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Health and wellbeing in the ancient world



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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

[View transcript - 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

[View transcript - Video 2 Taking your pulse](#)



[View comment - Activity 2](#)

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

[View transcript - 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

[View description - 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

[View description - 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 *calx*, 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

[View description - 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'

[View description - 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

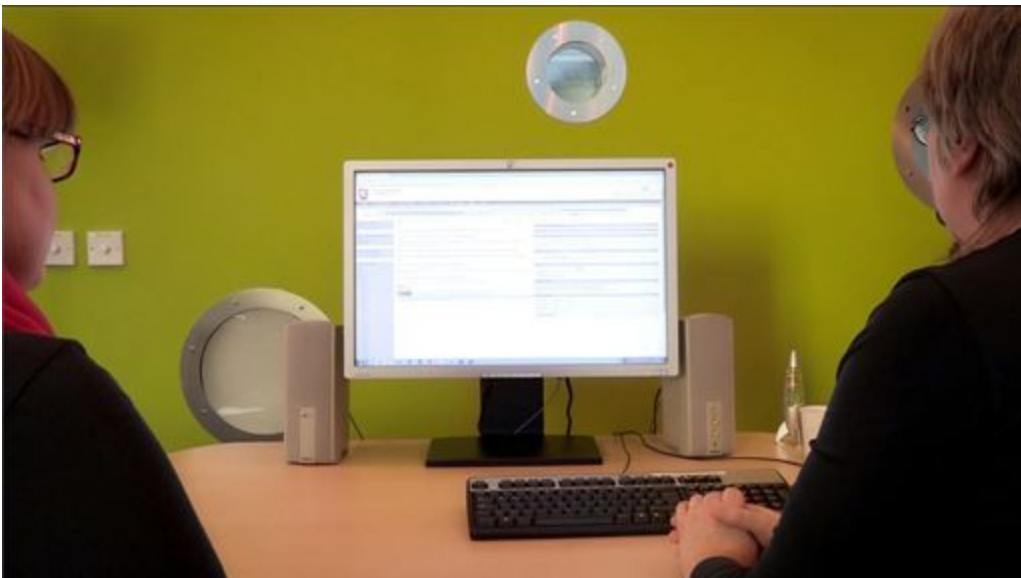
There are many online resources for finding material on health in the ancient world. For example, the Perseus Project is a digital library and currently the fullest open access database of ancient Greek and Latin texts. You will explore this site in detail before considering some important issues in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

[View transcript - 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](#).
- 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...

[View comment - Untitled part](#)

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.



Figure 5 Doctor reading a scroll

[View description - 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

[View transcript - Video 5 Lead curse tablets](#)

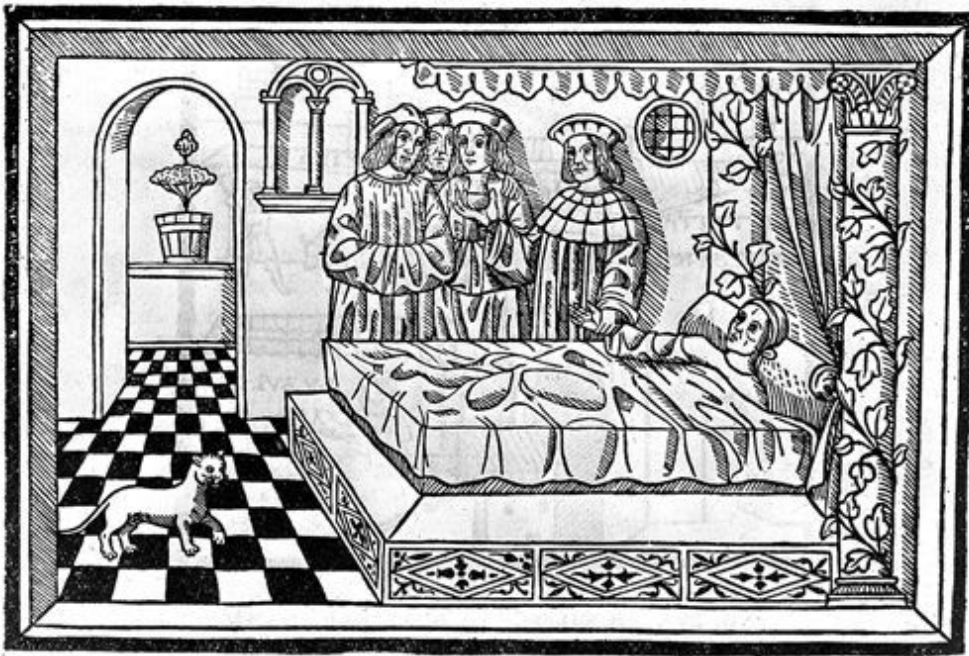


Next you'll return to looking at pulse and what it can help detect.

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

[View description - Figure 6 A physician at his patient's bedside, taking his pulse and examining ur ...](#)

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)

[View description - Figure 7 A Japanese netsuke of doctor and patient. Netsuke are ornaments from which ...](#)

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
[View description - Figure 8 A rich physician feels the pulse of a poor, sick patient, telling him he ...](#)

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

[View description - 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

[View transcript - 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

[View description - 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.



UNE CLINIQUE GRECQUE AU V^e SIÈCLE.
(Vase attique de la collection Peytel).

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

[View description - 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

[View description - 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

[View description - 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

[View transcript - 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

[View description - 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

[View description - 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

[View description - Figure 3 Roman mosaic from Antiochia, House of the Evil Eye, c. second century C ...](#)

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

[View transcript - 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

[View description - Figure 4 Replica of a Trojan archer from the Temple of Aphaia, Aegin](#)

Figure 5 shows another statue called the Peplos Kore: *korê* 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

[View description - 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

[View transcript - 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

[View transcript - 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

[View description - 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 (*uolnerati*), 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 bleariness 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

[View transcript - 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

[View transcript - 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':

Elaterium 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. Smearred in the sunshine on the face, it removes freckles and spots.



Figure 7 A scallop shell with make-up remnants

[View description - 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.

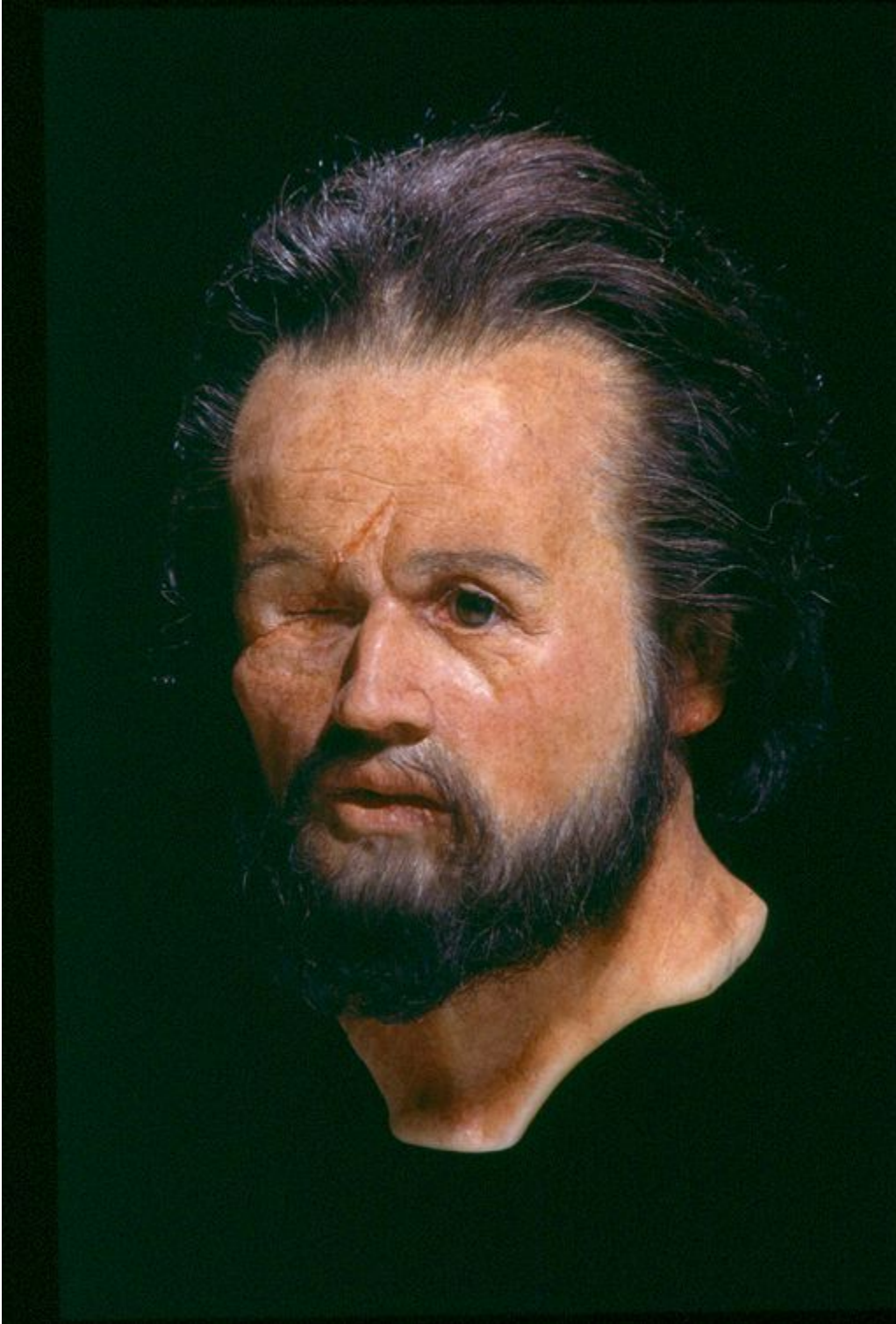


Figure 8 Facial reconstruction of Philip of Macedon

[View description - 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

[View description - Figure 9 Alexander the Great mosaic, Roman, circa 100 BCE, originally from the House ...](#)

Activity 4

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

Provide your answer...

[View comment - Untitled part](#)

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

[View description - 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

[View transcript - 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

[View description - 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

[View transcript - 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

[View description - 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.

[View comment - Activity 1](#)

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

[View description - Figure 3 Portrait of Emperor Rudolf II as Vertumnus, the Roman god of the seasons, ...](#)

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

[View description - 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

[View description - Figure 5 Roman wall painting of a glass bowl of fruit and vases, from the House of ...](#)

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 knobby. 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

[View description - 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...

[View comment - Activity 3](#)

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

[View transcript - 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

[View description - 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

[View description - 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 HYGEIA NURSING BOTTLE CO., Inc., 1206 Main St., Buffalo, N. Y.

Hygeia NURSING BOTTLE

Figure 9 Advertisement for the Hygeia nursing bottle

[View description - 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

[View description - 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

[View transcript - 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

[View description - Figure 11 Attic red-figured kylix depicting a symposiast vomiting after a symposium, ...](#)

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.

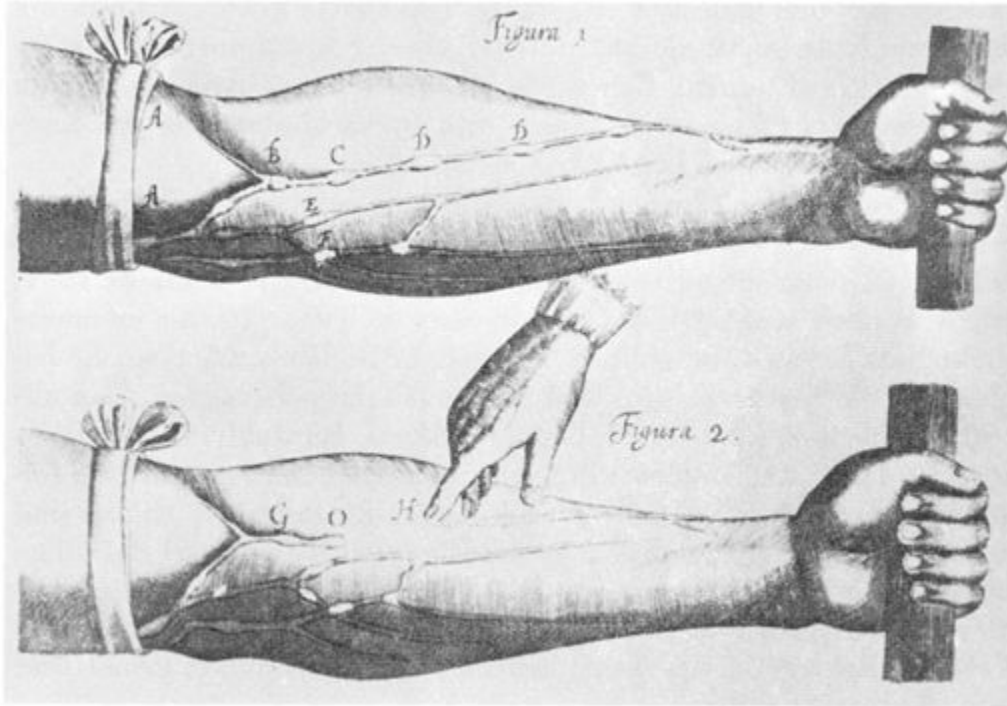


Figure 12 An illustration of the veins found in the forearm, from Harvey's work *Exercitatio Anatomica de Motu Cordis et Sanguinis in Animalibus* (*On the Motion of the Heart and Blood*)

[View description - Figure 12 An illustration of the veins found in the forearm, from Harvey's work Exercitatio ...](#)

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 handwriting: 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

[View description - Figure 13 Jar used for storing 'theriac', a type of medicine made from exotic in ...](#)

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

[View description - Figure 14 Still life with eggs, birds and pewter dishes, from the House of Julia ...](#)

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

[View transcript - 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

[View description - 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

[View description - 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...

1. 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

[View transcript - 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

[View description - 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...

1. 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

[View description - 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

[View description - 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

[View description - 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

[View transcript - 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!

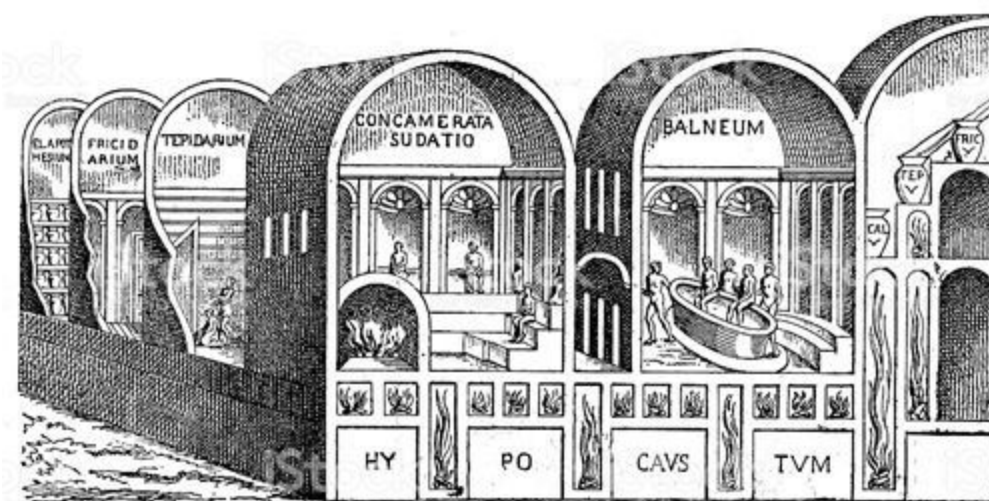


Figure 7 Antique illustration of Roman baths (*thermae*)

[View description - 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.

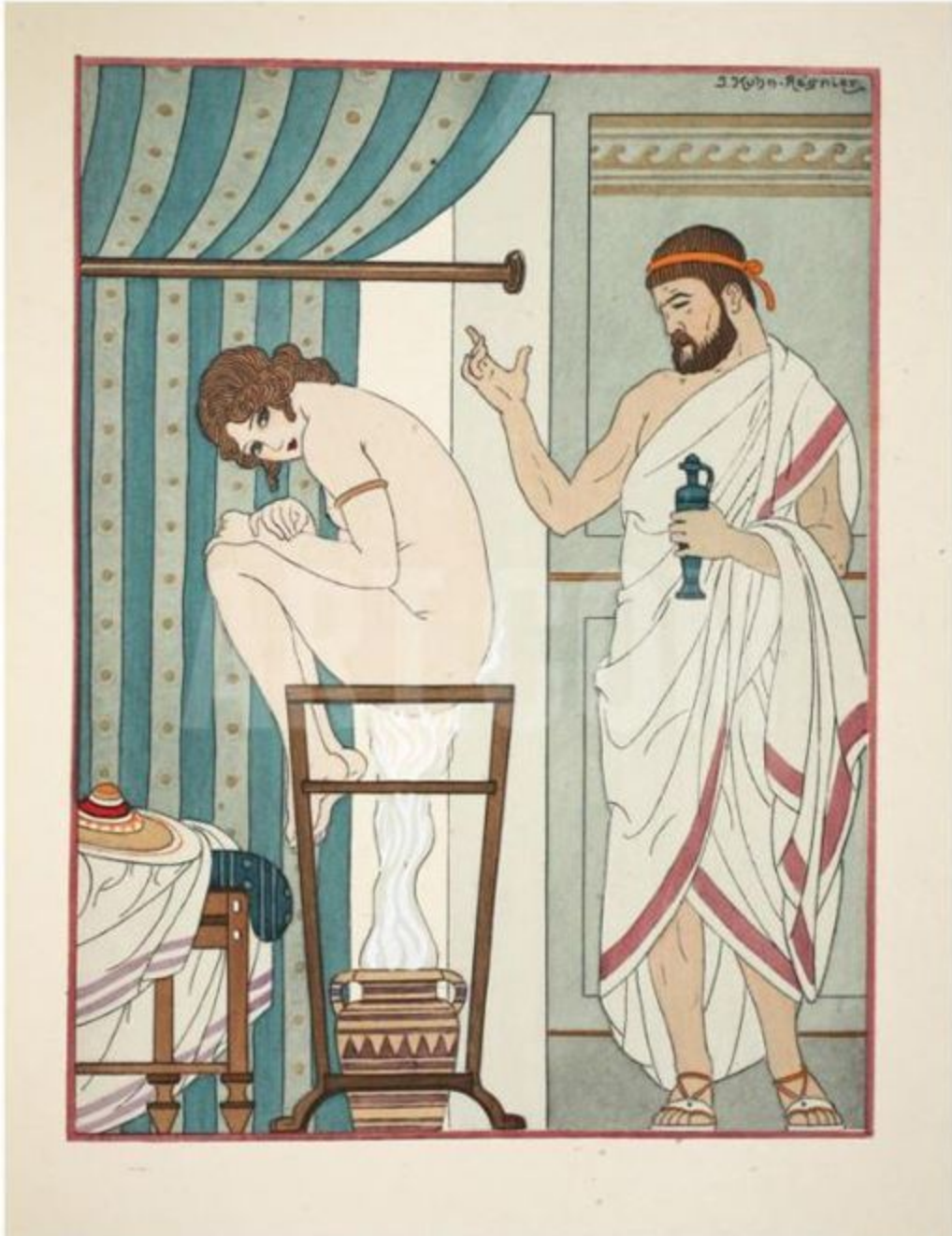


Figure 8 Fumigation therapy

[View description - 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, 5¾ 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

[View description - 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

[View description - 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

[View description - 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

[View transcript - 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

[View description - 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 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

[View description - 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.



Figure 3 Icons relating to pregnancy

[View description - Figure 3 Icons relating to pregnancy.](#)

A woman also had to endure various treatments, such as sitting through long fumigations (treatments in which vapour was directed to the woman's vagina, discussed in the section Doctors and excrement in Week 4), or drinking unpalatable potions for several days. One of these potions, described in the Hippocratic text *Diseases of Women* (1.13), consists of powdered deer horn (antlers) to be drunk in wine for four days. The choice of this ingredient was far from gratuitous: the deer had a reputation for its sexual prowess, and the capacity for its antlers to regenerate was well noted. Today, male deer are still associated with sexuality: think of the 'stag do', which in British culture is the party traditionally organised for a groom shortly before he marries.

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

It is thought that conception is aided by cucumber seed if a woman keeps it fastened to her body without its having touched the ground; while labour is easier if, without her knowledge, the seed, wrapped in ram's wool, be tied to her loins; but it must be hastily carried out of the house immediately after delivery.

(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.

[View description - 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.

(*OnBarrenness*, 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...

1. 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

[View description - Figure 5 Eight representations of the foetus in the womb, from The Midwives Book ...](#)

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

[View description - 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...

1. 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

[View description - Figure 7 Mary Toft duping medical professionals into believing she is giving birth ...](#)

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

[View description - 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...

1. 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?

[View transcript - 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

[View description - 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

[View description - 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

[View description - 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

[View description - 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

[View description - 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

[View description - 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

[View transcript - 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

[View description - 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

[View description - 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?

[View transcript - 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.



Figure 1 The Doryphoros of Polykleitos

[View description - Figure 1 The Doryphoros of Polykleitos](#)

Where does the Western image of the ideal body come from? Figure 1 is of Polykleitos' *Doryphoros*, which means 'The Spear Bearer'. This is a Roman copy of an original Greek image dating to the mid-fifth century BCE, and is in perfect proportion: it shows an ideal physical body.

Most of the now-famous statues from the ancient Greek and Roman worlds were discovered in the Renaissance, dug up in northern and central Italy in vineyards and gardens, studied, and then used as models by artists. In the Western world, you can still see many of these statues as well as Renaissance images based on them, such as Michelangelo's David. But their impact extends far beyond museums. For example, the *Venus de Milo* still appears as a symbol of 'woman'.

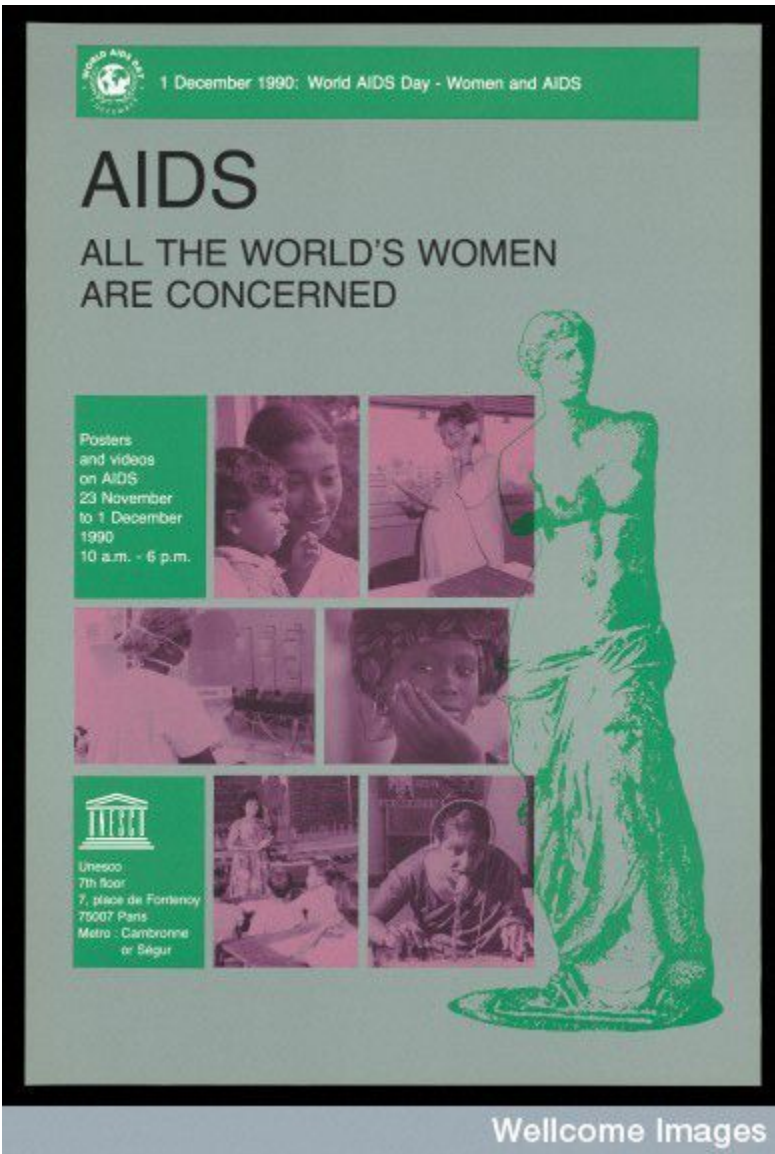


Figure 2 Venus de Milo on a World Aids Day poster

[View description - Figure 2 Venus de Milo on a World Aids Day poster](#)



Figure 3 A scholar's study containing a statuette of the Venus de Milo

[View description - Figure 3 A scholar's study containing a statuette of the Venus de Milo](#)

In her film of the 1936 Berlin Olympics, Leni Riefenstahl recreated Myron's *Discobolus*, a statue of a man about to throw the discus. In it she showed the statue, which then dissolved into the decathlete Erwin Huber recreating the pose.



Figure 4 Still image taken from 1936 film *Olympia*.

[View description - Figure 4 Still image taken from 1936 film Olympia.](#)

The Nazis' aesthetic inspiration from ancient Greece and Rome, and the *Discobolus*, featured prominently in the opening of Riefenstahl's film. One version of the *Discobolus* was bought by Adolf Hitler, who in 1938 encouraged the German people to visit it by saying that it showed 'how splendid man used to be in the beauty of his body'. Watch Video 2 now which discusses the impact of the *Discobolus* both for the Nazis and for its original audience in the fifth century BCE.

Video content is not available in this format.

Video 2 Ancient ideals

[View transcript - Video 2 Ancient ideals](#)



1.1 Discovering ancient bodies



Figure 5 Four ancient statues: Apollo Belvedere, the Belvedere Torso, Laocoon and His Sons, and the Medici Venus

[View description - Figure 5 Four ancient statues: Apollo Belvedere, the Belvedere Torso, Laocoon and ...](#)

Activity 1 will give you the opportunity to spend some time researching an ancient statue for yourself.

Activity 1

Look on the internet or in magazines and newspapers to find out more about **one** of the following ancient statues found in the Renaissance:

- *Apollo Belvedere*
- *The Belvedere Torso*
- *The Laocoon*
- *The Medici Venus*

Then write a summary of your findings and ideas in the space below. Keeping your piece to no more than 200 words, for your chosen statue do **one** of the following:

- explain how artists have subsequently used the statue
- show what ideals of the body it demonstrates
- find a modern reuse of the image in a news story or in advertising.

Imagine you are writing for a general audience to show them that the ideal body of the ancient world is still a powerful image used today.

Provide your answer...

1.2 Healthy bodies in the ancient world

Other than looking at the ideal bodies of sculpture, how can you find out about the realities of bodies in health?



Figure 6 The Vaison Diadumenos

[View description - Figure 6 The Vaison Diadumenos](#)

Ashes were already falling, not as yet very thickly. I looked round: a dense black cloud was coming up behind us, spreading over the earth like a flood. 'Let us leave the road while we can still see,' I said, 'or we shall be knocked down and trampled underfoot in the dark by the crowd behind.' We had scarcely sat down to rest when darkness fell, not the dark of a moonless or cloudy night, but as if the lamp had been put out in a closed room. You could hear the shrieks of women, the wailing of infants, and the shouting of men; some were calling their parents, others their children or their wives, trying to recognize them by their voices.

(Pliny the Younger, *Letters*, 6.20.13–14)

Here Pliny the Younger describes his escape from Misenum, during the disaster that killed his uncle (Pliny the Elder, writer of *Natural History*). This disaster was the eruption of Vesuvius, a volcano to the east of Misenum, which you read about in Week 3, and which is known most about from its effects in Pompeii and Herculaneum, further to the south-east of Vesuvius and over 50 km from Misenum, although this is only because the remains of these towns have been discovered.

Many of the individuals killed in 79 CE had changes in their tooth enamel which would suggest a period of serious illness or perhaps of food shortage, preventing them assimilating calcium. The food supply in antiquity was always erratic. The huge city of Rome relied on imports and these were affected not only by crop failure, but also by bad weather or warfare preventing ships from sailing. There is skeletal evidence of chronic conditions, such as arthritis, found in 35 per cent of the joints which have been studied in Pompeii. Osteoporosis was also found, although women's bone density was similar to that which is found today; men's bone density was a little higher. The condition of individuals' teeth differed considerably; 25 per cent of people from Pompeii had at least one dental abscess but the individuals from Herculaneum had much better teeth. The levels of fluoride in the water were higher in Herculaneum, which may explain this.

As for the overall shape of the healthy body, one individual, labelled by archaeologists as 'Erc86', was about 46 when he died. His bones were thick and heavy, which suggests his diet was very good, and his body was highly muscular, to the extent that scholars think he was a bodybuilder, exercising in order to look good or because he needed to be very strong. Perhaps he was an athlete; the muscles on the right side of his body were even stronger than those on the left, so his sport may have been the discus or javelin. Perhaps he was a gladiator, although there are no signs of injury on his body, so, if he was, he would have been a very good one! Another individual, 'Erc28', aged 16, had pronounced upper body strength, which

archaeologists have compared to that found in modern fishermen. This suggestion could be supported by his teeth, which showed a pattern of wear that would fit with holding cord between the teeth while repairing nets.

1.3 Bodies from Roman London

Watch the following video in which Dr Rebecca Redfern, from the Museum of London, talks about finding out about health from Roman bones, and how it is possible to identify illness and disability on skeletal remains from London.

In the video Rebecca Redfern discusses with Helen King the sorts of injuries which can be seen on their bones, ranging from fractures to dietary deficiencies. As you watch, think about the social factors that would affect people's healing and thus their future mobility.

Video content is not available in this format.

Video 3 Bodies from Roman London

[View transcript - Video 3 Bodies from Roman London](#)



2 The ideal body and the disabled body

This section explores attempts to mould the body to achieve the ideal physique, and how the disabled body was seen in society and art, particularly in relation to impaired mobility. Most people in the ancient world did not have a muscular physique. Nevertheless, from birth onwards attempts were made to 'shape' bodies into the ideal.

Watch the following short video in which you see Eleanor Betts of The Open University with an ancient votive offering made in the form of a swaddled baby.

Video content is not available in this format.

Video 4 Shaping the body from birth. NOTE: There is no audio associated with this video.



After recording the video, Eleanor reflected:

Holding a newborn baby votive. Cradling it along one arm, its length matches my forearm, head cradled in the crook of my right elbow, feet resting in my right hand. I gently rock it.

The weight is comparable to a new baby. But it is very cold to the touch because it's kept in a [temperature controlled] cool storeroom. If it was in a sanctuary in Paestum, in the sunshine, the terracotta would be warm to the touch – blood temperature maybe? Feeling like the warm skin of a real baby? And if it was wrapped in swaddling bands it would be warm and soft and would smell of my own baby. Or maybe it doesn't wear real swaddling bands because maybe it is apotropaic, a terracotta dissonant imitation of the baby I want so desperately. Am I trying to warm it up when I rock it? Or am I wistfully wishing it was my real baby? I feel a sense of attachment to it, an attachment which grows as I cradle and rock it. I don't want to put it down. It is difficult to put it down.

(The Votives Project, 2015)

You have read the views of Soranus, who wrote in the second century CE, about Men in the birthing chamber; Soranus also explained that swaddling and massage were two ways the baby's body could be manipulated to encourage a healthy physical shape:

One must mould every part according to its natural shape, and if something has been twisted during the time of delivery, one must correct it and bring it into its natural shape The midwife should put the newborn down gently on her lap which has been covered entirely with wool or with a piece of cloth so that the infant may not cool down when laid bare while every part is swaddled. Then she must take soft woollen bandages which are clean and not too worn out, some of them three fingers in breadth, others four fingers ... in order that the former may fit the limbs, the latter the thorax.

(Soranus, *Gynecology*, 2.14)

Swaddling clothes, according to Soranus, were made of wool because this was a breathable fabric. The wool was clean, warm and

soft so that it did not injure the infant. A space could be left at the back for defaecation.

2.1 Shaping the body from birth

Boys and girls were swaddled differently. Females had their breasts more tightly bound than males, and the area around the hips more loosely because this form was thought to be more attractive when they grew up:

She should then wrap one of the broader bandages circularly around the thorax, exerting an even pressure when swaddling males, but in females binding the parts at the breasts more tightly, yet keeping the region of the loins loose, for in women this form is more becoming.

(Soranus, *Gynecology*, 2.15)

This shape was also considered better for childbearing. Swaddling was practised for the first two months or so, until the body was considered 'firm'. The first part to be released was the right hand, to encourage right-handedness. Babies were also unwrapped, bathed and 'massaged and modelled', the aim again being 'so that imperceptibly that which is as yet not fully formed is shaped into its natural characteristics' (Soranus, *Gynecology*, 2.32).

This shows that, even from childhood, a different ideal was expected for a woman's body. Many Greek and Roman statues also depict women with a softer body than men, as seen in the *Venus de Milo*, a statue from the Hellenistic period (332–31 BCE), which has wider hips than male statues of a similar date.



Figure 7 Venus de Milo (also known as the Aphrodite of Melos)

[View description - Figure 7 Venus de Milo \(also known as the Aphrodite of Melos\)](#)

The Roman goddess Venus was equivalent to the ancient Greek goddess Aphrodite. Another famous image of her was Praxiteles' *Aphrodite of Knidos*, as described on [the Perseus Project](#). You will see that it is now lost, but we know about it from Roman copies of the Greek original. Comparing these two images of Aphrodite/Venus with the representations of the male body you saw in [Ancient ideals](#), you will notice that a different approach was taken to showing the genital organs.

As you discovered last week, women were thought to be 'colder' than men and so unable to transform their blood into semen. Notoriously, the philosopher Aristotle described women as 'deformed males'. This meant not only that they had different body parts, but also that they were thought less likely to develop certain diseases:

Speaking generally, unless the menstrual discharge is suspended, women are not troubled by haemorrhoids or bleeding from the nose or any other such discharge, and if it

happens that they are, then the evacuations fall off in quantity, which suggests that the substance secreted is being drawn off to the other discharges. Again, their blood vessels are not so prominent as those of males; and females are more neatly made and smoother than males, because the residue which goes to produce those characteristics in males is in females discharged together with the menstrual fluid.

(Aristotle, *On the Generation of Animals*, 727a)

So, although women's bodies were different, they could also be healthier as a result.

2.2 Disabled bodies

What about male and female bodies which fell short of the ideal for their sex? There is no word in ancient Greek or Latin that can be translated directly as 'disability'. Yet people were born with, or developed, physical impairments that would have affected their ability to perform some of the normal tasks of life; for example, seeing or being mobile. In Week 1 you considered definitions of 'health', and you may like to go back to these briefly now, to consider how they could affect attitudes towards disability.



Figure 8 Nydia, The Blind Flower Girl Of Pompeii, Randolph Rogers, 1858

[View description - Figure 8 Nydia, The Blind Flower Girl Of Pompeii, Randolph Rogers, 1858](#)

For the ancient world, it's often assumed that people born with disabilities were not accepted by society, but were left to die at birth. The evidence for this practice, known as 'exposure', largely comes from literary sources and should not always be taken at face value. For example, the first century CE writer Plutarch explains that Sparta had a ritual by which newborn babies were judged by the elders and those thought unfit to be allowed to live were left at the foot of Mount Taygetos. However, no other source tells us this about Spartan practices, and no infant remains have been found at this site. Archaeological evidence elsewhere includes the remains of a large number of babies found in a sewer under a bathhouse in Ashkelon, from the late Roman period. While infanticide was the first suggestion here, this could have been an act of war rather than normal practice, with another possibility being that this was the site of a brothel, and any baby born to the prostitutes working there was killed.

There is plenty of evidence for the survival of babies with disabilities. Exposure was most commonly practised on illegitimate children or those whose parents could not afford another mouth to feed. Some babies left to die would have been picked up by those wanting a child. It's likely that, in the ancient world, it was more common than today to see people with physical differences. Some conditions would not have been obvious in the week or so after birth when exposure was practised. Now, bodily differences are often corrected surgically at an early age. The Roman first century CE marriage laws, which gave rewards to those who had three or more children, may even have encouraged parents to rear those with disabilities.

Although they didn't have a word for disability, Greek and Roman writers did comment on difference. For example, Aristotle helps you think about people's attitudes to disability. He approaches the topic medically and biologically, and also in relation to moral character. Aristotle uses a clear set of terms to imply a 'disturbed' process of some sort, and the word he uses for 'incapacity' (*pêrôsis*) is related to the idea of a sort of 'incomplete process'. In *On the Soul* he uses this term for an imperfect organism which has somehow fallen short of nature's intended creation – what is 'necessary' has been 'left out'. Physical incapacity, also described as a *pêrôsis*, affects the ethical

behaviour of the individual. In fact, Aristotle is more interested in psychic, rather than physical, incapacity. This is probably because he is more interested in thinking and decision making than in physical capacity.

If people followed Aristotle's reasoning, they would have considered someone 'incomplete', rather than disabled. Pliny the Elder praised the Roman general Marcus Sergius for overcoming incompleteness, using the Latin word *debilis* which covers both 'weak' and 'disabled':

Sergius in his second campaign lost his right hand; in two campaigns he was wounded twenty-three times, with the result that he was crippled in both hands and both feet, only his spirit being intact; yet although *debilis*, he served in numerous subsequent campaigns He fought four times with only his left hand, having two horses he was riding stabbed under him. He had a right hand of iron made for him and going into action with it tied to his arm, raised the siege of Cremona, saved Piacenza, captured twelve enemy camps in Gaul: all of which exploits are testified by his speech delivered during his praetorship when his colleagues wanted to debar him from the sacrifices as *debilis*.

(Pliny, *Natural History*, 7.104–5)

Despite Sergius' achievements, some people thought that his disability should exclude him from religious activity.

While fewer people than today survived to extreme old age, the prospects for such a person would depend very much on their wealth. Pliny the Younger describes Domitius Tullus in his old age as follows:

Crippled and deformed in every limb, he could only enjoy his vast wealth by contemplating it, and could not even turn in bed without assistance. He also had to have his teeth cleaned and brushed for him—a squalid and pitiful detail.

(*Letters*, 8.18)

Activity 2

Before going further, take a moment to consider how you would define 'disability'. Would you expect the definition to be the same in the ancient world as it is today?

Provide your answer...

2.3 The Emperor's feet

In a world with no cars or wheelchairs, but rather rocky, uneven roads and walkways, walking was even more important than today. But there were no insoles or arch supports in shoes and no surgery to improve congenital conditions, such as club foot. How, then, did people move when they had a foot injury, were born with a condition that impeded their movement, or had mobility difficulties because of age?



Figure 9 Foot from Roman Egypt

[View description - Figure 9 Foot from Roman Egypt](#)

There are many votive offerings of feet that may suggest people were asking for divine assistance with their movement. Figure 9 is thought to be a large porphyry foot from second century CE Roman Egypt; however, it is not known whether it was a votive object offered to a god of healing to thank the deity for curing a foot problem, or just a piece of a lost statue. Some ancient healing sanctuaries also had more votive feet than others, such as the one at Ponte di Nona, near

Rome. One argument is that this site was dedicated to problems with physical movement.

The Roman Emperor Claudius was born in 10 BCE, possibly prematurely, and, according to the Roman writer Suetonius, was treated badly by his family. You can read [sections 2 and 3](#) of *The Lives of the Caesars*, to see what Suetonius says about Claudius' childhood.

When he grew up, Claudius dragged his right leg and was weak on the right side of his body; he also shook slightly. He had other disabilities too, including a speech impediment, although literary sources say that he could still speak in public as long as he stayed sitting down and kept to his prepared text. He also had stomach problems. There is no evidence that he looked for any help from the gods with this. Retrospective diagnoses of his condition have included polio and cerebral palsy.

There are suggestions by Suetonius and in other sources that he was set apart as 'different'. For example, when he and his brother Germanicus appeared in 6 CE at an important Games, Claudius was dressed in a Greek cloak called the *pallium*, rather than a Roman toga, to set him apart as an invalid. This also perhaps shows that his family wanted to keep his body as far out of sight as possible. At the Games in 8 CE, he didn't even appear. And even when he was an adult, he went out accompanied by a 'minder'. Nonetheless, Claudius studied and wrote the history of Rome; he became a popular emperor and was made a Roman deity after his death. As you can see, Suetonius claims that his mother, Antonia, called Claudius someone 'that nature began and never finished': this recalls Aristotle's view of disability as not being 'complete' from the previous section.

Interestingly, some classical myths also point to people with foot problems. The name Oedipus, a Greek tragic hero, means 'swollen foot', and he was abandoned at birth but found by a couple who brought him up. The Greek god Hephaistos was born to Hera and Zeus with clubbed feet and was thrown off Mount Olympus by his mother, Hera, as the Homeric hymn says:

Hera was angry and spoke thus among the assembled gods: '... See now, apart from me he [Zeus] has given birth to bright-eyed Athene who is foremost among all the blessed gods. But my son Hephaistos to whom I gave birth was weakly among all the blessed gods and shrivelled of foot, a shame and a disgrace to me in heaven, whom I myself took in my hands and cast out so that he fell in the great sea'.

(*Homeric Hymn 3 to Pythian Apollo*, 310 ff (trans. Evelyn-White))

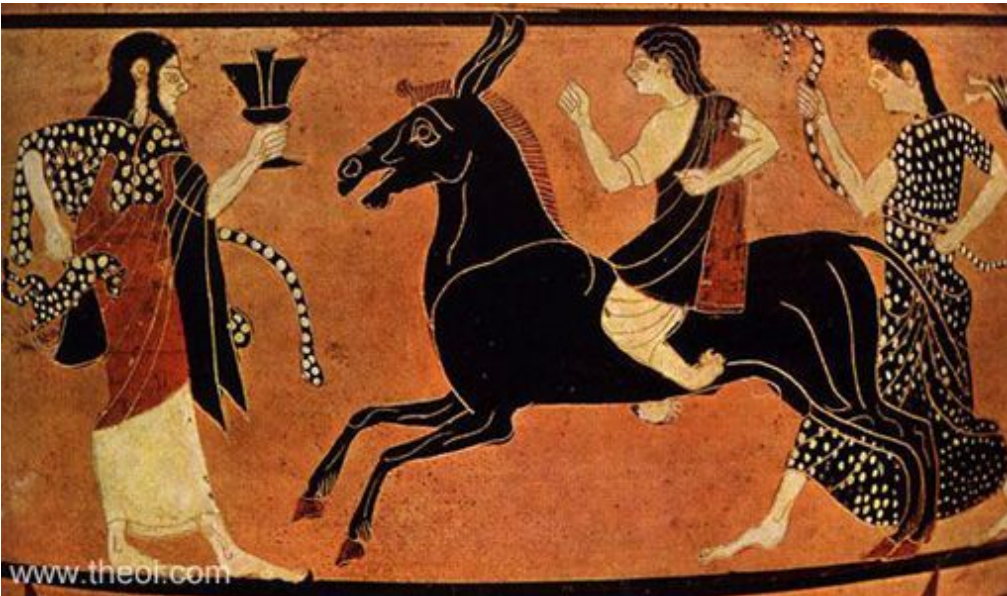


Figure 10 A Greek vase painting depicting Dionysos leading Hephaistos back to Olympus

[View description - Figure 10 A Greek vase painting depicting Dionysos leading Hephaistos back to Ol ...](#)

After he fell from the mountain, Hephaistos eventually became a blacksmith and is mentioned in many myths which praise the fine detail of his work. His upper body musculature can be shown as very developed. He is often depicted on horseback carrying his blacksmithing tools (as in Figure 11).



Figure 11 The return of Hephaistos, circa 430–420 BCE

[View description - Figure 11 The return of Hephaistos, circa 430–420 BCE](#)

It's possible that the important role of blacksmith was open to those with mobility issues. If people didn't have to move on their feet a lot, such a job might have suited them. Unfortunately, there has been little scholarship on this topic, but it's possible that some occupations, such as crafts, were open to those with mobility problems, as you considered in Week 2 when thinking about vision.

2.4 Other differences

Greco-Roman literature, art and archaeological remains give us an indication that people lived with many other types of bodily differences. For example, there exist depictions of people with achondroplasia, commonly known as dwarfism. These are found on Greek and Roman vase paintings. There have also been a few skeletal remains of people with the condition found buried in Roman necropoleis.

Figure 12 is from a fifth century BCE pot (an aryballos), which you saw in Week 1, Knowing what's normal. It shows people using walking aids and a person with achondroplasia. It seems to present a doctor's surgery, with the doctor letting blood from the arm of one patient. The other people there include a man leaning on a staff and a dwarf. Is the dwarf a patient, or is he a servant or slave of the doctor?



UNE CLINIQUE GRECQUE AU V^e SIÈCLE.
(Vase attique de la collection Peytel).

Figure 12 Decoration on an aryballos, representing a doctor's surgery

[View description - Figure 12 Decoration on an aryballos, representing a doctor's surgery.](#)

In the Hellenistic period – after Alexander the Great – there was a tendency towards more realism in sculpture. From this period, and from the Roman era, there are small statuettes which show people with gibbosity, or a hunched back. This was a problem known to affect people in their old age, and sometimes paintings on Greek pots depict older men with hunched backs using a walking stick to aid them. In the first century BCE bronze statuette shown in Figure 13, the outstretched right hand may have held a stick.



Figure 13 Hellenistic Greek bronze statuette of a person with a hunchback

[View description - Figure 13 Hellenistic Greek bronze statuette of a person with a hunchback](#)

Depictions in art also show people with obese and emaciated bodies. Obesity was a sign of excessiveness, as discussed in Week 3, and therefore a lack of balance. Emaciation was sometimes associated with envy. However, it was likely suffered by anyone who was unable to get food, which is an indication of a social problem rather than a moral one.

Hermaphroditism, a congenital condition where a person is born with both male and female genitalia, was known about in the ancient

world. The term comes from the name of the god Hermaphroditos, who was the child of two Greek deities: Hermes, the messenger god, who was also known for his tricks; and Aphrodite, the goddess of love. Hermaphroditos (Figure 14) had both sets of genitalia. He was often depicted in art with a feminine body, but with male genitalia.



Figure 14 Sleeping Hermaphroditus

[View description - Figure 14 Sleeping Hermaphroditus](#)

Other known bodily differences have to do with sensory perception. Blindness was a problem, as you have seen in Week 2. Deafness was also a problem people had to face in the ancient world, though as far as we are aware, there existed no means to help people with weak hearing. There is little written on the subject in ancient texts, but what does exist indicates that people with deafness were usually unable to speak. The Greeks may have thought people with this combination of problems – deafness and muteness – lacked the capacity for reasoning. Speech, like the ability to use one's hands, was seen as an important distinction between humans and the rest of the animal world.

In contrast to being mute, stuttering was also a problem known to have affected some people. The Emperor Claudius, as previously

mentioned, had a stutter. The Greek historian Plutarch said that Demosthenes, an Athenian politician and orator (c. 384–322 BCE), was afflicted with speech problems as a child. He is not specific, except to say that the condition led to a weak and unpleasant voice. In societies as focused on the skill of public speaking as ancient Athens and Rome, it's impressive that anyone with a speech defect could nevertheless work as an orator.

A speech made in fourth century BCE Athens, Lysias' *On the refusal of a pension to the invalid*, provides evidence that some people who were *adunatoi* – a word which means literally 'without power' and which has been translated as 'disabled' – received some money from the state. Another source, Aristotle's *Constitution of the Athenians*, says this pension was given to the poor and those 'incapacitated by a bodily infirmity' (*Constitution of the Athenians*, 49.4). Lysias contrasts those who are *hygiainos* (in good health) and those who are *adunatos* (disabled) (Lysias, 24.13), and the latter should be regarded as deserving of pity.

3 Recruiting and treating the soldier

One area of life in which a healthy body was essential was the military. This section explores the health of an army and how it was trained and cared for.



Figure 15 Roman soldier

[View description - Figure 15 Roman soldier](#)

In the ancient world, all adult men were originally expected to serve in the army to defend their homeland. This meant that the campaign seasons had to fit in with the agricultural year, so that men would be back to harvest the crops. From the second century BCE onwards, however, Rome shifted towards a 'professional' army, recruited to serve full time and to be rewarded with citizenship or land at the completion of 25 years of service. The beginning of this change was associated with the general Marius and, because of the amount of kit soldiers were expected to carry with them, they were known as 'Marius' mules'.

Activity 3

1. Read the first sections of book 1 of Vegetius' *De Re Militaris* (On military matters): 'The Selection of Recruits' and 'Signs of Desirable Qualities'.
2. Vegetius wrote in the late fourth century CE and seems to have taken his advice on the military from earlier sources. In his opinion, who makes the best soldier? Where did such men come from and why is this important? Do you see similarities with this section and the work you did in previous weeks?

Provide your answer...

1. You will have noticed that the eyes of the soldier are very important. In Egypt, a man called Tryphon, the son of a weaver, failed an eye test in 52 CE because he had 'weak eyesight caused by a cataract' (See Week 2, Section 1.1). The evidence has been taken to suggest that eyesight was tested regularly in the army, but it's unclear whether Tryphon was a soldier rather than a civilian.
Do you think environment and someone's place of birth is still considered in modern discussions on a person's health? How does Vegetius' section on 'Desirable Qualities' compare to modern military selection?

Provide your answer...

1. Do an image search for Greek and Roman soldiers dating to the Greco-Roman period. Compare these images to later historical periods – Renaissance, Baroque, Neo-Classical and Victorian eras – to see how the physique of the body has changed.



Figure 16 Roman marble relief of the Praetorian Guard, circa 50 CE

[View description - Figure 16 Roman marble relief of the Praetorian Guard, circa 50 CE](#)

Do you think these images represent the ideal body at the time they were painted or sculpted? Does this represent different understandings of a healthy musculature and

bodily build over time? How do these images compare with the literature you read at the beginning of this activity?

Provide your answer...

3.1 Training the Roman army

The Roman army was a well-fed and healthy group of men. Their uniform and equipment varied between types of soldier and also across time, but what they ate and what they wore is known from finds at Roman military sites as well as from literary texts.

Now watch Video 5. In this video, filmed at Caerleon, Helen King and Dr Patty Baker investigate the armour the Roman army wore and the conditions in which they lived, including what happened when they were ill or injured. As you learned in Healing the eyes from Week 2, not all those who were listed as sick were suffering from battle wounds, and most of the time soldiers were in camp or building roads and military structures rather than fighting.

Video content is not available in this format.

Video 5 Training the Roman army

[View transcript - Video 5 Training the Roman army.](#)



3.2 How healthy were classical Greek armies?

Now listen to Audio 1 in which Helen King talks to Owen Rees of Manchester Metropolitan University about the different implications for health on the way Greek armies were recruited.

Audio content is not available in this format.

Audio 1 How healthy were classical Greek armies?

[View transcript - Audio 1 How healthy were classical Greek armies?](#)

3.3 Treating the injured soldier

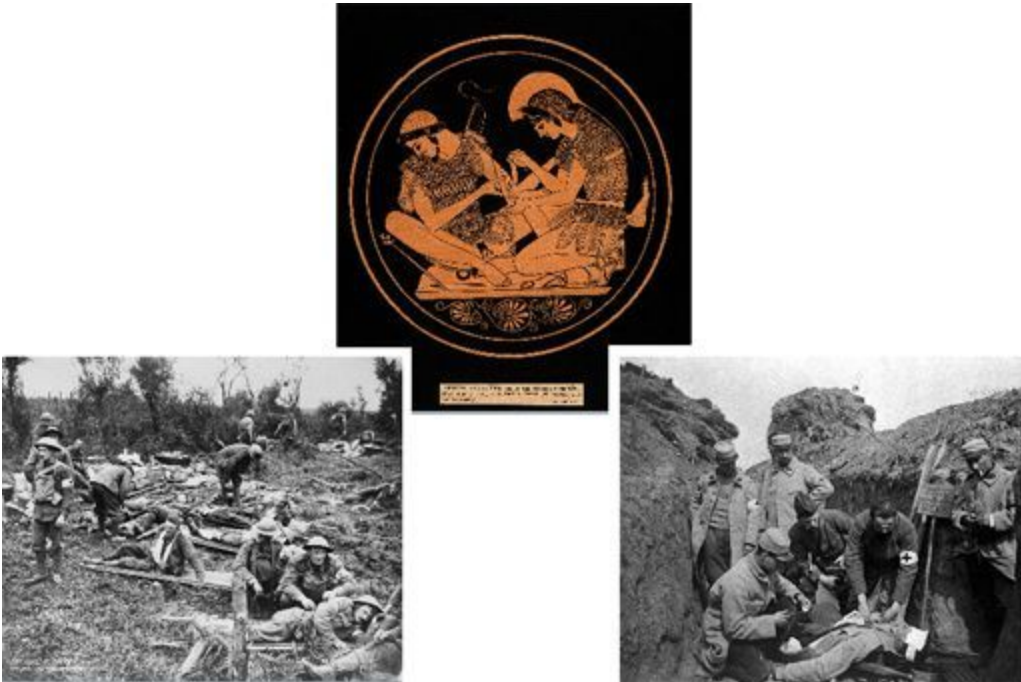


Figure 17 Soldiers being treated for the injuries

[View description - Figure 17 Soldiers being treated for the injuries](#)

In one of the images in Figure 17, you can see the Greek hero, Achilles, bandaging the injured Patroclus on the battlefield. Although this painting is based on the *Iliad*, there is some evidence in ancient histories that soldiers helped treat each other, as discussed earlier in the section on [Training the Roman army](#).

Activity 4

Compare what you have learned from Video 5 with what you see in the images which make up Figure 17, and perhaps what you know through former history classes or films: for example, about the treatment of soldiers on campaign during the First and Second World Wars. Do you think there are many differences in

treatment and places of treatment between the different periods in time?

Provide your answer...

3.4 Battle wounds and surgery in art and literature

Information about field treatments comes down through the ages in poetry, images and medical literature. You will now begin to explore these types of evidence to learn about battle wounds and surgery.

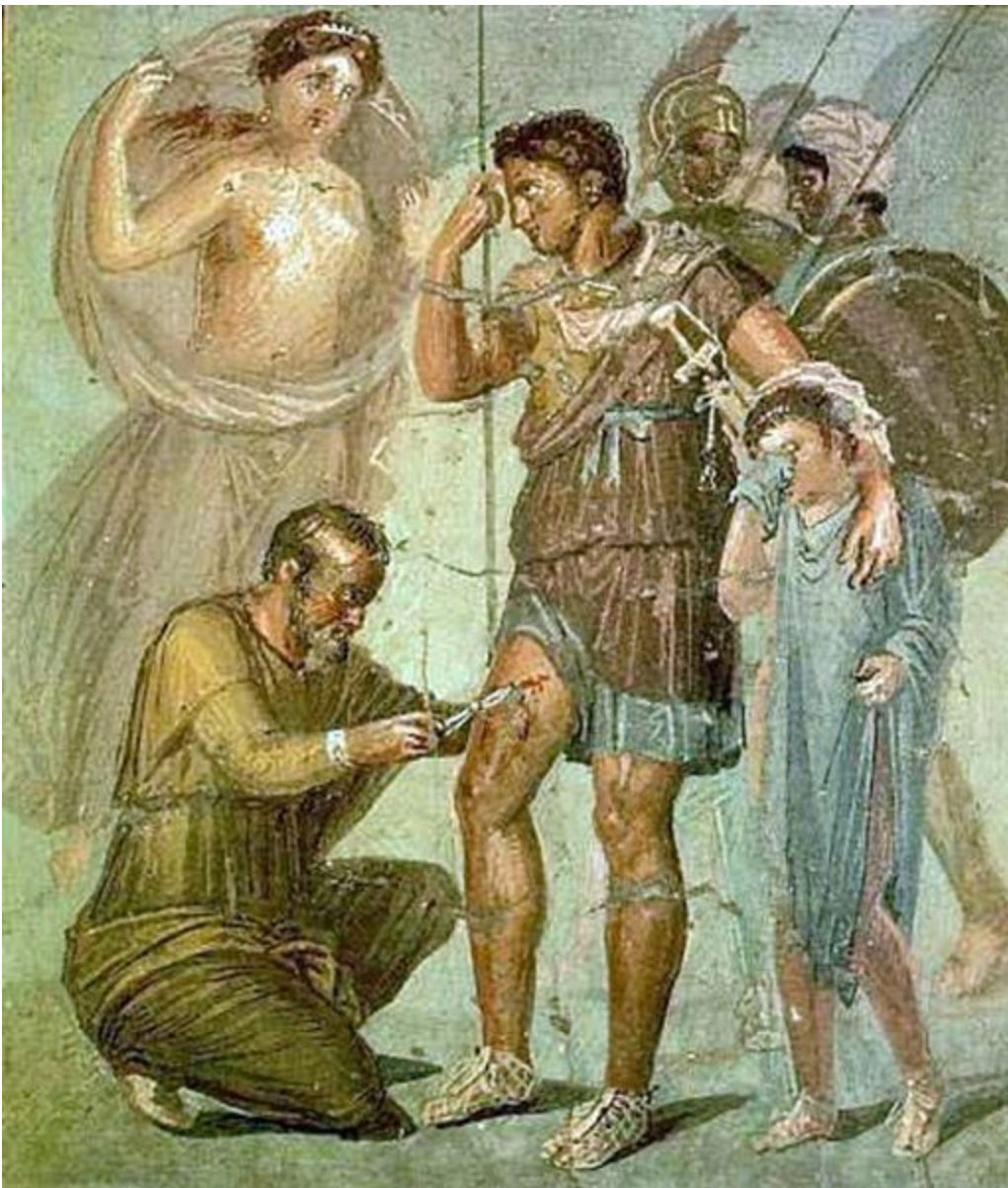


Figure 18 Iapyx operates on Aeneas's leg

[View description - Figure 18 Iapyx operates on Aeneas's leg](#)

Figure 18 shows a fresco found on a wall of a house in Pompeii, depicting the Roman hero Aeneas having a spear head removed from his thigh by the doctor, Iapyx. Aeneas is leaning on his son, Ascanius, and his mother, the goddess Venus, is helping from behind. Aeneas was ultimately healed through the divine intervention of Venus.

Activity 5

Now read [this extract from Virgil's epic poem, *the Aeneid*](#) (Book 12, lines 383–440) and compare what you read with the image from the fresco in Figure 18.

In the poem, it's the goddess Venus who makes the doctor think of using a healing balm made of Cretan dittany, an aromatic plant used in medicine. Do you think the image matches the section of the *Aeneid* you have just read? Who is playing the central part in healing?

Provide your answer...

3.5 Battle wounds and surgery in medical texts and archaeology

In the first century CE, Celsus described surgical procedures in some detail in books 7 and 8 of his work on ancient medicine. Book 8 focused on bone surgery. Actual surgical tools have been found, but it can be difficult to match them to Celsus' descriptions. The tools he recommends for broken bones are often confused with iron carpentry tools in the archaeological record, and doctors possibly borrowed carpentry tools as needed: for example, saws and chisels, which would be used in amputations.



Figure 19 Greco-Roman surgical instruments

[View description - Figure 19 Greco-Roman surgical instruments](#)

Some of the commonly used objects, such as scalpels and spoons, look similar to modern surgical objects, but could have been used for

other purposes, such as kitchen cutlery. In fact, some spoons found with identified Roman surgical kits are identical to ones found as cooking implements. The forceps look like modern tweezers and probably served as many functions as they do today. A vaginal speculum could also be used to hold flesh open during the removal of a weapon, as discussed in Celsus.



Figure 20 Roman surgical instruments

[View description - Figure 20 Roman surgical instruments](#)

Activity 6

1. Read the following sections of Celsus, in which he describes the procedures for the removal of projectile points lodged in the body (Y-shaped tool, cyacisthus, or Spoon of Diocles, and probes for bones). Does he give a clear description of the tools? How does his description compare with that shown in the image from Pompeii in Figure 18, and with what Virgil describes in the *Aeneid*?

Provide your answer...

1. One instrument described is the 'Spoon of Diocles'. Try to make a drawing of it from Celsus' description. Does Celsus give a good description of the objects?

3.6 The mental health of ancient soldiers

In the following audio, Helen King talks to Owen Rees of Manchester Metropolitan University about the controversy around whether ancient Greek and Roman soldiers would have suffered from post-traumatic stress disorder (PTSD).

Audio content is not available in this format.

Audio 2 The mental health of ancient soldiers

[View transcript - Audio 2 The mental health of ancient soldiers](#)

3.7 Caerleon

You have seen the baths at Caerleon in Week 4's Baths in the ancient world and earlier this week you looked at the reconstructed barracks in [Training the Roman army](#). The legionary fortress for the Legio 2 Augusta, Caerleon, has yielded finds of cooking utensils and surgical tools but also further evidence of different aspects of health and healing; for example, animal bones which reveal the diet of the soldiers. The site now includes a Roman-inspired garden with a range of plants which the Romans believed had healing qualities.

Now watch Video 6 which, as this course approaches its end, brings together these different pieces of the jigsaw of sources from which you can learn about health.

Video content is not available in this format.

Video 6 Caerleon

[View transcript - Video 6 Caerleon](#)



3.8 Using texts and objects

Throughout this course, you've been invited to think about how it is possible to reconstruct health in the ancient world from a mixture of texts and objects. This isn't always straightforward though.



Figure 21 Roman surgical instruments found at Pompeii

[View description - Figure 21 Roman surgical instruments found at Pompeii](#)

You should complete Activity 7 now, which asks you to consider the challenges of using text and objects as evidence.

Activity 7

Can you think of one example from the course which made you aware of the point that neither objects nor texts are entirely straightforward to interpret?

Provide your answer...

4 This week's quiz

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

[Week 6 quiz](#)

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

Summary

As you have worked through this course, some of the beliefs and practices of the ancient world probably sounded very familiar to you. Others, for example the theories of vision, the communal toilets, excrement therapy, and beliefs around conception such as the maternal imagination and tying up one testicle, less so.

While the ancient world is the ancestor of some aspects of the modern West, it's also a set of very different cultures. Overall, health was balance, and the way to achieve it was a balanced way of life, keeping exercise and rest in the right proportions and eating so that the right fluids were produced in your body. However, lifestyle also had to be adjusted according to where you lived, your age and gender, and the season.

The overall environment of the ancient world was one in which epidemics spread unchecked and food supply could be uncertain. Warfare was also a normal part of life. While cities were proud of their water supply and sewers, these would not always have led to hygiene in the modern sense of the term. But the evidence from sewers is valuable in reconstructing ancient diet and in showing some of the diseases which affected people.

Medical treatises and more general guides aimed at an elite readership show the theory behind health-related practices, as well as recommending recipes and instruments to improve health. The material record preserves some of the instruments used, and also shows the bones of the people of ancient Greece and Rome. Modern methods of analysis reveal much about their actual diet as well as their physique. Looking healthy could mean using cosmetics, but the substances in some of them could lead to lasting damage. The same was true of some remedies. There was a clear sense of the ideal body; this was displayed in art, and attempts were also made to shape babies' bodies into an ideal. Not everyone matched this ideal, but those with a range of impairments were still able to find roles in ancient societies. Sometimes, being a woman was itself a type of disability, but women's bodies were also thought less likely

than men's bodies to have some disorders, simply because they had another way of expelling fluids which accumulated in excess.

As you have studied this course, you have been encouraged to search for primary evidence yourself. Only by combining, where possible, literary sources, material culture and bones, can you reach a fuller and more balanced view of health in ancient Greece and Rome.

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Further reading

[Antiqua Medicina](#): This site collects materials assembled for a print display on ancient medicine created for Historical Collections in the Claude Moore Health Sciences Library.

[The Hippocratic Oath](#): A translation of the Hippocratic Oath from the National Library of Medicine.

[The Conversation, 'Hippocrates didn't write the oath, so why is he the father of medicine?'](#): Helen King explains why historians of medicine no longer attribute the Hippocratic Oath to the historical Hippocrates.

[Sarah E. Bond, 'As trainers for the healthy'](#).

[Perseus quick start guide](#): If you would like more guidance using Perseus, check out this quick start guide.

[Livius](#): This offers other English translations of ancient Greek and Latin texts.

[Project Gutenberg](#): This offers ebooks of free-to-use publications.

[Inscriptions and papyri](#): These English translations of some inscriptions and papyri illustrate the history of the Hellenistic World and Roman Republic.

[Celsus](#): Here you can find the full text of Celsus.

[Cicero, Tusculan Disputations](#): Here you can find an older translation of the full text.

[Royce Morris, 'The economy of Oxyrhynchus in the first century'](#): Here you can find more on the context of Tryphon.

[Adam Parker, 'Artefact in focus: a gold disc depicting the Evil Eye'](#)

[Anatomical votive reliefs as evidence for specialisation at healing sanctuaries in the ancient Mediterranean world](#): Find out more about votives in this article by Steven Oberhelman.

[Laurence Totelin, 'You'll thank me later'](#)

[Vindolanda Tablets Online](#): Oxford University host an online edition of the Vindolanda Tablets.

[Vindolanda Tablets Online II](#): Oxford University's sister site for exploring the Vindolanda Tablets.

[How did Gallo-Roman physicians treat their patients? A look into the earliest pharmacopoeias of France](#): In this article, Danielle Gourevitch writes about medicine in Gaul in particular.

[The Pozzino Tablets](#): In this article, Laurence Totelin tries to interpret the Pozzino Tablets.

[Votive body parts](#): The Roman city of Wroxeter had a temple dedicated to a god with the power to cure the eye diseases that were common in Roman times.

[Ancient eye surgery](#).

[Different desires: a dialogue comparing male and female love attributed to Lucian of Samosata](#)

[Make-up, another thing the Romans did for us](#): This *Telegraph* article describes the findings from the first analysis of a rare Roman skin cream.

[A 2,000-year old secret is out](#): The University of Bristol recreated the 2,000-year-old Roman cosmetic cream using modern technology.

[Not Philip II of Macedon](#): This article published in *Archaeology* in 2000 discusses the skeleton incorrectly thought to be Philip II of Macedon.

[Reconstructing Seianti - Learning from human remains: Seianti's skeleton](#): On facial reconstruction, an Etruscan example, shows the basic principles. This is one of four videos about Seianti.

[Researchers have just reconstructed a 2,300-year-old Egyptian Mummy's face](#): This article describes how Australian researchers have constructed the face of an ancient Egyptian mummy, using a 3D printer to create a replica skull and forensic sculpting techniques to bring it to life.

[The science and art of the facial reconstruction process](#): This video demonstrates the process of facial reconstruction completed by museum specialist Gay Malin.

[A dietitian put extreme 'clean eating' claims to the test](#)

[Monty Python, *Life of Brian*](#): The 1979 film, *Life of Brian*, includes a scene in which Brian is selling snacks in a Roman arena: the first 27 seconds of this clip summarise the sorts of foods we often associate with the Roman elite.

[The Shield of Minerva](#): The 'Shield of Minerva' was described by Suetonius in his life of the emperor Vitellius.

[Barbara Levick and Doreen Innes, 'Luxurious dentifrice in Rome', *Omnibus 1989*](#): This short article explores dental problems in the ancient world and Roman methods of cleaning the teeth.

[\[Hippocrates\] on regimen in acute diseases](#): Here you can find the full text.

[Sally Grainger, 'Master-chef or glutton? The mystery of Apicius', *Omnibus 1999*](#): In this article, Sally Grainger discusses the identity of the author behind the *De re coquinaria* recipe book.

[The subsequent history of Apicius's Treatise](#)

[Women's idealised bodies have changed dramatically over time - but are standards becoming more unattainable?](#): This article discusses how the ideal shape of women's bodies has changed over time.

[Houses of Pompeii](#): Houses in Pompeii are identified by their 'region'. II.4.10 refers to Region II. Simply scroll down the homepage to find out more about the house of Julia Felix.

[Corpus Inscriptionum Latinorum](#): This collection of classical Latin inscriptions gives an insight into the history and everyday life of ancient Rome.

[Prices in ancient Rome](#): Find out more about ancient Roman currency.

[The House of the Surgeon, Pompeii](#)

[Ancient DNA: written in bone](#): This article further describes the Lant Street Teenager.

[Alimentarium](#): Ettore Rossi's collection of feeding bottles.

[David Leith discusses the Papyrus Johnson in his blog post, 'Painting plants in Roman Egypt'](#)

[When foods become remedies in ancient Greece: the curious case of garlic and other substances](#)

[Sponge on a stick](#): This blog post looks at the Greek writings that mention a 'sponge on a stick'.

[Roman game pieces really old toilet paper](#): This article discusses the Roman artifacts now thought to have been used as a form of toilet paper.

[Roman version of toilet paper believed to be found](#): This video describes the stone artifacts used as a form of toilet paper.

[Charlier, P., Brun, L., Prêtre, C. and Huynh-Charlier, J. \(2012\) 'Toilet hygiene in the classical era', British Medical Journal, vol. 345, e8287.](#)

[The birth of comedy](#): Find out more about Aristophanes' plays and his humour in this free resource on OpenLearn.

[Virginia Campbell, 'No shit'](#): Virginia Campbell has written a blog post on evidence for Roman city authorities banning the disposal of waste in certain locations.

[Kristine Killgrove, 'Scatological graffiti was the ancient Roman version of Yelp and Twitter'](#).

[The history of sanitary sewers: an online exhibition from 3500 BCE to the 1930s.](#)

[Draining Herculaneum](#): A discussion of the sewers of Herculaneum.

[Latrines, sewers show varied ancient Roman diet](#): Archaeologists have picked through latrines and sewers to find clues to the varied diets of the citizens of Pompeii and Herculaneum.

[750 sacks of human excrement recovered from Herculaneum](#): Excavations at Herculaneum have revealed layers of excrement that

give us clues about the diet and health of the inhabitants there.

[Romans in focus: Insulae: how the masses lived](#)

[UK government guidance](#): Sewage sludge on farmland: code of practice.

[Roman baths at Carnuntum](#): Public baths originally covering around 1500 square metres have been reconstructed at the Austrian site of Carnuntum.

[List of surviving Roman baths](#).

[Did the Romans go to the baths to get clean or be dirty?](#)

[Piers Mitchell, 'Why the Romans weren't quite as clean as you might have thought', *The Conversation*](#): Piers Mitchell discusses the impact of Roman sanitation technology upon health.

[Ancient bottom wipers yield evidence of diseases carried along the silk road](#).

[Mark Bradley, 'Roman sewers and the politics of cleanliness', *Omnibus*, 2006](#): This article discusses one of the highlights of ancient Rome, the Cloaca Maxima (or Great Sewer).

[Helen King, 'Faecal transplants: not the first prescription of medicinal poo'](#): Helen King discusses the use of faecal transplants to treat antibiotic-resistant bacteria.

[Helen King, 'Poisons and love potions'](#): On knowledge of dosage in the ancient world.

[Helen King, 'Ancient Greece has something to say about the three-person baby debate', *The Conversation*](#).

[Horse love pills](#): In this blog post from the site *The Recipes Project*, Laurence Totelin discusses remedies used in veterinary medicine to encourage horses to breed.

[Pliny: Mares impregnated by the wind](#): The full translated chapter from Pliny's *The Natural History*

[Plutarch's advice to the bride and groom](#): Loeb's translation of Plutarch's essay *Coniugalia Praecepta*.

[Donald Macleod, 'Ancient Greeks balls it up', *The Guardian*, 17 March 2005](#): In this article Macleod discusses some research in testicles in ancient Greece.

[Jeremy Laurance, 'It's a boy! The science of gender selection', *The Independent*, 23 April 2008](#): Laurance discusses theories surrounding gender selection.

[Caroline Lawrence, 'Historical detectives and social networking'](#): On positions for birth in the ancient world.

[Representations of the foetus in the womb](#): Here you can find out more about Figure 5.

[The Campbell Bonner Medical Gems Database](#)

[Galen, *On Prognosis*, 8](#): a full English translation of Galen's *On Prognosis*.

[Jennifer Evans, 'What about fathers?'](#): Evidence from nineteenth-century Ulster.

[Helen King, 'When is a womb not a womb?'](#)

[Laurence Totelin, 'Playing the bear'](#): In this blog post Laurence describes an attempted visit to the temple of Artemis at Brauron.

[Hysteria in virgins](#): You can read the whole of the ancient Greek text in translation.

[Owen Rees, 'Ancient PTSD again, and again and again'](#).

[Women's idealised bodies have changed dramatically over time - but are standards becoming more unattainable?](#)

[Why does the art of ancient Greece still shape our world?](#) If you are in the UK, you could watch *Treasures of Ancient Greece*, BBC Four, 'Capturing beauty'

[Pompeii: portents of disaster](#): This article discusses the signs of impending disaster at Pompeii and asks why no one picked up on them.

[Written in bone: looking for Londoners](#): This video from the Museum of Londoners explains how they undertook the first multidisciplinary

study of the inhabitants of a Roman city anywhere in the Empire.

[Extracts from Aristotle, *On the Generation of Animals*.](#)

[The geniuses who invented prosthetic limbs](#): This article examines inventors who pushed forward the development of prosthetic technology.

[Emma-Jayne Graham, 'Votive efficacy'](#): In this article, Emma-Jayne Graham asks whether ancient anatomical votives really worked.

[Stories of Hephaistos from the Saga of the Gods](#)

[Owen Jarus, 'Fighting champ was recruiter for ancient Roman army'](#): This article discusses the novel method that the ancient Roman city of Oinoanda used to recruit soldiers.

[Medicina Antiqua](#): The Medicina Antiqua Essays are short, authoritative, up-to-date treatments of specific topics in Greco-Roman medicine and medical thought.

[Alison E. Cooley and M.G.L. Cooley \(2014\) *Pompeii and Herculaneum: A Sourcebook*, 2nd edn, London, Routledge](#): This book allows readers to form a rich and diverse picture of urban life in the Bay of Naples.

[Wilhelmina Feemster Jashemski and Frederick G. Meyer \(eds\) \(2002\) *The Natural History of Pompeii*, Cambridge, Cambridge University Press](#): This book explores the natural history of Pompeii by bringing together the work of many scientific experts to give a thorough picture of the flora, fauna and landscapes of the ancient sites.

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Figure 4: Ancient Roman latrines / latrinae, Ostia Antica. Fubar Obfusco

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Week 5

Figures

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Week 6

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Figure 8: Randolph Rogers, 1825-1892; Nydia, the Blind Girl of Pompeii, 1856; Museum of Fine Arts, Boston

Figure 9: (c) Great North Museum: Hancock, Newcastle upon Tyne

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Figure 11: The Kleophon Painter (Greek, Attic), Skyphos, Side A, detail of Hephaistos, about 420 B.C., wheel thrown, slip decorated earthenware, H: 11 13/16 in. (30 cm); Diam (rim): 13 1/16 in. (33.2 cm); Diam (with handles): 18 13/16 in. (47.8 cm); Diam (foot): 8 15/32 in. (21.5 cm). Toledo Museum of Art (Toledo, Ohio), Purchased

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Activity 2

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?

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Activity 6

Untitled part

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'.

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Activity 4

Untitled part

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.

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Activity 1

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!

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Activity 3

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>

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Figure 1 The Hope Hygieia, Roman 140–160 CE

Description

A photograph of a classical statue of Hygieia, standing and holding out a small dish in her right hand. Her body is turning slightly towards the right as she looks down at the dish. A snake descends from her left shoulder; curving across the statue's body and onto her outstretched arm, touching the dish with its head.

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Figure 2 Galen and Hippocrates, fresco from Anagni, Italy

Description

Image of a thirteenth-century fresco showing two men seated facing each other. Both men are bearded and robed, and are depicted in a stylised way in red, green and ochre colours. Latin inscriptions extend above and below them, and their names are also given – Galen on the left and Hippocrates on the right. Each man has a small table in front of him bearing a book.

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Figure 3 Advertisement for a calcium preparation

Description

Image of an advertisement for a calcium preparation called Kalzana. The advert is painted in an Art Deco style and depicts a smiling blonde woman, the picture of health, standing with her arms outstretched against a yellow and orange background. The text promises that 'Kalzana banishes weakness and disturbances of the system' and 'strengthens the cells of blood, body and nerves'.

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Figure 4 Herbalists and scholars of medicinal lore 'Herophilus and Erasistratus'

Description

Detail from a sixteenth-century woodcut depicting ancient herbalists and scholars of medicinal lore 'Herophilus and Erasistratus'.

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Figure 5 Doctor reading a scroll

Description

Detail of a wood-carving showing a doctor reading a scroll. The doctor is robed and has short hair and a beard; he is seated in profile, facing to the right. The chair he is sitting on is a substantial one. On the right of the carving is a simple depiction of the cupboard in his room. The frame of the carving is covered with Greek writing.

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

Description

Image of a sixteenth-century woodcut showing a doctor examining his patient. The patient is lying in an elaborately decorated four-poster bed, while the doctor takes his pulse; he does this by holding the patient's wrist with his left hand while at the same time looking intently at a small phial of urine which he holds in his right hand. Gathered next to the doctor are three other men standing with folded arms, watching what is happening. On the left of the image is what looks like a cat which is walking across the tiled floor towards the bed.

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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)

Description

Photograph of a small, nineteenth-century ivory netsuke of a doctor taking the pulse of his female patient. Doctor and patient are both kneeling on the ground, while the doctor holds the patient's right hand in both of his hands to feel for her pulse. A few jars and the doctor's bag are positioned on the ground on either side of them.

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

Description

A coloured nineteenth-century engraving of a wealthy doctor taking the pulse of his poor patient. The doctor is standing to the right of the image; he is portly and well-dressed, wearing a blue coat and a tall black hat. He has hold of his patient's left wrist as he feels for the pulse. The patient is on the left of the image; he is obviously very poor, wearing ragged and patched clothing and a soft red cap. He is seated on a rickety wooden chair, looking very unwell as he turns towards the doctor, extending his left hand for his pulse to be taken.

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Figure 9 Marcus Aurelius being treated by Galen

Description

Photograph of a marble roundel attached to a marble wall. The carving on the roundel depicts the physician Galen as he takes the pulse and feels the forehead of the emperor Marcus Aurelius. Galen is standing on the left of the carving, leaning forward to treat the emperor who is on the right of the carving, seated on a stately chair.

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Figure 10 Stethoscope and cardiogram print-out

Description

Close-up photograph of a doctor's stethoscope resting on top of a print-out of the results of a cardiogram.

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

Description

Image of the decoration on an aryballos, depicting a number of people with various ailments and disabilities as they visit a doctor at his surgery.

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Figure 12 Hippocrates' Aphorismi manuscript

Description

Image of the open pages of an illustrated manuscript, possibly late fifteenth century, decorated in gold and other bright colours. The page on the left has a colourful picture of three figures in a landscape with deer, trees and a small town in the background. On the page to the right is the highly decorated text with an ornately patterned border.

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Figure 13 A clay-backed face, Roman votive offering

Description

Photograph of the front of a face made of clay, depicting only the eyes, nose and upper mouth. The face has been broken in two, with the break occurring vertically down the left side of the face, separating the left eye from the other features.

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Figure 1 Part of a female face with inlaid eyes

Description

Image of a stone carving depicting the upper part of a female face with inlaid eyes, set into a wall. Only the forehead, eyes and upper part of the nose are present. The surface of the face is smooth and pale; the eyes are very dark, almost black.

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

Description

Photograph of an oculist's stamp, Roman Britain, from first to fourth century. The stamp is a slim, rectangular shape resembling a matchbox, with letters incised around the edges of the stamp and on its surface.

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

Description

Image of a Roman mosaic from Antiochia, House of the Evil Eye. Towards the right of the mosaic, a giant eye is pierced by a trident and sword, and attacked by a raven, a dog, a centipede, a scorpion, a cat and a snake. To the left of the eye, and seemingly walking away from it, is a horned dwarf who is crossing two sticks. A large phallus emerges from between his legs, pointing backwards towards the eye.

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

Description

Photograph of a modern reconstruction of the polychromy of a Trojan archer from the Temple of Aphaia. He is posed in the action of kneeling down to shoot an arrow. A second arrow is held lightly between the fingers of the hand he is holding his bow with. A quiverful of arrows is suspended from his left hip; they are brightly coloured with blue shafts and red fletchings. His bow and the arrowheads seem a metallic bronze colour. His clothing is very colourful: his helmet and the front of his tunic are a bright yellow and decorated with flowers and animals; his sleeves, leggings and quiver are covered in a pattern of rainbow colours.

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Figure 5 The Peplos Kore

Description

Photograph of a statue of a young woman, standing very straight with her eyes looking forward. She has long ringleted hair flowing over her shoulders, and is wearing a *peplos*, or heavy woolen garment, over her *chiton* – hence the name of the statue. Her right arm is hanging down straight by her side but her left forearm is missing, indicating that it was probably in a raised position and lost when damaged. The statue is the pale colour of the marble it is made from.

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Figure 6 Doctor examining the eye of a patient

Description

Image of a stone-carved relief of an eye doctor with a patient. The patient is seated on the left, while the doctor is standing on the right. He seems to be applying a salve to his patient's eyes. Above and to the side of both figures are bell-shaped objects, or cupping glasses, which symbolise the practice of medicine.

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Figure 7 A scallop shell with make-up remnants

Description

Photograph of a scallop shell containing the remnants of make-up which resemble a brownish residue.

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Figure 8 Facial reconstruction of Philip of Macedon

Description

Photograph of the reconstruction of the head of a man, depicting his facial features based on those of a skull found in a tomb at Vergina, Macedonia, in northern Greece. The man is middle-aged, and has black hair and a black beard. The right side of his face is scarred and distorted by what looks like a serious injury, and the eye on that side is missing.

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

Description

Image of a floor mosaic depicting Alexander the Great, portrayed as a young man with dark hair. His face is shown in profile and only the upper part of his body is in view. He is wearing armour and riding into battle on a horse.

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Figure 10 Roman woman at her morning toilette

Description

Image of a carved stone relief of a robed woman seated in a substantial chair, being attended to by four maidservants. The woman is facing to the right of the image. The four servants are standing in a row next to her: starting from the left, the first of them is combing her hair; the second is waiting with her arms folded, holding a jar; the third is holding up a mirror; and the fourth is carrying a flask.

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

Description

Image of a coloured engraving depicting a French doctor and his English patient, seated on either side of a table in the patient's bedchamber. The doctor is on the left, the patient is on the right of the table, which is covered with a tablecloth. The doctor is a portly individual, wearing a dark coat and a curled wig, with a napkin tied under his chin. He is engaged in eating a substantial meal of capons and drinking a flagon of wine. The patient is in his bedclothes and is propped up in his chair by a large pillow. He is reading a sheet of paper on which is outlined the much less substantial meal that the doctor is recommending for him – tea and broth. In the background is the patient's bed with ruffled bedclothes.

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

Description

Image of a small terracotta figure of a standing woman with large breasts, belly and hips. Her arms are missing, probably as a result of damage. Her facial features are also difficult to discern because of becoming worn down over time.

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

Description

Image of a portrait of a bearded man, whose features and body are made up of fruit, vegetables and flowers of all seasons. So, for example, his nose is depicted by a pear, his cheeks by apples, his hair by grapes, plums, pomegranates, cherries, figs and cornstalks; a wreath of flowers, including roses, lilies, tulips and poppies, descends from his right shoulder and across his chest.

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Figure 4 Pompeii amphorae

Description

Photograph of a large number of amphorae (large, two-handed storage jars) from Pompeii. The amphorae are shown lined up in rows along two shelves. In the background can be seen a plaster-cast of the body of someone who died in the Vesuvius eruption; this is also stored on a shelf.

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

Description

Image of a fresco depicting a glass bowl of fruit – apples, pears and grapes – alongside a tilted wine jar which is leaning against another pottery vessel filled with more fruit.

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

Description

Image of a wall painting depicting an apple tree of dark green leaves and pale yellow apples, painted against a blue background. On either side of the tree are more plants and flowers.

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Figure 7 Statue of a woman breastfeeding a baby

Description

Image of a small statue of a woman holding a swaddled baby on her lap and breastfeeding it.

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Figure 8 Baby bottle from Pozzuoli, Italy

Description

Photograph of a ceramic baby's feeding bottle, shaped like an Aladdin's lamp, with a single handle on the side and a pointed end for drinking from.

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Figure 9 Advertisement for the Hygeia nursing bottle

Description

Image of a newspaper advertisement promoting the Hygeia nursing bottle. The Hygeia bottle is on the left and is illustrated as a wide-necked container with a rubber teat; its use is recommended because of its 'open-mouthed' design. This is compared with a narrow-necked bottle on the right, which is accompanied by a warning that this type of bottle should not be used. In the centre of the advert is the picture of a crying baby sitting in his or her feeding chair. The advertisement text warns of the dangers lurking in 'the narrow, hard-to-clean neck of baby's bottle', and extols the Hygeia bottle as 'always safe'.

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Figure 10 Chicken soup

Description

Photograph of of a bowl of chicken soup, with shreds of chicken meat and carrots in a broth. The bowl is a dark blue. There is a spoon in the soup, resting against the side of the bowl.

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

Description

Image of part of the decoration on a Greek wine cup, depicting a man bending over as he vomits into a large bowl, while his head is held steady by a boy.

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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)

Description

Image of an engraved illustration showing the veins in the forearm and the action of the blood flow as it circulates through them.

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

Description

Photograph of an ornate medicine jar with the word 'Thyriaca' written across the front. The decoration is in blue and red against a white background. The jar has a lid and two handles, one on either side.

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

Description

An image of a wall fresco depicting a series of objects, including a metal vessel with a ladle, a wide plate containing ten eggs and a large metal jug, all arranged on a low platform or step. On the wall above the eggs are about half-a-dozen small birds hanging together off a hook. To the right of these is a napkin also hanging from a hook, and below that a simple clay bottle is propped against the end of the step.

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Figure 1 Roman aqueduct in Segovia, Spain

Description

Photograph of the Roman aqueduct in modern-day Segovia, in Spain. The aqueduct consists of two stories of arches supported by blocks of stone, its long span extending through the town centre and into the distance.

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Figure 2 A coprolite

Description

Photograph of a preserved piece of human faeces known as a coprolite, of about 19 centimetres in length.

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Figure 3 Modern toilet cubicles

Description

Photograph of modern-day toilets, looking into three cubicles.

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Figure 4 Ancient Roman latrines (latrinae), Ostia Antica

Description

Photograph of ancient Roman latrines in the harbour city of Ostia Antica. In view are two rows of stone slabs positioned at right angles to each other and sited against a brick wall. The slabs have holes cut into them and are supported by blocks over a drain.

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Figure 5 Figure from a drinking cup

Description

Image of a figure from a drinking cup, depicting a bearded man with cloak and staff, squatting and defecating. He holds his staff with his right hand, which he is leaning on for support, while he reaches behind him with his left hand to wipe his bottom.

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

Description

Image of a wall painting depicting workers cleaning clothes in fullers' vats. The vats are arranged in a row, with one worker in each of them. A worker is standing up in one of the vats and treading on the clothes to clean them.

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Figure 7 Antique illustration of Roman baths (thermae)

Description

Image of an antique illustration showing the layout of Roman baths, which consist of a series of rooms through which bathers moved from cold to tepid to warm temperatures as they relaxed, bathed and exercised.

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Figure 8 Fumigation therapy

Description

Image of an illustration depicting a naked woman seated on a stool over a vessel from which steam is rising . Behind her is a physician overseeing the process. He is bearded and robed in a toga, and is holding a bottle in one hand as he gestures with the other, giving instructions.

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

Description

Image of the decoration on the base of a ceramic dish, depicting a drunken man lying on his side on a couch and vomiting into a large vessel nearby on the floor. Meanwhile, a young slave boy stands beside him, holding his head steady.

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Figure 10 A man surrounded by bottles of prescription medication

Description

Photograph of the head of an older man surrounded by bottles of prescription medication. He is clutching his forehead in dismay.

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Figure 11 Roman aqueduct in modern-day Segovia, Spain

Description

Another photograph of the Roman aqueduct in modern-day Segovia, in Spain, this time viewed from a different perspective. The aqueduct consists of two stories of arches supported by blocks of stone, its long span extending through the town centre and into the distance.

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

Description

Image of a painting by Peter Paul Rubens, the theme of which is the discovery of baby Erichthonius by the three daughters of Cecrops, king of Attica. These sisters are portrayed nude except for some drapery, and are arranged in dramatic poses around the infant who is the central focus of the painting. He is shown lying in a basket, which one of the sisters has opened to find him inside. A snake, who was in the basket with the baby, is uncurling itself to escape. The sisters are showing their alarm at the discovery. One of them, on the left of the painting, is being supported by an old woman, possibly her nurse; meanwhile, a nude small boy gestures from her to the baby. On the right of the painting is a statue of Diana of Ephesus, the many-breasted goddess of fertility.

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Figure 2 Joris Hoefnagel, White Horse, 1590–99

Description

Image of a painting by Flemish painter, Joris Hoefnagel, depicting a white horse in full gallop, its mane and tail flowing.

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Figure 3 Icons relating to pregnancy

Description

Image of a collection of people and objects relating to pregnancy, represented figuratively as flat shapes and colours. They are arranged within a circular shape and are in soft colours – dark and light blue, pink and olive. They include a pregnancy test, a stork, a baby in the womb, medicines, charts and a nurse; the main image, on the left of the illustration, is the silhouette of a heavily pregnant nude woman shown in profile with long hair.

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

Description

Photograph of a pregnancy test kit showing a positive result, which is resting on top of a baby's dummy. The two objects are both white – except for the purple cross of the pregnancy reading and the yellow of the dummy's teat – and are set against a pale pink background.

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

Description

Image of an engraved drawing depicting eight possible ways in which a foetus can present inside the womb. The foetus is shown in various positions, such as the breech position; and two of the representations are of twins.

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Figure 6 Giuseppe Cesari, Perseus saving Andromeda, 1596

Description

Image of a painting depicting the rescue of Andromeda by Perseus from a sea monster. Andromeda is on the right of the image; she is chained to a rock in a cliff by the sea. She is nude and has long fair hair. On the top left of the painting, Perseus is shown flying in on Pegasus, the fabled white horse with wings. Perseus is wearing armour and brandishing a sword in his right hand. In his left, he holds the head of the Medusa. At the bottom left of the painting is the dragon-like sea monster, looking up in alarm at Perseus' approach.

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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

Description

Image of an illustration depicting Mary Toft lying prone at the edge of a large four-poster bed, her head thrown back as she suffers the pangs of 'labour'. Another woman holds her around the shoulders to support the upper part of her body. Meanwhile, her legs are apart as a male midwife assists in the delivery of several rabbits, many of which are shown lying about on the floor. The scene is watched by several members of the medical profession, exclaiming at the remarkable event they are witnessing. Hogarth is poking fun at their incompetence and credulity.

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Figure 8 Etruscan woman giving birth standing up

Description

Photograph of a small image made by pressing a stamp into clay, depicting an Etruscan woman giving birth standing up.

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

Description

Image of a line engraving depicting a male midwife suggestively examining an attractive pregnant woman in her bedchamber, while her disgruntled husband, frowning, is led out of the room by a maidservant. A second maidservant looks on as she ties back the curtain on the four-poster bed. In the foreground, a cat lies curled up asleep on a chair.

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

Description

Photograph of a clay-baked Roman votive offering depicting a swaddled baby, with a cap on its head and an amulet around its neck.

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Figure 11 Terracotta figure of an old nurse and a baby

Description

Photograph of a small terracotta figure of an old nurse seated on a chair and holding a baby. She is smiling indulgently down at the infant in her lap.

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

Description

Image of a wall painting depicting two women in conversation. One is seated on a large chair, with her head bowed. She is robed and has her head covered. The other woman stands next to her, on the left of the image. She is wearing a simple dress and a cap on her head. In the background is a statue and the faded outlines of a landscape.

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

Description

Photograph of small statues of children from the ancient temple of Artemis in Brauron, Greece. In the foreground is a statue of a young boy; behind him are several statues of girls.

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Figure 14 Wooden doll from second century CE

Description

Photograph of a wooden doll with articulated limbs that can be moved about. The doll is clearly female, with small breasts and an elaborate hairdo.

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Figure 15 A rose touched by frost

Description

Photograph of a red rose in full bloom, the edge of its petals slightly discoloured because of damage by frost.

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Figure 16 Carved relief of a seated mother and her child

Description

Image of a carved relief of a mother holding a child on her lap. The child is standing on her knees and is wrapped up in swaddling clothes. They are depicted in profile, facing each other and looking fondly into each other's eyes. Another woman on the right of the image supports the child's head and back to help him or her to stand up.

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Figure 1 The Doryphoros of Polykleitos

Description

Photograph of a classical Greek sculpture in marble, of a naked, well-muscled man in a standing pose, his left leg bent slightly as his weight is borne by his right leg. His left arm is also bent and his hand closed in a relaxed grip, indicating that he may once have had a spear balanced on his left shoulder. His hair is short and he has no beard.

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Figure 2 Venus de Milo on a World Aids Day poster

Description

Image of a poster depicting the *Venus de Milo* statue alongside six photographs of women of all sorts, representing an advertisement for an exhibition of posters and videos on AIDS. The poster is headed: 'AIDS: all the world's women are concerned'.

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Figure 3 A scholar's study containing a statuette of the Venus de Milo

Description

Image of a print depicting a scholar's study containing a number of objects of interest to a scholar, on the desk, on top of the bookshelves and on the wall. These include a bust of Shakespeare, a profile portrait of Charles Darwin in a roundel, and statuettes of the Sphinx and of the *Venus de Milo*.

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Figure 4 Still image taken from 1936 film *Olympia*.

Description

Still image from the film *Olympia*, of a male athlete posed as though about to throw the discus he is holding in his left hand. Only the upper part of his body is in view. His chest is naked, and he is bending forward and twisting his torso to the left, as the arm holding the discus swings backwards in readiness for his throw.

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Figure 5 Four ancient statues: Apollo Belvedere, the Belvedere Torso, Laocoon and His Sons, and the Medici Venus

Description

Image consisting of a composite of four photographs of classical statues, all nudes, shown in various stances and in various states of repair. Moving from left to right, the photographs are of: a young man standing and looking to the left with his arms gesturing outwards; the torso only of a well-muscled man, clearly the result of damage; a bearded older man and two younger men struggling in the grip of sea serpents; and a young woman with her hair bound up, standing with her right leg bent and looking to the left.

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Figure 6 The Vaison Diadumenos

Description

Photograph of an ancient classical statue of an athlete, with his head looking down and his arms bent and raised at shoulder height. Only the upper part of his body is in view, and the camera view is from below looking upwards.

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Figure 7 Venus de Milo (also known as the Aphrodite of Melos)

Description

Photograph of the statue known as the *Venus de Milo*, portrayed as a young woman standing in a pose with her right leg straight and her left leg bent slightly, so that her body is turned and leaning slightly to the right, giving her torso an elegant curve. Her hair is waved and tied up at the back, and she is wearing some drapery wrapped around her hips. Her arms are missing.

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Figure 8 Nydia, The Blind Flower Girl Of Pompeii, Randolph Rogers, 1858

Description

Photograph of a statue in the classical style, depicting a young girl, bending forward slightly and holding a long staff in her right hand while poised to take a step forward. At the same time, she holds her left hand up and across her body to touch her right ear. Her eyes are closed.

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Figure 9 Foot from Roman Egypt

Description

Photograph of a foot carved out of porphyry, reddish in colour with a sheen on the stone.

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Figure 10 A Greek vase painting depicting Dionysos leading Hephaistos back to Olympus

Description

Image of a vase painting Dionysos leading Hephaistos back to Olympus. Hephaistos is depicted riding a donkey and, unusually, with severely shrunken and deformed feet. He is facing towards the left. Dionysos stands before him facing to the right, cloaked in a panther-skin and holding a cup of wine. On the far right of the image, a dancing maenad follows behind, with a coiling serpent in her hands.

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Figure 11 The return of Hephaistos, circa 430–420 BCE

Description

Image of a Greek vase painting of Hephaistos riding a donkey. He is facing towards the right and is carrying the tools of his trade, a hammer and some tongs. His feet are not shown as deformed here.

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Figure 12 Decoration on an aryballos, representing a doctor's surgery

Description

Image of the decoration on an aryballos depicting people with various ailments and disabilities visiting a doctor's surgery. The doctor is taking blood from a patient's arm; there is also a dwarf, a crippled man, and a number of other wounded men in the waiting room.

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Figure 13 Hellenistic Greek bronze statuette of a person with a hunchback

Description

Photograph of a Hellenistic Greek bronze statuette of a person with a hunchback. The limbs of the statuette have been damaged and have some part of them missing.

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Figure 14 Sleeping Hermaphroditus

Description

Photograph of the statue of Hermaphroditos sleeping nude on a mattress. The body is in a twisted pose, with the head resting on folded arms on a pillow, while the rest of the body is turned and resting on its side. Some drapery is coiled around the sleeping body and across the legs.

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Figure 15 Roman soldier

Description

Detail of a Roman soldier from a marble relief sarcophagus that depicts a battle.

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Figure 16 Roman marble relief of the Praetorian Guard, circa 50 CE

Description

Image of a carved marble relief showing five soldiers of the Praetorian Guard. They are all standing, shown wearing their armour and feathered helmets. Behind them is their standard of an eagle grasping a thunderbolt.

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Figure 17 Soldiers being treated for the injuries

Description

Composite image made up of three images: the first is the decoration on an Attic cup, of Achilles bandaging Patroclus' wounded arm; this is accompanied by two photographs of soldiers being treated on the battlefield in World War 1.

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Figure 18 Iapyx operates on Aeneas's leg

Description

Image of a fresco depicting Iapyx removing a spearhead from Aeneas's leg. Aeneas is standing with his arm leaning on his young son, who is crying. In the background on the left is a woman with flowing hair and drapery; on the right are armed soldiers.

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Figure 19 Greco-Roman surgical instruments

Description

Photograph of fourteen different Greco-Roman surgical instruments.

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Figure 20 Roman surgical instruments

Description

Photograph of four Roman surgical instruments, including two probes and forceps.

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Figure 21 Roman surgical instruments found at Pompeii

Description

Photograph of a variety of Roman surgical instruments found at Pompeii.

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Video 1 Images of health

Transcript

NARRATOR

Here, we've got two images of people in the ancient world. They're not gods or heroes, just ordinary people. And to our eyes, I think they all look pretty healthy.

The first image shows men wrestling. They're completely naked. This was normal for ancient athletics. The second image is sometimes known as the bikini girls. It's interesting that these women, although they're wearing rather more clothing than the men, are also exercising, running, playing with a ball.

One is wearing a crown. Has she won her event? Why are they doing this? Is it to keep healthy?

These images of exercise look very modern in some ways. But did people in ancient Greek and Roman societies really do the same things as us? And did they do them for the same reasons as we do?

In fact, were they actually healthy? How would we measure their health? And what evidence do we have to help us answer our questions?

People in the ancient world might claim they were healthy, but would we agree? Even today, health is a difficult concept to define. Thinking about

health can illuminate the relationship between the modern world and the ancient Mediterranean worlds, while looking at ideas from another culture can help us rethink our own assumptions about health.

Do we look back to the Greeks and Romans as supreme models of health, due to a simple diet, free from preservatives? Or do we focus on our greater knowledge of the body, the scientific progress we've made? For example, with understanding the role of minerals or vitamins in the diet, and developing vaccinations and finding ways to preserve food safely. And which attitude really matters here?

In this course, we've arranged the themes by looking at the parts of the body from head to toe. In Western medicine, this has been a traditional way of organising manuals for doctors. But we can also use this approach to think beyond purely medical approaches to the body.

So when we look at the eyes, we'll consider theories of sight, eye diseases and their treatments, but also the symbolic value of the eye. For example, what was the evil eye? How was that used?

Even today, the body gives us ways of thinking about our world more generally. So we talk with the head of an organisation or facing up to a fact or

digesting something we've read, or trampling on someone else's views. You're going to be learning an important skill, how do you evaluate evidence.

Look at those two images again. To understand them fully, we need some context. The image of the wrestlers comes from ancient Athens. It dates to around 510, 500 BCE. And it's on a piece of marble that was later reused to make a wall.

Originally, it would have been a statue base for a funerary monument. Other sides of the statue base show a ballgame, and a cat and a dog growling at each other as the owners watch. Now turn to the bikini girls. That one comes from the 4th century CE, Roman world. The mosaic was used to decorate a floor in a villa, a rich private residence. It's the Villa Romana del Casale, which is now a UNESCO World Heritage site.

So one image was on public display, and may commemorate a real athlete, the other is from a private house, and a really wealthy one at that. So it would have been used to impress lots of visitors. But of course, it may be a fantasy image. And although both images are ancient, they're a thousand years apart and from two different ancient cultures.

This course will help you read precious historical artefacts like these. But for now, I want you to think about how we and the ancient Greeks and Romans defined health. Just take a few moments to write down your definition of health today. And then jot down what you think the ancient Greeks and Romans might consider to be health, and then continue.

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Video 2 Taking your pulse

Transcript

EMILY REEVE

Hi. I'm Emily Reeve, senior cardiac nurse of the British Heart Foundation. Today, I'm going to show you how to check your pulse. Checking your pulse is important because it can detect any irregularities in the way your heart beats. It's quick and easy to do. You can even do it at home. I'm going to sit down now and check mine.

Turn one of your hands over so your palm faces upwards. Can you see some creases at your wrist where your hand meets your arm? On the side of your wrist where your thumb is, put the first two fingers of your other hand in the groove next to the bone, about an inch down from that crease. You should be able to feel your pulse. Feel your pulse for 30 seconds. Does it feel regular like this rhythm?

[HEARTBEAT]

Or does it feel irregular, like this rhythm?

[IRREGULAR HEARTBEAT]

If you feel an irregular pulse, please make an appointment to see your GP. An irregular heartbeat could be a sign of an abnormal heart rhythm, like atrial fibrillation, which could put you at risk

of stroke. Your doctor will be able to advise you.

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Video 3 Talking about health

Transcript

HELEN KING

Hello. I'm Helen King, professor of Classical Studies at the Open University. And I'm joined today by Mathijs Lucassen, who is a lecturer in the School of Health, Wellbeing, and Social Care. Welcome.

**MATHIJS
LUCASSEN**

Thank you.

HELEN KING

It's really good to have you here, because what we want to talk about today is health. What do we mean by health? How has that changed over time? And also we want to have a little look at a particular disease, which was known in the ancient world and which I don't think is known today-- lovesickness. So that's quite a lot to get through. And I want to start by thinking about those words-- health and wellbeing. So you're in a school that's got both words in the title. How do you understand the difference between health and wellbeing now?

**MATHIJS
LUCASSEN**

I think health, people will have more of a focus on physical health and a lesser focus on things like mental health. And wellbeing, I think, sort of encompasses so many different things, which includes health but it can be about environment as well as individuals and practitioners.

HELEN KING

Right. So from an ancient perspective, that's interesting because for the ancient world really health is about everything. It's about your environment as well as yourself. So it's also about how you function in that environment. But socially and institutionally, of course, it's arranged very differently. We don't have hospitals in the ancient world.

**MATHIJS
LUCASSEN**

Yeah.

HELEN KING

Whereas now, in terms of what you do if you're ill, your first port of call would be doctor, then a hospital.

**MATHIJS
LUCASSEN**

And also there is even compartmentalising within the hospital. So we have separate departments. So if you've got a problem that's related to something that has to have surgery, then you're on a surgical ward. If you've had a stroke, say, you might have to go to a rehabilitation ward, which would be separate again. So even within the hospital it's compartmentalised.

HELEN KING

Whereas in the ancient world a doctor just does everything. Some might be better than others at particular things, but surgery as well would be done by the same person as far as we can tell. So in the past, what you're most likely to die of is an infectious disease. Something that's just going to be acute, short disease that's going to kill you

rapidly. And there's not much you can do about it. Very different approach today in terms of what's going to get you.

**MATHIJS
LUCASSEN**

Yeah, completely. I think we've done a lot in terms of managing infections and acute health issues, because of vaccines and modern medication. But it's the chronic issues now that people are facing. Things like cancer, cardiac issues, diabetes, dementia. It's those things are the real difficulties that people are facing.

HELEN KING

So in terms of what's going to kill you, but also in terms of how you're going to live, these are the important ones. You're not going to feel that healthy over a long period of time, rather than just having a short burst of being very unhealthy and then dying. Yeah, it's very different.

What about the division between physical and mental now? I mean, how does that work?

**MATHIJS
LUCASSEN**

Well, we have completely different funding for-- you know, we've got the funding that's going to be for health services, and we split that up into different chunks. And then we have separate funding for mental health services. And if you present to a general practitioner in primary health care, and it looks like your main concern is around mental health issues, then you will have quite a

different care pathway, quite a different experience than you would if you were presented with a physical health issue. You'll get treatment that's completely different, mostly from practitioners, that are completely different as well.

HELEN KING

So you may end up being someone who's got both physical and mental health problems, but they're dealt with separately. You have to be defined.

**MATHIJS
LUCASSEN**

Yeah. And we get a lot of people falling through the cracks, because they don't neatly fit into these different care pathways.

HELEN KING

Whereas in the ancient world, it's all about balance. And if your bodily fluids are in balance, then you'll be healthy physically and you'll be healthy mentally. So there isn't such a problem.

So what about the way that we-- how do we decide? How do we decide if we're healthy? There's a big thing about numbers, I know. I mean, you've got various things in the magazines there about the different numbers we use. What sort of numbers are important?

**MATHIJS
LUCASSEN**

Well, we measure all sorts of things in terms of a person's health. So it can be from birth it's birth weight and height as children grow. And then for adults, it's things as varied as cholesterol levels, blood pressure. There's all sorts of ways in which we measure health and

wellbeing. And I think in some ways we could become quite fixated on that.

HELEN KING

We've certainly got lots of equipment to measure these things. I mean, we've got the blood pressure monitor here. So take one of these home, you don't have to go to the doctor. You just stick this thing on your arm. You can press the magic buttons. And if you look to see what the last member of the family to use it had. We can see that little picture of a heart comes up, which is very cute. Just like a sort of heart you use in love, actually. And there you go-- 140 over 84 for blood pressure, pulse of 62. So you know your numbers, and you can adjust your life accordingly. But in the ancient world, numbers really don't play a part.

Let's think about lovesickness, because in that, as you'll see in this week's work, we do have some use of the pulse, but not a number attached to it. Lovesickness is a disease which people thought they had if they felt a bit sort of faint and pathetic and felt dizzy and sweating, and a sort of pulsing sensation, a noise in the ears-- might mean that they were in love. Is love ever a sickness now, or is it always a healthy thing?

MATHIJS LUCASSEN

I think we don't pathologize love at all now. But we do think about certain aspects of love as being possibly problematic. So we do have services and clinics for people that are seen as

being addicted to sex. So that, I think, is connected to a love. But you wouldn't say-- you know, if you went to see a health professional, they wouldn't say this is a lovesickness. That would be really unusual now, I think.

HELEN KING

So if you think about that overall, then, in terms of health we have some ideas that are very different now, particularly the fixation on numbers and getting it right. We have a division between physical and mental, which they didn't really have in the ancient world. But love is no longer a sickness. It's OK to be in love. Thank you very much.

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Video 4 The Perseus Project

Transcript

HELEN KING

Hello, I'm Helen King. I'm Professor of Classical Studies at the Open University. And I'm here at the Open University Library in Milton Keynes to talk to one of our former PhD students, Rebecca Fallas, about using online resources. So thanks very much for coming, Rebecca.

REBECCA FALLAS

Hello.

HELEN KING

So, big question-- if you haven't got access to a university library like this, how do you find sources for ancient medicine?

REBECCA FALLAS

Well, it is quite difficult, because all the resources I use pretty much are behind a university library paywall. There is a couple of options. Google Books is a really good place to start. It has an awful lot of the ancient texts in translation on there. But unfortunately, as is the problem with Google Books, because of copyright restrictions, a lot of the time, pages are missing as well. It lets you look at a certain amount of the book.

The other place to look is Perseus Digital Library. Really, it's the site that has all the Greek and Latin core texts on it, most of which are in English as well. And it's free.

HELEN KING

Right. So let's have a look at Perseus. What do you think makes it a good resource?

REBECCA FALLAS

It has a wide selection of texts, everything from the Hippocratic texts to Socrates and Suetonius and Homer. It allows you to look at things in both Greek and Latin, and the English translations as well.

HELEN KING

OK. So we've got that online here. We've got Perseus Tufts, because it's hosted at Tufts University. If I just open that up-- right. So what's the quickest way of finding something? Suppose we want to find that famous passage of Xenophon describing what health is?

REBECCA FALLAS

Yeah.

HELEN KING

Where do we start?

REBECCA FALLAS

So if you go into the top right-hand corner, there's a white box that you can use to search. So you've got all the list of Xenophon's works that Perseus has online. So if we look for the Memorabilia--

HELEN KING

OK, so this clearly isn't Xenophon, is it? So what's this?

REBECCA FALLAS

This is a commentary explaining all the Greek words. You can see the Greek words here on the left, and then an explanation of what they might mean in that context.

HELEN KING

So that's going to be too technical for the sorts of things we want. So if we go

back to where we were before, and then down here, we've got Xenophon in Greek, Xenophon in English. So go on to that one. OK, there's Xenophon. So how do we find the passage about health?

REBECCA FALLAS

OK. So we want to look for Book Four. So if you go on the left-hand side, there's a table of contents. We were looking at 4.2, 31 to 32.

HELEN KING

So I'll click on section 31. OK. And there we have this discussion of health. "Health is good. Sickness is an evil." So how do we find the rest of this?

REBECCA FALLAS

So, you can either go down to the left-hand side in the table of contents again, and select 32.

HELEN KING

So I could go down there.

REBECCA FALLAS

Or at the top of the page, there's two blue arrows. And you can just press on the right-hand one to go--

HELEN KING

So there's this point that health is not always a good thing, because it might mean that-- if you were healthy, you end up fighting. Whereas if you are sick, you end up being left behind, so you survive. So if we wanted to go further than that and think about health and Xenophon, what would we do next?

REBECCA FALLAS

OK. Well we can actually search within the text itself. So on the right-hand side, in the middle, is the search box.

And this will let you search within the text you are looking at.

HELEN KING

OK. So if I'm going to put something in there-- if I put "health" and click Search, there's just one passage, so-- oh, great. And it's already-- it's highlighted, so we can see where that bit comes in. So what's he saying here? "Exercise as much as you can do it, because it ensures good health but doesn't hamper the care of the soul." I like that.

But there's also more information we could get on this passage, isn't there?

REBECCA FALLAS

There is. On the right-hand side, we have a section called "References."

HELEN KING

OK, so that's here. Yeah. We can find out about who Socrates was if we go on this biographical link here in the References section, and we get a biography of Socrates. Now what is this biography of Socrates? How do we find out what it is, when it was published, whether we take it seriously or not? If you go on this entry, which takes you back to the beginning, that will tell you some details.

REBECCA FALLAS

OK, yeah. So this one's published in 1873.

HELEN KING

OK. Well, that explains why the language in it is quite wordy, quite archaic. It's not the most up-to-date thing we've ever seen in our lives.

REBECCA FALLAS That's one of the drawbacks of Perseus. A lot of the texts that they use are ones that are out of copyright, so therefore are older.

HELEN KING "Athens, so rich in the means of mental culture." I don't think we'd say that today.

REBECCA FALLAS I don't know. It's a bit of flair.

HELEN KING So if you go down to the bottom of that - OK, so that's Smith's Dictionary.

REBECCA FALLAS From 1873. So even older than our translated text. But it just-- it does give you the information in a form that's easy to access.

HELEN KING And you can also click on all these blue links to go back into the Greek text or the English translation to find out where the evidence comes from, so that's really useful.

REBECCA FALLAS So, yeah. So one of the problems with it being the 1873 version is there are certain words that weren't used then that we might use today. So if we actually try searching for "wellbeing" in the text, instead of "health"--

HELEN KING Put that in the search box. Ah, nothing.

REBECCA FALLAS Nothing at all. So that's one of the words that we just don't find.

HELEN KING So we just wouldn't translate it as "wellbeing."

REBECCA FALLAS Yeah. So it might just be translated as "health." But if you go back into the top

right-hand corner, where we searched for Xenophon before, and we get--

HELEN KING

Ah. Now we get some hits. OK, so lots of those are, in fact, things like dictionaries and commentaries, where someone else is using the term. OK.

REBECCA FALLAS

So it's pulling it from the entire Perseus catalogue.

HELEN KING

What about if you can read Greek?

REBECCA FALLAS

We can also look at the Greek text directly. So if we go back to the Memorabilia page, on the right-hand side, we have a section just above where we clicked on References saying the Greek.

HELEN KING

Oh, OK. So Greek, 1921. Oh, OK. So we can compare exactly the same section, the Greek version and the English version there. So if you can read Greek, you can therefore go down and find-- there we are. There, it's there.

REBECCA FALLAS

Comes up with a nice translation of the word for you as well.

HELEN KING

Oh, that's very useful, isn't it? "Good for the health, wholesome, sound, healthy." So we could do quite a lot more with it. Well, that's great. So we've got an easy way in there, and if we want to learn more, we could go further. There's an online tutorial that takes you through some of this. But the basics, we can now have a quick look.

REBECCA FALLAS

Yeah.

HELEN KING

That's great. Thank you very much.

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Video 5 Lead curse tablets

Transcript

ADAM PARKER

This is a curse tablet. This one is a replica from the city of London. The vast majority of the originals are in lead or in lead alloys. They're usually this rectangular shape on the side. And you can see it's inscribed on the front by hand in Latin cursive text on here.

PATTY BAKER

I see it has some names on it. I believe it's Titus, Ignatius, Tirianus, Defictus, est. et. And then another name, Publius, Cirilius, Felix. And what would that mean?

ADAM PARKER

In cursed tablets we have some specific formulas that included in them, for example. This one includes then the petitioner's name. It doesn't include the name of the god they're giving it to, but other examples do. Frequently Sulis or Mercury, for example.

And it also includes the name of the person who's being cursed. The one at the front is the person who's giving the curse. And the curse is laid against the name of the second person in the line down here. In the examples, particularly relating to theft, we know the name of the suspect on them. If they don't know the original person, but put a whole list of names they can attach to them.

One of these people has wronged me, and we're going to curse them as a result of that. And if we have no idea, there are a series of alternative phrases that turn up in it as well. And whether man or woman, whether a slave or free, whether a boy or girl-- and these represent the social distinctions in the Roman Empire. So no matter what your individual situation, you're able to make a curse. But how that actually happens is very much up to the individual.

PATTY BAKER

Interesting. And why does this have a hole in it?

ADAM PARKER

They have a hole in it-- and when curse tablets have been finished, when they've been written, they are rolled up together. So the text is hidden on the interior. In this example, it has been pierced by a nail. And that square hole in the interior there, that's a Roman iron nail, which have a square section shanked to them.

And that's been knocked through, right through the middle of it. It looks like it just breaks through the name of the person, which is being cursed. And that would have been a very deliberate act, that the person who was being cursed has been attacked by the nail as well as the supernatural action of the cursed tablet itself.

PATTY BAKER

Are they always made of lead?

ADAM PARKER

Yeah. Well, the vast majority are made from lead and lead alloy when we find them in the Northwestern provinces. When we go up towards the east, we find other examples in bronze and pottery and papyrus as well. But the lead is quite important in a magical sense, because of what it represents.

It's got a sympathetic relationship to the curse itself, because lead is cold, lead is dark, and lead is also quite poisonous as well. So there's the relationship between the material and the action of the curse itself. The material, it's dark and it's a little bit evil, and so is the curse.

PATTY BAKER

Fascinating. And are these found in particular places?

ADAM PARKER

Yeah, the places where they found are really important. For example, at the Temple of Aquae Sulis in Bath, they are found in the natural spring that's in the centre of the temple. And there's a strong association with watery places with them as well. We also find them associated with graves.

These are all liminal places, which are quite close to the gods and close to important things that go on in day to day life. And there are some examples which suggest that a curse tablets have been placed directly into the graves because the dead people are going to be an intermediary between the real world and the supernatural world. And

they will take that message along with them to make the curse work.

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Video 6 The pulse of love

Transcript

HELEN KING I'm Professor Helen King. I'm Professor of Classical Studies at the Open University. And I'm here today to talk to Dr. Laurence Totelin of Cardiff University.

LAURENCE TOTELIN Hello, Helen.

HELEN KING Hello. We're going to talk about love.

LAURENCE TOTELIN Indeed.

HELEN KING So, big question-- why would love be seen as a disease?

LAURENCE TOTELIN Well, it's only seen as a disease when it doesn't get any resolution.

HELEN KING OK, so unrequited love then.

LAURENCE TOTELIN That's right, yes.

HELEN KING So what are the physical symptoms of this unrequited love?

LAURENCE TOTELIN Well, there are many, and they've been described most beautifully by Sappho, who was a poetess in the seventh century BC. And she describes those symptoms as becoming very pale, sweating, shivering, being unable to speak, seeing blank, and also a buzzing noise in the ears. And that

perhaps can be interpreted as a disturbance in the pulse.

HELEN KING

So the pulse then becomes a very important way of deciding if someone has got this disease.

**LAURENCE
TOTELIN**

Yes, it is. And we do have many stories from antiquity where taking the pulse is the way to diagnose lovesickness.

HELEN KING

So let's unpack one of those stories of ancient physicians diagnosing lovesickness then, the story of Dr. Erasistratus and his patient, Prince Antiochus, the son of the King Seleucus.

**LAURENCE
TOTELIN**

Yes. So Erasistratus was a very famous physician in the third century BC, and he was called to the court of Seleucus because Prince Antiochus was ill. And Erasistratus tried to diagnose the illness through the pulse, and he found the pulse of the prince to be normal until he saw his stepmother, the queen, Stratonice.

HELEN KING

So what happens after that?

**LAURENCE
TOTELIN**

Well, there was a very odd ending to that story, because Antiochus was allowed to marry his stepmother, Stratonice. The king, Seleucus, allowed him to do that. He passed on his wife to his son.

HELEN KING

That does seem quite bizarre to us, doesn't it? I mean, are there any sort of explanations as to why this story would

happen, other than to prove know what a great doctor Erasistratus was?

**LAURENCE
TOTELIN**

Yes. It's quite possible that there were dynastic issues, and that King Seleucus wanted to step down in favour of someone younger and stronger.

HELEN KING

I see. So it's cunning, really, isn't it?

**LAURENCE
TOTELIN**

It's very cunning. And Stratonice was still very young and very beautiful and, most importantly, able to bear children.

HELEN KING

Because she'd had a son already, hadn't she?

**LAURENCE
TOTELIN**

That's right.

HELEN KING

Yeah. So, OK, she was obviously good wife material.

**LAURENCE
TOTELIN**

She was, very much so.

HELEN KING

So there's also the story of Dr. Hippocrates treating Perdicas, and he's lovesick for his father's concubine. So there seems to be a bit of a pattern here. Is one story based on another one here, or what?

**LAURENCE
TOTELIN**

Yes. So it would be very difficult to know which one is based on which one, but it's clear that we have motifs here in those stories. We have patterns. And they are all based on one idea, and that's the very clever physician coming to a very important

character who is in love with someone who is not attainable.

HELEN KING

Yes. Hence, the unrequited thing.

**LAURENCE
TOTELIN**

Yes, exactly.

HELEN KING

Well, the other one, of course, changes the whole gender argument here. Because in both stories we've talked about, the patient is a man.

**LAURENCE
TOTELIN**

Yes.

HELEN KING

But with Dr. Galen, he treats the wife of Justus, and she's lovesick for a different unattainable object, a dancer, someone well below her status.

**LAURENCE
TOTELIN**

Yes. So there is a very important gender aspect to all the stories. And I think, from a modern point of view, we're used to stories of unrequited love being women who are lovesick. But these ancient stories do have men patients in them, as well as sometimes female patients.

HELEN KING

If we see the sorts of images we're get in the Renaissance and early modern Europe, it's always a girl who's lying there, looking a bit pathetic and rather pale, with a doctor, hand on her wrist, feeling her pulse, diagnosing what's going on. What's happening with these images?

**LAURENCE
TOTELIN**

Well, you say "pathetic," but I think there's another way to interpret this. You could see this patient as being

quite attractive. She's a damsel in distress and paleness makes her very pretty.

HELEN KING

But also, she can be a bit of a minx, can't she? Because sometimes you've got a nurse or a maid or someone offering him a letter like her lover's written, and we're not supposed to show that in front of the doctor.

**LAURENCE
TOTELIN**

Yeah. So there's a lot of intrigue going on in those paintings. There's a lot of sexual tension in there.

HELEN KING

Also, you do still get some men suffering from lovesickness. There's a case in the Renaissance that the doctor, Louis Ferrand, talks about, who was a lovesick scholar. And again, it's that classic pattern where he's talking to the patient, attractive maid comes in holding a lamp just as he's having his pulse taken. Now suddenly, it goes boom, boom, boom. And he goes pale, he goes red. He can't speak. Exactly the same things that Sappho was talking about in the seventh century BC. And then he confesses that, actually, he's in love with this girl. But Louis Ferrand says he would consent to be cured only by the one who had wounded him.

So what's the cure for lovesickness?

**LAURENCE
TOTELIN**

Well, the cure is very beautifully put in there. It is really to get what he wants. So to find resolution for his unrequited

love, and that is simply by having sex with the object of his love.

HELEN KING

So there you go. That's how to cure the disease.

**LAURENCE
TOTELIN**

Indeed

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Video 1 Here's looking at you

Transcript

HELEN KING

Hello. I'm Helen King. I'm Professor of Classical Studies at The Open University. And I'm here talking to Mathijs Lucassen who's a lecturer in the School of Health, Wellbeing, and Social Care. So we're going to talk about the face and its role in giving us our identity. So what do we think a healthy face looks like?

**MATHIJS
LUCASSEN**

A healthy face will have a clear complexion with the right level of hydration, not too oily, not too dry. I guess we've got the sort of health-- we associate health with youth, so it's going to be mostly wrinkle free. And the right sort of complexion, so having had the right amount of sun.

HELEN KING

Right. So in terms of what that would look like in the ancient world, and I think it's very similar. But, as now, you can always enhance it if it's not quite right. So we have all sorts of cosmetics that we have today. These are exactly the same sorts of things as will be used in the ancient world-- eye shadow, lipstick, rouge to make you look a bit more sort of pink and healthy and rosy cheeked. These are all the sorts of things you'd have.

And you could also enhance your appearance by using things like

interesting hairpins. This is genuine Roman hairpin. So you put your hair up on your head and stick that in. You can have quite decorated hairpins. All sort of project an image of looking good.

But there's also this extra, moral dimension. Although we know people were using these things, Roman writers sometimes talk about them as a bad thing. Greek writers, too. So they talk about using cosmetics as the mark of the prostitute, the loose woman, not what you want your wife to be doing. Do we have those sorts of moral judgments about cosmetic use today, do you think?

**MATHIJS
LUCASSEN**

I think we probably still do. I mean, I think that one of the ways in which we can tell is because of the way in which we would view make-up use across genders, so how do we feel about men wearing make-up versus women wearing make-up?

And another thing that gives us an indication of the morality that we might still associate with make-up use is how do we feel about girls or teenagers wearing make-up? And is it OK for them to wear make-up to school? At what age are you old enough to wear make-up? How much make-up is too much make-up? So I think some of these themes still exist.

HELEN KING

Yes, there is still a moral dimension. That's interesting. The eyes are very

important in the ancient world. They talk about the eyes as the windows of the soul, for example, is one reference. And generally, eyes are powerful. You can use your eyes to communicate. I'm looking right into your eyes now obviously. That's what we do when we talk to each other.

So what about the eyes? How can you pick up your eyes in modern terms, if they're looking a bit faded after a bad night out? You've got your post-party pick-me-ups there. What do you do to make your eyes look better?

**MATHIJS
LUCASSEN**

Yeah, well, you've got the sort of remedies in terms of potions and lotions. But you would also have surgical procedures. So functionally you've got the surgical procedures associated with, say, cataracts and the surgery that's needed to improve your vision should that be lacking. But you also have, I guess, eye lifts and things that you can do for sort of cosmetic reasons to make you look good in terms of aesthetics.

HELEN KING

Yeah, so I've got my eye-bath here, so I could always use that if I'm wanting to perk my eyes up. If I'm looking a bit lousy, I could put something in that. But the cataract thing is interesting because certainly there there's actually a functional problem with the eye, not just a sort of cosmetic effect. But we know that Ancient Romans were actually quite good at cataract. It's

something which is described and we've got the needles, we've actually know how they did it, we'll be looking at that later and it seems it would have worked so in fact their knowledge is pretty good. So similar to us on the cosmetics front, but actually much better than we might think when it comes to looking at how they did operations. So it can be done.

So the eyes are not just the window to the soul. They're also something you can modify in a quite interesting way. Do you think men have the same approach to identity in the face as women do nowadays?

**MATHIJS
LUCASSEN**

That's an interesting question. I think that there is probably an increase in pressure in terms of men having to look good in the same way that there's that pressure on women. And one of the ways in which we would be able to sort of establish that, I guess in a more objective fashion, is looking at things like sales around male cosmetics and access to appearance medicine, when we see more men turning to appearance medicine to enhance their looks.

HELEN KING

So what would you count as appearance medicine?

**MATHIJS
LUCASSEN**

For men, it could be things like hair transplants, face-lifts, Botox, all sorts of different procedures to, I guess, make men look more attractive and younger.

HELEN KING

Well, Julius Caesar is supposed to have had a comb-over. So that's one way of dealing with the problem. But also there are lots of ancient texts that talk about depilation for men, so actually making the male body less hairy. But they're all a bit iffy about how far you should go. So is it OK to do the armpits maybe, legs, mmm, depends. So the modification of the body there depends entirely on who you read as to what they think is OK or not.

But going back to the face, then, so the face is still clearly the way we think of ourselves, the way we present ourselves most to other people. And I think that is the same in the ancient world. Thank you very much.

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Audio 1 Hearing in colours

Transcript

HELEN KING

Hello, I'm Helen King. And I'm Professor of Classical Studies at The Open University. And I'm joined today by John Harrison who's an applied psychologist and also a PhD student in the Department of Classics here. Thanks very much for coming, John.

JOHN HARRISON

Pleasure. Thank you, Helen.

HELEN KING

So today we're thinking about vision, and we're trying to think about how the ancient Greeks and Romans thought about sight but also about how modern knowledge of sight helps us with that. And I want to start with one of the most, to me, weird images from the ancient world, a very famous one, Homer's epithet for the sea, the wine-dark sea. What on earth is that about? How can the sea be the colour of wine?

JOHN HARRISON

Yes, that's something I've agonised over, too. And I think anybody that's encountered it must've thought that's a very curious reference. And I suppose there's a variety of possibilities.

One of the things I always reach for quite early on is some metaphorical use of language. And something that comes up a lot is often synesthetic thought is usually just metaphor. So symphonies are black, and Keats is

purple. And I wondered if maybe that was one of the reasons why the sea might be wine-dark.

HELEN KING

So can you just unpack that a bit? How would that work? What does synesthesia mean?

JOHN HARRISON

Hmm. So synesthesia is a union of sensation literally. And the individuals that we've worked with in the past tend to have a coloured hearing variance. There are other combinations.

HELEN KING

So they hear something, and they hear it as red?

JOHN HARRISON

Yeah. It's one of those interestingly ineffable experiences, I think. So one of the revelations from synesthetes is that they've always assumed that everybody had this. And it's only at some point in their life where they said, I have a teacher Mr. Brown, but that's wrong because he's green. And their parents look at them oddly or one of their friends, and then they explain that when they hear certain words, they see certain colours.

HELEN KING

And is that a genuine phenomenon throughout human history? Are people always going to be, some of them, hearing in colours?

JOHN HARRISON

Yeah, I think we can make that assumption. I suspect that humans have changed very little in the last two millennia. There is some evidence that synesthesia is an inherited condition.

And I think we might reasonably assume that's always been the case.

HELEN KING

So if Homer says the sea is wine-dark, he's actually thinking the sea is in some way like wine?

JOHN HARRISON

Yes. I think that might be either at a semantic level or a perceptual level. I mean, one of the things we are not sure of, I suppose, is quite what colour the wine he was thinking about might actually have been. And if it was a typical colour for Greek wine of that time, then I would suspect that it was a reasonable metaphor to pitch. But I suspect there are other explanations, too. And at the very extreme, maybe Homer, in spite of being the blind poet, might have had some colour deficiencies if he did have any kind of vision.

HELEN KING

So could Homer have been colorblind in our terms?

JOHN HARRISON

I think it's a possibility, yes. I mean, if you've got a form of colorblindness where you're having trouble picking up green, I think a red-colored wine might look a sort of yellowish-brown. And that seems to me consistent with the idea of what the sea might look like.

HELEN KING

So we thought a bit about synesthesia and mixing up the senses. And we thought a bit about colorblindness as a diagnosis potentially. What other explanations have people come up with for this wine-dark sea image?

JOHN HARRISON

Well, it might be related to the use of language also. So colour and its colour term use across different languages varies very substantially. I think in English we sort of have 11 principal colour terms, but there's very good evidence that other languages tend to focus on a much more reduced level of language terms. And I think if you're talking about something being dark, and this is one of the analogies that we have from language is you could say that it's dark like a leaf. So that's implying a sense of greenness but also a sense of darkness, too.

HELEN KING

So you wouldn't take seriously any of the more empirical explanations, that by the time the Greeks had watered down their wine, it would have ended up looking more greenish?

JOHN HARRISON

Well, I think we're spoilt for choice here, aren't we? We have such a number of hypotheses to pursue, and any of them might be reasonable.

HELEN KING

Or perhaps just on a really stormy day it looked very dark.

JOHN HARRISON

I suppose ultimately the colour of the sea is a reflection largely of what's above it. So, yes, that's distinctly possible, isn't it?

HELEN KING

So we've got loads of explanations for wine-dark sea. Can I just ask you about one other colour term which always baffles me, and that's *chloros*, which tends to be translated green? But we

have this very famous poem by Sappho in which she describes the symptoms when she suffers from love and how she goes all sort of hot and sweaty and clammy, and her ears hum, and her heart's racing and so on. And she says that she's more *chloros*, more green, more whatever, than grass. What's going on with that one?

JOHN HARRISON

I think we're necessarily in the area of speculation. But I think there are, again, analogous situations. So I think of Keats as a good example. So for Keats, the colour of passion is purple.

HELEN KING

Oh, OK.

JOHN HARRISON

And he talks about-- Porphyro has the idea of sneaking into Madeline's chamber to watch her undress on the eve of St. Agnes. And the thought creates purple riot in his heart, which is always one of the lines I love from it. But I think also it seems to me the same sense that I'm getting from Sappho when she talks about the sensation of being in love. And I wonder if her use of *chloros* in the context of that situation is a legacy of that heightened state of arousal that she finds herself in when she's in love.

HELEN KING

That's interesting because chloros can also mean sort of dewy fresh colour, sort of spring I suppose, anything to do with newness and just freshness and sap rising and all those sorts of things. So it could fit in with what you're saying

there about that heightened arousal. Everything looks fresh in some way. That's really interesting.

JOHN HARRISON

I think the case of synesthesia is interesting because it's-- in neuroscience, you usually learn a lot more about normal human behaviour when you look at extreme cases, the people that have a supra level of performance and people that have some sort of level of impairment. And the impairment's always very interesting in the context of our understanding of vision. But I think synesthesia is a good focus for saying something that we know about everybody, the idea that your senses interact. So the interaction of sensation has some very unpredictable, but some very interesting, interactions.

HELEN KING

Thank you very much for that, John. I hadn't realised that we still don't really understand an awful lot about perception and particularly how the brain sees colour. So that's been really useful. Thank you.

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Video 2 Gifts for the gods: votive offerings

Transcript

- HELEN KING** Hello, I'm joined by one of my colleagues, Dr Jessica Hughes, also from the Classical Studies department.
- JESSICA HUGHES** Hello.
- HELEN KING** Can you just start by explaining to us what exactly a votive is?
- JESSICA HUGHES** So, a votive offering is an object that people take to sanctuaries in the ancient world-- churches and temples today, as well. And it's something that they offer to gods or saints, and it can be anything, really. It can be an object that they own. It can be a piece of their hair, or it can be a model of a body part.
- HELEN KING** So what point do you give that thing to the god?
- JESSICA HUGHES** Well, it's very difficult to tell for certain in relation to our ancient objects, because we don't have very many inscriptions on them. When we do find inscriptions, we find that they can be given as thank offerings after some kinds of miracle has been affected by the gods. Or perhaps they can be given as a request for some kinds of miracle or healing event. So both really. I think we have to keep very open minds

when we approach the ancient evidence.

HELEN KING

So both before and after are possibilities.

JESSICA HUGHES

Yes.

HELEN KING

OK. So how widespread is the practise of giving these votives to the gods?

JESSICA HUGHES

I think it happens everywhere in the ancient world. Votive body parts, the models of parts of the human body, we find those all through Greece. We find them in Italy. We find them in the Western Empire, in Britain, in modern France, in modern Turkey, the Roman region of Asia Minor. They're one of the most ubiquitous types of object that we find in the ancient world.

HELEN KING

Wow. So votives generally everywhere, and also votive body parts everywhere.

JESSICA HUGHES

Yeah, absolutely. And that goes for time as well. I mean, we find them as far back as the Minoan period, about 2000 BC. They occur in classical Greece, in the Roman Empire. And then again, the story can continue through the Middle Ages into the present day as well. So they really are everywhere.

HELEN KING

So which gods receive these votive body parts in particular? Are there particular gods associated with them?

JESSICA HUGHES

Any god could get a votive body part. There are some gods who seem to be particularly associated with them, like

Asklepios, the god of healing. Apollo seems to get them quite a lot. But I think really any god could be approached for this kind of healing favour, if indeed, that's what they are. We can think of somebody just going to their local sanctuary and asking their god or goddess if they could help them. Or they might make a special journey to a sanctuary that might have a particular reputation for healing some kind of body part.

HELEN KING

And are there particular body parts that are dedicated more than others?

JESSICA HUGHES

We find a really good range of body parts, and it depends a little bit on what region you're looking at. Eyes are very common-- legs and arms. Other types of body part appear more in one geographical area than another. In Italy, we get lots and lots of internal body parts-- so things like wombs and livers. And those are completely absent in classical Greece. So you've got this very interesting situation where people in different regions are dedicating different types of body parts. And that must have really broad implications for how they're understanding their body and how their bodies are working.

HELEN KING

Yeah. So what about the people who are doing this? Do we have any stories of people giving their body parts, or models of their body parts, to a god?

JESSICA HUGHES

It's important to emphasise that most of the thousands of body parts that we have don't come with stories attached. But in the region of Asia Minor, there are some really wonderful sculpted marble stelae, and these have images of body parts on. And they come with long inscriptions that show us that people in that area thought that they'd been punished in parts of their body. So it's something that they've done wrong, generally a kind of sacred misdemeanour, something like going into the temple on the wrong day or stealing some of the god's property.

So for example, there's one that's dedicated by a man called Diocles who's ill in his eyes. It doesn't go into much detail about the nature of the illness, but it does say on the inscription that he was punished by the god because he stole the god's birds. And he was then erecting this stele as a way of accounting for his transgression, let's say, in the hope of being healed. I mean, these are really amazing stories and I think they give insight into what the votives meant in that particular part of the ancient world. We can't necessarily then extrapolate from that and say that's what they meant everywhere.

HELEN KING

So let's go back to that individual dedicant then. You turn up at a sanctuary. Have you brought a body part with you, or do you buy one there?

How do you actually get a body part to dedicate to a god?

JESSICA HUGHES

There seems to be some evidence that body parts were on sale in sanctuaries, particularly in Italy. We find moulds, the evidence of some kind of craft industry. You also have to think that lots of the body parts would have been quite heavy, if you think of the big marble reliefs. That's probably something that was bought on site.

Then again, there's the possibility that the smaller body parts were brought with the dedicant. And I think if you think that long-term contact with the body of the dedicant, if you've got it in your pocket and you're feeling it in your hands, I think that's a really nice way of investing that object with something of yourself. So it might not represent your body as a kind of portrait, but the fact that you've been in contact with it for a long time means that it does belong to you in a way that it might not if you've just bought on site.

But again, I think the answer to your question is that it's not going to be the same all over the ancient world. But in some sanctuaries, there may have been these shops where you went up and you picked your body parts and maybe then had it customised afterwards with paints. And then there might be people who bring things from home.

HELEN KING

I like the idea of it having to be in contact with your body. That somehow sort of helps it to be you for the god. Because that's a bit like amulets that you wear close to your body. It's fascinating. Now with amulets, they can be made of a range of different things. Is the same true for votives? What materials can they be made of?

JESSICA HUGHES

Absolutely it's true. We have many in terra cotta and marble and bronze, and those are the materials that have survived. We also have some in wood, some from France in wood, and they've been preserved in waterlogged context. So that's a bit of a happy accident of archaeology for us. But I think we need to think of votives in many different materials. So there may have been many more in wood that haven't survived, because they're not in quite such wet areas.

But also things like wax. Wax is very, very common in later periods. And if we are thinking about this idea of contact and representation of the body, I'd love to throw in this point about, in the Middle Ages and beyond-- in the Renaissance time as well-- that wax votives often weighed exactly the same as the parts that--

HELEN KING

Wow.

JESSICA HUGHES

Yeah. Or they were measured, and so your wax one was exactly the same size or it weighed the same as your

child. So I think we have to be open to the possibility of wax as well, which of course wouldn't have survived, but would have had its own very special symbolic resonances.

HELEN KING

That's amazing. So as you say, it's a tradition that continues through much of Western European history, and probably across the world, generally.

JESSICA HUGHES

Yes, we find it in many different religious contexts-- so in orthodox Greek faith, in Catholicism, in Buddhist temples as well. And for me, one of the most fascinating things about studying votives is this comparative element. So whether that's within the ancient world, where you're looking at differences between votives in Greece and Italy, or actually looking at differences across time or across different cultures and faiths, you know, what do people choose to represent, and how do they represent those body parts differently? And how does that tie into other sorts of discourse about the body in that faith? We look at hearts now in Christianity and think about the overlaps with the Sacred Heart of Jesus. I think it's a very, very rich topic, and that's partly thanks to the absolute ubiquity of votives and how they appear all over the place.

HELEN KING

Well, thank you. That's an extremely rich account of votives and I think we've learned a lot there about ancient and modern, as well as about how the

ancient world itself works. So thank you
very much, Jessica.

JESSICA HUGHES

Thank you.

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Video 3 Votive eyes

Transcript

HELEN KING

Hello. I'm Helen King. I'm Professor of Classical Studies at The Open University. And I'm joined today by Jessica Hughes, my colleague from classical studies, who's an expert on votives.

JESSICA HUGHES

Hello.

HELEN KING

What sort of votive eyes do we have? Are they all sort of really realistic looking model eyes or more vague sort of pictures with eyes on?

JESSICA HUGHES

There's quite a few stylistic differences. It depends what material they're being represented in. So in France, we tend to find lots of tiny little bronze eyes. They can be represented singly or in pairs.

In classical Greece, we get marble reliefs with eyes carved on them. They might have been painted. So I don't know if we can get the full impact of them now. Terracotta eyes are very common in Italy, and they would have been made in moulds. So you get all different kinds.

And you also get things like masks, which show the two eyes in the context of the forehead and the nose, and heads and half-heads, as well, which

show eyes. So all these things present their own interpretational challenges.

HELEN KING

Yeah. Well, let's push you on that one. So what sorts of reasons would you give an eye or a mask with eyes on it? Is it just about disease, do you think?

JESSICA HUGHES

It could be about disease. It could be a way of keeping the two eyes together so to speak. People have tried this retrospective diagnosis and thought, well, perhaps it's more about the heads, about migraine or headaches. That's what could have motivated someone not to pick a single little model of the eye but to go for the eye mask or the portrait face.

And then there might be other symbolic resonances of these objects, as well. And I think scholars have explored some of these and suggested that perhaps some eyes, particularly in sanctuaries of Demeter where there's a connection to the mysteries, this might be a symbolic representation of some kind of divine sight or some kind of divine vision that the dedicant has experienced during these mystery initiations.

HELEN KING

Wow. So that's quite a range. What about ears? Are ears always about ear disease?

JESSICA HUGHES

Ears are possibly about ear disease. Again, there's a range of different things you could say about those. It could be the year of the gods, the

listening god. And we do have inscriptions that talk about this god who is hearing the prayers. Again, that's something else that might apply to eyes. Could it be the eyes of the gods who's watching you and who's looking over you, this omniscient god who can see everything that you do, right or wrong.

It's very difficult to arrive at a really secure conclusion. But I tend to think that most of them probably were for healing because we do find them all lumped together, all these different body parts. And I think that's probably more of an economic interpretation, if you see what I mean, rather than thinking that every single body part had its own unique meaning and gesture. I like to think that they were probably dedicated for healing. But within that, the individual dedicant then had the agency to maybe appropriate that body part and use it for something that might have been quite different.

HELEN KING

Well, thank you. That's an extremely rich account of votives. Thank you very much, Jessica.

JESSICA HUGHES

Thank you.

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Video 4 Making collyria

Transcript

[MUSIC PLAYING]

**LAURENCE
TOTELIN**

I'm going to make a collyrium. And collyrium is an eye remedy. So that's the Greek and Latin word for eye remedy. And this particular collyrium is called the white collyrium. And you're going to understand very quickly why it's called like that.

And it is meant to cure a persistent flow of tears. So what does that mean, a persistent flow of tears? It could mean anything. It could be a symptom for a range of diseases, ranging from the quite severe to things like we would call allergies.

This recipe is measured in drachmae. And drachma is a very common measure in the Greek and Roman world. So a drachma is more or less equivalent to 4.5 grammes. And so today, because it's easier, I'm going to use a spoonful, which is more or less that amount.

So I'm going to have to take 16 drachmae of the calamine. Then I need 8 drachmae of white lead. The white lead is very dangerous, so I've replaced it with more zinc. So you can see that I'm not being very precise. And that's OK with ancient recipes

because they're all about the proportion not about exact weights.

Then I'm going to take 4 drachmae of starch and four drachmae of gum Arabic and four drachmae of tragacanth gum and then two drachmae of opium. But, of course, I couldn't use opium, so I've just replaced it with white powder. And then I mix.

So now I'm going to pour water. And the recipe states that the water must be rainwater. So we've got some rainwater from Wales here. So I pour it. And I start mixing.

So this recipe comes from the writings of Galen. And Galen was a second century AD physician. He was one of the most famous physicians of antiquity. He came from what we would call Turkey, but then he moved to Rome and spent a large portion of his life in Rome where he was one of the physicians to the Emperor Marcus Aurelius and several emperors after him.

So now that I have mixed the preparation, it looks a bit like shaving foam. And that's because the gums in the preparation have acted as an emulsifier. They've made it look like foam. It doesn't smell very much, but I would say it has a bit of a medication smell.

Now I'm going to take a bit of the preparation, and I'm going to roll it into a sausage shape. And what I would do is to stamp it. So I would stamp it with my name because I am an eye doctor. And I would stamp it with the name of the preparation, the white collyrium. And then I leave it to dry. It takes quite a long time to dry, I would say 24 hours.

So now I have a dry collyrium. And I can sell it to my patients. And what my patients are going to do at home is to take a little bit, crush it in a mortar and pestle. There's no need for much.

And then they're going to have to apply it. And for that they need a liquid. And the liquid that is very often recommended is the white of an egg. So I have separated the white and the yolk. And then what they would do is take a bit of egg, take a bit of the powder, and then apply it to the corner of their eye.

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Video 5 Cataract surgery

Transcript

PATTY BAKER

What is a cataract? And how would you perform surgery on it?

RALPH JACKSON

So a cataract is a clouding of the lens. I mean, we still have a big problem with cataract these days, especially in the third world. But cataract could be resolved very straightforwardly. Even though their theories are different to ours, they were able to operate effectively.

So the cataract needle is described. Now, the reason we can identify this instrument as a cataract needle, this is the replica. Here is the original. Very beautiful craftsmanship. That's what unites all Roman surgical tools. They're precision instruments, and they're immaculately designed.

And it matches the description of the texts. Namely, that it should be an instrument of bronze, that it was double ended, that it had an olivary enlargement at one end. This is what Celsus and Paul of Aegina tell us. And the other end was a bronze needle and that the tip was round-pointed. It was sharp but not too sharp. And that allowed the identification of this type of needle in several sets of instruments.

PATTY BAKER

And why a bronze needle for cataract?
Is there any theory on that?

RALPH JACKSON

We don't know why. But they specified bronze which is unusual because, as you know, the needles were usually made of steel or iron. So it's unusual they specifically asked for the bronze needle.

Well, what they did then was to take that needle and push it into the angle of the eye. Why did they do this? They did it because they regarded the cataract as a suffusion. And they called it suffusio in Latin. And this was supposed to be something that dripped down and fell into the otherwise empty space between the pupil and the lens. So what they thought they were doing was breaking up a suffusion with the tip of the needle. And that's what they did.

PATTY BAKER

Could any doctor perform this surgery, or did it take a specialist?

RALPH JACKSON

No. I think, although in theory, any doctor could, in reality, it was a specialism. And we know from written sources that this was one of the specialist areas. Probably you would have a practitioner train up an apprentice. So basically, the apprentice was very important because he was an assistant.

So let's think about this. Turn around a little bit. You've got to go a little bit lower than me. I'm higher. I'm the practitioner. I need to be ambidextrous.

If you've got a cataract in your left eye, I need to operate with my left hand, the right eye with my right hand.

The assistant, the apprentice, holds your head very firmly from behind because Celsus tells us a slight movement will result in a big problem as we can imagine. So you're sitting there. The light is behind me, so it's shining on your face. The reason this description is very important because you can see that they did everything they possibly could to make the operation work.

Celsus is always very careful about post-operative care so he says once you've done that take the needle out carefully. Withdraw it, turning it slightly. Then get a little bit of wool soaked in egg albumin, place that on top of the eye, then an anti-inflammatory medication, and on top of that bandages.

But in fact, cataract surgery rarely has the problem of infection, post-operative infection. It's an area which is quite good in that respect. Septic infection rarely follows. So they had a good chance of success.

PATTY BAKER

How painful was it?

RALPH JACKSON

Well, in terms of pain, at the turn of the 20th century, 19th into the 20th century, this operation was being done in India. And the word is that it is not particularly painful. There's discomfort, but there's

not particularly pain. So it's an operation that had a lot going for it.

I find it absolutely splendid. It's so ironic that this operation, which was done with a completely flawed theory, was so beneficial and had such a long-lasting effect right through to the 16th, 17th century and onwards. Because they thought-- if they'd known that they were breaking up the lens-- if the practitioners, if Celsus himself had known that the lens was being destroyed, he wouldn't have done the operation. He'd had been incredulous. So the idea that you would break up a suffusion and move it away was what guided them.

And so the theory was rubbish, but the instrumentation was absolutely superlative. They had everything going for them with the instruments. The instruments could not have been better.

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Video 1 Why food matters

Transcript

HELEN KING

Hello, I'm Helen King. And I'm Professor of Classical Studies here at The Open University. And I'm talking to Mathijs Lucassen from the School of Health, Wellbeing, and Social Care. Hello, again.

**MATHIJS
LUCASSEN**

Hi.

HELEN KING

So today we're going to talk about food. And we still say you are what you eat. So we love a bit of comparison of ancient and current ideas about food and digestion. And I think one of the problems for me is the source material is quite difficult. So a lot of it is actually descriptions of banquets eaten by extremely powerful men, usually emperors, in the Roman world. So we get quite a skewed view maybe of what rich people ate or maybe just what people thought rich people ate.

So there's a wonderful recipe I've got down here, something called the Shield of Minerva, served to the emperor Vitellius. It contains livers of char fish, brains of pheasants and peacocks, the tongues of flamingos, the entrails of lampreys which had been brought in ships of war as far as from the Carpathian Sea and the Spanish straits.

So it's weird, and it's also exotic. And I think quite a lot of discussions of food in the ancient world are about normal food versus exotic food. Do we have exotic foods today, do you think?

**MATHIJS
LUCASSEN**

I think we still have the exotic foods. Like if I think about what's exotic, it's things like bananas or citrus fruits. It could be all sorts of delicious things we've got from all over the planet. But I think it's a lot easier to access those because of modern shipping and freighting really.

HELEN KING

Yes. So in the ancient world you haven't got those sorts of transport links until you get the Roman Empire where they are getting food in from all over the place. But they've also got the idea that actually it's somehow wrong to eat funny, foreign food and that if you do that you'll get ill. So new diseases, according to one Roman writer, arise from new foodstuffs that we just can't cope with, which I think sort of brings us to indigestion.

So when you can't manage something, what do you do? Now, later this week we've got a video of a colleague of mine, Dr. Laurence Totelin, actually making a Roman indigestion remedy. And today it's more like various sort of pills and potions that you have, usually something quite chalk-based to sort of calm down your stomach acid.

But to get to that point where you're not eating the right things or you're eating things that make you ill, let's go back a step and think, what should you be eating in the first place? What is a healthy diet? What's a healthy diet today?

**MATHIJS
LUCASSEN**

Well, a healthy diet is we talk about balance. We have got--

HELEN KING

Very ancient.

**MATHIJS
LUCASSEN**

--the right sorts of mix of food, so the right minerals and nutrients and vitamins in your food. So it's going to be some protein, some carbohydrate. We talk about five a day in terms of fruit and vegetables. Fresh fruit and vegetables are seen as being very important. We also measure these things in some ways, as well, because we'll say there's so many grammes of fat that you should be consuming a day , around 2,000 calories for an adult a day. And so we have some quite specific ideas around what's thought to be healthy for diet.

HELEN KING

And very specific numbers there that you brought out. So we've got the fruit in the fruit bowl here. So this comes from not exactly around the corner here, so transport links. But also you mentioned vitamins which, of course, they wouldn't have known about in the ancient world at all.

It's much more a question of what you can afford I suppose there and also

how you can preserve it over the winter because that's when the foodstuffs really reduced. We don't have any of those issues now. But what do we do in terms of knowing what sort of body weight we should be aiming for? What's the ideal now, do you think?

**MATHIJS
LUCASSEN**

Well, there's are all sorts of thoughts on what's the ideal. Again, if we go back to sort of measurements, we've got the body mass index which will tell us how much we should weigh relative to our height as sort of a really crude measure of what we should be weight-wise. And we relate that to what we're eating. And obviously, food and food intake is seen as being directly related to something like BMI.

HELEN KING

Yeah. And, of course, nothing like that at all in the ancient world. We've got a bit of evidence of what they would have eaten as well from things like this. This is part of a pot for drinking water or for food. But also some of the cooking pots we have. These are bits of black-burnished ware from the Roman Britain area. And some of these will have traces on them where you can actually scientifically analyse what they might have been eating, which is really useful. So you can get some access to what ordinary people would have eaten in an ordinary diet.

But most of the time, I think the problem is just that we have very skewed evidence. I think that's a

problem in a lot of things in the ancient world, but particularly maybe with diet. So we try to get some sort of balance ourselves between literary sources, Shield of Minerva, and the sorts of things we can find about real diet to see what actually happened in the ancient world.

I suppose on balance, I'm wondering were they healthier than us or not. And from what you're saying, they obviously didn't know the things we know about food, but maybe they weren't quite as driven by the latest fad, the latest diet craze, that we are. So perhaps overall they had quite a healthy, balanced diet.

**MATHIJS
LUCASSEN**

And certainly one of the things that they would have done a lot better than modern people do now is the low levels of sugar that they were consuming.

HELEN KING

Right

**MATHIJS
LUCASSEN**

And we have such highly-processed foods with additives and preservatives. They would have had food that would have been seen as being more basic but also less interfered with.

HELEN KING

So really the ancient diet is not healthy in the sense that they maybe didn't have enough meat protein. But it's also a lot healthier than ours in terms of sugar. And some of their ideas about food and excess are really quite similar to the ideas we have today, particularly about food coming from a long way

away being not necessarily good for you. Thanks very much.

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Video 2 The role of digestion

Transcript

[MUSIC PLAYING]

**LAURENCE
TOTELIN**

Today, I'm going to make an oxygarum. And an oxygarum is named after its main ingredient, and that's the garum. And garum is a liquid that is made with rotten fish. And the oxygarum is meant to help digestion.

So the ingredients, first we have peppercorns. And then we have two common herbs, parsley, and lovage. Lovage is not in season at the moment. So I've replaced it with mint, which is an ingredient that was commonly used for digestion in the ancient world. And the ancients themselves often did use another ingredient when it wasn't in season.

Then we have caraway seeds and honey and fish sauce. I've used Thai fish sauce because that's what is closest to the Roman garum. And finally, vinegar.

So now I'm going to measure and crush the ingredients. This recipe is measured in ounces. The Roman ounce is between 25 and 30 grammes, so that's quite a large amount. And what I'm going to do instead is use a spoonful of each ingredient. And that's

OK in Roman medicine. Roman medicine is all about proportions.

So I'm going to take a spoonful of peppercorns, a bit of parsley, the lovage that I have, plus a bit of mint, and the caraway seeds. And then I am going to crush the ingredients together with my pestle.

So this is a household remedy. It's made with relatively common ingredients. And depending on the wealth of the household, it would have been a slave preparing it in a wealthy household or the lady of the house.

So I'm done with my crushing now. And I'm going to add some honey. And this is going to make a paste. So this paste doesn't look particularly appetising. It's greenish-blackish. But it smells lovely. So it smells of honey and herbs and spices. So it's really nice.

So the next step in the recipe is to add the liquids. So normally this would be put in a jar and stored. But I don't have a jar here, so I'm just going to show you how it works. So I'm going to add the fish sauce and the vinegar. And it was probably quite a lot of it. So this was meant to make a large amount.

So now that I've added the liquids, the smell has really changed. And it's very pungent. And it's not nice at all.

And now that the preparation is ready, I can take it. So if I have indigestion, I

can take a little spoonful of my remedy.
It's not too bad. It's very strong tasting.
But it's much sweeter than I thought it
would be. So it's OK. I'm not sure it
would do anything to indigestion,
though.

[LAUGHTER]

It's so strong.

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Video 3 Food and bones: further evidence of ancient diet

Transcript

HELEN KING

So this is the Lant Street teenager. I'm so excited to see her at last. Tell me all about her. Where was she found? Who is she?

**REBECCA
REDFERN**

Oh, well, she's one of my favourite people. And she's found in Southwark, so that's the southern settlement of Roman London. So that's the south bank of the river. And she dates to the third, fourth century. And she was interred in a normal cemetery with lots of other people. But hers is an absolutely unique burial within the cemetery, within London, and also within Britain. So she's phenomenal.

So she was buried with an array of grave goods. So she had two glass vessels, either side of her head. At her hand, she had a clasped knife, so it was an ivory handle in the shape of a leopard. And then there was also a key on a chain. And at her feet we've got this very small bone carved inlay, so there was probably a box at her feet. So she's absolutely phenomenal.

HELEN KING

So it's a rich burial.

**REBECCA
REDFERN**

Very rich, yeah. Yeah, particularly for London, yeah.

HELEN KING

How old was she when she died?

**REBECCA
REDFERN**

Well, she's 14. And we know this because the ends of her bones haven't fused on. So this is one of her forearm bones. This is the epiphysis. So that's the joint surface there. And that hasn't fused on, so we know that she's about 14 years old. We know that she's female from the shape of her pelvis and various traits on her skull.

But normally we don't sex adolescents. There's a new method that allows us to do it. And luckily it matched our DNA evidence. So we were quite glad about that.

HELEN KING

So you've done DNA on her. What else have you done on her?

**REBECCA
REDFERN**

Well, we also did isotopes on her to figure out where she came from and what she ate.

HELEN KING

So how does that work? Tell me about stable isotopes.

**REBECCA
REDFERN**

OK. So very simply, the stable isotopes are captured from the food and water that people consume. And what happens is that those chemicals are used as the building blocks for the skeleton and the teeth. So in the dental enamel, locked in there, are the chemical signatures of the drinking water. So we look at oxygen, and we look at lead which is from the surrounding area. And those isotopes are particularly valuable alongside

strontium, as well, at telling us where people came from.

Because if we use their first molar, this is forming during early childhood. It erupts about the age of seven. And if people keep it through to adulthood, we know that we can compare the geology of where they're buried with the geological signature essentially captured there.

HELEN KING

So where does she come from?

**REBECCA
REDFERN**

So we looked at the chemicals in her dental enamel. And that showed that she had grown up somewhere very warm, much warmer a climate than Britain. And so we think that she's grown up in the southern Mediterranean. So that's kind of the Mediterranean basin and kind of like the northern coast of Africa, as well. So we can't tie it down any more than that.

But what is very, very interesting is that we also took a fragment of one of her rib bones, so one of her rib bones. We took a bit of the bone there. And we looked at the carbon and nitrogen, which tells us about diet.

HELEN KING

So we know what she ate.

**REBECCA
REDFERN**

So we know what she ate. And she was eating a local dietary pattern. So she's eating a London pattern of diet in the Roman period.

HELEN KING

So why? Why did she move to London?

**REBECCA
REDFERN**

Well, unfortunately there is no inscription evidence associated with her. There there's no tombstone for her at all. So that opens up multiple avenues of possibilities.

We know that there are troops from North Africa who were stationed in Britain. So it may well be that she was associated with the military community. Because what's interesting is the DNA has told us that she has blue eyes.

HELEN KING

Wow. We know that.

**REBECCA
REDFERN**

Yeah. I know. I know. It's absolutely phenomenal. Unfortunately, it didn't work so well on her hair colour. So they couldn't decide whether it was blond or brown. We looked to her maternal DNA, and that's showing us that the maternal DNA is European. So her mum is European. And that person has also then migrated.

She could have been a slave, a very high-- you know, beloved slave. She could have been part of like a merchant or trading family. I mean, the possibilities--

HELEN KING

Yes, for London. There's lots of possibilities. Was she healthy?

**REBECCA
REDFERN**

She had experienced rickets as a child and had recovered. We've got slight bowing of her forearm bones here. And then her femora show slight anterior curving, as well.

HELEN KING

Curving, yes. They're curving up.

**REBECCA
REDFERN**

So it's curving up and away. But it's quite subtle. So it's showing us that she may not have had it very severely as a child. She might have had a very mild case and then recovered.

And some of the most interesting information about her health is captured on her teeth. So we can see here that the crowns of her incisors and on her molars here, they have a very crimped appearance here. There's very little dental enamel present. And these are enamel hypoplastic defects.

HELEN KING

What does that mean?

**REBECCA
REDFERN**

So these are defects that are created when the tooth is developing during younger childhood. So when she's got her milk teeth in, these teeth are being formed. And what happens is that you have a disturbance in that, which is caused by poor nutrition, poor health. So what happens is that the enamel stops being laid down.

HELEN KING

So she wasn't that healthy then?

**REBECCA
REDFERN**

Well, absolutely, because she died when she was 14 years old. So the teeth are telling us that she had a compromised childhood and the fact that it must have been something very fast acting because she hasn't created a bone response to any disease. We didn't pick up any diseases through the DNA analysis of the viral and bacterial things, which pick up diseases like the Black Death, tuberculosis, and things

like that. We didn't find anything at all,
so it must have been fairly fast acting.

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Video 4 Ancient herbals

Transcript

**LAURENCE
TOTELIN**

What do you have for us today?

ELMA BRENNER

This is a manuscript produced probably towards the end of the thirteenth century. And it's a herbal written in Latin.

**LAURENCE
TOTELIN**

What's a herbal?

ELMA BRENNER

A herbal is a book about the medicinal qualities of plants. And they were produced from the ancient period onwards.

**LAURENCE
TOTELIN**

So you say it was used for medical purposes. Can you tell me a bit more about that?

ELMA BRENNER

Yes. It's really a repository of information about which plants can be used for specific ailments or illnesses.

**LAURENCE
TOTELIN**

Who would have made this?

ELMA BRENNER

We're not sure who made it. We can only speculate. Given the date of the manuscript and the subject matter, I think it's quite likely that it was produced in a monastery by monks or nuns.

**LAURENCE
TOTELIN**

So I see there's a snake there. So why did they represent a snake?

ELMA BRENNER

It's really to do with one of the primary functions of this book, which was to provide crucial medical information. And one of the things medieval people were very concerned about was poisoning.

**LAURENCE
TOTELIN**

Oh, wow.

ELMA BRENNER

Basically because when poisoning occurred, you needed a very swift remedy.

**LAURENCE
TOTELIN**

Yes. So when I compare this snake, which is very vivid and moving, to this plant, I can see a contrast. This doesn't look like anything I know, whereas the snake I can recognise.

ELMA BRENNER

Yeah, and that's a really important point in relation to this manuscript is that a lot of people would say that they can't easily recognise the plants. And I think that really reflects the process by which this and many other manuscript herbals were produced is that they were copied from earlier exemplars. And so there's a process of the copying of an earlier copy of another copy. And so the original information about the plant gets a little bit lost along the way.

**LAURENCE
TOTELIN**

You lose the naturalistic aspect.

ELMA BRENNER

Yes.

**LAURENCE
TOTELIN**

So do you have images in this herbal of plants that I would recognise perhaps?

ELMA BRENNER

Well, there are one or two that are more recognisable than others. So we could have a look at one a little bit later in the volume.

**LAURENCE
TOTELIN**

Beautiful. So which plant would you say I would recognise here?

ELMA BRENNER

Well, this plant is the peony plant. It may not look exactly like a peony today, but it is somewhat reminiscent, I would say. We know it's the peony plant primarily because the Latin label above tells us that. But also, I think it is notable that this has brightly coloured flowers. So with this illustration we've got the roots protruding down below the bottom of the frame. Here they've used a black frame which really makes the red of the flowers stand out.

**LAURENCE
TOTELIN**

It does. So, Elma, you've told me this is thirteenth century. So that's medieval, and this MOOC [course] is about the ancient world. So why are you telling me things about the Middle Ages?

ELMA BRENNER

Well, medieval manuscripts are often a source of information about the ancient world. The other thing to say is that there are fewer survivals from the ancient world. But we do have one or two things here, one of which I've brought to show you.

As you can see, it's kept in quite a special box.

**LAURENCE
TOTELIN**

Yeah. It's like unwrapping a present for Christmas.

ELMA BRENNER Exactly. It really reflects how important and precious this is.

LAURENCE TOTELIN That just looks like a book.

ELMA BRENNER So far it looks like a book.

LAURENCE TOTELIN I see it's called Johnson Papyrus. What does that mean?

ELMA BRENNER Well, this is a fragment of papyrus which was found in Egypt in the early 1900s by John de Johnson who was working with the Egypt Exploration Fund. It's very old, and it dates from around the year 400 AD.

LAURENCE TOTELIN [GASP]

ELMA BRENNER And it's extremely precious.

LAURENCE TOTELIN Oh, wow. It's really beautiful.

ELMA BRENNER This is a fragment from a herbal. So it's illustrations of plants with information in Greek written below them.

LAURENCE TOTELIN So this is in Greek. And would you say it's like a page of what you've just shown me, the medieval manuscript?

ELMA BRENNER Exactly. It would have been from a book.

LAURENCE TOTELIN And where's the rest of the book?

ELMA BRENNER Well, this is a fragment that survives. So we don't know what else was in the rest of the book, how big it was, or anything like that. It's one of those

tantalising things that we wish we knew more.

**LAURENCE
TOTELIN**

Very much so.

ELMA BRENNER

So this plant we know is the comfrey plant, following the label in Greek. We can be sure that this is the comfrey plant, even though it doesn't really resemble comfrey at all.

**LAURENCE
TOTELIN**

No, not really.

ELMA BRENNER

But we do know that comfrey had a number of medicinal uses, so that does make sense for it to feature in a herbal.

**LAURENCE
TOTELIN**

And the medicinal uses, are they written here?

ELMA BRENNER

I believe so. I believe that the Greek is telling us something about the medical uses of the plant.

**LAURENCE
TOTELIN**

How fascinating.

ELMA BRENNER

We don't know if possibly it was originally a different colour and if the ink pigments have faded, or if it was actually intended to be this colour. But we can see that there are different shades of blue, so it is ...

**LAURENCE
TOTELIN**

Yes, I can see the shading again.

ELMA BRENNER

Yeah. It is delicately drawn. And you've also got the roots to really clearly identify that this is a plant.

**LAURENCE
TOTELIN**

What is that plant then?

ELMA BRENNER

Unfortunately, we don't know what this specific plant was. Various experts have not been able to identify it, either from the visual appearance or from the Greek text.

**LAURENCE
TOTELIN**

Yeah, it does look like any plant and every plant, doesn't it?

ELMA BRENNER

It really does. And it's frustrating because we have been able to identify the plant on the reverse. The illustration itself doesn't give us enough information to really mark this out, and so it remains a mystery for us.

**LAURENCE
TOTELIN**

That's nice to have mystery sometimes.

ELMA BRENNER

Yeah, and it's something that maybe someone in the future will be able to discover.

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Video 1 Toilets across the world

Transcript

HELEN KING

Hello. I'm Helen King, Professor of Classical Studies here at The Open University. And I'm talking to Mathijs Lucassen who's from the School of Health, Wellbeing, and Social Care. Hello, Mathijs.

**MATHIJS
LUCASSEN**

Hi.

HELEN KING

Today we're going to talk toilets. So last week we looked at what goes into the human body, food and diet, and today it's what comes out. So let's think about toilets. And I have to say, I am a little bit insecure here because I have a recurring nightmare in which I'm trying to find a toilet, and the only ones I can find are ones without any doors. And I just can't use them. So for me, the knowledge that the Romans had some communal toilets makes me feel very insecure indeed. So am I weird?

**MATHIJS
LUCASSEN**

Well, I think no. I think that's perfectly rational and normal. I think in a modern Western context we would very much see toileting and toilets as very much a private space and not to be shared with others.

HELEN KING

But the Romans don't seem to have the same views as us here, which makes me a bit concerned about how I

can ever understand people who can do such strange things. And it's not just toilets. It's actually what you do in there.

So these objects we have here. And I've got one, and you've got another one. I mean, they look sort of superficially similar-- stick, brush or sponge on the end. But, of course, they're completely different. This is our mock up of a Roman sponge on a stick, which is basically toilet paper. This is what you wipe yourself with. Whereas that is what you put down the toilet to clean the toilet. So same sort of shape, fundamentally different. Do you know about these things?

**MATHIJS
LUCASSEN**

Yeah. I'm hoping it's disposable.

HELEN KING

Uh, it so isn't. No, I'm afraid not. Sorry. You put them into a bucket after use for use by the next person. There's a theory that the buckets contained vinegar, so it sort of vaguely might kill something. But even so, I find that quite disturbing.

And, of course, toilets are quite smelly places, too, particularly no-flush toilets clearly. Some sort of water going around that would wash the sticks and possibly sort of go through the toilet area a bit, as well, but nothing like a modern flush toilet.

Today, we've got all sorts of smell neutralisers and things. I mean this one

claims it's got 50 ingredients, sounds like some sort of ancient remedy where the more the merrier really. But nothing like that in the ancient world. So smelly places and known to be smelly places.

**MATHIJS
LUCASSEN**

Yeah, and this completely contrasts, as well, I guess, if you're sort of having the smells and being exposed to those. Because in the modern world we have sprays like this one which sort of sanitise and deodorise. But we can also select any scent we like. So instead of smelling faecal matter, we're smelling cherry blossom or lavender--

HELEN KING

Roses.

**MATHIJS
LUCASSEN**

--or roses. Whatever scent you like, you can pick it out. And have that scent instead.

HELEN KING

Yeah. It does seem like a different attitude to smell, although the Romans were certainly aware of quite how smelly their toilets and other things around the place would be.

If you can't go to the toilet, opposite problem, today, of course, we've got all sorts of constipation remedies, gentle, effective constipation relief. In the ancient world, I found a recipe from the Roman writer Apicius which is for a laxative dish of celery and leeks, where you cook up your celery and your leeks together. And that's supposed to have the same effect. I don't know whether it would, but it sounds a lot nicer in some ways, do you think?

**MATHIJS
LUCASSEN**

Well, I don't know what that would taste like. Maybe if it was sort of like a nice soup it could be quite flavoursome. But I do quite like the appeal of getting a tablet over the counter.

[LAUGHTER]

HELEN KING

Yes, I suppose there are certain advantages for over-the-counter medicine. It's quicker, at least.

And then, of course, there's this young fellow here, the octopus. This octopus is here to remind me that actually Romans were quite insecure about their sewers. So sewers, strange space, long way away, things could be there. And there's an urban myth story from Rome of a giant octopus that comes up through the sewers. Do we have similar insecurities about what's going on underneath our toilets?

**MATHIJS
LUCASSEN**

I think we probably have some issues in terms of rats and rodents in sewer systems. And we probably don't want to think about them too much. But, yeah, I think that people-- how much of that is a problem and how much of that is an urban myth is probably hard to disentangle.

HELEN KING

I've certainly read the odd story about alligators or crocodiles that people have had as pets, then try to dispose of, try to come up back through the toilet system again. So maybe we are quite insecure about these things in some ways.

Well, thank you very much. And I hope that hasn't put you off anything else that we're going to do in this course.

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Video 2 Introducing Roman toilets

Transcript

NARRATOR

Bath buildings were directly connected to Ostia's public water supply, as were some wealthy people's houses, like this fairly late example, the so-called House of Cupid and Psyche. This area of the house is the Nymphaeum, the main function of which was the ornamental play of water. Connected to terracotta water pipes, the ends of which are visible in the marble-clad podium, there would have been ornamental water spouts. The terracotta pipes, in their turn, connected to lead piping running behind the podium.

Lead pipes carried water within the city from the aqueduct which supplied Ostia. One actual piece of lead piping survives though most of this valuable material has been stripped from the remains of the city. A private supply like this was untypical of imperial Rome in Ostia. Most inhabitants of insulae carried their water from public or communal fountains.

JANET DELAINE

According to our literary sources, which again fill us in on the details which don't appear in the archaeological record, there were certainly night soil carts to remove human excreta from the city of Rome. And there are sufficient jokes about chamber pots,

particularly in apartment buildings, for us to realise that this must have been a very common part of Roman life. There were, however, latrines in many of the apartment blocks at Ostia that we've been able to discover. And there were also public latrines, particularly situated near the baths and around the forum. That is, in the two areas where you get the greatest concentration of people.

NARRATOR

At this public latrine in Ostia, running water was used to flush the excreta away into the main drains, and thence to the river Tiber. Members of the public using the latrine could dip sponges in water running down these channels in order to clean themselves. As well as public latrines, large pots were sunk into the ground besides streets, or by shop entrances, to collect urine for the fullery.

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Video 3 Baths in the ancient world

Transcript

HELEN KING

Patty, we've come about five minutes walk from the fortress to this building. It's a bath, clearly. Can you tell me a bit more about what this pool here is all about?

PATTY BAKER

OK. This is actually part of a whole bathing complex. And it would have been used by the Roman soldiers stationed at the fortress as well as probably people who lived in the local surrounding area.

What's special about Caerleon is it has a swimming pool, which was only part of the bathing experience. Large bath houses throughout the Roman Empire had gymnasias and a swimming pool, but it's rare to find those in smaller bathhouses around military fortresses. But the way people would use this, they would probably swim laps. As you can see, it's quite long and narrow, so it suggests lap swimming.

HELEN KING

So taking a bath here isn't about getting clean. It's about exercise.

PATTY BAKER

Yes. But part of the whole bathing experience was for both exercise and cleanliness, and it's also recommended for good health. So this is just the bit

about the exercise. The actual bathing is quite different. So let's have a look.

HELEN KING

Wow. That's an awful lot of bathhouse.

PATTY BAKER

Yes, it is. And, you know, what's interesting about this it's only half the bathhouse. Most of it is actually under the town. But I can show you what we have and explain how a Roman bath would have actually worked.

So we'll pretend we're soldiers. So a soldier would come into the bath. And the first thing they would do would go to the changing room. And that's called an apodyterium. The changing room is thought to be over here. Here, they would take off their clothes. And as I said, they would be naked, so then they would do the rest of the bath naked.

So they would keep their clothes in the changing room. And then they would go into a warm room. And that's called a tepidarium. And they would start to warm up.

And after spending some time in there, they would move into the hot room, or the caldarium. And here they would really start to sweat. And sweating was actually one of the main ways they would become clean. And then they would put oil on their bodies, and then they would scrape it off with a strigil. So the sweat and the dirt would come off. And you can imagine an oily floor.

But I'll explain to you how a Roman bathhouse was heated. Over here in the apodyterium, or the changing room, we actually have a room that looks similar to a hot room, or caldarium. A hot room was placed next to a furnace, and then the heat from the furnace would go through a flue, like we have down here. And that would heat the floor underneath.

And you can see those stacks of tiles. They're called pilae. And on top of the pilae would be marble slabs or stone slabs. And the heat from underneath would heat the stone slabs which would then heat the room. And usually there was a decorated mosaic floor on top of that.

So imagine walking across the hot room with bare feet. So it would have been quite hot to step on. And in some places they even had flue tiles where the heat would go up the walls, as well. So both the walls and the floor would have been heated.

Next to the hot room, the caldarium, was the tepidarium, or the warm room. And that, too, would have been on pilae. But because it's not next to the furnace it would have been slightly cooler.

Then the cold room wouldn't be on pilae. It's just a cold room. That always came at the end of a Roman bath.

So after the soldier was finished oiling up the body and scraping off the oil in the hot room, they would go back to the warm room, start cooling down. And then they would go into the cold room. And here the most interesting bit was they would go into a cold plunge.

HELEN KING

Oh!

PATTY BAKER

So they would end their bath in a very cold pool of water.

HELEN KING

So this is the frigidarium. This is the cold bit here. All of this.

PATTY BAKER

Yeah. This is all the frigidarium. And we assume that's the hot room, because we have evidence for the furnace there, was over there along with the tepidarium.

HELEN KING

So what about women? Would women have used the baths?

PATTY BAKER

Yes. Men, women, and children bathed in these places.

HELEN KING

Children? How do we know children?

PATTY BAKER

Well, what's interesting about the baths at Caerleon is they have actually found milk teeth in the drains of the bath. So that definitely suggests that children were here. And one or two of these teeth actually have indentations that suggest they may have been removed surgically with surgical forceps. So perhaps they were getting their teeth pulled here, as well.

HELEN KING

Well that's interesting isn't it because from what I've read about baths they're about so much more than the water and the bathing and you can have as we know from literary sources we can have barbers and hairdressers and all sorts working from the baths so that would suggest even more rooms where they would work.

PATTY BAKER

Especially in the larger bathhouses. They did have special rooms or perhaps people just setting up little stalls somewhere in the bath. And they would sell food. And we hear all sorts of stories about people singing in the baths, splashing around.

HELEN KING

It's quite an experience, isn't it, for a Roman soldier stationed at Caerleon? I can quite see why they want to come here.

PATTY BAKER

Definitely.

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Video 1 The mysteries of new life

Transcript

HELEN KING

I'm Helen King from the Open University, where I'm professor of classical studies. And I'm with Mathijs Lucassen, who's also from the Open University from the School of Health, Wellbeing, and Social Care. Hello, Mathijs. We're going to talk about pregnancy and childbirth.

**MATHIJS
LUCASSEN**

Great.

HELEN KING

So first question, how much do we really know these days about where babies come from? I mean, when I grew up I was told about the stork when I was a child. What do we know now? Do we all know it?

**MATHIJS
LUCASSEN**

Well, I think it depends on the sort of education people have had. I mean, we would hope that a lot of people would have learned that from, I guess, family members. But a lot of the time it can be through schools and through the curriculum that you're exposed to. So for me, I learned a lot through doing biology at high school. And the focus very much there was around control and preventing unwanted pregnancies basically.

HELEN KING

Right. Yes. So I think when I got to the school level, it was certainly about

preventing unwanted pregnancies. Which is interesting because it's a contrast with the ancient world where it was actually all about trying to get pregnant because you wanted to have more children. I mean, now, yes, it's all about this sort of thing, isn't it? It's the pill. It's various forms of contraception. It's which ones you should use. But in the ancient world really, very few contraceptive remedies around. It's all about how to get pregnant.

**MATHIJS
LUCASSEN**

Yeah. I guess we have both ends of the spectrum in that way because we have the pregnancy prevention, the technology around that, in the modern world. But we also have IVF and the technologies around conception. So I guess what we want really is to have real certainty around the number of children and control about when those children come in your lives.

HELEN KING

And certainty. You're not going to get any certainty at all in the ancient world where you've got much more chance of your children dying before they reach adulthood. So unless you have a reasonable number to start with, you're not going to have enough to survive to look after you in your old age. So I suppose there's a social thing there, too, isn't there, about why we need children?

**MATHIJS
LUCASSEN**

Yeah, which is different now in the modern world where we have so much in the way of quite sophisticated health

services and social services. So it's not a necessity to have children to look after you in your old age.

HELEN KING

Yes. Yes, I suppose that's right. So if you are trying to get pregnant in the ancient world, you can presumably try all the various remedies that are going in ancient medicine to open you up and clean you out so you can then get pregnant. But once you've done that, once you got pregnant, what do you do after that?

Obviously, now we've got pregnancy tests. Then, they hadn't. So in the ancient world there were various ways you could try and make sure you had a child of the desired sex, so ways like tying up one testicle or making the woman lie on her left side or her right side. It's all very left-right focused. Presumably in the modern world, there are rather more sophisticated ways of making sure you have a boy or a girl?

**MATHIJS
LUCASSEN**

Yeah. Well, we have the technology now to pretty much guarantee a male or a female baby. But there's a whole lot of ethical or moral debates that are tied in with that.

HELEN KING

And then, kind of going from that, you've got the rabbits here. The rabbits are here to remind us that in the ancient world they did have this theory of maternal impression which survived into the 19th century. So that if you were looking at a particular animal or

you were frightened by an animal or you were looking at a picture on the wall, you could actually make your child look like that.

**MATHIJS
LUCASSEN**

Like a rabbit?

HELEN KING

Well, yes, actually, or you could even give birth to rabbits. That's not an ancient story, but it's a modern one based on the theory of maternal impression. Yeah, you could give birth to rabbits.

**MATHIJS
LUCASSEN**

That is just bonkers.

HELEN KING

Yes, it is bonkers. It's wonderful. But I suppose that also gets you to the issue of the binary. So we're assuming you're going to have a boy or a girl. But actually, sex isn't so straightforward, is it?

**MATHIJS
LUCASSEN**

Yeah, correct. Like we have those people that will not neatly fit into male or female. We have the intersex people and all the different, I guess, conditions or presentations of sex diversity. I think it's about 1 in 2,000 babies that are intersex

HELEN KING

Wow. Because if a child was born in the ancient Roman world who wasn't clearly one sex or the other, the usual response was to say that it's some message from the gods, that actually you've done something wrong as a culture. And this is a warning to check

it out, to sacrifice to the right gods, to behave better morally, or something like that. So the child becomes a way in which the gods are speaking to you rather than a child.

**MATHIJS
LUCASSEN**

Yeah, and in the modern world, I think that there's still quite a lot of sort of, I guess, it can be a real stigma. And people don't necessarily talk openly about what experience is like for intersex babies, intersex people, their families growing up. But again, technology plays a part in that a lot of the time we have forced surgical procedures on infants so that they are then seen to conform to the sex binary. And with that comes a whole load of challenges that are ethical or moral.

HELEN KING

Yeah. So we thought a bit about the mother. We thought about the child. What about the father of the child, the presence of the father at birth? Is that normal in all cultures around the world now?

**MATHIJS
LUCASSEN**

Well, I think it varies so much in terms of the context. It probably, in part, would depend on the setting where the birth takes place. So in a home setting it is probably more likely to have the fathers present than you would in a hospital setting. And I guess in Western societies many of those now, there is an expectation that the father should be present. And, in fact, if the father isn't, it's sort of frowned upon

because they're looking like they're not a very good dad.

HELEN KING

It's swung the other way, then. Yeah. So in terms of what we have between the modern and the ancient there, our knowledge is obviously much better. We don't know for sure everything, but we've got better knowledge. But also we've got a different social setting in which we're giving birth so that the importance of having children isn't as great as it might have been in the ancient world. Although many people obviously still want them. But socially, we can survive without children as our insurance in old age.

And in terms of the presence of men at birth, ancient men, we do have some evidence now that even they were sometimes at birth. But, again, it's a sort of fashion thing, isn't it? It has changed in my generation certainly, in my lifetime, showing the change is recent as well as just change between the ancient world and now. Thanks very much.

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Video 2 A quick birth?

Transcript

HELEN KING

I'm Helen King. I'm Professor of Classical Studies at The Open University. I'm here today to talk to Dr. Laurence Totelin of Cardiff University about amulets. So what are amulets?

**LAURENCE
TOTELIN**

So amulets are something that you wear on the body, and it can have magical or medical properties. One of the names for an amulet in Greek is periapton and that literally means something that is attached.

HELEN KING

So it's attached to your body. It's actually touching you.

**LAURENCE
TOTELIN**

That's right. It is. And sometimes it is worn over the clothes and sometimes under the clothes, and it can be attached to various parts of the body-- to the arm, to the loins.

HELEN KING

Wow, so it could be anywhere. So what sort of things are they? What are they actually made of?

**LAURENCE
TOTELIN**

Well, it varies a lot. Some are made of perishable materials. So for instance, you have amulets made of wool. You also have amulets that are simply the root of a plant that is worn again on the body. And some are made of much more durable material so stones or metals.

HELEN KING

So how do we know about the perishable ones?

**LAURENCE
TOTELIN**

Well, we know through text. So this is an excellent example where the text complements the archaeological material evidence. So we have evidence in the ancient medical texts that amulets could be made of wool or plants.

HELEN KING

So what do you use them for? Are they use to help you get better or to stop you getting ill in the first place?

**LAURENCE
TOTELIN**

Well, for both really. So sometimes they're used as prophylactics so to prevent you becoming ill. Sometimes they're used to cure a disease or make it better, especially in cases of chronic ailments so like back pain or sciatica. And sometimes they are worn in cases where your health could be endangered. So here the main case would be childbirth, which can be a very dangerous situation.

HELEN KING

And I understand that, if I've got this right, Pericles, the great general Pericles, wore an amulet.

**LAURENCE
TOTELIN**

Well, that's right there is a story. We don't know whether it's a true story or legend, but it's a nice story of Pericles being given an amulet by a woman because he was afflicted with the plague.

HELEN KING

Must have made him feel slightly better.

**LAURENCE
TOTELIN**

Yes, there is an aspect of placebo effect in the wearing of amulets. It can make you feel better. We certainly have that evidence in the medical writings. So the physician Soranus did say that he didn't really believe in amulets, but he felt it would make his female patients feel better.

HELEN KING

Very understanding. So we've actually got an example of an amulet here, which is one of these child birth, possibly--

**LAURENCE
TOTELIN**

It is, yes.

HELEN KING

--Womb amulets. So this is about a centimetre or so.

**LAURENCE
TOTELIN**

Yes

HELEN KING

It's made of hematite.

**LAURENCE
TOTELIN**

That's right, so--

HELEN KING

Is that significant?

**LAURENCE
TOTELIN**

Yes, it is. So hematite is the bloodstone, and so it's red like blood. And it's certainly significant because blood is the liquid, the fluid, that characterises women.

HELEN KING

Yeah, so whether that's because you want to let the blood out or whether you are letting out too much and you want to stop it, could it be used for either of those?

**LAURENCE
TOTELIN**

For either because so you see on this amulet there's a picture of the womb?

HELEN KING

Oh, that's a womb.

**LAURENCE
TOTELIN**

That's a womb, yes. So this vessel-like thing is a womb. And then there's a key that opens the womb, and so well, it either opens it or closes it. So it can open the womb so to let the blood out or let a child out in childbirth, or it can lock the womb so that the blood is kept inside the womb and is then used to create a baby.

HELEN KING

Right, so it's multi-purpose?

**LAURENCE
TOTELIN**

That's right.

HELEN KING

So what else have we got on the amulet? What else is happening on it?

**LAURENCE
TOTELIN**

Well it's very rich, especially it's only a centimetre high, so it's really tiny. And around the amulet you have what is called a Ouroboros, and that's a snake that bites its own tail. And then you have representations of various Egyptian gods. So this amulet was produced in Greco-Roman Egypt, and then you have a lot of text in Greek.

HELEN KING

And who are all of the other people? There's one who seems to be holding the key of the womb.

**LAURENCE
TOTELIN**

That's right, and then you have various divinities.

HELEN KING

So they're just assorted gods you're calling on?

**LAURENCE
TOTELIN**

That's right, yes.

HELEN KING

So what's actually having the power here to make you better or to help you give birth properly? Is it the images? Is it the material?

**LAURENCE
TOTELIN**

It's a bit of both. So it is the material, that is the bloodstone. It is the images, and it's also the words that are very significant.

HELEN KING

So that's a very powerful piece of equipment.

**LAURENCE
TOTELIN**

Very powerful.

HELEN KING

Thank you very much

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Video 3 Infertility - ex votos of sexual parts

Transcript

HELEN KING

Hello, I'm Helen King. I'm Professor of Classical Studies at The Open University, and I'm joined today by Jessica Hughes, my colleague from classical studies, who's an expert on votives.

JESSICA HUGHES

Hello.

HELEN KING

So we're talking about votives and fertility today and in particular, I'd like to start with thinking about what fertility is and about what sorts of parts associated with fertility, sex, childbirth you find that are dedicated to the gods in the ancient world.

JESSICA HUGHES

In votive deposits all over the ancient world, you do find bits that we might conventionally link with sexuality or healing or a generation. So we have the male bits. It's generally the non erect penis with the scrotum that gets dedicated.

You also get the female vulva and that's often shown as a little triangle with a line in it. And those are marble reliefs generally. But then you find wombs, uteri often made from terracotta that are generally found in

Italy, and breasts as well, singly or represented in pairs.

HELEN KING

So what are the breasts doing there? Do we think that they count as sexual parts?

JESSICA HUGHES

They could be about healing like many of the other votive body parts, our arms and legs and things. We generally ascribe those with a healing function. And, actually, the same goes for the genitalia as well, but we have very little hard evidence about what these are about. So I think we just have to keep an open mind and think breasts could be to do with lactation. They could be to do with problems, tumours, mastitis. But whatever they're about, there were an awful lot of them.

HELEN KING

Right. So why are people doing this? Why are people dedicating bits of their bodies that we regard as quite private?

JESSICA HUGHES

Well, it links into this very sacred type of healing where you go to a god or a goddess and you'd ask them to intervene in bodily matters. We do have a very rare literary text. We don't have very many of them about votives. But in a later text by Saint Augustine, City of God, he does describe people going into temples and hanging models of their genitalia, female and male, and dedicating these to the gods, Liber or the goddess Libera.

He's seeing this as a very strange pagan practice, but he says it's to do

with the successful liberation of the seed or ejaculation or female equivalent. So, again, that's putting them very firmly in the sexuality realm rather than necessarily the healing one. But it's an interesting perspective from late antiquity on what was happening earlier.

HELEN KING

Yeah, as you say, it's Augustine who's got a bit of a thing about pagans who are all obsessed with sex so you can see where he's coming from with that. So do you actually go to the sanctuary yourself with your bits or do you just send one along?

JESSICA HUGHES

You can do either and we do have evidence that people did sometimes send votives with a relative or perhaps that the relative themselves took the initiative and bought a votive for an ailing relative a bit like you might light a candle for someone in a church today. There are inscriptions on some of the votives. For instance, at the Asclepeion in Athens which say a man has dedicated something on behalf of his wife although that is a face rather than a breast or genitalia.

HELEN KING

So we can say that people do it on each other's behalf as well as going--

JESSICA HUGHES

Oh absolutely.

HELEN KING

--on their own.

JESSICA HUGHES

Absolutely and even beyond the strict sphere of votives, we have the miracle

inscriptions from the sites of Epidauros which talk about people going to the sanctuary of Asclepeios and sleeping there on behalf of someone else and then having dreams about this other person then being healed at home.

HELEN KING

So back on those bits of fertility or possibly fertility or gynaecological problems or whatever, these wombs, how do you know that that's a womb? It doesn't say womb on it.

JESSICA HUGHES

No and it's a good question because a lot of them don't really look very much like wombs as we know them.

HELEN KING

I wasn't going to say that. But, actually, yes, you're right.

JESSICA HUGHES

I think it's because they're found in with other body parts and of all the body parts, they probably look most like a womb. Some of them have striations on them, so lines, curvy lines. This has been interpreted as the muscle contracting during childbirth. I'm not sure how much you agree with that interpretation.

HELEN KING

Well, yes, you see my dubious expression here. So that's tricky because the literary sources talk about the child being active in the process of birth, not about the womb being active. So that becomes problematic because you've got literary sources that really don't fit that interpretation. But then that doesn't mean everyone thought the way that those literary sources do.

JESSICA HUGHES

No and I think that's one of the things that make these votives such a valuable source of evidence because they can often provide a counter-narrative, an unexpected narrative to what you get in the literary sources. The fact that there are these male and female body parts dedicated in what we assume is the realm of fertility and sexuality also gives a really interesting perspective on this idea of both men and women being responsible in a way for procreation.

HELEN KING

So, what about some of the weirder wombs? There's some which have got little stones in them.

JESSICA HUGHES

Yes, there are quite a few of those from Italy, and sometimes they rattle around. They're like little pellets. There's one or two in there, and people have x-rayed these wombs and seen some of them are also fixed.

HELEN KING

The idea of going around x-raying a terracotta womb is quite weird. But it's the only way to find out, I suppose.

JESSICA HUGHES

Yes because you can rattle them and you can hear them, but I think that by x-raying them you get a better sense of the diameter, which is generally like one or two centimetres.

HELEN KING

Right. What on earth are those about?

JESSICA HUGHES

People have looked at these and thought, well, it must be something to do with childbirth and procreation and

perhaps it's an embryo, a fertilised egg, or perhaps it's a thank offering for somebody, a couple who's got pregnant. What do you think?

HELEN KING

I don't know. This is a tricky one, isn't it? To me, the idea of stones in the womb sounds more like something like bladder stones, which we know they knew a lot about in the ancient world and which they could treat. So maybe those stones are sort of seen as bad things, disease that's in the womb that needs to be got out rather than an embryo. But it's impossible. We can't say because there's no text to help us.

JESSICA HUGHES

Yes, it's very difficult and I think that's a really good example of how we always need to approach these objects with an open mind and not make assumptions that are perhaps based on our own cultural expectations about the body.

HELEN KING

Clearly, there's a lot there to think about, and it's not somewhere where we've got definite answers that we can come up with. So, yeah, it's over to you. What do you think?

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Video 1 Becoming perfect?

Transcript

HELEN KING

I'm Helen King. I'm Professor of Classical Studies at The Open University. And I'm here with Mathijs Lucassen, who is a lecturer in the School of Health, Well-being and Social Care. So we're going to talk about mobility and the Roman army, but first we're going to talk a bit about the ideal body. So where do we get on our ideals today about what our bodies ought to look like if they're healthy?

**MATHIJS
LUCASSEN**

I think we get bombarded with lots of images. So we'll see pictures, advertisements, all sorts of ways in which we depict the perfect body. And we've got loads of information we're exposed to, how we should look, both for men and women.

HELEN KING

And that's going to be everyone, presumably. Whereas in the ancient world, if you're looking at something like, I don't know, a statue of Atlas or something, kind of, holding the entire world on the shoulder, then that's only going to be available to people who are based in the city where that statue is. If you're living out somewhere in the rural zones, you might not really see any of these perfect bodies, whereas we've got them everywhere.

This is a classic example. This magazine where you've got rock hard abs on the front. You've got couple of ideals there, and then on the back you've got another one. So they're just everywhere, and they're all much of a muchness. They're all extremely muscular, and that's quite hard to achieve for most people.

So the image that we have is very strong. The army, I'd have thought, were going to be a group who are nearer to that ideal than many because they have to be pretty fit. I mean, looking at my little Roman soldiers here.

You know, they're carrying their shields and their swords, and they've got pretty heavy armour. They've got helmets on. They'd also have to carry all their kit with them when they're marching. I suppose that's similar to today. The Army is the area where physical fitness is prized.

**MATHIJS
LUCASSEN**

Yeah, and I think that most people would know about the whole concept of basic training. Basic training is a whole process to prepare you physically and mentally for battle, for your role in the military.

HELEN KING

And you mentioned mentally there, as well, because of course the mental health of the Roman army is something we don't know about. What about, what

could you say from that about that today?

**MATHIJS
LUCASSEN**

Well, I think it's something where the military is sort of becoming increasingly aware of the sorts of psychological factors of the service men and women. I went to a conference last month in New York on cognitive behavioural therapy, and there was a whole session on how to help returning service men and women coming back from battle zones.

HELEN KING

So it's that readjustment to civilian life after living in the army, fighting all the time, completely different standards of everyday behaviour.

**MATHIJS
LUCASSEN**

Yeah, those difficult transitions, yeah.

HELEN KING

Yeah. Yeah, I can understand that. But of course also, being in the army is one of the most dangerous areas in terms of the injuries that you might suffer, and we still don't know for sure whether the Roman army had dedicated doctors or whether the soldiers mostly looked after each other. But if you were injured, there, or I suppose in civilian life, it's hard to know exactly how you would be treated. Mobility is a big thing.

I don't know today if you've got an injury-- I mean, I managed to break my wrist in three places last year, so I was in this delightful extremely pink cast for a while, but I could modify my behaviour. So I had a chance to heal. I

don't-- today, I'm just trying to think whether, actually, it's more difficult today to recover from something like this, because we've got computers and cars and things, or whether it actually would be easier to recover today.

**MATHIJS
LUCASSEN**

Well, we'd certainly have the ways in which we could assess something like a fracture really scientifically. We've got x-rays, and we can, we can use surgery if it's required. And we've got all sorts of evidence around what will facilitate recovery, and I guess we become very efficient in the way in which that's managed.

I guess it's much more tricky in a battle zone because it's going to be so much more chaotic than a sort of civilian setting.

HELEN KING

And if you do put too much stress on a fracture when it's healing, you are going to be more likely to be left with a permanent disability, which fortunately I wasn't. Also I had physiotherapy which was extremely good so that, you know, my wrist is I think completely normal now. But that wouldn't be the case for someone who had to go back to agricultural work or maybe into their military work too soon.

So probably, although they start off healthier because they look fit. They're strong. They can cope with carrying things and fighting and marching for long periods of time. Maybe they're

actually-- if they're damaged, they've got more risks to their body as they've got to get back to work more quickly.

So I'm just wondering where we are in terms of the ideal body image and where it was located in the past. Is it, is it in your mind that you need to look like a certain type of person? Do you judge by simply whether you can do what you need to do?

**MATHIJS
LUCASSEN**

Well, I guess it's that whole division between function over fashion, and we can be thinking about what we-- the images and the ways in which we're sort of exposed to ideas around how we should look. Which, of course, is really pervasive, but we've got the stuff around our functioning, as well.

So we'll say well, a body that might not look beautifully, sort of very attractive, might be really functional or a body that might not be so functional is really attractive. And I guess what would be the ideal is this body that functions perfectly and looks stunning. And usually those images that you showed, they're sort of images of, of, of, physical perfection in youth. They're usually of young bodies.

HELEN KING

So even if you could look like that, it wouldn't last very long.

**MATHIJS
LUCASSEN**

Yeah.

HELEN KING

Thanks very much.

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Video 2 Ancient ideals

Transcript

NARRATOR

The 20th of April, 1938, was a very special day here in Munich. It was Adolf Hitler's birthday. Five years after taking power, things were going well for the Fuehrer. And he decided to celebrate turning 49 with a screening of his favourite film.

The film was *Olympia* directed by Hitler's star filmmaker, Leni Riefenstahl. And it was a celebration of the recent Olympic games held in Germany which Hitler had used as an occasion to promote his vision of a strong, healthy, not to say aggressive, new nation.

The film opened with a remarkable sequence, a montage of ancient Greek sculpture. The star of the show was a sculpture known as the *Discobolus*, the discus thrower, created in the fifth century BC by the sculptor Myron. Riefenstahl showed this statue morphing into a real live German athlete. This image of the perfect classical body reborn utterly entranced the Fuehrer.

Scarcely a month after Hitler's birthday screening of *Olympia*, the statue itself arrived in Munich bought by the Nazis for a record price of 5 million lira. A cast of the statue can still be found at

the former Nazi headquarters in Munich.

To really understand Myron's discus thrower, you have to put it in context and compare it with the sort of statues that were common just a generation or two earlier. For a century or more, Greek artists had created thousands of standing nude men. They had a certain presence, but they're also fairly stiff and formal and distinctly unlife-like.

And then in the fifth century BC, with his bronze *Discobolus*, Myron blew all of that apart. Suddenly we find this naturalistic athlete mid flow. And that spiralling composition is so dynamic, so fluid, a vortex of compressed pent-up soon-to-be-released energy. Myron wanted here to dramatise an ephemeral moment, an instant that he'd ripped from reality. And yet, the result was so satisfying and harmonious that it felt timeless all the same.

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Video 3 Bodies from Roman London

Transcript

HELEN KING

So Becky, what can we find out about the diseases people lived with when we look at human bones?

REBECCA REDFERN

Well, human bones are fantastic because what they do is they capture lots of information about a person's life. So we can look at their health from childhood right up until the time that they died. And here I've taken a selection of middle aged Roman men from London, and they've all broken their tibia. So these are your shin bones, so this is the bones below your knee. And as you can see, they've got the same fracture so they've all sustained an oblique fracture. So they've had a twisting force on their leg.

HELEN KING

That one's really twisted.

REBECCA REDFERN

So what we're looking at is this area here. And so we can see that there's a degree of overlap on the bone. We can see here on the shaft it should be one continuous run. And instead, we've got this big lump here and this is where the end of the bone has got overlapped on the main shaft.

And we can see here this is the callus, which is all remodelled into the bone so it's all the same colour, and this is telling us that the person sustained the injury many years ago. This one is very much twisted and you can see here that, in contrast to a lot of them, that it has been angulated so it's been tilted forwards so their whole foot would have been pushed forwards.

HELEN KING

So when they're walking--

**REBECCA
REDFERN**

Oh yeah--

HELEN KING

--you could have told he'd got an injury. An old one.

**REBECCA
REDFERN**

Oh yeah, absolutely, yeah. And then if we look here, we've got-- this is all osteoarthritis here. So that-- the shininess, the pitting, and that lipping here is where the knee joint has been placed under a lot of stress.

HELEN KING

Some of these injuries you think, gosh how could you possibly walk with that?

**REBECCA
REDFERN**

Exactly because most of the impairments that we see in the ancient world are mainly derived through injury, so accidental injury like this, or through old age where people have debilitating conditions like osteoarthritis. Because we have so much clinical data and we have all of the ancient medical texts which are telling us how people should set fractures and things, that really we can look at this and see the range of

treatments that were available and how successful they were. But what we also have to bear in mind is that we're seeing an individual.

HELEN KING

Yes.

**REBECCA
REDFERN**

And so this person may have broken their leg but not actually had enough money to have it set properly rather than it being set badly.

HELEN KING

So what you're saying is that the medical texts are helpful.

**REBECCA
REDFERN**

Yeah.

HELEN KING

But you can't obviously tell if someone accessed the person who knew how to set bones.

**REBECCA
REDFERN**

Exactly.

HELEN KING

So what about babies in the ancient world? I see we've got some skeletons of infants here.

**REBECCA
REDFERN**

Yes, we do.

HELEN KING

What can we tell from that about the sorts of things people-- people lived with and also what children were born with--

**REBECCA
REDFERN**

Yeah.

HELEN KING

--in the ancient world?

**REBECCA
REDFERN**

Children are absolutely fantastic because they are a snapshot of a very

limited amount of time. So unlike these individuals where we see years and years and years, because we can age them very, very well, we can see the changes that are happening over a shorter time span. So they've actually got the same disease.

HELEN KING

Oh, what's that?

**REBECCA
REDFERN**

Well, this is a very, very interesting disease to us and this is rickets. So it's rickets when it's in children, and it's osteomalacia when it's in adults, but it's caused by the same thing. So these children haven't had sufficient levels of vitamin D, and most of your vitamin D you absorb by exposure to the sunlight through your skin.

HELEN KING

Yes.

**REBECCA
REDFERN**

And Britain is really bad for this, and it's very, very unusual for children to develop vitamin D in this age group. So for this person, what we're looking at here is the end of that radius – so that's one of the forearm bones – has got more of a conical shape.

HELEN KING

Yes.

**REBECCA
REDFERN**

And it looks very frayed, and it's got lots of holes in it. So the thing is because children grow so quickly, we have to be very careful in distinguishing between what is growth and what is pathological. But in comparison to lots of other infants from Rome and London that we have, this is very unusual. It's

very, very distinctive changes, the frayed edges, the expansion. And it's also slightly bowing as well; the legs and the arms bow because the bone itself is not strong enough so you've got the weight of the body and it pushes it down.

HELEN KING

Can't sustain the weight.

**REBECCA
REDFERN**

So we've done isotopic studies of both of these and that's shown that they're having breast milk either from their mother or perhaps through a wet nurse and what's that--

HELEN KING

Wow.

**REBECCA
REDFERN**

--and so if the mother is healthy, she should have sufficient vitamin D passing through her milk to her child to protect the child. And also when they're born, they have, obviously, you know, sufficient levels of vitamin D. So what this is showing us is that their mums are very, very ill.

HELEN KING

I see.

**REBECCA
REDFERN**

Yeah.

HELEN KING

Oh, so the child is actually telling us about the mother's health.

**REBECCA
REDFERN**

Yeah.

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Video 5 Training the Roman army

Transcript

HELEN KING

Patty, where are we now? What's this room?

PATTY BAKER

We're in the reconstructed room of a Roman barrack. It would have held about eight to 10 people and a barrack would have held about 100 people. A sentry would have been placed in a barrack. And so this is how we think they may have looked.

HELEN KING

Awful lot of people in a very small space, isn't it?

PATTY BAKER

Yes, it is and we're not sure if they slept together at the same time or if they were off on different duties, but they seem to have also cooked in here as well.

HELEN KING

Wow. So that's why we've got an oven?

PATTY BAKER

Yes. And given the climate, it's probably also good for the temperature.

HELEN KING

So what do they do to keep fit?

PATTY BAKER

As far as we can tell, they were supposed to train every day, and they were supposed to train in their armour so that way when they went into battle, it would be very easy for them. And there are stories that they actually carried heavier weapons as well so-- But, again, going into battle would have been quite light with the real weapons.

HELEN KING So, what does that mean in terms of what they actually had on them at any point? We've got a full set of armour here. We can--

PATTY BAKER OK.

HELEN KING We can see. I mean, what's the-- OK, that's light.

PATTY BAKER Yes, this would have actually gone on the head. We'll save that for a sec-- later.

HELEN KING OK. This is the sort of under-- ooh, gosh, that's quite heavy.

PATTY BAKER Yes.

HELEN KING That's the under thing.

PATTY BAKER Yes, it's padded armour and it's-- I'll put it on. So it's based on representations we have from Trajan's Column.

HELEN KING So all this, obviously, is reconstructed armour, but it's done to as accurate a standard as we possibly can get.

PATTY BAKER Yes, and in some of it, we actually have bits of the armour left in the archaeological records so we can recreate that and look at the images as well. What we have here is lorica segmentata. It's segmented armour and it goes on over the tunic so--

HELEN KING Ooh, it's heavy.

PATTY BAKER Put this on. It's very heavy. So if I go in--

HELEN KING OK. Oh, you got your arm in. OK. That's very impressive.

PATTY BAKER Yes. And then we would have the belts. OK. And--

HELEN KING So that's the front.

PATTY BAKER Yes.

HELEN KING Mind the dagger.

PATTY BAKER So, normally, this would go around the waist. It alleviates some of the weight as well on the armour.

HELEN KING Yes, that's the front bit.

PATTY BAKER Yeah. The front would have an apron and the apron was thought to protect the groin area, and it's leather straps with decoration on it. And then we would have the helmet.

HELEN KING OK, so that's your--

PATTY BAKER Yes, they would put something on underneath to keep the helmet from slipping. And then-- oh gosh. [LAUGHTER]

HELEN KING It's so heavy.

PATTY BAKER And the helmet underneath.

HELEN KING Fabulous.

PATTY BAKER And then also-- so I'd have a little dagger, which is already on the belt.

HELEN KING Yes.

PATTY BAKER And my gladius or long sword. And then my pilum. [LAUGHTER] Right.

HELEN KING And you'd have to train in that every day?

PATTY BAKER Supposedly, yes.

HELEN KING Or possibly something even heavier.

PATTY BAKER Yes, carrying heavier weapons and then they were also supposed to swim in it.

HELEN KING No.

PATTY BAKER Vegetius, one of our main sources on Roman military, says that the soldiers should know how to swim because not everywhere had a bridge. They may have to run to escape, so they may have to swim across in their armour.

HELEN KING OK, let's get this off.

PATTY BAKER OK, thanks.

HELEN KING It's going to be weight off your mind, isn't it? Literally.

PATTY BAKER That's a relief.

HELEN KING Goodness. So in order to do all this incredibly heavy training, what did they eat? What was their diet like?

PATTY BAKER Well, interestingly, their diet was basically, on campaign when they were actually marching and setting up camp every night, they were given a ration of grain. And we think they probably made gruel or some kind of porridge out of that. They had a ration of wine called acetum, which was a stronger wine, more like vinegar. But while they were stationed in a camp like here at Caerleon, they actually had bakeries so they would bake their own bread. So they had a ration of bread every day, and then they also hunted. So we have

evidence for wild animal-- wild game such as hare and possibly wild boar is often hunted. And then there's evidence for chicken and pigs as well. So they may have been raising their own animals.

HELEN KING

So they got lots of exercise, and they got lots of food. What happens when they get ill?

PATTY BAKER

OK, when they did get ill, there were a couple of things that we have evidence for. They did have doctors in the army called a medicus, and their doctor may have had a little office. There may have been something called a hospital or valetudinarium. But sometimes, we actually know that they were cared for by their barrack mates. There's a letter from Egypt of a soldier writing home apologising to his parents for not writing home, but he'd been ill with food poisoning and his barrack mates took care of him. And we think he was actually just looked after in his barrack.

HELEN KING

So one of these rooms might have been your hospital ward as well?

PATTY BAKER

Perhaps.

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Audio 1 How healthy were classical Greek armies?

Transcript

HELEN KING

Hello. I'm Helen King. I'm Professor of Classical Studies at The Open University. And today I'm talking to Owen Rees, who's the author of *Great Battles of the classical. Greek World*, and a PhD student at Manchester Metropolitan University. Hello, Owen.

OWEN REES

Hello, Helen.

HELEN KING

So we've heard a lot about Roman armies so far in terms of their health. Can you start by telling us something about what armies were like in ancient Greece?

OWEN REES

Within the classical Greek world, Greek armies are very different to the Roman model you would have been looking at. The Greek polis, the Greek city-state, each would have had an army. But it was not a standing army. It was what you might classify more as a militia army. So these are just everyday citizens with other jobs, other roles, that would be called to arms either when the need arose or especially during the Peloponnesian War annually.

But the core of the Greek military body is the hoplite, the citizen heavy

infantryman, who would have been armoured with a spear and shield, the aspis, and is the core element of the Greek army in battle. And it's the one that they talked most about.

HELEN KING

So the soldiers are basically very different. Do we know if they'd have been healthy or not?

OWEN REES

This is a brilliant question because it depends entirely on what model you choose to use when looking at Greek warfare. Take the hoplite as a classic example. The hoplites in Athens, which we know most about, democratic Athens, the great polis of the classical Greek world, they had a system of conscription called the katalogos. But to be on the lists for the katalogos, you needed to have a certain social status, a certain financial status. So by definition, someone who's brought through as a hoplite was himself quite a wealthy man.

So from that perspective we would expect him to have enough leisure time to exercise. But on the same token, he would have had enough money and enough capability to eat well. However, we also know that the hoplites were supplemented by volunteers who weren't necessarily rich enough to appear on these lists. But because these people would have come from a slightly lower social stratus, a lower income, we can't assume the same level of physical athleticism through

training, which needs leisure time as I said. But also you can't assume the same level of dietary capabilities.

HELEN KING

So you've told us something about the Athenians for whom we have more literary evidence at least. What about the Spartan army because that always comes across in ancient sources as really the greatest of the ancient armies? Was it really so great?

[LAUGHTER]

OWEN REES

Was the Spartan army really that great? A revisionist would say no, of course not. They live as much on their reputation as they do on their capabilities in war.

From the Battle of Plataea, which is the last great land battle of the Persian Wars in 479, we don't really see the Spartans send out a major army that we can reconstruct. Again, until late into the Peloponnesian War, you're talking some 80-odd years later if not further, what we actually see the Spartans do is they lead armies. But in actual fact, whenever you quite often read or learn about Spartan victories, these aren't actually Spartan soldiers doing the fighting.

So in one respect, the answer is actually no. No, they're not as good as we think they are. But on the other hand, what we have to accept is that the Greek sources really believed they were. They have this agoge, this

institutional training, which is not just military related, but it does have a lot of military elements.

And this is when we see actually the Spartans are capable of things on campaign and in battle. They know what the Greek army's capable of. You are thinking of sort of great manoeuvres and great movements and great abilities of endurance. Whereas in reality, all the Spartans really mastered was a simple flanking manoeuvre which they repeat over and over again in battle, where they extend their right wing, rotate it 90 degrees, and then come in at the flank of the enemy. And this constantly wins them battles. And no other Greek army can do it.

HELEN KING

I love it. So the Spartans are basically living on their reputation and one manoeuvre which they're really, really good at. Can we think about those who are disabled by war? So they don't die in battle, because in Greek terms dying in battle is the beautiful death, the kalos thanatos. It's a good way to go. But if you don't die if you're just left disabled and you can't fight anymore, what provision is made for those people?

OWEN REES

Within Sparta, it's admittedly from a late source, from Plutarch, but he describes basically injury and ailment was not an excuse for a Spartan to not continue in the military. So he does

give us stories of people going back when lame and with lots of different injuries and ailments. So to the Spartan ideal, or at least the late Spartan ideal, that was not an acceptable excuse. You must either be dead or serving.

Within Athens, we have a slightly different image. We know that in classical Athens there seems to have been a, to use a modern term, a welfare state as such for a pension. But we don't explicitly know that this is for the military. We are told it is for people who are made unable to fend for themselves, unable to look after themselves financially within Athens.

This, then, raises the question, where does that leave the injured? And we do have little bits of evidence where we might be able to get to an idea. So, for instance, the famous play *Philoctetes* which is all about an injured veteran of war, the hero from the Trojan War, Philoctetes himself, in which he constantly laments how he's been treated because of his injury. And he asks the question, is this actually a reflection of how injured veterans are treated in Athens? Is it they're looked down, they're ignored because they have no value, they have no worth, or not?

HELEN KING

OWEN REES

Thank you so much, Owen.

I'm very happy to help

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Audio 2 The mental health of ancient soldiers

Transcript

HELEN KING

Hello, I'm Helen King. I'm Professor of Classical Studies at The Open University, talking to Owen Rees, the author of *Great Battles of the Classical Greek World*, and a PhD student at Manchester Metropolitan University. I know it's extremely controversial still as to whether we can apply PTSD to the ancient world. I know this is a huge question. But what are your thoughts on that?

OWEN REES

It is a very big question. The first one, the controversy, is probably the best place to start with. The reason it is controversial is very simply because it is a very sensitive issue, modern sensitive issue, both socially and politically.

Basically, whenever historians use the term PTSD in history, especially in ancient history, when we're talking about it within ancient history, it's important to understand we are not questioning or challenging modern PTSD. That is not up for debate. It is not a historian's place to even do that.

What the historical question is, is can PTSD be removed from its social and medical context and just transplanted

into any historical period? This brings in the question of what's known as universalism. Is PTSD a universal human experience or reaction to trauma and to combat?

Which is the second important element here, that PTSD, Post-traumatic Stress Disorder, is not just the ailment or the issues of soldiers. This is not a military problem. When moving into the ancient world, you've got to start asking questions of what actually are the factors for PTSD today, not just the experience of the trauma, so the visual aspect of seeing it or doing it or hearing it. We know many of the different senses are very heavily involved.

But also the social aspects, there's an argument by some that the modern concept of individualism that we so strongly hold to, that we are all individuals, that we hold ourselves separately from everyone else is a modern trait and is an important aspect within trauma. So if you accept all these premises, you've got to ask the question, well, if the ancient world don't have the sense of individualism, would they then struggle with it in the same way?

And this has ultimately been taken further and further. And the latest – what we call relativist – model, so challenging the idea that there is a universal element at all and that actually all cultures are unique, all

people are, in essence, unique has been put forward that the entire environment in which a soldier is raised, in which he is trained, in which he returns after active duty, makes the unique nature of post-traumatic stress disorder a purely modern phenomenon.

Whereas there is a side argument, one that I hold, which is that post-traumatic stress disorder is based on modern understandings of psychology of neuroscience as well as of psychoanalytical theory. Now, if we accept that the human body and human brain has not fundamentally changed in two and a half thousand years, which is not a greatly contested argument, if we accept that, then there is always the possibility, the potential, that the biological underpinnings of post-traumatic stress disorder are ever present as long as there are humans, modern humans.

So with this underlying premise that it is possible, not that it is inevitable, that it is possible, you then ask the question, well, what is there in ancient Greek society, ancient Roman society that may have either aided someone's possible propensity for PTSD or, in fact, hindered their ability to deal with it? One of the important elements here-
- we've been talking about training. I know you're doing something similar within the Roman period, the training we've been talking about is physical

training. These men are physically prepared for war and for campaign in the Roman period. In the Greek period, they don't even do that. They're expected to maintain their own physical prowess themselves.

What neither seem to really get to grips with or even bring up as a possibility is the mental conditioning for warfare. And even if we accept that their, perhaps, society was more violent then and that, especially in the Roman period where you've got 20, 25 years of active service, you become acclimatised to warfare. In the Greek period, not so much. They don't go on long campaigns in the same way. But within the Roman period, they become acclimatised to warfare, to violence, maybe they wouldn't have felt trauma in the same way. Maybe they wouldn't be shocked by what they're seeing.

However, they do at some point have to then leave the army because they have to come home. And then the question is, how do they re-adapt? We do know, or we certainly have evidence that suggests, people who from their experience in war suffer nightmares. They suffer what seems to be a flashback.

We have a description in the Greek orator Gorgias who describes men who from fear in battle, they experience a fear in battle, go ill, extremely ill, or else actually go mad because of it. And they

ignore all the customs they've been brought up with. They ignore all the cultural norms. And as you read this, you can't help but look at it and see trauma, the psychological trauma, that they are not prepared for.

HELEN KING

Thank you very much, Owen. It's a really interesting topic because it brings up so many issues about applying modern categories to the ancient world and also about the sorts of evidence we have. So that's been really useful. Thank you.

OWEN REES

Oh, no, thank you. Thank you for having me.

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Video 6 Caerleon

Transcript

NARRATOR

Caerleon, Roman Isca, is just outside Newport in Wales, and it was one of the most important military sites during the Roman occupation of Britain.

Built in 75 CE, it was in use until the early third century and was one of just three permanent fortresses in Roman Britain.

It was home to the second Augustan legion and would have housed about 4 and 1/2 thousand soldiers.

On the site was a large bath complex with a cold room, a warm room, and a hot room. There was also an open-air pool for swimming in.

The bath complex also included an area for exercise. Some of the bathers lost their jewellery in the baths, and so the site has one of the best collections of gemstones in the Roman world.

Just outside the fortress walls is an amphitheatre. This could have seated up to 6,000 spectators. It would have been used for games and also as a training area for the legion.

Caerleon now has a reconstruction of a Roman garden. Herbs used for healing, plants for cooking, and flowers for

decoration would all have been grown here.

Caerleon was in use until the end of the Roman occupation of Britain, and much of the site can still be seen today.

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