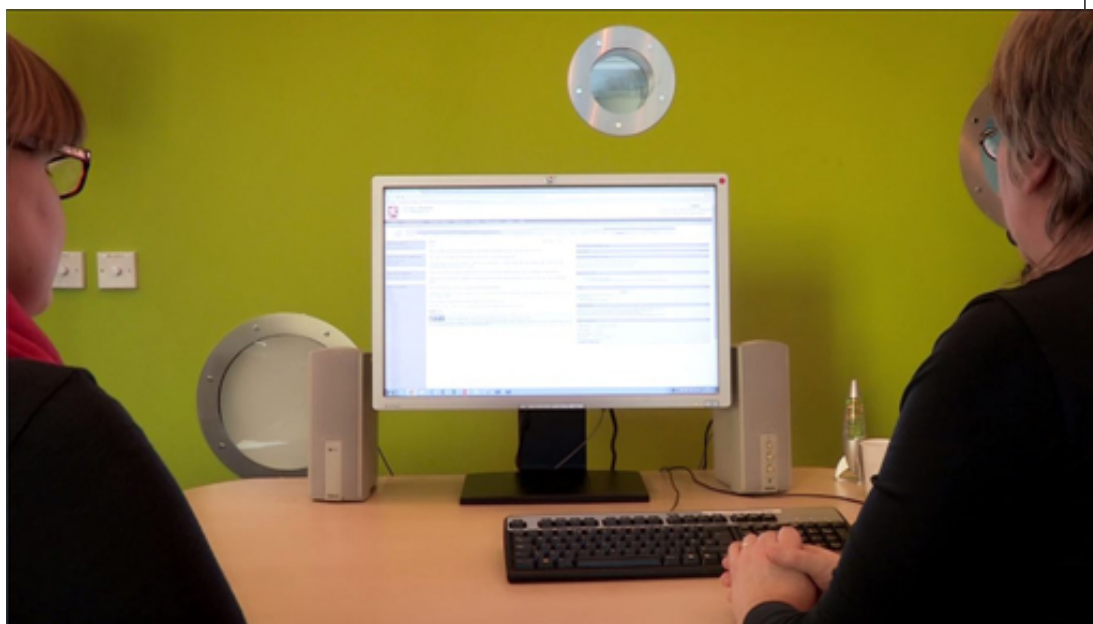
2 Hearing ancient voices

There are many online resources for finding material on health in the ancient world. For example, the Perseus Project is a digital library and currently the fullest open access database of ancient Greek and Latin texts. You will explore this site in detail before considering some important issues in interpreting what you find, whether textual or archaeological.

First watch Video 4 which walks you through how to use the Perseus Project.

Video content is not available in this format.

Video 4 The Perseus Project



Now complete your own search on the Perseus website in Activity 6.

Activity 6

Follow the steps below to familiarise yourself with how to use the Perseus website.

- Visit the [Perseus website](http://www.perseus.tufts.edu/).
- Type 'Xenophon' into the search box in the top-right corner of the screen. You'll be given a full list of all the treatises by Xenophon currently held, in both Greek and English. One of these is *Memorabilia*, from which you read a short extract in the section 'What is health? Ancient answers'. You also learned more about Xenophon himself in Section 1.5.
- In the list on Perseus, click on the English translation of *Memorabilia*.
- The section you read was *Memorabilia*, 4.2.31–32; this means Book 4, Chapter 2, Sections 31–32. On the left of the screen you can see the books and chapters; click on Book 4, Chapter 2 and then scroll down to Section 31. Click on this and

you will find the beginning of the passage you have already read. Click on Section 32, or use the left and right arrows above the passage to find the rest.

- Use the further search facility, which works within the source you are currently reading. In the white box on the right of the screen, type in 'health' and you will be taken to one other passage in *Memorabilia* which uses this word.
- Click on the reference – 'Book 1, Chapter 2' – to see the phrase in context. What does this tell you about Socrates' view of health?

Provide your answer...

Comment

Remember, searching in this way depends on the choices the translator used. If he or she translated the Greek *hygieia* not as 'health' but as 'wellbeing', for example, it won't come up unless you search for that word. The English translation given here is from 1921; would you expect 'wellbeing' to be used at this time?

If you can read Greek, then look at the original text of this chapter by clicking on 'focus' under 'Greek (1921)' on the list of further material to the top right of the English translation. In the Greek text, the word used is the adjective ὑγιεινός (*hygieinos*) meaning 'good for the health'.

2.1 Literal or not? The role of genre

The range of material available when studying health in ancient societies is very wide. As you've already seen, it includes poetry and other forms of literature, but also texts written by doctors. In addition to literary evidence, there are also objects associated with health, and the physical remains – bones – of people who lived in the ancient world. You'll be looking at these in more detail in future weeks.



Wellcome Images

Figure 5 Doctor reading a scroll

One of the dangers of ancient source material is that it's all too easy to take a text out of context. You need to be aware of who wrote it, when it was written, who the intended audience may have been, and the conventions of the genre in which it was written. Medical texts appear to be written for other doctors, but in the section 'What is health? Ancient answers', you encountered Celsus, who wrote on medicine but for a general audience of elite Romans.

When reading Galen, in particular, you also need to be aware that he likes to promote his own skills, so he presents other doctors as nowhere near as clever as he was. Things may have looked rather different from their point of view!

As you have seen in the sections 'Health and the gods', 'What is health? Ancient answers' and 'Who is telling us this?', poets and historians are also sources for ideas about health and illness. However, it can take some effort to work out how seriously to take what they say. For example, in Lucian's *Timon* you read that gold is very good at stopping bleeding, but this isn't meant to be taken literally – Gnathon has been hit by Timon but is suggesting

some money would make him feel a lot better about this. If you search for information on Lucian, you will find that his writings are satirical and intended to amuse. Lucian wrote at a similar time to the great doctor Galen.

Activity 7

Read the two epigrams from first century CE satirical writer, Martial, below then answer the questions that follow.

Until recently, Diaulus was a doctor; now he is an undertaker. He is still doing as an undertaker what he used to do as a doctor.

(Epigrams, 1.47)

You are now a gladiator, although until recently you were an ophthalmologist. You did the same thing as a doctor that you do now as a gladiator.

(Epigrams, 8.74)

There is some genuine unease being expressed here about doctors being bad for your health – after all, they were advocating drugs which could be poisonous – but this is used for humorous purposes. How do you react to the medical profession? Do jokes about doctors told today show similar fears to those expressed by Martial?

Provide your answer...

You'll return to doctors and their attempts to restore health later in the course. Next, however, you'll think about another approach common in ancient Greece and Rome – magic – and how separating 'textual' sources from 'material culture' may be problematic.

2.2 Lead curse tablets

In Ancient Greece and Rome, magic was used to protect people from bad health as well as to inflict illness on your enemies, as in the case of [one lead curse tablet](#) which wants the targeted person to wrestle with fevers, possibly malaria.

In the following video, Dr Patty Baker speaks to Adam Parker, a museum curator and PhD student at The Open University, about how these curse tablets were used in the ancient world. Like medicine, cursing used material objects to create its effects, but here the purpose was to cause harm rather than to heal. In creating a curse tablet, not only the material but also the words are important, as is the action of piercing the tablet.

Video content is not available in this format.

Video 5 [Lead curse tablets](#)

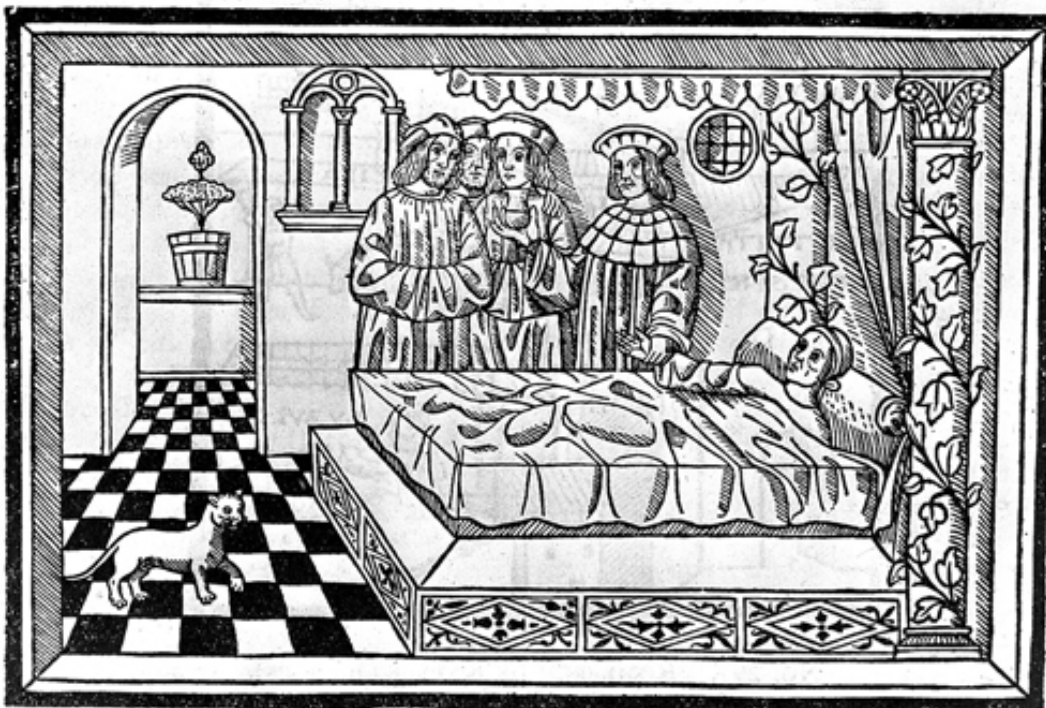


Next you'll return to looking at pulse and what it can help detect.

3 Keeping your finger on the pulse

Taking the pulse is a very familiar part of modern Western medicine, but it's also found in Eastern medicine, to the point that the hand on the wrist would become the mark of a doctor. Measuring the pulse was important in the ancient world too, but for different reasons.

You took your own pulse earlier, and here you will explore the different meanings that can be given to it. You will also encounter a disease of the past: lovesickness, which was briefly mentioned in Video 3.



No. 300. SILVATICUS (Matth.).

Figure 6 A physician at his patient's bedside, taking his pulse and examining urine

The interest in the pulse goes back to Praxagoras of Cos in the fourth century BCE, but it is also mentioned in Egyptian medical papyri. The Papyrus Ebers states that it is possible to feel the heart by touching any limb, because vessels go out from the heart to the whole body. But the ancient pulse was about quality more than quantity. When ancient Greeks and Romans felt the pulse, they were sensitive to many aspects no longer considered: size, frequency, strength, speed, fullness, order, equality and rhythm.

Galen wrote many books on the pulse and gave it a key role in prognosis because it showed how much vital force there was in the body. He even said he had diagnosed an intestinal tumour from measuring the pulse alone. He knew it was the arteries that moved, but he believed that these carried 'air' (*aer*), or 'breath' (*pneuma*), and he wondered if the movement he felt came from the arteries themselves or from the air in them. Most of his surviving treatises on the pulse were written in the 170s CE, where he recorded vivid descriptions, such as the 'ant-like' pulse and the 'wave-like', 'worm-like', or 'mouse-tailed' pulse; a 'goat's pulse' is a short beat and then a stronger one. In Chinese medicine,

similar distinctions are still made; for example the ‘unravelling’, ‘clay ball’, ‘soup fat’, or ‘darting shrimp’ pulse.

However, the awareness of the subtle differences in pulse was not something that could be learned simply by taking a watch or clock and counting; it had to be taught person-to-person. The focus on quality rather than quantity may therefore reveal something about knowledge and power. As a patient, you can’t easily know all these variations for yourself. Indeed, Galen claimed that not all doctors knew what they were doing either:

They consider a pulse that is not large to be large, or sometimes one that is not swift to be swift, or one that is not slow to be slow.

(Galen, *On Prognosis*, 14)



Figure 7 A Japanese netsuke of doctor and patient. Netsuke are ornaments from which to attach objects, such as medicine boxes or tobacco pouches, on the sash of a kimono (a traditional form of Japanese dress)

Activity 8

Measure your pulse again and this time concentrate on what animal it most resembles! Make a note of what you think below.

Provide your answer...

3.1 Rich and poor?

In Figure 8 you can see that, historically, there have been concerns about whether doctors are just out to make money. The ritual of measuring the pulse is used here to symbolise what the doctor does. In the companion image to this one, a doctor tells a healthy rich person that he needs treatment! But this is not only a modern concern. The Roman writer Pliny the Elder mentions the income of some famous doctors:

Erasistratus, a son of the daughter of Aristotle: for curing King Antiochus he received a hundred talents from King Ptolemy, his son ... men like Cassius, Calpetanus, Arruntius and Rubrius: two hundred and fifty thousand sesterces were their annual incomes from the Emperors.

(Natural History, 29.5–7)



Figure 8 A rich physician feels the pulse of a poor, sick patient, telling him he is fine

However, Galen – despite eventually becoming a doctor to the emperor – also knew about what peasants ate and drank, from meeting them on his extensive travels. He wrote that they would forage for blackberries and acorns, and store them in pits so that they could use them over the winter. If boiled and then baked, or ground up to make soup, acorns could be highly nutritious, Galen believed. He said that he had himself treated peasants for injuries, although he treated these with urine or excrement – materials he would not have used so readily for rich patients. He also treated domestic servants – who, like farm animals, were regarded as the master's 'property' – and, in just three cases, slaves. He

did not always charge fees, because he believed that a doctor should treat both rich and poor.

Galen was unusual, however. The suspicion that some doctors were charging whatever they thought the patient was wealthy enough, or desperate enough, to afford meant that some ancient writers argued that doctors were not really necessary at all. Self-help was the best medicine, they believed, and this line of thought has continued across history.

3.2 Galen and Marcus Aurelius

There is no detailed information on the wealth of the great Galen himself, but his own background was certainly a wealthy one. He was born in 129 CE in Pergamum, in what is now Turkey. His father, a wealthy architect, took very seriously a dream in which Galen became a doctor. He believed the dream was sent by Asclepius.

With his father's wealth, Galen was able to travel widely across the Mediterranean area as a student. He brought together ideas from the Hippocratic medicine of classical Greece with the philosophy of Plato and Aristotle to create an original synthesis which would dominate late antique, medieval and early modern Western medicine. He took from Aristotle the idea that nature does nothing in vain, and from Plato the idea of three organs, each being in charge of one aspect of the body's functions. The brain controlled the nerves; from the heart the arteries took one kind of blood to the rest of the body; and from the liver the veins carried nourishment to other parts of the body.



Figure 9 Marcus Aurelius being treated by Galen

Galen's first post was as a doctor to the gladiators in Pergamum. From this, he moved to Rome and impressed the city's elite so much that he became one of the doctors to the

imperial family. Here is one ancient story about the pulse, which comes from Galen's very first meeting with the emperor, Marcus Aurelius:

Three doctors had already examined him at dawn and at the eighth hour; they had taken his pulse; and they agreed that this was apparently the opening of an attack of an illness. When I stood by in silence, the emperor looked at me and asked why, when the others had taken his pulse, I alone had not done so. I replied that since they had already done so twice and the peculiarities of his pulse were probably known to them through their experiences on their travels abroad with him, I expected that they could obtain a better diagnosis of his present condition than I. On hearing this, he commanded me to take his pulse. It seemed to me that his pulse, compared with the general norm for each age and constitution, was far from showing the onset of an attack of an illness, and so I said that there was no attack of fever, but his stomach was overloaded with the food he had taken, which had turned to phlegm before excretion, and that this was now quite clear.

(Galen, *Prognosis* 2)

Galen suggests here that a doctor should know what is normal to the patient, in health, in order to detect any variations. But he also has a view on what is 'generally' normal, and suggests that the problem here is that the emperor has simply eaten too much.

Marcus Aurelius had already been examined by three doctors before Galen arrived. Competition at the patient's bedside, which you see here, is a key feature of ancient medicine (it was the inspiration for the Asterix and Obelix scenes in *Asterix in Switzerland* and *Asterix and the Magic Carpet* where doctors compete at the bedside). Where the patient was a ruler, the competition was even more intense, because the potential benefits of success were even higher.

Next you'll meet another royal employer, King Seleucus of Syria, who called in a doctor when his son, Antiochus, had a mystery illness.

3.3 The pulse of love

Whether you classify a pulse by numbers or by 'feel', what does it mean for your health? Professor Helen King and Dr Laurence Totelin discuss how the pulse was used in the ancient world to diagnose the disease of 'lovesickness' and how the ability to detect this became a mark of a great doctor.

One of the doctors who used this ability to enhance his reputation was Galen in the second century CE. He wrote his own account of his diagnosis of the wife of Justus.

Read pages 95 and 101–103 of the following link to Galen's account then watch Video 6: http://galen.bbaw.de/epubl/online/cmg_05_08_01.php. (Note, you can reach these pages most easily by typing page numbers into the box on the right of the word 'Seite' (page) and then clicking OK).

Video content is not available in this format.

Video 6 The pulse of love



3.4 Knowing what's normal

Celsus, who as you've seen wrote in the first century CE for an audience of educated Romans rather than for doctors, stated that: 'But above all things everyone should be acquainted with the nature of his own body' (*On Medicine*, book 1, ch. 3).

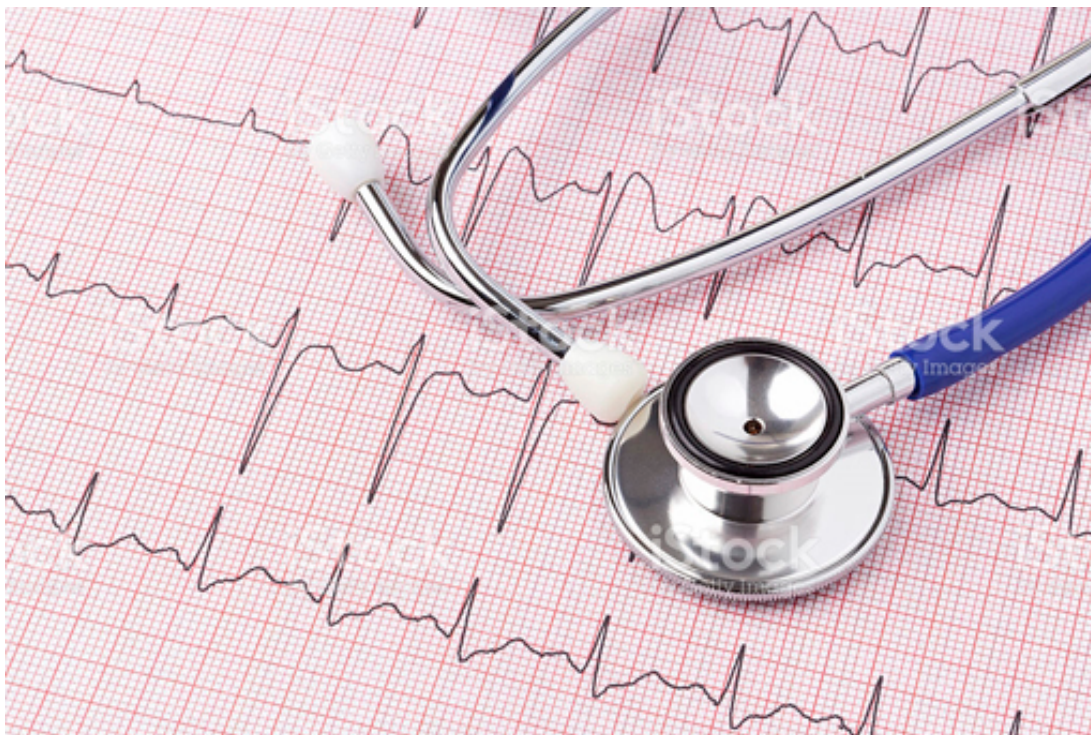


Figure 10 Stethoscope and cardiogram print-out

When Galen first met the emperor Marcus Aurelius, he emphasised that the normal state of the body should be understood in order to know what counts as 'health' for that

individual. But do some features of the body, such as the pulse, always count as 'healthy' or 'diseased' regardless of the person in whom they occur? How far is health measured against a standard, or an ideal, and how far does it depend on what counts as healthy for a particular individual?

For example, missing pulse beats or having extra beats are today considered as something which can happen without the person being ill, but it can also be a sign of a more serious condition. Back in the second century CE, Galen had already argued that it could be one's natural condition to miss pulse beats. In one example, a patient was a young man working as a steward and other doctors had noticed his pulse was missing beats. Galen, however, decided it was entirely normal for this young man (*On Prognosis*, 14).

This raises questions about who defined 'normal': who were the gatekeepers of health? For rich people the doctor could be a sort of personal trainer, working closely with them on all aspects of their diet, exercise, sleep patterns and so on – what Galen called the 'non-naturals' – and he would know their 'normal state'. But poorer people would not have access to this level of care.

Instead, other ways of deciding on what was 'normal' were used. For example:

- The belief that ageing happened in periods of seven years, so that things were normal for one age group but not for others.
- Beliefs about the way that age group, temperament and climate interacted (e.g. what was normal for an old person dominated by yellow bile and living in a warm climate).
- The idea of one of the 'four humours' – blood, phlegm, yellow bile and black bile – dominating a person's body and being their personal 'normal'.

Were those with physical abnormalities defined as 'healthy', even if they were not considered to be 'normal'? In Figure 11, a small container (called an aryballos, a flask with a globular body and narrow neck) from the fifth century BCE appears to show a doctor's waiting room, with the doctor himself performing bloodletting on one patient.



Figure 11 Decoration on an aryballos, representing a doctor's surgery

One of the patients in the queue appears to have a growth disorder, perhaps achondroplasia, and is carrying a hare. Is this his fee for the doctor, or is he a servant or slave of one of the other patients? People with growth disorders could be servants, or craftsmen – even the god Hephaistos was represented as lame.

3.5 The importance of location



Figure 12 Hippocrates' *Aphorismi* manuscript

In the next activity, you will look at the work of Hippocrates to think about diet.

Activity 9

Return to the Perseus Project [here](#) and find the list of works attributed to Hippocrates. Select 'Hippocrates Collected Works I (English)' and go to the treatise *Airs Waters Places*. Select 'Part 1' and read what it says about the importance of the location of a town and the way of life of those who live there.

What does this tell you about ancient diet?

Provide your answer...

You will return to diet in Week 3.

4 This week's quiz

Check what you have learned this week by taking the end-of-week quiz.

[Week 1 quiz](#)

Open the quiz in a new tab or window and come back here when you are done.

Summary

Today there are many possibilities for monitoring your own health. In English, one of the most common greetings is still, 'How are you?' This isn't an invitation to list one's physical and mental ailments, but it suggests that when you meet others you do have an idea of what 'health' looks like. So, can you tell just by looking at someone whether or not they are healthy? Identify what you think is the key feature of health in terms of outward appearance.



Figure 13 A clay-backed face, Roman votive offering

This week you've been introduced to ideas of what we may mean by 'health' and what counted as 'being healthy' for the ancient Greeks and Romans. You have also started to explore the primary sources that can be used to study this material, both literary and material, and to consider the role of genre here.

Next week you will be looking at the appearance of the healthy body, and specifically the face.

Week 2: Health and identity: the face and eyes

Introduction

How was vision understood in the ancient world? How well could people see, and how were problems with the eyes treated? In Week 2 of this course, you'll look at how colour was used, and why ordinary people feared the Evil Eye.

To start the week, Helen King and Mathijs Lucassen discuss the role of the face in giving you your identity. How do you decide by looking at someone whether they are healthy or not?

Video content is not available in this format.

Video 1 Here's looking at you



Your body gives you your identity in many ways: other people make assumptions about you based in particular on your face and eyes, and assess your age, race and gender mainly from this first impression. For most people, making eye contact is very important in social relationships and many cultures regard its absence as disturbing.

This week, you'll think about how people in the ancient world reacted to the face and altered its appearance. You'll look at evidence of attempts to enhance or mimic a healthy

appearance, and consider whether some of the substances used may have damaged the health of those using them. For example, white lead was used to make the skin look pale because this suggested that a woman hadn't needed to work outside but was rich enough to stay inside her home. You'll also think about how modern scholars use facial reconstruction to reconstruct faces from skulls, and consider how this helps people today to feel a direct link to the remains of antiquity.

1 Vision in ancient times

How was vision understood in the ancient world? How well could people see, and how were problems with the eyes treated?

In this section you'll think about the eyes – how vision was thought to work, and what impairments of vision were experienced by people in ancient Greece and Rome. You'll also look at how colour was used, and why ordinary people feared the Evil Eye.



Figure 1 Part of a female face with inlaid eyes

Activity 1

Do you know, or can you find, any stories about visual impairments in ancient Greece or Rome, either in myth or in reality?

Provide your answer...

1.1 How do you see?

Within the face, the eyes are traditionally thought to be the ‘windows of the soul’, and this phrase goes back to the Roman orator and politician, Cicero. He thought of the senses as the five ‘messengers’ of the soul, taking information to the soul, but only if the soul was able to interpret the information:

We do not even now distinguish with our eyes the things we see; for there is no perception in the body, but, as is taught not only by natural philosophers but also by the experts of medicine, who have seen the proofs openly disclosed, there are, as it were, passages bored from the seat of the soul to eye and ear and nose. Often, therefore, we are hindered by absorption in thought or by some attack of sickness, and though eyes and ears are open and uninjured, we neither see nor hear, so that it can be readily understood that it is the soul which both sees and hears, and not those parts of us which serve as windows to the soul, and yet the mind can perceive nothing through them, unless it is active and attentive. What of the fact that by using the same mind we have perception of things so utterly unlike as colour, taste, heat, smell, sound? These the soul would never have ascertained by its five messengers, unless it had been sole court of appeal and only judge of everything.

(Tusculan Disputations, 1.20)

The main theory of sight in the ancient world is called the ‘extramission’ theory. Many Greeks and Romans believed that the eyes sent out (the meaning of ‘extramit’) light towards the object the person was observing. More specifically, the pre-Socratics – philosophers who lived in the sixth and fifth centuries, a generation or so before Socrates (c. 470–399 BCE) – mainly believed that the eyes emitted fire, like the rays of the sun. The rays (or fire) mingled with the object viewed and were reflected in the pools of water surrounding the eyes.

Another, less popular, theory was that of ‘intromission’, in which objects sent out little images of themselves which went into the eye of the viewer. The philosopher Democritus (c. 460–370 BCE) argued that all objects gave off ‘effluences’, which was a thin replication of the object made of atoms that moved from the object into the eyes. In this way, vision was seen as rather like touch, but not so effective because the back of the object couldn’t be reached so easily.

Today most people wear contact lenses or reading glasses in addition to us having good lighting to help us to see. In the ancient world, there was clearly concern about poor eyesight, described as ‘cloudy’. One way this is known is that collyrium stamps, used to mark a symbol or the maker’s name on a substance used to make eyewashes, sometimes had an inscription on them to indicate that the medicine they used to ‘stamp’ was used for clarity of vision. One such medicine was *cycnum* or *cycnon*. This word is tied to the word *cygnet*, and, recalling the whiteness of a swan, meant ‘brightness’, which could cure the cloudiness of poor eyesight. One of these stamps was also decorated with a radiate sun, which may also indicate brightness. You’ll look at cures for eye disease later this week, and also see one of these collyria being made.



Figure 2 Oculist's stamp from Roman Britain, first to fourth century CE

Blindness affected people in the ancient world. In one of Aristophanes' comedies written in the fifth century BCE, *Wealth*, the god of wealth, Ploutos, is presented as being blind and seeking healing in the temple of Asclepius (who you learned about in Health and the gods in Week 1).

Poor sight, however, was not necessarily an issue. In the Week 1 section What is health? Modern definitions, you thought about defining health in terms of the absence of disease, complete wellbeing, or the ability to self-manage. However, what you needed to be able to see in the ancient world was very different from today's dominance of the written word. To some extent, things would depend on your profession; for example, the Roman writer Celsus (7, *Prooemium* 4) notes that a surgeon needed 'sharp and clear' vision.

People could also be interested in magnifying what they saw. Seneca (*Natural Questions*, 1.6.5) describes how, if you look at something through a glass ball filled with water, it appears larger. There is no evidence that lenses, as in our spectacles, were used in the

ancient world, even though some of the very fine detail on ancient objects, for instance carvings on gems used for rings, may suggest that lenses were being used by specialist craftsmen. Pliny the Elder (*Natural History*, 29.132 and 37.62–64) says that *smaragdi* (emeralds and possibly other green stones) and green scarab beetles were restorative for tired eyes and used by gem carvers to restore their vision.

A papyrus fragment from Egypt (*P.Oxy.* 1.39) hints that some form of vision test might have existed in the ancient world. The fragment dates to the first century, and reads:

*C]. Minicius Italus to Celanus, Greetings
... Copy of a release dated and signed in the 12th year of Tiberius Claudius
Caesar Augustus Germanicus Imperator, Pharmouthi
Discharged by Gnaeus Valerius Capito, praefect of upper and lower Egypt, to
Tryphon, son of Dionysus, weaver, with weak sight owing to a cataract
Of the metropolis of Oxyrhynchus.
The examination was conducted in Alexandria
The examination was conducted in Alexandria
The examination was conducted in Alexandria*

Scholars disagree about whether Dionysus was a soldier or a civilian and if the discharge was actually because of poor eyesight. The letter implies that people were examined for problems concerning vision. Do you think this would be a routine procedure, or only when a problem was noticed?

1.2 The Evil Eye

Another side of the theory of extramission led to the belief in the 'Evil Eye': simply by looking at you for a little bit too long, an enemy could harm you.

The Evil Eye was particularly associated with envy; the eyes drew this envy from the soul and then sent it out to another person. There was even a risk of looking at one's reflection and 'evil-eyeing' oneself! One way to avert the Evil Eye was to wear an image of an eye, or have one painted on a wall or boat, which was believed to send out powers which prevented evil from striking. The Evil Eye has many enemies: images which are particularly effective at distracting or deflecting it, which may be represented in Roman art surrounding or attacking the Eye.



Figure 3 Roman mosaic from Antiochia, House of the Evil Eye, c. second century CE

In Figure 3 you can see the enemies of the Evil Eye – the ways of stopping its malign influence – which include animals like the raven, cheetah, scorpion or centipede, and objects like swords, tridents and arrows, as well as powerful or protective images like the phallus. Perhaps the most common method of all to avoid the effects of the Evil Eye was to call on the Roman god Fascinus, represented as a phallus. The phallus image was carved into doors, floors and walls, hung from wind-chimes, and worn as a necklace or ring. It was used by both adults and children, but children were thought to need extra protection. In the section [Making collyria](#) you will see one being worn by Dr Laurence Totelin as she makes up a Roman remedy. Another way to avoid the danger of the Evil Eye was to spit.

This was only one of the magical aspects of preserving one's own health and damaging that of others: you will encounter others later in this course. The belief in the Evil Eye still persists in many cultures today, and you may like to carry out a search on the internet to find an image of one.

1.3 Hearing in colours

Today, colour blindness is a recognised condition, most commonly meaning that a person can't distinguish between green and red. It's normally present from birth and affects men more than women. This may be a problem in certain modern professions; for example, airline pilot, driver or electrician. But have people always seen colours in the same way? For example, in ancient Greece the colour *chloros* – the colour you are said to go when

suffering from lovesickness – is sometimes translated as yellow, sometimes as green. Why do you think this is? Ancient wine is sometimes described in medical texts as ‘orange’, while Homer’s poetry famously refers to the ‘wine-dark’ sea. So are we seeing the same things?

Listen to Audio 1 in which Helen speaks to psychologist (and OU PhD student) John Harrison about colour perception and synaesthesia.

Audio content is not available in this format.

Audio 1 Hearing in colours

1.4 The colours of the past

When you look at the physical remains of the ancient Greek and Roman worlds today, the first material that comes to mind may be stone, and the first colour white. The statue in Figure 4, in its bright colours, may be very surprising. But such reconstructions are based on good evidence from the traces of colour which remain even today.



Figure 4 Replica of a Trojan archer from the Temple of Aphaia, Aegin

Figure 5 shows another statue called the Peplos Kore: *koré* is the Greek word for a ‘young woman’, and a *peplos* is the garment she is wearing. The original statue still shows traces of the paint used to make her look beautiful, from which it is possible to tell that she used to be coloured very brightly. Eyes on ancient statues were often inlaid, and for this Kore her eyes were found separately.



Figure 5 The Peplos Kore

Activity 2

Search online for images of the Peplos Kore, which show how she would originally have looked. What is your reaction to these reconstructions? Had you seen anything like this before, and if so, where? What can you find out about the process which ensures that modern scholars can be confident the colours are correct?

Provide your answer...

1.5 Gifts for the gods: votive offerings

Why were images of parts of the body dedicated to the gods? In Video 2, Helen King talks to Dr Jessica Hughes of The Open University about how these dedications were used to preserve or encourage health.

Video content is not available in this format.

Video 2 Gifts for the gods: votive offerings



Different amounts of body parts were found in different healing sanctuaries. In Athens, at the sanctuary of Asclepius, 40 per cent (154 objects) were eyes, while in Corinth limbs were more common. But did they only concern physical conditions or did they have a more complex meaning?

1.6 Votive eyes

In this audio, Helen and Jessica discuss the dedication of eyes to the gods.

Video content is not available in this format.

Video 3 Votive eyes



Activity 3

Having listened to Helen King and Jessica Hughes discuss votives in Videos 2 and 3, you should now complete an online search to find another ancient votive. Write a brief summary below of what you have found, describing the image and explaining where and when it was found.

Provide your answer...

2 Healing the eyes

In this section, you will investigate in more detail what was done for eye disease, particularly in the Roman world, looking at both salves and surgery.



Figure 6 Doctor examining the eye of a patient

2.1 Curing eye disease

Vindolanda, on Hadrian's Wall, is famous for the Vindolanda Tablets; thin pieces of wood on which people wrote letters in ink and then folded the pieces in half. Their survival means that it is still possible to read the personal correspondence and official reports written by soldiers and their families.

One of the tablets does something no other comparable document does: it not only lists but also classifies the soldiers who were considered unfit for service. Of nearly 300 soldiers, over 10 per cent were classed as unfit, and these were divided into the wounded (*uulnerati*), the ill (*aegri*), and those with eye disease. The Latin word for those with this last condition is *lippientes*, which relates to the word *lippitudo* meaning 'inflammation'. It's striking that people with inflamed eyes were seen as a separate category of the sick.

Eye disease may have been the most common condition in the Roman world. Further evidence of this comes from the collyrium stamps, which are found in many parts of the north-western Roman Empire. They were also used as amulets and votive offerings. Most of them are green, made, for example, of steatite, with green being a colour associated with eye care. Some are decorated with magical symbols. Most come from Gaul, and so it may be significant that the Vindolanda tablet which mentions *lippientes* is for an auxiliary unit which came to Hadrian's Wall from Gaul (Tungria). Was this because the people of Gaul were particularly concerned with their eyes, or were they for some reason more likely to suffer from eye disease?

The stamps were used to mark strips of aromatic substances mixed with something to make them hold together. Pieces could be torn off and mixed in water before being applied to the eye. There is literary evidence of them being used. For example, in Lucian's *Lexiphanes*, 4, one speaker says:

My sight is weakened, I am constantly blinking, my eyes are watering: I need an eye salve. I need a disciple of Asclepius, some oculist to make up a remedy to take away the redness from my eyes, clear their blariness and stop their running.

(Lucian, *Lexiphanes*, 4)

As with other forms of medicine, the ancient Greeks and Romans described how the idea for using these remedies came from the animal kingdom:

When hawks have eye trouble they immediately find some crumbling stone wall and dig up the wild lettuce that grows along it, then hold it above their eyes while the bitter juice runs into them. This restores their vision. Doctors, I hear, also use this remedy on patients who are having eye trouble, and the remedy takes its name from the bird, 'hawk medicine'.

(Aelian, *On Animals*, 2.43)

The *hieracion* (or *hieracium*) plant, used in eye salves, is still known as 'hawkweed'. Some eye salves, however, were so strong they made your eyes water (Lucian, *The Passing of Peregrinus*, 45); making the patient cry was seen as part of the treatment. One salve was even known as 'the thankless', and Galen described it as effective against eyes running with tears, perhaps because it would make the condition worse before making it better!

2.2 Making collyria

Collyria are very common in the ancient world. They were coloured ointments, often green, used to treat the eyes, and stamped with the mark of their maker.

In Video 4, Laurence Totelin shows how one of these ointments – white collyrium – was made and used.

Video content is not available in this format.

Video 4 Making collyria



2.3 Cataract surgery

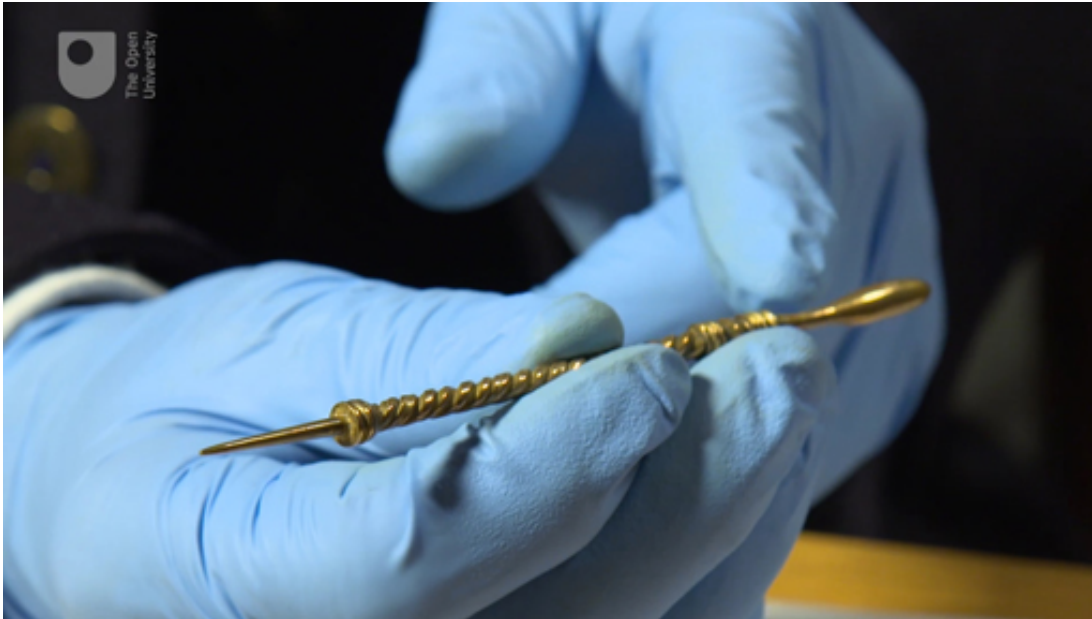
Treatment for eye diseases in the ancient world went far beyond ointments. In particular, cataract surgery was carried out. It is described by Celsus (*On Medicine*, 7.13–15), who says it was a delicate procedure.

The patient would sit opposite the doctor and the patient's head would be held by the doctor's assistant. As is also the case today, the good eye was covered, so the patient would not have full vision of the procedure. Celsus warns his readers that any movement could cause the doctor to slip and thus cause damage to the eye. A thin needle was stuck into the eye and cataract, and the cataract was slowly and carefully moved below the pupil. If the cataract did not stay below the pupil, Celsus suggested that it be cut up by the needle into smaller parts and each part could then be moved below the pupil. This would help restore vision.

In this video, Ralph Jackson of the British Museum shows Dr Patty Baker of the University of Kent the instruments used by the Romans for eye surgery, and demonstrates how cataract operations would have been carried out.

Video content is not available in this format.

Video 5 Cataract surgery



3 Modifying the body

In the ancient world, as today, cosmetics could make you look healthier, and in this section of the course you will explore attitudes to these. You'll also see what a facial reconstruction from an ancient skull can reveal about a person's life and death, and how it can help you to connect with people from another era.

3.1 A good complexion

Many remedies for facial imperfections exist in medical and other literature from the ancient world. For example, Pliny the Elder's *Natural History* (20.4.9–10) includes the following list of the benefits of the 'squirting cucumber':

Elatarium promotes menstruation but causes abortion when taken by women with child. It is good for asthma and also for jaundice when injected into the nostrils. Smeared in the sunshine on the face, it removes freckles and spots.



Figure 7 A scallop shell with make-up remnants

Both Greek and Roman writers who discuss their own societies tend to associate the use of face paints, false hair and hair dye mostly with prostitutes. But the texts are part of a long anti-cosmetic tradition, which present 'respectable' women who use them as likely to be unfaithful. In the extended passage that follows, from a treatise by Xenophon, Socrates and Critinus talk about how best to manage your estate or household: the ancient Greek word is *oikos*, from which 'economy' comes from. In the course of their discussion, Socrates recounts a conversation he once had with Ischomachus, a '*kalos te kagathos anêr*', literally a 'beautiful and good man' and normally translated 'true gentleman'. He

married his wife when she was 14, and trained her up as a wife so that she could manage the household without him. Ischomachus notices one day that:

her face was made up: she had rubbed in a lot of white lead in order to look even whiter than she is, and alkanet juice to make her cheeks rosier than they truly were.

(Xenophon, *Oeconomicus*, 10.2)

Alkanet is a red dye made from a plant. White lead is toxic, so this attempt to give a healthy appearance would be potentially very dangerous, particularly if the lead penetrated thinner skin, such as the area around the eyes. Ischomachus, according to Socrates, tried to stop his wife using cosmetics:

please assume, wife, that I do not prefer white paint and alkanet dye to your real color; but just as the gods have made horses delight in horses, cattle in cattle, sheep in sheep, so human beings find the human body undisguised most delightful. ... people who live together are bound to be found out if they try to deceive one another ... when they're just out of bed and not yet dressed, or they perspire and are lost, or a tear convicts them, or the bath reveals them as they truly are!

(Xenophon, *Oeconomicus*, 10.7-9)

He went on to describe his young wife's obedience to his request:

Wouldn't you know, she gave up such practices from that day forward, and tried to let me see her unadorned and as she should be. Still, she did ask whether I could advise her on one point: how she might make herself really beautiful instead of merely seeming to be ... it was excellent exercise to mix flour and knead dough; and to shake and fold clothing and linens; such exercise would give her a better appetite, improve her health, and add natural colour to her complexion.

(Xenophon, *Oeconomicus*, 10.9-11)

So, housework, conveniently, provides the exercise to ensure health!

Even more distaste for cosmetics comes across in a dialogue about love from the fourth century CE, Pseudo-Lucian, *Amores (Affairs of the Heart 39–41)* (the text used to be attributed to the second century CE writer Lucian but seems to have been written rather later than this). The speaker says that women are particularly ugly in the morning, and it's better not to see them then:

They're surrounded by old women and a throng of maids as ugly as themselves who doctor their ill-favoured faces with an assortment of medicaments. ... numerous concoctions of scented powders are used to brighten up their unattractive complexions.

The speaker goes on to talk about using rouge, yellow hair dye, curling tongs, tight shoes and heavy jewellery which cuts into women's skin. In the period of the Roman Empire, writers equated women's use of perfumes from all over the empire with the sort of luxury practices which were opposed to traditional Roman ideals of simplicity (Pliny the Elder, *Natural History*, 12.84).

There is some evidence for the reality of ancient cosmetics. For example, in 2003, a small tin container from the second century CE was found in a dig in Tabard Square, London. It contained what has been identified as a cosmetic face cream. Richard Evershed of Bristol University analysed the ingredients and found that, instead of lead, it achieved the white effect through tin oxide. The tin would have probably come from Cornwall, and the fat in it was from cattle. The other main ingredient was starch, perhaps from boiling roots. The initial effect is greasy, but then the starch leaves an overall 'powdery' texture.

Men's personal care also came under some attack in antiquity. The Romans believed that washing, cutting one's hair and how one walked and dressed were all part of what sets humans apart from animals. But how far should a man go? In his *Art of Love*, Ovid includes dealing with nostril hair and clipping nails as acceptable for men (1.505–514).

3.2 Facial reconstruction

In 1977, the skeleton of a man aged between 35 and 55 was discovered at Vergina in Greece in what is now known as 'Tomb I'. The grave goods showed this was a wealthy person, as they included a gilded silver diadem, a helmet, a ceremonial shield and a cuirass (a type of armour). Two small ivory portrait heads were also discovered. Could this be the grave of Philip II, the father of Alexander the Great?

A team consisting of Jonathan Musgrave (anatomist), John Prag (archaeologist) and Richard Neave (medical illustrator) argued that it was. They used a literary source describing the injuries Philip sustained, including an arrow entering his right eye. A groove and a bump in the eye socket, they argued, showed that this skeleton had suffered such an injury and had subsequently healed.



Figure 8 Facial reconstruction of Philip of Macedon

However, the grave goods have now been dated to around 317 BCE, a generation after Philip was assassinated in 336 BCE. The groove and bump have been reinterpreted as normal features or damage to the skull after death. Scholars now emphasise the lack of other marks on the skeleton; this is surprising when other ancient authors describe damage to Philip's collar bone and to the upper leg, which would have left him lame.

In another tomb on the same site, however, an adult male skeleton has a lance wound on the leg, which would match an injury Philip incurred in a battle in 339 BCE. Perhaps this one is Philip, and the other skeleton is that of Philip Arrhidaeus, the successor to Alexander, who was physically or mentally disabled and never fought in battle. The cuirass looks like the one Alexander the Great wore in a famous mosaic from Pompeii: did Philip Arrhidaeus inherit some of his older half-brother's armour?



Figure 9 Alexander the Great mosaic, Roman, circa 100 BCE, originally from the House of the Faun in Pompeii

Activity 4

Can you find out how Philip Arrhidaeus died? Does the skeleton found show any sign of this?

Provide your answer...

Comment

While anatomical science can do much to show the faces of the people of the past, some details such as the shape of the lips or the colour of the eyes cannot be known, and at this point the reconstructor has to make his or her own decisions. The face needs to be believable. If an image of the deceased person survives – whether from a mosaic or from a portrait on their grave – it can be difficult not to be influenced by this when making a reconstruction from their skull.

4 This week's quiz

Check what you've learned this week by taking the end-of-week quiz.

[Week 2 quiz](#)

Open the quiz in a new tab or window and come back here when you are done.

Summary

This week you've learned that the face and eyes were key to seeing an ancient person's appearance as healthy or ill, beautiful or ugly, and that the eyes were both a common location of disease and a mirror to the soul. You've also seen how important facial reconstruction is to engagement with the individuals of the past. You've seen several examples of how written evidence of different kinds – medical treatises, literary sources, papyri and letters – needs to be read with care. You've also discovered some other ways of encountering the past through skeletons, surgical tools, cosmetics, medical remedies, votive offerings and statues.



Figure 10 Roman woman at her morning toilette

In Week 3, you are going to move from the outside to the inside of the body, to understand how ancient diet contributed to health. What do you think an average person in the ancient world ate? And what evidence do you think there is for this?

Week 3: Eating and drinking

Introduction

This week you'll be looking at food and digestion. What did rich and poor people eat? Why was so much of ancient medicine about eating and drinking? As you'll see, the processes of eating and drinking were monitored by doctors and ordinary people in the ancient world, and this applied to adults and children, healthy and sick.

You should start this week by watching Helen King discuss issues around a healthy diet, with Mathijs Lucassen.

Video content is not available in this format.

Video 1 Why food matters



1 A regimen for everyone

The process of eating and drinking was monitored by doctors and ordinary people in the ancient world. This applied to adults and children, healthy and sick.

In the ancient world, the first option for treating disease was diet rather than drugs or surgery. Diet was also seen as very important for maintaining health. Ancient doctors devised 'regimens', which were lifestyle plans focused on diet but also included exercise,

bathing, sleep and other aspects of life believed to affect the body. These would vary with the seasons of the year.



Figure 1 A doctor instructs his English patient not to eat as he does

An ancient Greek medical text, *Regimen in Health* (one of the Hippocratic texts, from perhaps the end of the fifth century BCE), opens with advice to ordinary people that, in winter, they should eat as much as possible and drink as little as possible. All meat eaten in winter should be roasted, to make it dry. This keeps the body in general dry and warm. As spring comes on, people should gradually drink more and move towards boiled meat rather than roasted, so that by the time of summer all meats are boiled, and thus more 'wet', as is appropriate when the heat of the season is drying out the body.

However, the seasons were not the only point to consider. Regimens would also vary with the age, gender and body type of the patient. Those with fleshy soft bodies should keep to 'dry' foods for most of the year, to counteract their natural wetness. People's individual habits should also be considered, as it could be dangerous to impose on someone a foodstuff, or a quantity of food, with which they were not familiar.

So, balancing the diet was seen as a complex process. Another Greek medical text, *Nutriments*, suggests simply that food has 'power' (in Greek, *dynamis*) as it can both nourish and change the body. *Nutriments* argues that no foodstuff is simply good or bad; it all depends on the circumstances. So, for some people, milk is a nutriment, but for others it is not.

Eating cooked food rather than raw food, and in particular bread and meat, was seen as something that set apart the ancient Greeks and Romans not only from the animal

kingdom, but also from neighbouring peoples. Bread was seen as a particularly important food and, because the body was also thought to be affected by what is placed on it, it could be used as the basis of an external remedy. Soaked in herbs and oil, bread was applied to the skin to encourage pus to come out of the body.

One Hippocratic medical text even argued that it was doctors who had made health possible because it was they who had realised that humans should not live on the same food as animals:

I hold that not even the mode of living and nourishment enjoyed at the present time by men in health would have been discovered, had a man been satisfied with the same food and drink as satisfy an ox, a horse, and every animal save man, for example the products of the earth—fruits, wood and grass.

(Hippocrates, *Ancient Medicine*, 3)

However, in addition to humans eating cooked food, further ‘cooking’ also took place in the body itself. Food was thought to begin its transformation in the mouth, and then undergo further changes in the stomach until it eventually became blood. Galen described the process of the maintenance of the body like this:

nobody will suppose that bread represents a kind of meeting-place for bone, flesh, nerve, and all the other parts, and that each of these subsequently becomes separated in the body and goes to join its own kind; before any separation takes place, the whole of the bread obviously becomes blood.

(Galen, *On the Natural Faculties*, 1.2.6)

He described the digestive organs in terms of their heat:

And if one considers along with this the adjacent viscera, like a lot of burning hearths around a great cauldron—to the right the liver, to the left the spleen, the heart above, and along with it the diaphragm (suspended and in a state of constant movement), and the omentum sheltering them all—you may believe what an extraordinary alteration it is which occurs in the food taken into the stomach.

(Galen, *On the Natural Faculties*, 3.7.164)

Cooking was also considered an art form within the elites of the ancient world, where eating unusual foods or parts of animals and birds was part of rich people’s banquets. By the early Roman Empire, Greek and Roman banquets seem to have had a lot in common – you can even think in terms of an ‘international Mediterranean cuisine’.

1.1 The role of digestion

Digestion (in Greek, *pepsis*) was seen as a key process in the body, harnessing its natural heat to ‘cook’ food into blood. Galen commented that stale bread made from emmer would make a person feel ‘like a lump of clay is lying in his bowels’.

Because health depended on effective digestion, ways of aiding digestion were used. Apicius’ *De re coquinaria* (*On the Subject of Cooking*) is a fourth or fifth century CE

compilation of earlier Latin cookery books, containing around 500 recipes. Watch Video 2 where Laurence Totelin prepares Apicius' recipe for oxygarum, an aid to digestion.

Video content is not available in this format.

Video 2 The role of digestion



1.2 Weight issues in antiquity

Balance was an essential principle in maintaining health. The internal fluids of the body should be kept in balance, as an excess of any one of them could cause disease. This applied to other, non-physical, aspects of life as well. As developed by the philosopher Aristotle in his *Nicomachean Ethics*, the need for balance (the 'golden mean') meant one should aim for the middle ground between deficiency and excess in moral, as well as physical, terms. For example, the virtue of courage was intermediate between cowardly and rash behaviour.

As applied to health, the ideal body weight was therefore one that was neither too high nor too low. This seems very reasonable to us, because it is still how Western biomedicine operates. Guidelines from the UK National Institute for Health and Care Excellence (NICE) include detailed information on what is considered correct; for example, suggesting that, in general, a Body Mass Index (BMI) of less than 18.5 or more than 30 has many adverse effects. While the ancient Greeks and Romans didn't quantify the relationship between height and weight in the way that BMI does, you will learn in Week 6 how by looking at ancient art you can gain some idea of the ideals in the ancient world.



Figure 2 Terracotta figurine of an obese woman, Greek, circa 350–320 BCE

Despite the importance of athletics in the ancient Mediterranean cultures, the body of the athlete was not seen as the ideal. A Hippocratic treatise stated that ‘the athletic state is not natural: better the healthy condition’ (*Nutriments*, 34). Galen put it like this: ‘athletic development is not natural, the healthy condition is better’ (*Protrepticus*, 11). Athletes, he argued, shook their teeth so much that they would fall out early, and their joints were weakened by being twisted. He recommended exercise with a small ball as the healthiest form, free of risks. Needing no special equipment, it used many different muscles, exercised the whole of the body and did not strain any part of it. Catching the ball even exercised the eyesight. You saw this illustrated by the ‘bikini girls’ mosaic you studied in Week 1.

Running swiftly has already killed many, when they rupture an important blood vessel ... vigorous horse riding has caused rupture of those structures in relation to kidneys, and has often harmed structures in the chest, and sometimes also the spermatic ducts.

(Galen, *On exercise with a Small Ball*, 5)

He added that those from the wrestling school can be seen to be ‘lame, twisted, crushed or with some part altogether maimed’. You will return to the effects of life on bodies in Week 6.

Regimen in Health

The Hippocratic treatise *Regimen in Health* advises that fat people wanting to become thin ‘should take only one full meal a day’ and thin people who want to become fat should eat more than once in the day (Hippocrates, *Regimen in health*). Eating immediately after exercise was considered least likely to make a person fat. Celsus wrote that:

It is not good indeed to overeat after a long fast, nor to fast after overeating. And he runs a risk who goes contrary to his habit and eats immoderately whether once or twice in the day.

(Celsus, *On Medicine*, 1.3.2)

Activity 1

In The Perseus Project, which you used in Week 1, you saw how the Perseus digital library can be used to find English translations of many ancient written sources. Visit the [Perseus website](#) now and find the English translation of Celsus, *On Medicine*.

Using the search box halfway down the page (on the right-hand side), search for 'fat'. You should have one search result, with the total number of hits in the top-right corner (23). Click on 'More' to see all the results. Clicking on one of them will take you to the page on which it appears, and the word you have searched for will be highlighted in blue.

Comment

As well as many references to fat as an element of the diet, or as a carrier for plant substances being applied externally to the body, you'll discover a number of references to those who are neither too thin, nor too fat, as being fittest, and as being the people who heal most quickly. In terms of diet, you may also be surprised at the range of types of animal fat being consumed in the ancient Mediterranean!

The effects of being 'too' fat

What were the presumed effects of being 'too' fat? One was infertility, in both sexes. Abdominal fat was thought to put pressure on the womb so that it was unable to receive the man's seed. Conversely, the diversion of food to make more body fat meant less food was available to produce menstrual blood which, as you will see in Week 5, was thought to be the raw material of a foetus. For this reason, unnaturally (*para physin*) fat women were also unlikely to be able to support a foetus to full term. As for men, those who were healthy but a little overweight were thought to produce less semen and be less interested in sexual activity, according to Aristotle in his treatise *On the Generation of Animals*.

Galen wrote a treatise entitled *The Thinning Diet*. This was not about weight loss, but a treatment for chronic ailments intended to avoid the need for drugs. Galen suggested that foods which were 'sharp', 'biting' or 'hot' to the taste could cut through thick humours in the body. The most 'thinning' foods of all were garlic, onions, cress, leeks and mustard. Fish from mountain rivers and birds from a high altitude were also 'thinning' in this medical sense, because they were thought to be 'drier' than those living nearer ground level.

1.3 Vegetarianism and other exceptional diets

Today, vegetarianism is relatively mainstream; people refuse to eat meat on religious grounds, or for moral or health reasons. But in the ancient world, although people ate relatively little meat, being completely vegetarian was regarded as very odd. One group advocated vegetarianism as well as the avoidance of beans: the Pythagoreans. These were the people who, throughout antiquity, lived by the principles first expounded by the philosopher Pythagoras (sixth century BCE).



Figure 3 Portrait of Emperor Rudolf II as Vertumnus, the Roman god of the seasons, growth, plants and fruit

Activity 2

Go online and find information about the diet of the ancient athlete Milo of Croton, and of other Pythagoreans. You will find conflicting stories about what Milo ate. What did you find out about the way ancient Greeks or Romans viewed vegetarianism?

Provide your answer...

Next you will consider the archaeological evidence for food and health.

2 Archaeological evidence for food and health

How does archaeological evidence add to or contradict the picture of diet gained from written sources?

A very unusual set of finds, in terms of understanding health, resulted from the eruption of Vesuvius, in autumn 79 CE. Over 50 complete human skeletons were found in Pompeii, together with a group of over 100 skeletons of people sheltering from the pyroclastic blasts at Herculaneum.



Figure 4 Pompeii amphorae

What is exceptional about all these finds is that they show what healthy bodies were like; the bodies of women, children and men, all of whom died unexpectedly in the disaster. They give a picture which is different from what would have been found if only ideal representations of the body, written evidence, or bones found in graves had been relied on. You will revisit these finds in Week 6, when looking at the variation in healthy bodies in the Roman world.

2.1 Introducing Pompeii and the Vesuvian sites

The finds at Pompeii and Herculaneum include entire houses, shops, civic and religious buildings, as well as gardens. These provide plentiful evidence on the diet of the Romans in the first century CE. Many houses had toilets in them, which you will discuss in Week 4.

The houses are often named after the artefacts, frescos or mosaics found in them. One of them is called the House of the Surgeon (VI 1, 9. 10.23) because an excavation on 6 April 1771 revealed a large collection of medical tools in one room of the house. Further information about medical tools will be given in Week 6.

Wealthy home owners at Pompeii and Herculaneum decorated their houses with mosaics and frescoes. Several of these depict food, as in the case of the fruit bowl shown in Figure 5. Larger than life-size, it comes from the house of Julia Felix (II.4.10), a wealthy resident who renovated her house after an earthquake in 62 CE. The fresco shows a glass fruit bowl filled with fruits, including pomegranates, grapes, and apples, a wine jar, as well as another pot. Another fresco from the same housing complex depicts a bowl of eggs, several hanging birds and cooking implements (see Figure 14 in this week's summary).



Figure 5 Roman wall painting of a glass bowl of fruit and vases, from the House of Julia Felix, Pompeii, 50–79 BCE

People with less disposable income could eat in one of the numerous eateries and bars at Pompeii and Herculaneum (*thermopolia*). There, food was kept in large jars (*dolia*). One such bar advertises its wares as follows:

You can drink here for one *as*, if you give two, you will drink better, if you give four, you will drink Falernian.

CIL 4.1679 (House VII.ii.45)

One *as* would probably be around the price of a loaf of bread. Falernian was a very expensive type of wine, named after Mount Falernus (on the border between Latium and Campania), where the grapes used in its production were grown. You will return to this wine, and wine more generally in the section [Ancient tonics: antidotes](#).

Some *dolia* found at the Vesuvian sites still contain remains of food that can be analysed with modern archaeo-botanical techniques. For instance, when archaeologists analysed

the thick organic deposit in a dolium found in the Villa Vesuvio near Pompeii, they discovered that it had held walnuts, peaches, and a complex mixture made of plant and animal substances. Archaeo-botanist Marina Ciaraldi suggests that the mixture might have been an ancient remedy, and more specifically the Mithridatic antidote, named after King Mithridates of Pontus (again, see [Ancient tonics: antidotes](#)). Unfortunately, archaeo-botanical analyses of this type are rarely conducted because they are quite expensive. You will return to Pompeii and Herculaneum next week, when you look at the sewers which are a further source of information when studying ancient diets.

2.2 Citrus fruits at Pompeii

Carbonised and mineralised citrus seeds are among those discovered at Pompeii. They date to the third and second century BCE – that is, well before the destruction of the town by the explosion of Vesuvius. Citrus fruit is also represented on a fresco of the House of the Fruit Orchard (I.9.5–7). The citrus fruits consumed at Pompeii were the citron (*Citrus medica*), a fragrant citrus fruit with a thick rind frequently used in Bangladeshi cuisine, and the lemon (*Citrus limon*).

When Vesuvius erupted in 79 CE, citrus trees were fairly common in Italy, but that had not always been the case. Archaeologists believe that these trees were introduced to southern Italy and Greece at the beginning of the first millennium BCE, and traders from the East played an important role in importing these plants from Persia. The Persian origin of the citron is reflected in its first Greek and Latin name, meaning ‘the apple from Media’ (modern Iran). Naming fruits after their place of origin (or alleged place of origin) was a common practice among the Greeks and Romans: they called the peach the ‘Persian apple’, and the apricot the ‘Armenian apple’. These names signalled the exotic status of the trees and their fruits.

The citron, however, was eventually given a simpler name: *citrus* in Latin and *kitron* in Greek. In the first century CE Virgil described ‘the health-giving citrus tree’ (*Georgics*, 2.126–130) and said it could counteract poison, something the encyclopaedist Pliny the Elder (*Natural History*, 12.7.15) agreed with. You will return to the topic of antidotes against poison in the section [Ancient tonics: antidotes](#). By the end of the second century CE, Galen said that only pedants called the citron the ‘apple from Media’.

The Greeks and Romans grew the lemon and the citron trees for their decorative quality and to consume their fruits as medicine, rather than as food. According to Galen the citron is not easy to digest as a food, but is useful as a drug:

The citron has three parts, the acid part in the middle, the flesh, so to speak, that surrounds this, and the third part, the external covering lying around it. This fruit is fragrant and aromatic, not only to smell, but also to taste. As might be expected, it is difficult to digest since it is hard and knobbly. But if one uses it as a medicament it helps concoction, as do many other things with a bitter quality. For the same reason it also strengthens the oesophagus when a small quantity is taken.

(Galen, *Properties of Foodstuffs*, 2.37)

So, taken in small amounts, as a medicine, the citron could ‘help concoction’, but when consumed in large amounts, as a food, it had the opposite effect. Citron was also used in gynaecological treatments: Pliny the Elder (first century CE) writes that pregnant women

ate citron pips to avoid nausea in pregnancy (*Natural History*, 23.105) and the physician Soranus (from a similar date) explains that smelling citrons can help women in labour when they are very weak (*Gynecology*, 2.2). However, Plutarch warned that 'many older people still cannot eat ripe cucumber, citron, or pepper' and suggested that they produced some sort of residue in the body.

Plutarch is also one of the many writers who writes about the order of courses in ancient meals. He suggests that:

It is also probable that the order and rearrangement of foods makes a considerable difference; for the 'cold course,' as it used to be called, with oysters, sea-urchins, and raw vegetables, has like a body of light-armed troops been shifted from the rear to the front, and holds first place instead of last. The serving of the so-called aperitifs is a great change too. The ancients did not even drink water before the dessert course, but nowadays people get themselves intoxicated before eating a thing, and take food after their bodies are soaked and feverish with wine, serving hors-d'oeuvre of light and sharp-flavoured and sour foods as a stimulant to the appetite and then, in this condition, eating heartily of the rest of the meal.

(Plutarch, *Moralia*, 733f-734a)

However, the context of this literary source means that you should treat it with care. Plutarch is explaining why new diseases emerge and argues that a change in diet is a dangerous thing.

2.3 Hippocratic apples: finding out more

The Hippocratic text, *On Regimen* (2.55) says the following about apples:

Sweet apples are indigestible, but acid apples when ripe are less so. Quinces are astringent, and do not pass easily by stool. Apple juice stops vomiting and promotes urine. The smell too of apples is good for vomiting. Wild apples are astringent, but when cooked they pass more easily by stool. For orthopnea their juice, and the apples themselves when a draught is made of them, are beneficial.



Figure 6 Fresco of an apple tree, from the main hall of Livia's villa, Pompeii

Activity 3

Use a search engine to look for the words 'Hippocrates' and 'apple'. What type of websites do you find? What claims do they make? To what extent can they be traced back to the claims made in the original Hippocratic text?

Provide your answer...

Comment

While you may have found natural health sites promoting the benefits of apple cider vinegar or even selling it – and there are many of these – you will also note that the original Hippocratic text does not specify any particular type of vinegar.

If you have not already found it, try reading the useful discussion from 2012 on <http://pothos.org/forum/viewtopic.php?t=3825>

2.4 Food and bones: further evidence of ancient diet

Dr Rebecca Redfern from the Museum of London is an archaeologist who specialises in osteoarchaeology. In Video 3 she explains what can be learnt from bone evidence (including studying DNA and stable isotopes).

Using the example of the 'Lant Street Teenager', Dr Rebecca Redfern examines what the bones tell us about the origins and health of this fourth century CE girl. When was she born, and when did she come to London? How has her diet left traces on her bones? How healthy was she?

Video content is not available in this format.

Video 3 Food and bones: further evidence of ancient diet



2.5 Breast milk in antiquity

A further finding from bone evidence is that babies in the ancient world were fed for longer than in many cultures today. In the first couple of days of their lives, however, ancient Greek and Roman babies may not have been fed on breast milk, as Soranus tells us:

Now after putting the newborn to bed subsequent to the swaddling, one must let it rest and, in most cases, abstain from all food up to as long as two days. For it is still violently upset in all parts and its whole body is yet full of maternal food which it ought to digest first, so as at the proper time to take other food readily.

(Soranus, *Gynecology*, 2.17)



Figure 7 Statue of a woman breastfeeding a baby

Research shows that the first milk, colostrum, is actually extremely rich in antibodies, and therefore contributes to the health of the newborn. However, the tradition of letting a baby

fast after birth is still practised in some parts of the world today, following a common folkloric belief that the first milk is a dangerous, tainted substance. Soranus describes it as being:

unwholesome, being thick, too cheese-like, and therefore hard to digest, raw, and not prepared to perfection. Furthermore, it is produced by bodies which are in a bad state, agitated and changed to the extent that we see the body altered after delivery when, from having suffered a great discharge of blood, it is dried up, toneless, discoloured, and in the majority of cases feverish as well.

(Soranus, *Gynecology*, 2.18)

The mention of blood here is important. The ancients believed milk to be concocted (that is, 'cooked') menstrual blood: they had observed that breastfeeding women do not menstruate for many months after the birth of a baby. If a woman loses blood while also producing milk, as she does in the first few days after giving birth, she risks complete exhaustion. Even worse, they thought, the blood may mix with the milk and poison the baby.

While the ancients regarded the first milk with suspicion, they considered normal breast milk as a very healthy substance, not only for babies but also for adults. The pharmacological writer Dioscorides (first century CE) describes several of its possible uses, including for eye injuries. As you saw in Week 2, eye conditions were often described in the ancient world:

The milk of a woman is extremely sweet and nutritive. Suckled it helps against gnawing of the belly and *phthisis* [a type of wasting disease]. It is also good to give against poisoning with sea-hare. Mixed with powdered frankincense, it is instilled in eyes that are bloody because of a blow; and applied as a cerate [an oily preparation] with hemlock, it helps those affected with gout.

(Dioscorides, *De materia medica* 2.70.6)

Note that, when breast milk is to be drunk, it must be 'suckled' (taken at the source), even if the patient is an adult. This may seem very strange to us, but it makes a lot of sense: milk straight from the breast does not require heating as it is at body temperature. Offering her breast also spares the woman the bother of expressing milk, which can be very time-consuming.

In cases when Greek and Roman women expressed breast milk, they may have used a vessel like the one in Figure 8, which was found in Pozzuoli (Latin *Puteoli*), a very important port near Pompeii.

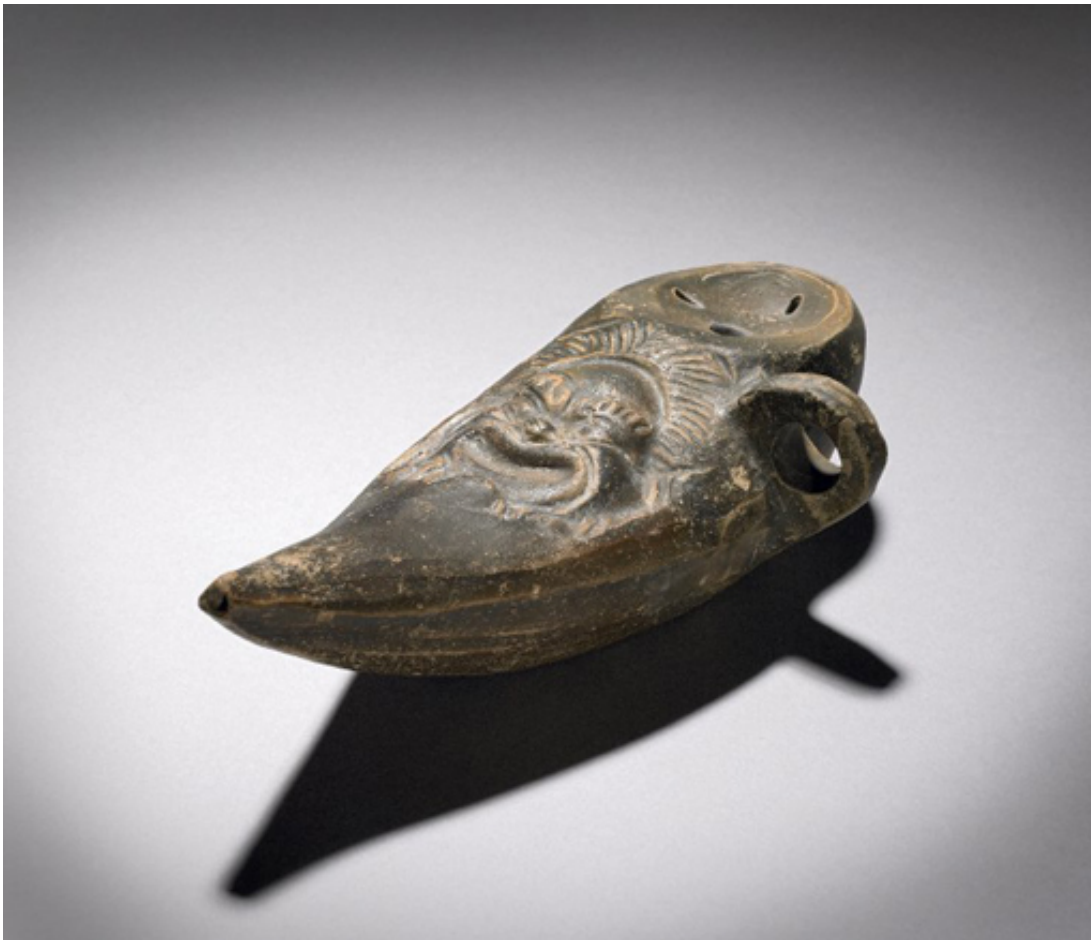


Figure 8 Baby bottle from Pozzuoli, Italy

Archaeologists call these artefacts ‘baby feeders’, both because of their shape – which is very close to that of invalid feeders used until the beginning of the twentieth century – and the place where they are generally found: children’s burials. Scientific analysis of residues in ancient baby feeders reveals that they indeed contained milk. The contexts in which these baby feeders were used, however, remain unclear. They must have been very difficult to clean properly, and may therefore have posed a danger to the health of babies.

2.6 Advertising baby feeding

Figure 9 shows an advert for a baby bottle: the Hygeia nursing bottle

Use
*Open-Mouthed
Hygeia*

Don't use
*Narrow-Neck
Bottle*

Danger Lurks In the Narrow, Hard-to-Clean NECK of Baby's Bottle

A MILLION babies died in this country in the last three years. Safe milk would have saved thousands *if the nursing bottles had also been safe*. A narrow-neck nursing bottle is *not* safe. Even boiling to sterilize cannot make it completely safe, for the narrow neck chokes free circulation of water.

Your baby in its first year feeds 2,000 times. Dare you risk the bottle being imperfectly cleaned — and baby sick — even once?

The wide-mouthed Hygeia Nursing Bottle is always safe — it has no place for food particles or germs to collect. Easy to cleanse as a tumbler.

The rubber Hygeia Breast is nearest like a mother's breast and aids nursing. There is a rubber cover that snaps over the bottle to protect food while in ice box.

Be safe — not sorry. First made by a physician to save his own child. Insist on Hygeia, the Nursing Bottle with breasts of red or black rubber. All drug stores.

THE HYGEDIA NURSING BOTTLE CO., Inc., 1206 Main St., Buffalo, N. Y.

Hygeia NURSING BOTTLE

Figure 9 Advertisement for the Hygeia nursing bottle

This advert dates to 1919 and reads:

Danger lurks in the narrow, hard-to-clean neck of Baby's Bottle. A million babies died in this country in the last three years. Safe milk would have saved thousands *if the nursing bottles had also been safe*. A narrow-neck nursing bottle is not safe. Even boiling to sterilize cannot make it completely safe, for the narrow neck chokes free circulation of water. Your baby in its first year feeds 2000 times. Dare you risk the bottle being imperfectly cleaned – and baby sick – even once? The wide-mouthed Hygeia Nursing Bottle is always safe – it has no place for food particles or germs to collect. Easy to cleanse as a tumbler.

The rubber Hygeia Breast is nearest like a mother's breast and aids nursing. There is a rubber cover that snaps over the bottle to protect food while in ice box. Be safe – not sorry. First made by a physician to save his own child. Insist on Hygeia, the Nursing Bottle with breasts of red or black rubber. All drug stores.

Activity 4

Describe the differences between this 'modern' type of baby bottle in Figure 9 and the baby feeder described in [Breast milk in antiquity](#).

What is the significance of the use of the name 'Hygeia', which you also encountered in Week 1, to promote a baby bottle?

Provide your answer...

3 Food and drugs

In the previous section, you encountered two foods that could also serve as drugs: citron and breast milk. In this section, you will learn more about the difference between a food and a drug, and explore how knowledge of drugs was recorded and transmitted. In keeping healthy, wine played an important role, as did antidotes to poison.



Figure 10 Chicken soup

3.1 When does food become a drug?

The Greeks and Romans sometimes described the difference between drugs and foods as one of taste: a drug is usually much more bitter than a food. Thus, in the case of the citron, the bitter pips were thought to be particularly useful as drugs. However, there were various exceptions to the 'bitter' rule. Breast milk, for instance, is very sweet to the taste. It became a drug when it was administered to people who do not usually consume it (adults), or when it was applied externally (in particular, on the eyes) instead of internally. Today, the boundary between food and medicine remains relatively blurred.

Activity 5

Can you think of examples of foods that you use medicinally? What diseases do you use them for?

Provide your answer...

What gives these foods their healing properties? Are they always healthy?

Provide your answer...

3.2 Ancient herbals

Identifying plants used as food or as drugs can be complicated. While there is evidence from the ancient world that includes illustrations of plants, they are not always easily recognisable today. In Video 4, filmed in the Wellcome Library, Dr Laurence Totelin discusses with Dr Elma Bremmer some rare material, which derives from ancient Greek and Roman traditions, and discovers how far it is possible to identify plants from ancient and medieval illustrations.

Video content is not available in this format.

Video 4 Ancient herbals



Notice how the knowledge of plants used in healing was transmitted from the Greeks and Romans into medieval and early modern Europe and the Arab world.

3.3 Wine: the blood-making drink

Wine played a crucial role in ancient societies: it was the drink of choice of the Greeks and Romans. They drank it mixed with water, as drinking either water or wine on its own was considered unhealthy. Unmixed water could make people physically ill. Unmixed wine, for its part, could lead people to act in a crazy way: in Greek and Roman stories, cruel tyrants are often represented as drinkers of neat wine. It is now known that wine kills the bacteria

found in untreated water, and that some ancient wines might have had a rather high alcohol content. The ancients, however, explained their mixing of the two drinks in terms of the key concept of 'balance' for health.



Figure 11 Attic red-figured kylix depicting a symposiast vomiting after a symposium, circa 490 BCE

Figure 11, depicting the scene of a man vomiting, is represented on the *tondo* (the circular bottom) of a *kylix*, a Greek wine cup. On the sides on the cup you find representations of people at a symposium, a type of party where wine was consumed in large quantities. The image on the *tondo* is a reminder of what can happen when you have too much of a good thing.

The Greek medical author Mnesitheus wrote that wine was the greatest blessing, if used correctly:

It can be mixed with liquid drugs and it brings aid to the wounded. In daily intercourse, to those who mix and drink it moderately, it gives good cheer.

(Mnesitheus, cited in Athenaeus, *Sophists at Dinner*, 2.36a-b)

Mnesitheus is here referring to the use of wine in ancient wound dressings, and as a vehicle for ancient drugs. Today, you would explain these uses by making reference to the antibacterial properties of wine. Bacteria, however, were not known to the ancients. Instead, they argued that each type of wine had properties linked to its particular taste, smell, and colour. White wine, for instance, was considered especially moistening, and therefore helpful in drying conditions. Red (or 'black') wine, for its part, had 'haematopoietic' properties; that is, it could make blood.

To understand this, you need to go back to ancient theories of digestion. The ancients believed that, after the food had been ground up in the stomach, some of it went to the liver, where it was transformed into blood. That blood then contributed to the good functioning of the body's organs. The Greeks and Romans believed that the body constantly produced new blood – they did not know about the circulation of blood which

William Harvey discovered in the early seventeenth century: Figure 12 shows one stage of his reasoning.

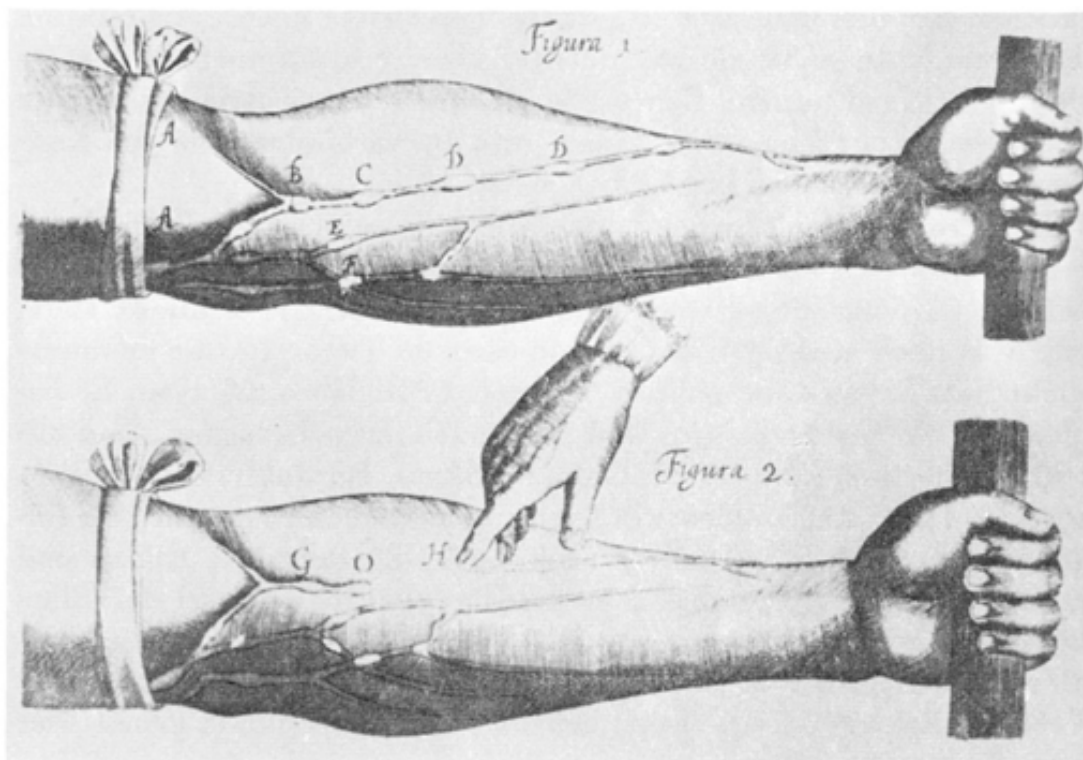


Figure 12 An illustration of the veins found in the forearm, from Harvey's work *Exercitatio Anatomica de Motu Cordis et Sanguinis in Animalibus* (*On the Motion of the Heart and Blood*)

Some foods, they suggested, were particularly good at making blood and, of these, red wine was the best of all. No doubt the similarity in appearance between blood and wine influenced that belief. Galen wrote that:

Of all wines the red and thick are most suited for the production of blood, because they require little change before turning into it.

(Galen, *Properties of Foodstuffs*, 2.37)

Black wine was recommended, for instance, to women who had heavy periods or lost much blood after birth. On the other hand, women who wanted to conceive were not advised to drink too much. Soranus writes that 'the satiety due to heavy drinking hinders the attachment of the seed to the uterus' (*Gynecology*, 1.38). Some wines were thought to have the power to make women infertile. The philosopher Theophrastus (fourth century BCE) writes that:

So at Heraclea in Arcadia they say there is a wine that makes men who drink it mad, and women sterile.

(Theophrastus, cited in Dalby, 2000)

After the first days of her pregnancy, however, a woman was allowed to drink a little bit of weak wine before her meals.

3.4 Ancient tonics: antidotes

Many people take vitamins on a daily basis, as part of a health regime. The closest thing the ancients had to vitamins were 'antidotes', which were originally meant to protect people against the dangers of poisons. They became very popular at the courts of Hellenistic kings (the Greek-speaking kings who ruled in the Mediterranean world after the conquests of Alexander the Great), where poisoning a political rival was a common occurrence. To be effective – or allegedly effective – antidotes had to be taken on a daily basis. King Mithridates (see [Section 2 Introducing Pompeii and the Vesuvian sites](#)), the king of Pontus (a very important kingdom in the first century BCE), apparently took a daily antidote that he had himself invented:

When the mighty king Mithridates had been overcome, Cn. Pompeius found in a private note-book in his cabinet a prescription for an antidote written in the king's own hand-writing: two dried nuts, two figs, and twenty leaves of rue were to be pounded together with the addition of a pinch of salt; he who took this fasting would be immune to all poison for that day.

(Pliny, *Natural History*, 23.149)

Mithridates' antidote was so effective that, when he tried to overdose on poison instead of being killed by the Romans who had defeated him, he failed. He had to ask one of his men to kill him by the sword.



Figure 13 Jar used for storing 'theriac', a type of medicine made from exotic ingredients

With time, antidotes evolved. First, they included an increasing number of ingredients; some antidotes had 100 different ingredients, many of which were expensive and exotic. Second, antidotes started to be used in the treatments of all sorts of diseases, ranging from fevers to epilepsy and tetanus.

Marcus Aurelius, whom you met in Week 1, was a great consumer of antidotes. His favourite was the antidote called 'theriac'. It had been invented by a doctor named Andromachus, physician to yet another emperor, Nero. It included over 50 ingredients, but its most significant one was the flesh of vipers, which made it particularly suitable to treat snake bites.

Galen tells us that Marcus Aurelius took theriac every day to keep in good health, changing the dosage of the antidote according to his need. According to Galen, rich men also started to imitate the emperor: he had created a fashion for the drug. These wealthy people, however, were not as knowledgeable as the emperor and instead of getting the antidote prepared by esteemed physicians, they bought it from street peddlers. Some of these merchants were rather dishonest and replaced expensive ingredients with cheaper ones, but still sold theriac at a premium price.

Mithridates' antidote and theriac remained in use for centuries. Pharmacists kept the expensive preparations in ornate jars, such as those in the image above.

4 This week's quiz

Check your learning this week by taking the end-of-week quiz.

[Week 3 quiz](#)

Open the quiz in a new tab or window and come back here when you are done.

Summary

Diet in the ancient world was not only important to health but was also seen as a way of curing diseases. Monitoring and advising on diet was part of the role of the doctor, and digestion was seen as a way of 'cooking' the food to make it become part of the body. Vegetarian diets, like raw food diets, were not seen as appropriate for human beings. For babies, breast milk was essential, and its value meant it could even be used as a medicine for adults. Exercise was important to control weight, but excessive exercise was thought to damage the body.



Figure 14 Still life with eggs, birds and pewter dishes, from the House of Julia Felix, Pompeii

Diet is known about not only from written sources, but also from the images that decorated wealthy people's houses, and the remains of what they actually ate. Next week you'll be delving into another type of evidence: what came out of the body, as found in the sewers of the ancient world.

Week 4: Sanitation

Introduction

Last week you learned about what the ancient Greeks and Romans put into their bodies to remain healthy, and whether that was food or something regarded as a drug or an antidote.

As with the 'thankless' eye remedy or the use of lead in cosmetics, some of the things they did to look or feel healthy would seem unhealthy to a modern audience. It is also now known that colostrum, which was thought bad for health, is in fact good, and it is possible to explain that wine kills the bacteria found in untreated water, even though the reasons why people in the ancient world mixed wine and water did not concern bacteria. But what about toilets and waste disposal?

This week focuses on human waste. Everyone needs to get rid of waste from their body. What were toilets like in the ancient world and what sort of evidence is there about this aspect of health? For example, according to Pliny the Elder, urine was an excellent guide to health: it should start clear in the morning and become darker as the day went on. You will examine how and why doctors intervened in evacuation, using a range of ways to purge the body and, they believed, restore health to the sick. You will encounter some unexpected toilet habits and some unusual uses for human waste, and will start to consider just how ancient hygiene worked.

To start the week, Helen King and Mathijs Lucassen discuss attitudes to toilets across the world today.

Video content is not available in this format.

Video 1 Toilets across the world



NOTE: The branded products in this video are not intended to be an endorsement and have only been used for teaching purposes; there are other products available.

1 Toilets and waste

Today the focus tends to be on the positive aspects of the Romanisation of Europe: road networks, town planning and the supply of fresh water to cities. This was also a view found in antiquity. Strabo was a Greek who lived through the fall of the Roman Republic and the beginning of the Roman Empire. In his *Geography* (5.3.8), he praised the Romans for three major achievements which enhanced 'the blessings with which nature supplies the city' of Rome: creating roads, aqueducts, and building sewers 'to wash away the filth of the city into the river Tiber'. Indeed, he added, the sewers in Rome are so large that wagons loaded with hay can drive along them.



Figure 1 Roman aqueduct in Segovia, Spain

To understand health in the ancient world, you need to think about ancient cities and their effects on health. These were not always as beneficial as the positive view of the city would suggest. Concentrating on hygiene and waste disposal can help to reflect on just how people in the ancient world could judge their own health, or that of someone else. Without modern technologies for seeing *inside* the body – X-rays, CT scans and MRI – they relied heavily on what came *out* as a guide to health.

Although they lived surrounded by smells rather than deodorants and air fresheners, the ancient Greeks and Romans shared some of the modern world's attitudes to odour. They could also find it difficult to talk about excrement without embarrassment. In the first century BCE, praising the design of the human body in his *On the Nature of the Gods*, Cicero noted that the mouth is perfectly designed to chew and soften food, but he hesitated over describing the other end of the digestive tract. He wrote:

It would not be difficult to indicate the way in which the residue of the food is excreted by the alternate constriction and relaxation of the bowels; however this topic must be passed over lest my discourse should be somewhat offensive.

(2.55.135)

Later in the same section, he compared the architecture of the body with that of a house:

And just as architects relegate the drains of houses to the rear, away from the eyes and nose of the masters, since otherwise they would inevitably be somewhat offensive, so nature has banished the corresponding organs of the body far away from the neighbourhood of the senses.

(2.56.141)

Did the reality of life in the ancient world always meet Cicero's ideals?

1.1 Coprolites: finding out more

Figure 2 shows a human coprolite – a preserved piece of human faeces. This one is Viking, held at Jorvik Viking Centre, and is known as the 'Lloyds Bank coprolite'.



Figure 2 A coprolite

Activity 1

1. Use the internet to find out more about this human stool. Why is it so special? What diseases can you learn about through this object?

Provide your answer...

2. Bearing in mind that Activity 1 in Week 1, Defining health, started with one image from fifth century BCE Greece, and another from fourth century CE Roman Sicily, how relevant do you think this stool from the Viking period is to understanding the ancient Greeks and Romans?

Provide your answer...

1.2 Introducing Roman toilets

Video 2 shows some of the arrangements found in Ostia, the port of Rome. What are insulae? Where were toilets placed in Ostia and how did they work?

As you watch, think back to what you learned about facial reconstruction in Week 2, and reflect on how literary and archaeological sources illuminate each other.

Video content is not available in this format.

Video 2 Introducing Roman toilets



1.3 Finding a toilet

Have any ancient toilets been found in your country, or in a part of the world you have visited?



Figure 3 Modern toilet cubicles

Activity 2

1. Use the internet to find an example of an ancient toilet – it can be a reconstruction, or an example from archaeology.
In what context was your example found? For example, was it part of a private house, or a public building? What is its approximate date?

Provide your answer...

2. Are there any patterns to be detected from your image? For example, in what sort of locations were toilets built? Were these public or private? Would they have been used by women and by slaves? Why do you think so many communal toilets have been found in Roman army bases?

Provide your answer...

1.4 Sharing a toilet

Toilets may date back to the Minoan civilisations on the island of Crete. From there they spread to other parts of the ancient Mediterranean, with the earliest ones in mainland Greece found in the fourth century BCE. These would be in private buildings, as well as

public ones. In a private house, a toilet would be next to the kitchen, and would be 'flushed' by pouring water from the kitchen into it. This would then go down into a cesspit with the kitchen waste.

In addition, the Romans also had larger toilet buildings, with rows of toilet seats opposite each other for as many as 60 people. Most of these surviving Roman 'communal' toilets (*foricae*) are found in army bases or in conjunction with public baths. It's possible that they were found near prestigious public buildings because the city officials were keen to keep their buildings clean, rather than for any other reason. These toilet buildings had a supply of running water which would carry waste away to the river. Today the idea of several dozen Romans sitting together on the toilet is very difficult to understand, but the nature of Roman male clothing may have made it relatively easy to maintain some privacy.



Figure 4 Ancient Roman latrines (*latrinae*), Ostia Antica

Concepts of privacy have changed over human history. The typical house in the West today has internal walls, but over time it has been more common for people to eat and sleep in the same room, often with their animals within the same walls. While rich people in the ancient world may have positioned their town houses so that others could not look in, most people in ancient Rome lived in cramped apartment blocks of three to five storeys high (*insulae*) with thin walls. Perhaps the lack of privacy in a shared toilet wasn't a problem for them.

But just how sociable was it in the toilet? Although reconstructions often show men talking to each other, there is very little evidence on how one was expected to behave in a shared toilet. A few examples of board games etched between seats suggest a long stay; there are references in literary sources to graffiti, and paintings on the wall existed in some communal toilets. Would a long stay perhaps have been linked to people's diet? It is not clear whether these toilet buildings were open or roofed, and this is relevant in terms of the amount of light. You would have needed some light to play a game, or see the

paintings, if there were any. A popular subject for paintings in *foricae* was Fortuna, goddess of fortune!

As usual, literary sources are not always straightforward. The poet Martial wrote:

You read to me as I stand, you read to me as I sit,
You read to me as I run, you read to me as I shit.

(Martial, 3.44)

Does this indicate normal behaviour, or instead someone who won't leave him alone, even in the toilet where he expects to have some peace and quiet? The rest of the poem makes it clear that this is not how most people act, as the poet asks: 'Do you wish to know why it is, Ligurinus, that nobody is glad to meet you?'

On the subject of long stays, Martial also mocks someone who hangs around in the public toilet in the hope of a dinner invitation:

Vacerra spends hours in all the privies, sitting all day long.
Vacerra doesn't want a shit, he wants a dinner.

(Martial, 11.77)

In some reconstructed toilets, in addition to the hole on which the user sits, there is another hole at the front of the seat. This may be for a man to urinate through, but is often interpreted in connection with the 'sponge on a stick', which you'll look at next.

1.5 What did the Romans use for toilet paper?

['What the Romans used for toilet paper'](#), by novelist Caroline Lawrence, is one of the most popular articles on the 'Wonders and Marvels' history blog. The options she gives are a leaf; the left hand; moss; or a sponge on a long stick. She suggests that, after rinsing the sponge, it would be left for the next person to use. Some scholars suggest that all the sponges would be put back into a large jar filled with water, or perhaps a vinegar and water solution.

This sounds very unhygienic, but travelling around with a personal stick also seems very unlikely. The Romans used an ancient Greek word for this object: *xylospongion*, literally 'wool-sponge'. But this is a very rare word, and sometimes just 'sponge' would do. In a fifth century BCE comedy written by Aristophanes, a character who has opened his bowels from terror and is feeling faint asks for 'a sponge for my heart' and then uses it to wipe his bottom. This leads another character to express surprise as to where his heart is located, to which the reply is that his heart was scared and sneaked down into the lower part of his gut (Aristophanes, *Frogs*, 479–490).



Figure 5 Figure from a drinking cup

Finds of scraps of fabric in latrines have also been interpreted as toilet paper. More controversially, so have some small ceramic discs. When a later ancient Greek writer was trying to explain the jokes in Aristophanes' comedy, *Peace*, he explained a reference to putting three stones next to a breast-plate before using it to defaecate in by writing, 'Three stones are enough to wipe one's arse' (*Peace*, 1230).

Archaeology has found some support here. In an article published in the *British Medical Journal* in 2012, a team led by Philippe Charlier, a forensic medicine specialist and anthropologist, reported on various pieces of ceramic found in latrines from the Greek and Roman worlds. The team noted that these were 're-cut from old broken ceramics to give smooth angles that would minimise anal trauma' (Charlier et al., 2012). Analysis confirmed the presence of faecal material on them. As a result of this research, some ceramic discs in the museum at Fishbourne Roman villa in Chichester, England, were immediately reclassified as toilet 'paper'. Previously they had been thought to be pieces from a board game.

Next you will look at how sewage systems and bathing contributed to the levels of health in ancient cities.

2 Keeping clean: sewers and bath houses

How much solid human waste would the city of Rome have generated at the height of its power? If you search for a guesstimate of its population, including citizens, women, children, slaves and visitors, you will find figures in the region of 1 million. If one person produces 50g of solid matter daily, that makes 50 000kg for disposal every day!

Not all of this, of course, would have happened in a toilet. One piece of graffiti from the Roman city of Pompeii reads, '*Apollinaris, medicus Titi Imperatoris hic cacavit bene.*' This translates as 'Apollinaris, doctor to the emperor Titus, had a good crap here.' In Herculaneum, a notice painted on a water tower at a crossroads was originally placed there before 60 CE. It announced that if free citizens did something – the words cannot now be seen – they would be fined 20 sesterces, but slaves would be punished with the lash. In the following decade or so the sign was repainted and the name of the current Roman official was added; this time the notice is clear that the 'something' is dumping excrement in the area around the water tower.

Roman cities had both underground drains and open sewers served by gutters or trenches in the street. In Rome, the main underground drain of the city was the Cloaca Maxima, built in the sixth century BCE and eventually linked to other drains. Recent archaeological work suggests it was not primarily a way of getting rid of human waste, but instead served as a storm drain, removing excess rainwater from the streets. At street level, gutters collected rainwater and any other things lying in the street, which passed into the underground drains and then into the Tiber.

Open sewers were accessible to all the inhabitants of the city wanting to get rid of waste or rubbish. But because they were often not covered at all, people could fall into them; for example, Crates of Mallos fell down one in the Palatine quarter of Rome and broke his leg (Suetonius, *On Grammarians*, 2).

St John Chrysostom, an early Christian writer who was a priest in the city of Antioch in the fourth century CE, mentions the sewer cleaners (*koprônai*) who cleared these open sewers with poles or mattocks so they would not be blocked and overflow. The satirical poet Juvenal mentions men who took out the contracts to operate the public urinals (*foricae*) and suggests that, in the job market, this is about as low as you can go (3.38). In the first century CE, the Roman writer Pliny the Younger mentioned older convicts being used for this job, stating that 'cleaning public baths and sewers, or repairing streets and highways' were 'the usual employment for men of this type'.

Chrysostom also describes the trenches in the street, which could easily be blocked up by straw, branches and rubbish. Where Cicero (as you saw in [Section 1 Toilets and waste](#)) compared the body's architecture to that of a house, Chrysostom compared it to a city. He described the body, seeing the bowels as 'sewers' and suggesting they should be cleared out just like the sewers on the streets. His use of the language of 'filth' also served a rhetorical purpose – he represented Greco-Roman customs and wealthy people as 'filthy'. He wrote that 'the more luxuriously we live, the greater the stench we accumulate'. This applies to the mind as well as the body and, for Chrysostom, the role of the preacher is like that of a sewer flusher.

Those who lived in the Roman tenements would sometimes have a vat into which they could empty their chamber pots, or they could just empty them on a dung heap, or into an open sewer. Houses could also have a cesspit, a deep hole approximately three metres deep, into which they could throw anything. This was usually entirely separate from the sewer system, although home-owners were entitled to make a connection at their own

expense. Certainly in Rome itself, there may have been some advantage in not being connected to the sewers. If your toilet was connected and the Tiber flooded, then the filth would all come back up into your house. In Pompeii, most houses had an individual toilet in or adjacent to the kitchen, unventilated, and opening on to porous rock which would at least allow the liquid waste to drain away.

One of the most striking stories from the ancient world concerning sewers comes from Aelian's *Nature of Animals* (13.6). He tells the story of a giant octopus which would swim up a sewer to a cargo store and smash the storage jars to get access to the pickled fish. The merchants of the city couldn't work out how this could happen when there was no sign of access by the doors, roof or walls. Only when a servant offered to stay in the store overnight to see who was doing this was the culprit identified!

2.1 The positive sides of sewage

The remains in Roman sewers have been used to reconstruct the diet of people in ancient cities. Since 2001, the [Herculaneum Conservation Project](#) has been excavating the remains of the city, buried by the eruption of Mount Vesuvius in 79 CE.

One of the main problems with the site was water damage, and so they decided to clear and use the Roman sewers which drained the toilets and kitchens of the houses, shops and the public baths in the city. During this work, a large amount of broken pottery – mostly from lamps – and lost objects such as beads, coins, pins and a ring were found. These were mixed up with organic material from human faeces. From the remains, the diet of the inhabitants of Herculaneum can be reconstructed. What was found included:

eggshell fragments, poppy and fig seeds, olive pits, fish bones and scales, pig, sheep and bird bones, with a particular emphasis on chicken bones. More exotic offerings were represented by sea urchin spines and shells.

Carmardo, D. et al. (2010)

Most of the eggshells were from chickens. The coprolites had the remains of tiny fishbones, along with fig, grape and mulberry pips.

Sewers don't only tell us about diet, however. They also hint at some of the diseases from which people in the ancient world suffered. Larvae from weevils were found in ancient bread, while at Carnuntum in Austria – a military base – roundworms and their eggs were found in the sewers.

Sewage could also be beneficial in the ancient world; it was used in agriculture, gardens and – for urine – in fabric manufacture. Cesspits would have had to be emptied regularly, so their contents could be used to fertilise the soil. City dwellers could have sold their waste to farmers, and the process of moving it out of the city would mean paying people to carry it out on carts, so this increased employment opportunities. In the countryside, the connection was more direct. The advice on agriculture given by the Latin writer Varro includes the comment that some people have their slaves use the top of the manure pit as their own toilet (*On Agriculture*, 1.13.4). Another Latin agricultural writer, Columella, writes on manure:

The orchards, too, and the gardens should be fenced all around and should lie close by, in a place to which there may flow all manure-laden sewage from

barnyard and baths, and the watery lees squeezed from olives; for both vegetables and trees thrive on nutriment of this sort too.

(*De re rustica*, 1.6.24)

Today, human excrement is not used in agriculture because of the risk of disease transmission. When he discusses how to make good manure, Varro recommends not letting the sun heat the manure pile; but in fact the heat kills the pathogens, so this is not good advice.



Figure 6 Wall painting depicting workers cleaning clothes in fullers' vats

Urine was used in fabric production and cleaning, because it is rich in nitrogen. The finishing of woollen fabric was carried out by the fuller, whose workshop included terracotta tubs in which the woven fabric would be placed in a mixture of water and urine, or water and fuller's earth (various types of clay which absorb oils), and then trodden before being rinsed in water. In Ostia, a pipe from a urinal at the Baths of Mithras may have carried urine straight into a fuller's shop in the basement, but this is the only such example.

The presence of vats of urine on the street, and piles of excrement on fields and gardens, may make you wonder whether people in ancient Greece and Rome simply had a higher level of tolerance for bad smells. But in fact there is evidence to the contrary. Martial mentions a container of urine, destined for a fuller's shop, lying broken in the road as the first of his list of the worse smells of all (*Epigrams*, 6.93). Pliny the Younger, when governing a Roman province, wrote to the emperor Trajan about the city of Amastris, concerning an otherwise beautiful street:

Throughout the length of this, however, there runs what is called a stream, but is in fact a filthy sewer, a disgusting eyesore which gives off a noxious stench. The health (*salubritas*) and appearance alike of the city will benefit if it is covered in, and with your permission this shall be done. I will see that money is not lacking for a large-scale work of such importance.

(*Letters*, 10.98-99)

The emperor gave him permission, but no funding.

2.2 Baths in the ancient world

At the top of many lists of benefits brought by the Romans you will find the baths. Both private and public bathhouses existed, and mixed the use of hot and cold rooms, dry heat and plunge baths. But what were they really about? How did a strigil and oil substitute for soap, and was the bath experience only about keeping clean?

In Video 3, Helen King asks Dr Patty Baker to explain the remains of the bathhouse that was part of the Roman presence at Caerleon.

Video content is not available in this format.

Video 3 Baths in the ancient world



2.3 Baths in literature

Here is Seneca the Younger writing about the public baths. It's a very sensory account based on the sounds he can hear:

May I perish if silence is as necessary as it seems for a man who has withdrawn to study. Listen, on all sides noises of every sort resound about me. I am living right above a public bath. Imagine now every sort of voice which can sicken the ears. When strong men train and lift dumb-bells, when they are in pain or pretend they are, I hear groans; whenever they let out their breath I hear whistling and laboured gasping. When I chance upon some lazy fellow who is happy with a cheap rub-down, I hear the slap of a hand laid on his shoulders, which makes different sounds depending on whether it is flat or hollow. If the scorer turns up and begins to count the balls, I am done for. Add now the man kicking up a row and the thief who is caught and the man who thinks he sounds good singing in the bath, add those who jump into the pool with an enormous splash. Besides those whose voices are, if nothing else, at least natural, think of the hair-plucker repeatedly calling out in his thin and high-pitched voice to attract customers, who never shuts up except when he is pulling hairs out of armpits and makes someone else shout out instead of him. Think of the different shouts of the drinks-seller and the sausage-seller and the pastry-seller

and all the cook-shop hawkers selling their wares, each with his own personal cry.

(*Letters*, 56.1–2, cited in Shelton, 1988)

Once again, though, what sounds like a very realistic and vivid description is not as straightforward as it first appears. Seneca's point is that he is able to rise above all this disturbance because of his approach to life, based on Stoic philosophy. He claims: 'I no more notice all this roar of noise than I do the sound of waves or falling water'. Life, he says, is like a bath – things happen which you can't predict, but so long as you can ignore them and stay calm you will be fine.

Somewhat undercutting all this optimism, however, at the very end of this letter he announces that he can't stand it any longer and will be moving house!

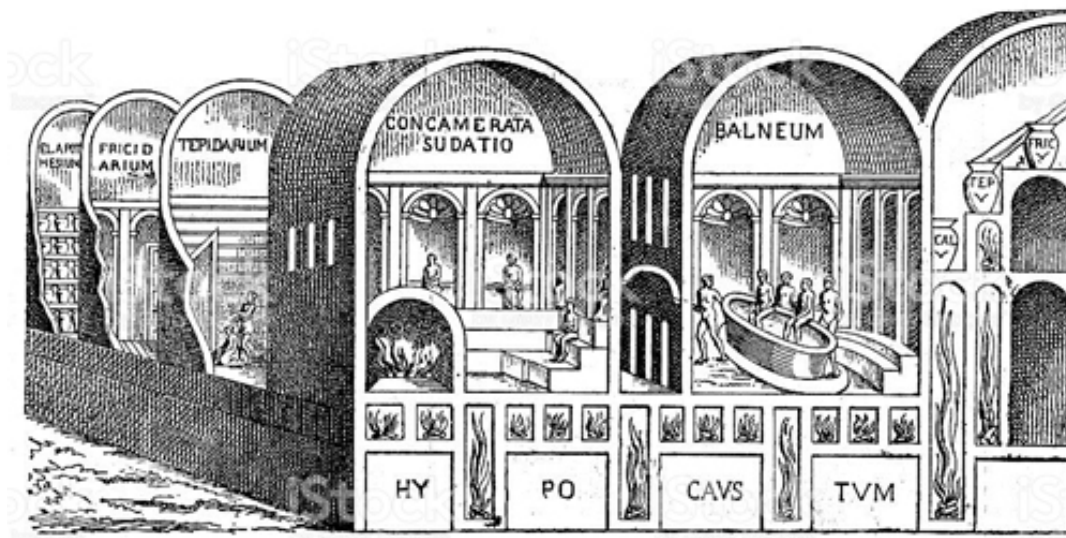


Figure 7 Antique illustration of Roman baths (*thermae*)

The various activities at a bath make it more like going to the gym today. It is also clearly a social occasion rather than primarily being about cleanliness. Indeed, some of the activities mentioned by Seneca could have spread disease as the water was not disinfected or changed. External parasites, including fleas and lice, were common in the ancient world; delousing combs have been found. While lice are unlikely to be spread in water – as they stick to their host – some of the other activities at a Roman bath involved the sort of close body contact which spread disease: for example, in the exercise areas, and as a result of the work of the masseurs and barbers who were at the baths. At Caerleon, teeth have been found with the marks of extraction instruments on them, suggesting that dental extraction went on alongside Seneca's hair-pluckers and food vendors.

Worryingly, some medical advice involved recommending the baths for those with weeping skin conditions. For example:

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.

(Celsus¹, 5.15)

2.4 How hygienic were ancient cities?

Toilets were recognised as smelly, and, as you learned in [Section 1.3 Finding a toilet](#), in private houses they would have been located next to the kitchen. In the communal toilets, the 'sponge on a stick' would spread disease and there were also no handwashing facilities. Baths, as you have just seen, were about more than keeping clean, and may also have spread disease. But what about the city more generally?

There was genuine concern in the ancient world about polluting the water supply. An inscription from Herculaneum, found on the wall of the water distribution point and dating from the period 60–70 CE, reads:

If any dung should be inclined to fall down upon this place, it should be warned not to lie there. If anyone provides intelligence contrary to this, freeborn are to pay a fine of (?), slaves are to be punished by being beaten on their behinds.

(Cooley and Cooley, 2014)

However, there was no central administration to control such pollution.

Scholars are still divided on whether running water and baths did anything for public health. Focusing on archaeology, you may be impressed by the water supply or the architecture, but if you concentrate on literary sources, which often present the city as a place of overcrowding with streets full of rubbish and danger, then you will get a very different picture. As a magnet for immigration and a centre of trade, the huge city of Rome was always playing host to new strains of disease. With a far greater density of population than the countryside, city dwellers would meet more people and thus more potential carriers of disease than their rural counterparts.

In a recent article in *Parasitology*, Piers Mitchell compared the pre-Roman and early medieval periods to see if there was any improvement between them. He found none, and suggested that the Roman public baths did nothing to reduce the various internal and external parasites which caused disease.

The Roman army may even have spread parasites across the empire, along with the sanitation which in theory could have improved people's health. The recent discovery of what may be 'sponge on a stick' toilet wipes, found in a toilet at Xuanquanzhi on the Silk Road, which was used over 200 years from around 100 BCE onwards, found eggs of Chinese liver fluke, roundworm, whipworm and *Taenia* tapeworm, and may suggest that travellers from eastern and southern China brought their internal parasites along this important travel route which linked Europe to Asia. It is known that silk from Asia was used in medical practice in the Roman Empire, because Galen mentioned it alongside dried animal gut when stitching wounds.

Activity 3

Having learned about Roman hygiene practices, where do you think would be healthier: the city or the countryside?

Provide your answer...

3 Doctors and excrement

In this section, you'll see how some forms of ancient medicine used waste products, why, and how these would have affected people's health.

Both urine and faeces – normally animal rather than human faeces – were used as medicines. Pliny the Elder praised a range of types of urine, including that of eunuchs which, he said, would work against any magical spell to prevent fertility. He describes a woman healer called Salpe who used urine to strengthen the eyes and also to cure sunburn; he adds that it could also remove ink blots. Human male urine was thought to cure gout, which is why, he claims, fullers never suffered from the condition – their work protected their health. Urine was also mixed with ash or soda and used for a range of skin conditions, including rashes and burns. He claims that:

Each person's own urine, if it be proper for me to say so, does him the most good, if a dog-bite is immediately bathed in it, if it is applied on a sponge or wool to the quills of an urchin that are sticking in the flesh, or if ash kneaded with it is used to treat the bite of a mad dog, or a serpent's bite.

(Pliny, *Natural History*, 28.18.67)

In other situations it was not one's own excrement that was of most use. Galen recommends the faeces of a child who had only consumed lupines (a member of the pea family), bread and wine. He also suggests that some people were willing to try a boy's urine as a cure for eye disease – although most would not.

So, at least by the second century CE, there was clearly some unease among patients about these therapies. As you have already seen, people in the ancient world liked the smell of excrement no more than people do today. Galen insists that some animal dungs did not smell anywhere near as bad as people might have expected, but he also mentions a special odour-free dog dung, from a dog who has only been fed on bones. It was white, and good for throat complaints.

Scent therapy (both foul and perfumed) was used in ancient Greek medicine to treat women suffering from the 'wandering womb'. If the womb was thought to have moved upwards in the body, foul smells would be put at the nose for the woman to sniff. These would repel the womb and make it move down. At the other end of the woman's body, sweet smelling substances would entice the womb towards them.

One more complex gynaecological process using scent therapy was fumigation. Women sat over a heated pot from which would rise up vapours of a particular scent. The vapours were thought to help move a woman's womb into its correct position. In ancient Greece, the process would take place outdoors and would last for several days.

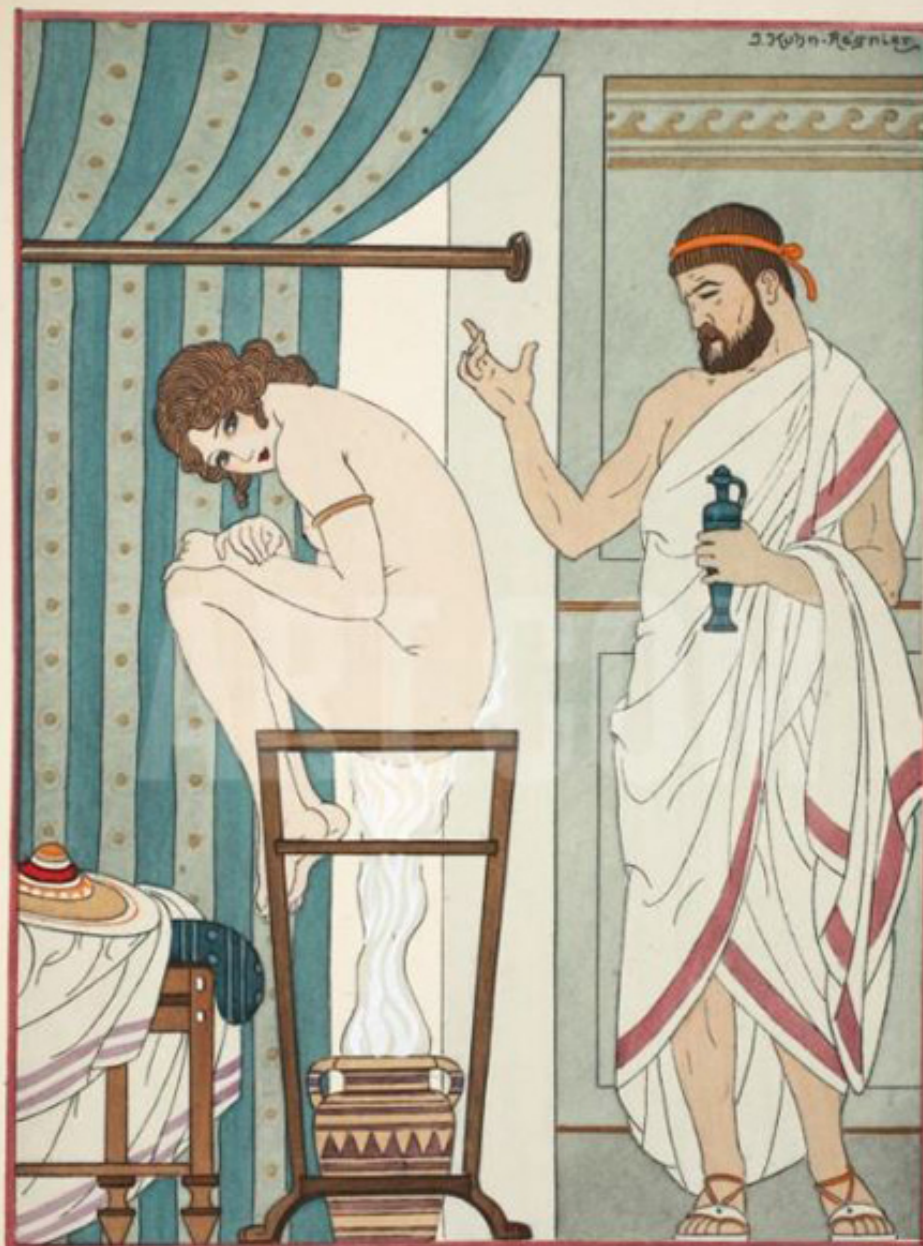


Figure 8 Fumigation therapy

If the womb was thought to have turned around so that menstruation was not happening, the doctor was advised to apply substances thought to have a 'warming' effect. These were listed as follows:

cow's dung, bull's gall, myrrh, alum, all-heal juice, and anything else that is similar – apply a great amount of these, and evacuate downwards with laxative medications that do not provoke vomiting and are mild, in order that purging does not become excessive.

(Hippocrates, *Places in Man*, 47)

If a fumigation was performed, the pot would contain sweet-smelling herbs or spices, or animal substances, including, in one recipe, a puppy. This may have related to dogs having multiple births – litters – and the desire to encourage fertility in women too. In Week 5, you will look at the ideas surrounding conception and birth in ancient Greece and Rome.

3.1 Medicine and purging

Ancient medicine made much use of a range of types of purge, both upwards and downwards. For example, here is an extract from a late fifth century BCE medical text:

Emetics and clysters for the bowels should be used thus. Use emetics during the six winter months, for this period engenders more phlegm than does the summer, and in it occur the diseases that attack the head and the region above the diaphragm. But when the weather is hot use clysters, for the season is burning, the body bilious, heaviness is felt in the loins and knees, feverishness comes on and colic in the belly. So the body must be cooled, and the humours that rise must be drawn downwards from these regions. For people inclined to fatness and moistness let the clysters be rather salt and thin; for those inclined to dryness, leanness and weakness let them be rather greasy and thick. Greasy, thick clysters are prepared from milk, or water boiled with chick-peas or similar things. Thin, salt clysters are made of things like brine and sea-water. Emetics should be employed thus. Men who are fat and not thin should take an emetic fasting after running or walking quickly in the middle of the day. Let the emetic consist of half a cotyle of hyssop (a herb from the mint family) compounded with a chous of water, and let the patient drink this, pouring in vinegar and adding salt, in such a way as to make the mixture as agreeable as possible.

(Regimen in Health, 5, Loeb translation)

NB: 1 chous = 12 cotylae (thus, $5\frac{3}{4}$ pints). Is this the (huge!) dose, or the proportions in which it should be mixed?



Figure 9 A drunk man vomits while a young slave holds his forehead, 500–470 BCE

Here is an example from the Roman writer, Celsus² (*On Medicine*, 1.3, 19–23):

A vomit is more advantageous in winter than in summer, for then more phlegm and severer stuffiness in the head occur. It is unsuitable for the thin and for those with a weak stomach, but suitable for the plethoric, and all who have become bilious, whether after overeating or imperfect digestion. For if the meal has been larger than can be digested, it is not well to risk its corruption; and if it has already become corrupted, nothing is more to the purpose than to eject it by whatever way its expulsion is first possible. When, therefore, there are bitter eructations, with pain and weight over the heart, recourse should be had at once to a vomit, which is likewise of service to anyone who has heartburn and copious salivation or nausea, or ringing in the ears, or watering of the eyes, or a bitter taste in the mouth; similarly in the case of one who is making a change of climate or locality; as well as in the case of those who become troubled by pain over the heart when they have not vomited for several days. Nor am I unaware that in such cases there is prescribed rest, but that is not always within the reach of those who are obliged to be busy; nor does rest act in the same way with everybody. Accordingly I allow that vomiting should not be practised for the sake of luxury; on account of health I believe from experiment that it is sometimes rightly practised, nevertheless with this reservation, that no one who wants to keep well, and live to old age, should make it a daily habit. He who after a meal wants to vomit, if he does so easily should first take tepid water by itself; when there is more difficulty, a little salt or honey should be added. To cause a vomit on getting up in the morning, he should first drink some honey or hyssop in wine, or eat a radish, and after that drink tepid water as described above. The other emetics prescribed by the ancient practitioners all disturb the

stomach. After a vomit, when the stomach is weak, a little suitable food should be taken, and for drink, unless the vomiting has made the throat raw, three cupfuls of cold water. He who has provoked a vomit, if it be early in the day, should after that take a walk, next undergo anointing, then dine; if after dining, he should the next day bathe, or sweat in the baths.

Both writers agree that winter is the season for vomiting because it is when the cold, wet humour called phlegm dominates the body. Celsus is suggesting that the only reason for it is to keep healthy; 'for the sake of luxury' suggests those who vomit simply in order to go on eating. But Celsus warns against vomiting every day, and he seems concerned about the effects of too much vomiting on the stomach. Although modern scholarship has debunked the myths about a special room in which diners went to vomit during dinner parties, it is clear that medical writers expected emetics to be used. What effects do you think all this purging would have?

3.2 Help or harm?

It should be clear by now that ancient medicine was not simply about recommending a diet to achieve 'balance' in the body, or about caring for the sick: it also used some dramatic and invasive forms of intervention in the body.



Figure 10 A man surrounded by bottles of prescription medication

Activity 4

Consider the use of noxious or dangerous remedies in modern medicine. How similar or different is it from the forms of ancient medicine you have studied here?

Provide your answer...

4 This week's quiz

You can now check what you have learned this week by taking the end-of-week quiz.

[Week 4 quiz](#)

Open the quiz in a new tab or window and come back here when you are done.

Summary

While we are still not sure about how people in the ancient world used toilets, it is clear that the ancient world was not just a smelly place, but also that the people who lived in it found the smells of excrement upsetting. And this is precisely what gave excrement such power in medical interventions. Purging the body was one of the treatments that was relatively easy to do, and which had a very obvious effect.

This week you have also learned more about how ancient sewers worked. The image of ancient cities as having a good water supply and sewage system turns out not to be entirely accurate. Furthermore, some of the agricultural practices involving human waste may have spread disease.



Figure 11 Roman aqueduct in modern-day Segovia, Spain

Next week you will move away from diet and look at ideas and practices surrounding fertility and birth. Suggestions about how pregnancy happened were not only found in medical texts, but also in myth and natural history writing. How would a woman know she was expecting a baby? Was it possible to ensure you had a boy rather than a girl? How could the mind affect the body at conception? What were men's roles at birth and how were babies cared for? How did girls learn about their bodies, and what happened if they were not fertile: would they still be considered 'healthy'?

Week 5: Conception, generation and sexuality

Introduction

We all know where babies come from, and that they aren't delivered by storks! Having an heir to inherit your wealth, and to ensure you were looked after in your old age, was crucial to people in the ancient world. This week, you will explore some of the different theories about conception and birth that were developed in the ancient world.

In the first video for the week, Helen King and Mathijs Lucassen discuss the gaps in modern knowledge about conception and birth, and the classical precedents for some modern developments.

Video content is not available in this format.

Video 1 The mysteries of new life



NOTE: The branded products in this video are not intended to be an endorsement and have only been used for teaching purposes; there are other products available.

1 Births in ancient mythology

Ancient Greek mythology contains many stories of unusual conceptions. For example, Hera, the wife of Zeus, became pregnant by eating lettuce; the milky white fluid found in lettuce stems was thought to resemble semen. In some versions of the story, she did this to show that Zeus was not the only one who could give birth on his own, something which he did when he ate his pregnant lover, Metis, and then gave birth to their daughter, Athene, from his own head. However, while Athene was a powerful goddess, Hephaistos – born only of the female – was lame. You will return to Hephaistos in Week 6, but it's significant that there was no male contribution to his conception.

There were different theories in the ancient world about what exactly it was that male and female parents contributed to conceiving a child. In some versions, men provided seed, and this was what gave the baby its identity and even its shape. Women only provided the blood, the raw material on which the seed would act. In other versions, both men and women provided seed, but men's seed was thicker and stronger. One model had a scale running from the very manly boy to the very feminine girl, with other possibilities – the feminine boy, or the 'tomboy' girl – in between. The child that was produced depended on the balance of the contributions of seed from the father and the mother, both in quality and quantity.

The so-called 'mother' is not a parent of the child, only the nurse of the newly-begotten embryo. The parent is he who mounts; the female keeps the offspring safe, like a stranger on behalf of a stranger, for those in whose case this is not prevented by god. I shall give you powerful proof of this statement. A father can procreate without a mother: a witness to this is here close by us [indicating Athene], the daughter of Olympian Zeus, who was not even nurtured in the darkness of a womb, but is such an offspring as no female divinity could ever bring forth.

(Aeschylus, *Eumenides*, 658–65)

It is not known how the audience of the play would have responded to this; would they have nodded their heads in agreement? In the context of the play, Apollo's arguments are getting increasingly desperate, plus the members of the jury to whom he speaks in the play do not all accept what he says. His comment that Athene was not 'nurtured in a womb' is also misleading, as she was conceived normally by Metis before Zeus decided to swallow her because he was afraid of a prophecy which said she would give birth to a son greater than his father.



Figure 1 Peter Paul Rubens, *The Discovery of the Child Erichthonius*, circa 1615

In myths of Erichthonios, a legendary king of Athens, he was born from Earth (the goddess Gaia). In some versions, his conception was the result of the lame god Hephaistos chasing the goddess Athene, who had sworn to remain a virgin. Hephaistos' seed fell on the earth and made Gaia pregnant. Athene received the baby from Gaia and hid him in a box, giving this to the three daughters of King Cecrops. While in the box, Erichthonios would gradually become immortal. Two of the girls obeyed the instructions not to open the box, but the third did not. This meant the immortality plan failed, and the boy was then brought up by Athene and eventually became king.

1.1 Wind eggs and the uterine mole

Aristotle described a well-known phenomenon, the 'wind egg'. This is when a female bird lays an egg with no yolk, and it was believed that this happened without any copulation. For Aristotle, the fact that wind eggs went bad suggested that what was in them was in some way alive, so that they contained at least a potential 'soul'. A wind egg was therefore 'incomplete', and in Week 6 you will consider further how this idea of 'incompleteness' was also applied to people with disabilities.



Figure 2 Joris Hoefnagel, *White Horse*, 1590–99

Another belief around the wind was that mares could be made pregnant by the west wind. Many ancient sources on the natural world and on agriculture repeated this story; for example, Pliny the Elder described how, in Spain:

mares when a west wind is blowing stand facing towards it and conceive the breath of life and ... this produces a foal, and this is the way to breed a very swift colt, but it does not live more than three years.

(Pliny the Elder, *Natural History*, 8.67)

In some versions of this story, the mares were feeling lust but there were no stallions available. The mares deliberately lifted their tails and turned round so that the west wind could satisfy their desire. Some writers told similar stories about sheep and combined normal conception with the wind's responsibility for the sex of the lamb. The second century writer Aelian wrote in his *On the Characteristics of Animals* (2.48) that sheep who were being impregnated by a ram would conceive male lambs if there was a north wind and female lambs if there was a south wind. In the sixteenth century, Joachim Camerarius picked up this idea of the power of the wind when he was wondering how pollen moved from one flower to another.

Could women also be impregnated by the west wind? No, but a similarly odd condition was thought to affect them. Sometimes women were thought to produce a 'uterine mole', a fleshy mass which was thought to result from menstrual blood acting without the male seed to shape it into a baby. This was not only something believed by medical writers. Here is philosopher and author Plutarch, who died in the early second century CE:

It is said that no woman ever produced a child without the co-operation of a man, yet there are misshapen, fleshlike, uterine growths originating in some infection, which develop of themselves and acquire firmness and solidity, and are commonly called 'moles'. Great care must be taken that this sort of thing does not take place in women's minds. For if they do not receive the seed of good doctrines and share with their husbands in intellectual advancement, they, left to themselves, conceive many untoward ideas and low designs and emotions.

(Plutarch, *Advice to the Bride and Groom*, 145d–e)

Here, Plutarch uses common knowledge of the mole to argue against women's minds being left to come up with ideas on their own.

The mole could also be seen in terms of imbalance: if there was too much blood from the woman's body, it could overwhelm the male seed. Symptoms were difficult to distinguish from true pregnancy, but the main difference was that the woman wouldn't feel the mole moving. Male foetuses were normally thought to move after three months, female after four, according to a Hippocratic treatise; or males after 40 days, females after 90 days according to Aristotle. The 'mole' was named from the ancient Greek word for a millstone, which was heavy and difficult to move.

1.2 Increasing the chances of conception

In Wine: the blood-making drink in Week 3, you saw that couples wanting to conceive a child should avoid drunkenness. Ancient medical texts are full of such advice, much of it directed at women, who were usually seen as responsible. In order to become fertile, a woman had to follow complex regimens: drying if her womb or vagina were too 'slippery'; moistening if they were too dry.



Another example of an ancient recipe thought to assist conception is preserved in Pliny the Elder's encyclopaedia:

(Pliny, *Natural History*, 20.3.6-7)

The 'fertilising' power of the cucumber was linked less to its phallic shape than to its being full of seed, which could help the human seed stick in the woman's womb, rather than slip out of her body and 'fall to the ground'. The seeds in this remedy were not consumed, but rather carried as an amulet by the woman. And the power of cucumber seeds did not stop at conception: it also helped in labour, as described above, where they were wrapped in ram's wool (an animal again known for its sexual ardour) and tied to the woman's loins without her knowledge.

The ancients also thought that sexual intercourse provoked or accelerated labour (an idea that still exists today), but instead of recommending this openly, they used remedies that had sexual overtones. The cucumber amulet had to be destroyed once it had served its purpose, while other ancient birthing amulets were made of more durable materials: you will come back to them later in [A quick birth?](#)

Medical texts contained some advice for men; in particular, that men could influence the sex of the unborn child. A passage from the Hippocratic treatise *On Superfetation* contains the following recommendations:

When a man wants to produce [literally: to grow] a male child, he should have sexual intercourse towards the end of the woman's period or when they have just ended, and he should thrust as hard as possible until he ejaculates; when he wants to produce a girl, he should have intercourse when the woman's periods are the strongest, or at least when they are still flowing, and tie his right testicle as much as he can bear. If he wants to produce a male, he should tie the left testicle.

(*On Superfetation*, 31)

There is much going on in this passage. First, you discover that the most fertile stage of a woman's cycle was during her period. This is rather surprising, as it is now considered that that time of the female cycle is the least fertile. When the man wants to produce a baby boy, he has to have vigorous sexual intercourse, as strength and vigour are male traits. The man can also tie his left testicle; in that way his semen will come from his right testicle. Now, the ancients considered the right to be positive and the left negative (or at least less positive), so the semen produced by the right testicle was more likely to produce a male. Note that, when the author recommends tying the right testicle to produce a girl, he mentions discomfort ('as much as he can bear'): producing a girl is altogether a more unpleasant experience than producing a boy.

1.3 Detecting pregnancy

Today, pregnancy tests are ultra-accurate and can detect pregnancy after a few days. Later on in the pregnancy, if they wish to do so, parents can also discover the sex of their unborn child. 'Gender Reveal' parties are becoming more and more common, in particular in the USA. But how did people detect pregnancy and the sex of their child in the ancient world?



Figure 4 A positive pregnancy test and a baby's dummy.

The simple answer is that there were supposed to be ways to be sure, even at the earliest stages of pregnancy. A woman of experience – that is, one who had had several pregnancies – would be able to recognise some of the signs, including nausea or a 'heavy' feeling. Later in the pregnancy, the movements of the baby would be the real proof that the woman was expecting.

A woman's testimony and experience, then, were the best ancient pregnancy tests. On the other hand, the ancients had numerous fertility tests to ascertain whether a woman was ready to receive a man's seed and grow a child.

You saw in Week 2 how the colour green was often used for eye remedies, but where fertility was concerned, red frequently featured. In the Hippocratic gynaecological texts, which date to Greece in the late fifth or early fourth centuries BCE, a test to check if a woman was fertile involved rubbing her eyes with 'the red stone – if the drug penetrates, she will become pregnant' (*Nature of Women*, 99). The power of the colour red continued after conception was achieved: a quick-birther, a remedy to speed up a difficult labour, involved wrapping red wool around the ingredients and hanging this round the woman's loins (*Diseases of Women*, 1.77). The traditional Roman medicine summarised by Pliny the Elder had a very similar fertility test, without specifying colour: rubbing any drug substance on her eye-lids and if it showed up in her saliva, it was a 'sure sign' that she was fertile (*Natural History*, 7.14.67). You also considered in Week 2 what a healthy appearance would look like. In the ancient world, it was believed that sunken eyes meant that a woman was pregnant (Hippocrates, *Barrenness*, 3).

Another type of fertility test involved smells. For instance, a woman had to insert a head of garlic in her vagina, leave it for the night, and see the next day whether she smelled of garlic through the mouth. If she did, she had a good chance of getting pregnant (Hippocrates, *Barrenness*, 2). The ancients believed that a sort of tube linked a woman's

mouth to her vagina, and blockages in that tube could prevent pregnancy. The garlic test revealed that there was no blockage, so the woman was fertile.

The Greeks and Romans also had various tests to determine whether a woman was expecting a boy or a girl. For instance, the Hippocratic text *On Sterile Women* states that:

Pregnant women who have spots on their face are carrying a female, whereas those who retain their good complexion are generally carrying a male. If the nipples turn upwards, a woman is carrying a male, whereas if they turn downwards, a female.

(*On Barrenness*, 4)

It is not difficult to see that being pregnant with a girl was considered a negative experience, while being pregnant with a boy was a positive one. A woman expecting a boy was 'glowing', her nipple turned upwards – the upwards direction being positive – while the woman expecting a girl was covered in unsightly freckles, with sagging breasts.

Activity 1

1. Think of the folkloric ways of finding out the sex of a baby in your country. Do you look at the shape of a woman's belly? Do you consider the way in which she walks? Do you swing a ring over her belly?

Provide your answer...

2. What do these tests tell us about social hierarchies? If they are plainly sexist, why are they still popular?

Provide your answer...

1.4 Developing in the womb

As you learned in A regimen for everyone in Week 3, digestion was understood by ancient Greeks and Romans as a form of internal 'cooking'. Similar images were used to understand what happened during conception and beyond.

A Hippocratic treatise of around 430–420 BCE (*On Generation/Nature of the Child*) describes how the foetus grew in the womb, and in particular how 'breath' (*pneuma*) entered the mixture of male and female seeds to make it rise like bread dough, forming a membrane. Imagery was not just taken from baking, but from agriculture and the natural world. In myth, Erichthonios was born from Gaia, the earth goddess. Many ancient Greek cities had myths in which their first inhabitants were born from the earth. The imagery continued in the classical Athenian marriage ceremony, in which a man gave his daughter to her future husband 'for the ploughing of legitimate children'.

Medical writers drew on this imagery. Inside the womb, the growing foetus put out 'branches' – the limbs, and subsequently the fingers and toes. The author of *On*

Generation/Nature of the Child also draws parallels between human gestation and that of animals; for example, both pregnant women and cows about to have a calf put on extra fat. This treatise contains two different theories of seed production in the body. In one, the seed comes from the head and travels down the spinal cord; in the other, seed comes from all over the body, and this explains why a person may have some features of one parent, but also features from the other parent.



Figure 5 Eight representations of the foetus in the womb, from *The Midwives Book* by Jane Sharp, 1671

The same treatise also explains the birth of children with disabilities. Weak babies may be the result of the mother's womb being too open, so that the blood needed to make them grow is lost. Alternatively, the womb may be too small. The writer asks the reader to imagine a cucumber growing in a jar; it will grow into the shape of its container. Further disabilities are described as the result of injury to the mother. Disabled parents, however, usually produced healthy children, unless there was damage to their 'seed':

When some disease befalls the moisture from which the sperm is formed, the four kinds of substances that are naturally present in this part do not produce a complete seed, but one weaker to the degree that it is maimed; thus it does not seem any wonder to me that this offspring is maimed like its parent.

(*On Generation*, 11)

You will return to disability in Week 6.

Premature birth was also discussed by medical writers. A pair of treatises from the early fourth century BCE look at the 'seven months child' and the 'eight months child' – because the ancient Greeks counted 'inclusively', this means children born after six months and seven months in the womb have been completed. The writer is pessimistic about these premature births, but says that the 'seven months child' is more likely to live than the 'eight months child'. Again, agricultural imagery features:

Now as a fetus arrives at the onset of its final formation, it matures and gains much strength in the process, more than at any other time; the membranes in which it is nourished in the beginning become loose, just the way that ears of grain do when they are stretched before their fruit has reached its complete maturity.

(Eight Months' Child, 1)

The emerging baby is thought to be the active element here, as it 'breaks through its membranes' and 'compels' birth to occur; elsewhere in the ancient Greek medical texts, the image of a chick pecking its way out of an egg features.

The explanation for the 'seven months child' being more likely to live was that it emerged before a period of 40 days, during which the Greeks believed that the child changed position in the womb so that it emerged (normally) head-first. This period was seen as a very dangerous one and is even described as an 'illness', because access to both food and 'breath' was restricted while the child moved.

1.5 The theory of maternal impression

In [Section 1.1 Wind eggs and the uterine mole](#), you read about the belief that women's minds, as well as their bodies, could 'conceive strange and evil schemes and feelings'. This also applied to conception and birth. The philosopher Empedocles described the power of the woman's imagination to influence their offspring: 'For often women have fallen in love with statues of men and with images and have produced offspring which resemble them' (Aetius, 5.12.2, quoting Empedocles fr. A81).

This is one example of how the ancient Greeks and Romans believed in the theory of 'maternal impression' – that an object seen, or even just imagined, by a woman as she conceived somehow imprinted itself on the unborn child. The best-known example of this is in the early Greek novel, Heliodorus' *Aethiopica*, where the heroine, Chariclea, turns out to have been born in Ethiopia; there, she had been rejected by her black mother, who was afraid she would be accused of adultery because of Chariclea's white skin. But, the story assures us, this only happened because her mother had been looking at a painting in the bedroom showing Andromeda white and naked.



Figure 6 Giuseppe Cesari, *Perseus saving Andromeda*, 1596

How was this thought to happen? Return to Week 2 and refresh your memory of ancient theories of seeing. Here, the eye receives the image, then imprints it on the unborn child. This can be used as a form of eugenics, trying to improve the appearance of your children; in his *Gynecology*, the early second century CE medical writer Soranus (1.39.1) says the tyrant of Cyprus, who was 'misshapen', deliberately made his wife look at beautiful statues and ensured their children didn't look like him.

Activity 2

1. Sometimes an ancient idea still survives in popular culture today. Have you encountered anything like the theory of maternal impression?

Provide your answer...

2. Search online for the story of Mary Toft, who apparently gave birth to rabbits.



Figure 7 Mary Toft duping medical professionals into believing she is giving birth to a litter of rabbits; *Cunicularii or The Wise Men of Godliman in Consultation*, illustration by William Hogarth, 1726

Why was this story believed and how was it proven to be fake?

Provide your answer...

2 Giving birth

Every culture has its own expectations about positions for giving birth and who is allowed to be present. In this section, you'll explore what these expectations were in ancient Greece and Rome.



Figure 8 Etruscan woman giving birth standing up

Activity 3

1. There are many images (statuettes, paintings, etc.) of woman giving birth from ancient cultures around the world. Use the internet to find some of these images, and note down which societies they came from, where they were found, and why they might have been made. Do the images depict birth in the same manner or are they different?

Provide your answer...

2. What is the most common birthing position in your country? Does it differ from what is represented by the ancient images you found?

Provide your answer...

The blog post [RTI of Etruscan Bucchero Fragments at Poggio Colla](#) describes how a new form of imaging made it possible to see the image on the piece of pottery shown in Figure 8, from an Etruscan site, more clearly.

2.1 A quick birth?

Video 2 shows Professor Helen King and Dr Laurence Totelin discussing the role of amulets in supporting reproductive health. What was an amulet and how was it thought to work?

In the video, they focus on an amulet that is made of haematite (blood-stone) and which 'opens' and 'closes' the womb, thus serving both as a contraceptive and a way of achieving a quick birth.

Video content is not available in this format.

Video 2 A quick birth?



2.2 Men in the birthing chamber

The role of men in birthing has historically been a controversial one. Should men even be present when a woman is giving birth, whether as husbands or doctors?



Figure 9 A male midwife examines a pregnant woman, line engraving, 1773

In myth, the goddess Artemis helped her mother, Leto, to give birth to her twin brother, Apollo. Real women in the ancient world certainly acted as midwives, and some were commemorated on funerary monuments as midwives or doctors. However, the role of midwife was not a 'profession' in any modern sense. In a famous passage from a writer of the late Roman Empire, a woman was working as a barmaid when a call came for her to use her midwifery skills (Eunapius, *Lives*, 463). However, reading between the lines of

many medical texts, you can tell that men were also present at births, particularly difficult births, where men and women could work alongside each other.

As usual, you need to be cautious in how you read the evidence. Galen, for example, dedicated his treatise on the anatomy of the womb to a midwife. When he was treating the wife of Boethus – a well-known Roman – he respectfully described the midwives she consulted for a gynaecological problem as ‘the best in Rome’. However, the point of him telling the story of her case is to show that the midwives failed, but he succeeded in curing her. Indeed, the section in which her story features is about how people in Rome called him a ‘miracle worker’ (*On Prognosis*, 8).

With some evidence, it is difficult to tell whether normal life is being exaggerated for comic effect. In a passage from a comedy written in 411 BC, Aristophanes describes how a woman pretended to be pregnant and then purchased a baby who was smuggled into the room. Clearly the presence of the woman’s husband in the room would ruin this pretence. So, while faking labour, the woman shouts out to her husband that she is about to give birth, and he leaves the room; this shows he was there, up until this critical point (*Women at the Thesmophoria*, 502–516).

In many written sources, including private letters that survive from Roman Egypt, there are hints that men were expected to make the preparations for birth, whether that was buying fragrant ointment or raising the bed so the foot end was higher. In the second century CE, Soranus described the basic equipment for a normal birth as olive oil, warm water and soft sea-sponges, wool, bandages, ‘things to smell’, a delivery chair and two beds. The ‘things to smell’ included soil, barley groats, and apples, quinces, a lemon, a melon and a cucumber, if these were in season. Sniffing these would revive the woman if she was in danger of fainting. A useful task for the husband would be buying these foodstuffs. Soranus gave detailed instructions on how to make the delivery chair, perhaps suggesting that husbands could make these themselves. In the absence of a suitable chair, he suggested the labouring woman should sit on the midwife’s lap. You may be wondering why two beds were also needed. One should be soft, to rest after giving birth, and the other firm, for use during labour. This suggests that, at least in wealthy households, the woman had the freedom to change her position.

During labour itself, Soranus described what the midwife should do, and also recommended three other women should be there as helpers. There were clearly issues of embarrassment involved; he warns the midwife not to look at the woman’s private parts as she gives birth, because embarrassment may make the woman’s body close up at the wrong moment. However, Soranus himself, like doctors who wrote parts of the Hippocratic Corpus, seems to have been present at births. By reading Soranus’ treatise, other men could be ‘present’ in a different way; he was writing for an audience of wealthy men who wanted to make sure they were providing the best possible care to the women of their families.

In some cases, men’s presence at births was for legal purposes. If a widow was pregnant and claimed the child had been fathered by her late husband, Roman law allowed for any interested party to be present at the house where she was giving birth, or to send representatives (Justinian, *Digest*, XXV 4.1.10). At the actual birth, those who were concerned were allowed to send women into the room to witness what happened. These would include one midwife attending on behalf of the deceased man’s family and another representing the woman’s family.

3 After birth: care of the newborn

In this section, you will examine what happened to children immediately after birth. You will also explore what happened to girls growing up towards puberty, and you'll consider infertility.



Figure 10 A clay-baked Roman votive offering of a baby

Activity 4

Soranus wrote about the care of the newborn child in his work on *Gynecology*. Read Soranus, *Gynecology*, Book 2 (sections 6–11) (pages 79–90).

Note down your reactions to what you have read. Were the treatments suggested hygienic from a modern perspective? Is there an element of ritual involved in the treatment? What tools and materials were used for treatment of the infant after it was born? How was a child fed?

Provide your answer...

You will return to the practice of swaddling next week.

3.1 The role of the wet-nurse

In Week 3, you learned about the properties of breast milk. There were no safe alternatives to breast milk in antiquity, so if a mother could not, or did not want to breastfeed, a wet nurse had to be found. The benefits of maternal breastfeeding were a matter of debate in antiquity. Soranus advocated maternal breastfeeding, but within limits:

All things being equal, it is best to feed the infant with mother's milk. For it is most suited to him and the mothers become more sensitive towards their offspring, and it is more natural to be fed by the mother after the birth, as it is before the birth. But if anything prevents this, one must choose the best nurse, lest the mother grow old because of the suckling that takes up every day.

(*Gynecology*, 2.18)

Soranus acknowledges here how exhausting it can be for a mother to breastfeed her child in the days and weeks after birth. In contrast, his contemporary, the orator Favorinus, refused even to consider the possibility of giving the child to a nurse. In an episode recounted by the Latin author Aulus Gellius, Favorinus goes to visit a noble family where a baby has just been born. The mother has had a difficult and exhausting labour. The grandmother is in favour of bringing in nurses who will relieve the new mother, but Favorinus pleads with her: not feeding the child would amount to 'half motherhood'. He stresses the dangers of entrusting the baby to a 'foreign' influence:

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.

(Favorinus in Aulus Gellius, *Attic Nights*, 12.1.17)



Figure 11 Terracotta figure of an old nurse and a baby

As you saw in Week 3, breast milk is a powerful substance, one that is analogous to blood and seed. If 'degenerate' milk is fed to a noble baby, they risk taking on the bad characteristics of their nurse. Favorinus notes that finding a nurse is often a rushed affair, with the first comer winning the job.

Favorinus' portrait of the bad nurse is almost point by point the opposite of Soranus' portrait of the ideal wet nurse, which includes physical specifications:

One should choose a wet nurse not younger than twenty nor older than forty years, who has already given birth twice or three times, who is healthy, of good habits, or large frame, and of a good colour. Her breasts should be of medium size, lax, soft and unwrinkled, the nipples neither big nor too small and neither too compact nor too porous and discharging milk over-abundantly. She should be self-controlled, sympathetic and not ill-tempered, a Greek, and tidy.

(Soranus, *Gynecology*, 2.19)

As well as the descriptions of Soranus and Favorinus, [wet-nursing contracts](#), which is preserved on papyri from Hellenistic and Roman Egypt, provide further information.

This contract, which dates to 13 BCE, is for a nurse (Didyma) to feed a baby who had been abandoned by his or her parents, and taken on as a slave by a woman called Isidora. The contract specifies the pay of the wet nurse, and stipulates that she 'shall take proper care both of herself and of the child, not injuring her milk nor sleeping with a man nor becoming pregnant nor suckling another child'. She must breastfeed for 16 months, a length of time that is below the two years recommended by the World Health Organization (WHO) today, but higher than the reality in many countries of the world.



Figure 12 Wall painting of Phaedra and her wet nurse, Pompeii

In wealthy families in antiquity, the wet nurse often stayed on and became a friend and confidante of the child. The aged nurse is a stock character in ancient plays. For instance, in Euripides' *Hippolytus*, Phaedra confides in her nurse about her forbidden love for Hippolytus, her stepson. The wall painting from Pompeii (Figure 12) is sometimes thought to represent Phaedra and her nurse talking about her lovesickness, a condition you looked at in Week 1.

3.2 Girls growing up

Girls learned about growing up, and about being a mother, in several ways: from ritual, from play, and from the theories about how their bodies worked.

Very little is known about the rituals associated with becoming a woman, though it is known that girls would dedicate their childhood toys to a goddess when they married. A ritual called the *arkteia* was celebrated in classical Athens at Brauron, a settlement in

Attica (the geographical territory centred on Athens). The ritual may have been a sort of initiation, or may have been done to appease the goddess Artemis, who was known to bring disease.



Figure 13 Statues of children from the temple of Artemis in Brauron, Greece

The main evidence for this is a literary source: Aristophanes' play *Lysistrata* lists various ritual activities performed by girls growing up, one of which is 'playing the bear for Artemis' (lines 644–645). The context here is that the female chorus in the play is making a case for their right to advise the city. The other evidence comes from Brauron itself: fragments of pottery on which girls seem to be dancing or running. On one fragment, an older woman – possibly a priestess – is wearing a bear mask and raising her hands as if to threaten. One of the pieces of information about bears which is given in ancient natural history is that they literally lick their cubs into shape. This could suggest that the girls who perform the *arkteia* – a word which comes from the term for bear, *arktos* – are learning how to shape their own future babies. Swaddling, as you will see in Week 6, was thought to 'shape' the child's body.



Figure 14 Wooden doll from second century CE

Nearly 500 dolls from the Roman world have been found, dating between the second and fourth centuries CE. Some, such as those made of ivory or bone, survive in girls' burials – these may have articulated limbs – while others found in Egypt were made of cloth. Most have the proportions of an adult woman, and may also have intricate hairstyles. It is possible that playing with these dolls helped girls to think about their future roles as wives and mothers.

One medical text, the title of which could be translated as *Diseases of Virgins, Illness of Maidens* or *Diseases of Young Girls*, describes in detail the effects on a girl's body if she remained unmarried when she was 'ripe for marriage'. The blood will be unable to leave her body and will instead move up to the diaphragm, believed by the author to be the seat

of consciousness. She will have suicidal feelings and will see visions. The writer says that girls seek assistance from Artemis, but it was not the goddess who healed them; it was when their accumulated blood flowed out of the body. The writer ends with the advice that 'if they conceive, they become healthy', and the warning that married women who do not have children were also likely to suffer from this condition.

3.3 Infertility – ex votos of sexual parts

If a girl grew up, married, but did not become pregnant, her status as a full woman was threatened. Models of both male and female reproductive organs are among the objects dedicated at sanctuaries of gods and goddesses associated with health; places which – as you saw in Week 1 Health and the gods – were found all over the ancient world.

In Video 3, Professor Helen King speaks to Dr Jessica Hughes about why people would offer these objects to the gods.

Video content is not available in this format.

Video 3 Infertility - ex votos of sexual parts



3.4 Being healthy but infertile

As you heard in Video 3 earlier, one possible reason for dedicating models of sexual organs to a god was infertility. The WHO estimates that today around 1 in 4 couples of reproductive age will be affected by infertility – that is, a couple will have attempted to conceive for more than a year without producing a living child. Although there are no figures from the ancient world, written sources do reveal that the struggle to conceive was a concern in antiquity and there are many recorded causes and treatments given for such difficulties in the ancient medical texts.



Figure 15 A rose touched by frost

The main source for infertility in the ancient world comes from the writers of the Hippocratic Corpus. Indeed, fertility problems were considered so frequent by the Hippocratic writers that after listing the various causes of infertility, the third volume of *Diseases of Women* – often known as *On Sterile Women* – states:

This is the number and kind (of causes) in women that prevent them from giving birth, until they are healed, and through which they become completely infertile: therefore, there is no need to be surprised that there are often women who fail to give birth.

(*Barrenness*, 1)

So reproductive failure was viewed by this Hippocratic writer as something that a doctor should expect to see in his patients with relative frequency. It is worth noting that, although the focus in this case is on female infertility, it was understood in antiquity that men could be infertile too. In *On Sterile Women*, the writer notes that he has listed causes of infertility which stop women 'giving birth, until they are healed, and through which they become completely infertile'. The writer says that if treatment is successful the women will go on to have a child and, if not, she will remain infertile.

This raises the question of whether someone could be considered both healthy and infertile in the ancient world. If you look at some examples of infertility in the Hippocratic texts you can see that there are three different prognoses given.

The first possibility was that the treatment worked, and the person was not only cured but their fertility was restored. For example:

If a woman's menses do not flow where they should, but start down into her rectum, in this case too she does not become pregnant ... If the mouth of a

woman's uterus has turned toward her rectum or has closed, on being treated she recovers her fertility.

(Barrenness, 1)

Here the author clearly states that by treating the woman's menstrual problems her fertility will be restored.

The second prognosis was that treatment was unsuccessful and the woman remained ill and may even have died:

Now if the menses which have become full of pus do not go down through the vagina, they are likely to burst forth above the groin down along her flank without swelling ... In these cases the woman does not usually survive. But even if she should survive she will always be infertile.

(Diseases of Women, 1.2)

In the Hippocratic Corpus, there are many examples of women being described as 'cured' while the author also states that they will remain infertile. It therefore does seem possible to be healthy as a person, while having an unhealthy womb. While an unhealthy woman may also be infertile, this did not mean that an infertile woman was always considered as being unhealthy by the ancient medical writers.

4 This week's quiz

Check what you've learned this week by completing the end-of-week quiz.

[Week 5 quiz](#)

Open the quiz in a new tab or window then come back here when you are done.

Summary

Becoming pregnant and giving birth were very important parts of the life of a woman in the ancient world, and this week you've considered how women would have learned about their roles. Men, too, had roles to play, not only in fathering babies – and there were different views about how women and men contributed to making a child – but also in assisting with birth.



Figure 16 Carved relief of a seated mother and her child

You have also learned about a ritual called the *arkteia* – a word which comes from the term for bear, *arktos* – and the idea that the bear is a ‘good mother’ because she literally ‘shapes’ her cub. Next week you will consider the production of the ideal body in more detail, focusing on the mobility of the body in relation to health.

Week 6: The ideal body: disability and wounding

Introduction

There is evidence from art and from medical texts describing what the ideal body was supposed to look like. But how did reality match up?

Many of the images from the ancient world you see today are of strong bodies, which give the impression that the Greeks and Romans were healthy and physically powerful. Yet this ideal was far from reality. This week you will explore the role of exercise in the ancient world and then examine physical impairments: how can they be identified? How did people live with them? What injuries could be treated so that strength and health remained?

Much evidence for exercise regimens comes from the Greek and Roman military, so you will explore ancient texts on army recruitment and on surgical treatment, and compare these with literary texts and visual representations of surgery. By exploring this material, you will see what soldiers did to maintain their battle strength. Their fitness helped protect them from battle wounds; however, such wounds were inevitable and you will also explore how soldiers treated wounds and the types of objects used for treatment. This will lead into considering the general surgical procedures used to maintain bodily health.

You should begin the final week of this course by watching Video 1. In this video, Helen King and Mathijs Lucassen discuss how ideals for male and female bodies have changed over time, and consider not only the effect of injuries on this ideal, but also the physical and psychological health of soldiers in the ancient world.

Video content is not available in this format.

Video 1 [Becoming perfect?](#)



NOTE: The branded products in this video are not intended to be an endorsement and have only been used for teaching purposes; there are other products available.

1 Ancient ideals

In previous weeks you have examined appearance in terms of the face, but the entire body, particularly musculature, was also used to determine a healthy physique. Each culture will have its ideal body type, but physical strength is generally a sign of health achieved through exercise.

