

Why did the Greeks have new ideas about medicine?

THE HISTORY of medicine and health is full of surprises. The Greeks are one of them. Many Greeks sought Asclepius' help and believed that he had healed them. Yet at the same time as people were flocking to Asclepeia other Greeks were gradually developing new theories about disease and treatment. Their ideas suggested that gods such as Asclepius had nothing at all to do with health or disease. They began to believe that diseases actually have natural causes. They claimed that people's belief in magic and the gods prevented effective medical treatment.

What was this new idea?

The theory of the four humours: the Greeks' greatest idea

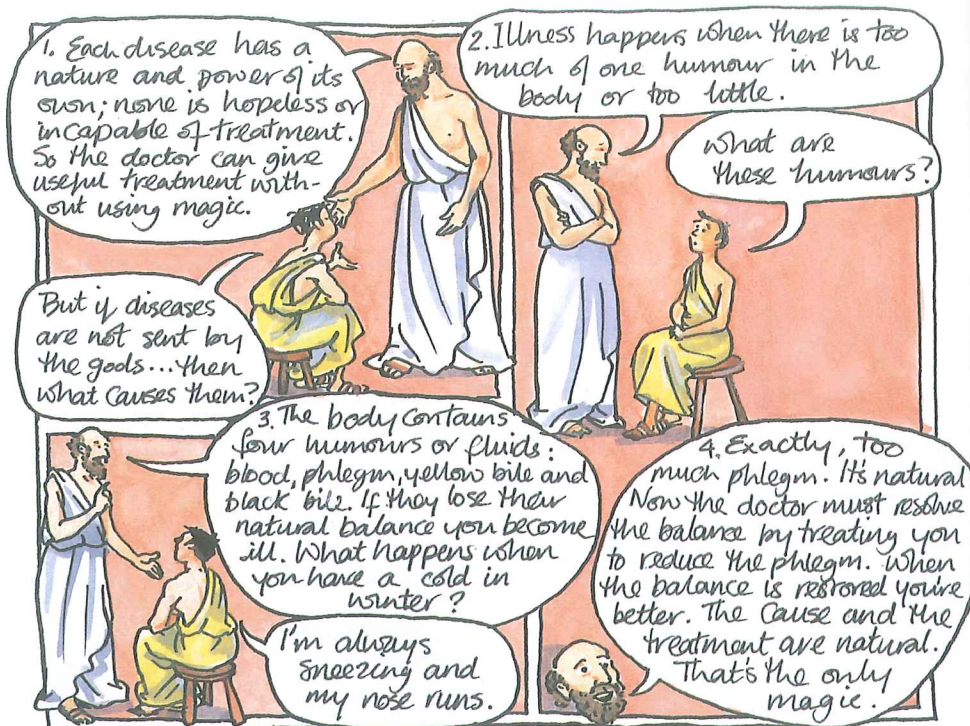
Greek thinkers believed that the body contained four important liquids which they called humours. They were

- phlegm
- blood
- yellow bile
- black bile

If these humours stayed in balance then a person would remain healthy, but if the humours became unbalanced (if there was too much of one humour, not enough of another) this could make a person ill (see Source 1).

It is important to understand this theory because:

- it was the basis for many Greek treatments
- doctors continued to believe in the theory of the four humours for well over 1000 years and so it affected the way people were treated throughout that time.



SOURCE 1 Hippocrates explains the Greek theory of the four humours

How did the Greeks find time for all this thinking?

Like the Egyptian Empire, the Greek Empire was rich. Its wealth came from farming and trade and from the hard work done by slaves and the poor. This allowed the wealthy classes to spend their time becoming educated and discussing new ideas. Trade also helped, bringing knowledge and methods from other civilisations.



Why did the Greeks develop the theory of the four humours?

The Greeks had enquiring minds. They did not just have ideas about medicine – they had theories about everything! Many Greeks went on believing in the old ideas about gods or spirits controlling everything, but a small number of Greeks were interested in finding more rational explanations. They wanted to understand how and why things worked. Greek thinkers investigated mathematics, geometry, science, astronomy, philosophy and politics, as well as medicine.

Observation

Greek thinkers and doctors tried to understand what caused disease through careful observation of people who were ill. They saw that when someone was ill there was usually a liquid coming out of the body, for example, phlegm from the nose or vomit from the stomach. They decided that these liquids (which they called humours) must somehow be the causes of illness. The liquid or humour must be coming out of the body because there was too much of it. The humours had got out of balance with each other.

How did the theory of the four humours fit in with the Greeks' other ideas?

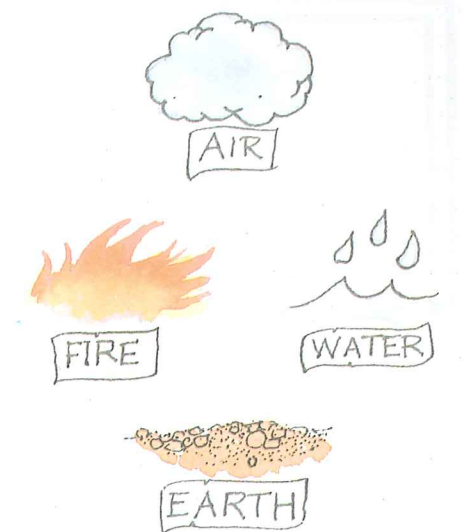
The theory of the four humours grew directly out of the theory of the four elements.

The Greeks believed that everything in the world was made up from four elements – which were air, water, earth and fire. They said that each of these elements had different qualities – which they could observe from the world around them. Water was cold and moist, for example.

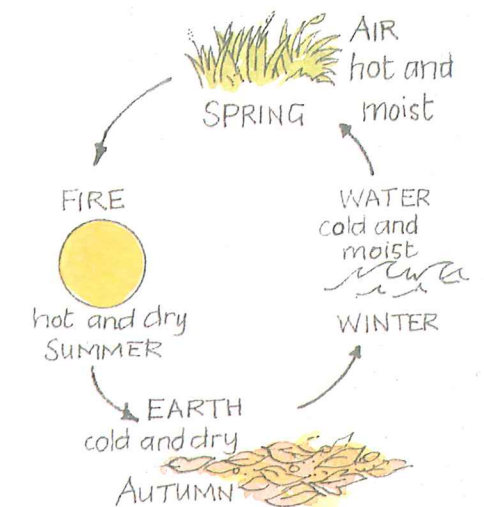
Source 2 shows the qualities they associated with the other elements.

Source 3 shows you how the Greeks also linked the four seasons with the four elements. Greek thinkers looked carefully at the world around them. They knew that each season was different and they could see how the elements could explain that. Water was cold and moist and so, too, was winter. Therefore in winter, water must be the dominant element.

Greek doctors observed their patients carefully. In winter they noted that people were often ill with sneezing and runny noses. Clearly they had too much phlegm, the humour most like the element water, which was cold and moist. This linked phlegm to water and to the cold, moist season of winter – which was exactly when people did have too much phlegm. The whole argument fitted together perfectly as you can see from Source 3! Doctors could now see the humours that were causing illness. This was such a good theory that it stayed in use for over 1000 years and changed the way illnesses were treated, as you will see from pages 30–31.



SOURCE 2 The four elements



SOURCE 3 How the four seasons were linked to the four elements

ACTIVITY

In pairs think of five quiz questions to ask the rest of the class about the information on these two pages. Try to include a couple of easy questions and a couple of difficult ones.

Write your five questions on one side of a piece of card and the correct answers on the other.



SOURCE 4 How a Greek doctor could link the theories of the four elements and the four humours

Elements	Qualities	Season	Humour	Illness/Symptoms
Water	cold and moist	Winter	phlegm	sneezing/colds
Air	hot and moist	Spring	blood	DYSENTERY/nose bleeds
Fire	hot and dry	Summer	yellow bile	fevers, vomiting, yellow skin
Earth	cold and dry	Autumn	black bile	dry skin, vomiting

SOURCE 5 Chart showing the links between the different Greek theories

Was it a step forward?

It is easy to laugh at ancient ideas about illness. Rotting food sending gases round the channels – mad! The body’s humours are out of balance – ridiculous! Or is it? This idea led the Greeks to do everything in moderation – not eating too much; not exercising too much – and so it did help to make them more healthy.

It’s also important for another reason – in those far-off times people had started to search for the causes of illness, instead of simply saying ‘It’s the gods. We must pray to them.’

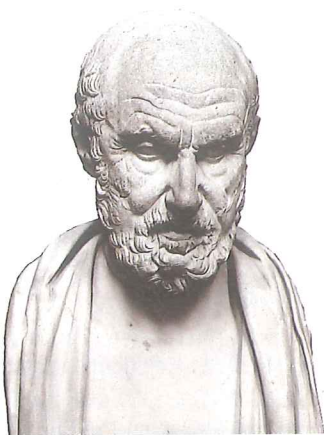
While people still believed that natural events like disease were caused by gods or spirits they would never find the real causes. However, if they looked closely at what they saw, as the Greeks were doing (and as the Egyptians had done with their idea of blocked channels), and tried to explain it rationally and logically then eventually they might find the real causes.

The theory of the four humours was a far cry from blaming illness on evil spirits. Hippocrates, the most famous Greek doctor, who developed the theory of the four humours, told his students that all diseases could be treated without using any magic. He said that all they had to do was to discover the nature of each disease. Then they would be able to treat it. You can find out about the treatments they came up with on page 30.

Who treated the sick in ancient Greece?

THE IDEA OF the four humours made doctors in ancient Greece much more important than they were before. Because people thought doctors now really knew what caused disease they were more prepared to trust them and pay for their treatments.

However, doctors were not the only healers in ancient Greece. You have already come across some other healers. Yet the bulk of medical care was probably still handled by women – wives and mothers – at home, using herbs, and remedies which had been handed down by their ancestors. This was particularly true among the poor, who could not afford to consult a doctor.



SOURCE 1 Hippocrates, the most famous Greek doctor. He is thought to have been born in Cos around 460bc. He wrote a number of medical books, advising doctors how to treat their patients. However, we cannot be certain about the details of his life. This bust, produced long after his death, may not even be very like him! You can find out more about him on pages 32–33

TASK

Types of healer	Prehistoric period	Ancient Egypt	Ancient Greece Did they have them?	Example
Mothers and wives	✓	✓		
Medicine men/priests	✓	✓		
Trained male doctors		✓		
Trained women doctors		✓		

Draw your own copy of the chart above.

From Sources 1–3 and from what you have so far found out about Greek medicine, complete the chart. In the third column put a tick if they had that kind of healer in ancient Greece. In the fourth column note down an example of such a healer.

1. What evidence is there in Source 2 that Greek doctors took their work seriously?
2. There is no written evidence that mothers and wives treated everyday health problems in the home. Why do you think historians are so sure that they did?
3. As you saw on pages 26–28 Greek doctors had developed logical explanations of disease. Why do you think people still went to priests and visited Asclepeia for healing?

SOURCE 2 From the HIPPOCRATIC OATH which was created by Hippocrates to give people confidence in doctors

“ I will swear by Apollo, Asclepius and by all the gods that I will carry out this oath. I will use treatment to help the sick according to my ability and judgement but never with a view to injury or wrongdoing. I will not give poison to anybody ... whatever I see or hear professionally or in my private life which ought not to be told I will keep secret. ”

SOURCE 3 Adapted from the works of Hyginus, a Greek writer

“ The ancient [Greeks] had no midwives ... for the Athenians had decided that no slave or woman should learn the science of medicine. A certain girl, Hagnodice, as a young woman desired to learn the science of medicine. Because of this desire, she cut her hair, put on male clothing, and entrusted herself to a certain Herophilus for training. After learning this science, when she heard that a woman was having labour-pains, she would go to her. And when the woman refused to entrust herself [to Hagnodice], thinking she was a man, Hagnodice lifted her undergarment and revealed that she was a woman. In this way she used to cure women. ”

[Herophilus (c. 320–250bc) was one of the most learned Greek doctors. Hagnodice became so successful that she was accused of seducing her female patients and this forced her to admit that she was a woman. However, Hagnodice’s female patients gave her so much support that ‘the Athenians amended the law so that free-born women (not slaves) could learn the science of medicine’.]

How did Greek doctors prevent and treat illnesses?

Observation

Greek doctors were trained to diagnose illnesses carefully. They observed symptoms and recorded each stage of an illness. Sometimes they wrote up what doctors today would call a case-history of the patient.

SOURCE 1 A patient's case-history which is included in a book called *On Epidemics*, part of the Hippocratic Collection (see page 32)

“Silenus began with pains in his abdomen, heavy head and stiff neck.

First day: he vomited, his urine was black, he was thirsty, his tongue dry and he did not sleep.

Second day: slightly delirious.

Sixth day: slight perspiration about the head, head and feet cold, no discharge from the bowels, no urine.

Eighth day: cold sweat all over, red rashes, severe DIARRHOEA.

Eleventh day: he died – breathing slow and heavy. He was aged about twenty.”

1. Read Source 1. List which of the following techniques of observation the doctor probably used:

- inspecting urine
- inspecting FAECES
- feeling temperature
- listening to breathing
- asking the patient questions.

2. Why would such a case-history be written down in a book?

Advice

Silenus, the patient in Source 1, may have died, but by their observation doctors knew that many diseases cleared up on their own without any help from a doctor. So a lot of the time they simply gave advice to patients on

how their disease might develop (a PROGNOSIS). This was based on their knowledge of earlier patients whom they had treated with similar symptoms.

They also offered advice on avoiding illness altogether. They instructed their patients on what they should eat, on taking exercise, and on keeping clean.

Treatments

Once they had established how the patient's humours were unbalanced the main task of the Greek doctor was to try to help nature restore the proper balance – by making them vomit, purging their bowels, or BLEEDING them.

They also knew there were some illnesses they could not cure. In these cases they could see nothing wrong with a visit to an Asclepion – miracles might happen!

3. The treatments and advice on preventing disease in Sources 2–4 are all based on the theory of the four humours. Explain how each one would help restore the balance of the humours.

SOURCE 2 From a book in the Hippocratic Collection, *On the Treatment of Acute Diseases*, 400–200bc

“If the pain is under the diaphragm, clear the bowels with a medicine made from black hellebore, cumin or other fragrant herbs.

A bath will help PNEUMONIA as it soothes pain and brings up phlegm.”



SOURCE 4 From *A Programme for Health*, one of the books in the Hippocratic Collection of medical books

“In winter, people should eat as much as possible and drink as little as possible – unwatered wine, bread, roast meat and few vegetables. This will keep the body hot and dry. In summer they should drink more and eat less – watered wine, barley cakes and boiled meat so that the body will stay cold and moist. Walking should be fast in winter and slow in summer.”

SOURCE 5 Adapted from a book by a Greek doctor, Diocles of Carystus, who lived in Athens c.390bc

“After awakening he should not arise at once but should wait until the heaviness of sleep has gone. After arising he should rub the whole body with oil. Then he should wash face and eyes using pure water. He should rub his teeth inside and outside with the fingers using fine peppermint powder and cleaning the teeth of remnants of food. He should anoint nose and ears inside, preferably with well-perfumed oil. He should rub and anoint his head every day but wash it and comb it only at intervals. Long walks before meals clear out the body, prepare it for receiving food and give it more power for digesting.”

SOURCE 3 A bleeding cup, used to draw blood from a patient. It was heated and placed over a scratch. The warmth drew blood to the surface of the skin and out through the scratch. Doctors used bleeding in the spring and summer when it was thought that people had too much blood because they often became hot and red

4. Read Source 5. List the ways in which this advice would help someone stay healthy.

5. Do you think that all Greeks would be able to follow the advice in Sources 4 and 5?

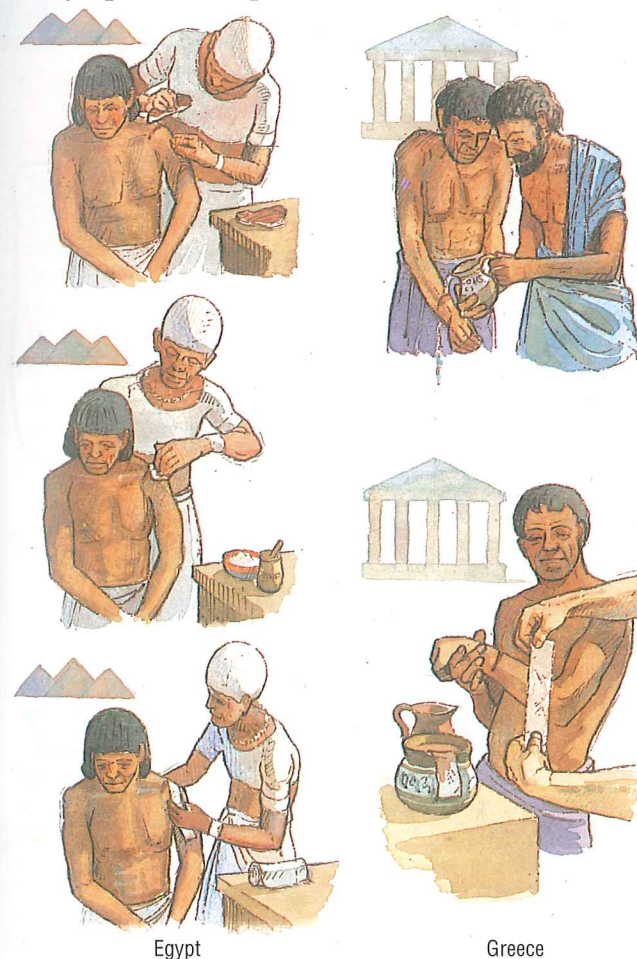
6. Are there any treatments on the opposite page that you know were practised:

- in prehistoric times
- in ancient Egypt?

7. Hippocrates and his followers used methods that are still used today. What are they?

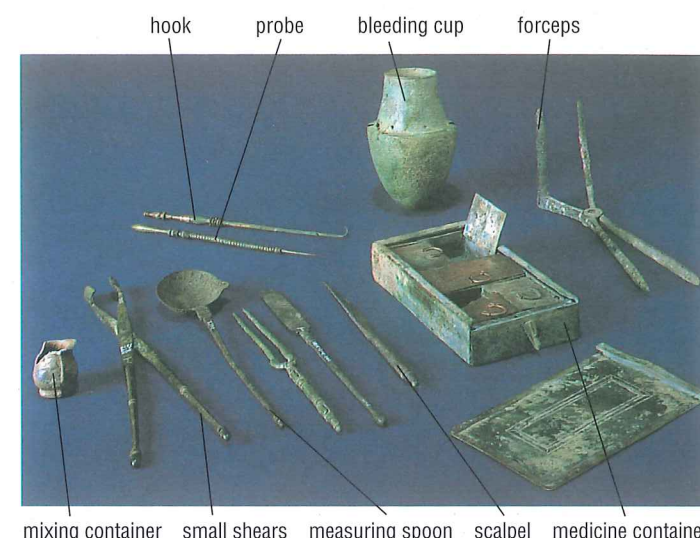
Surgery

From around 1200bc the use of iron and steel gave doctors stronger and sharper instruments. Greek surgeons developed good techniques for setting broken bones and also, in extreme cases, AMPUTATION (the cutting off of a leg or an arm). However, very few operations were done inside the body. One of the exceptions was the draining of the lungs – performed if a patient had pneumonia. This operation was frequently and successfully undertaken, thanks to doctors' careful observation of the symptoms and pattern of the illness.



SOURCE 6 An extract from the *Iliad* Book 11, written by the Greek poet, Homer. The *Iliad* is the story of the Greek war against the Trojans

“‘My lord,’ replied the wounded man, ... ‘I want you to cut out this arrow from my thigh, wash off the blood with warm water and spread soothing ointment on the wound. They say you have some excellent prescriptions... I cannot get help from our surgeons for one of them is lying wounded in our camp while the other is fighting the Trojans in the battle ...’”



SOURCE 7 A set of Greek surgical instruments

SOURCE 8 Adapted from H. von Staden, *Herophilus, The Art of Medicine in Early Alexandria*, 1989

“The three most common ‘non-magical’ Egyptian techniques of wound care – putting a slab of fresh meat on a wound; applying a SALVE of honey and animal fat; applying adhesive linen tape – are not among the techniques that dominate Greek wound care.

The Greeks instead washed the wound with wine or vinegar – a basic antiseptic procedure apparently ignored in Egypt. Sometimes they bandaged wounds with linen soaked in wine.”

8. What technological improvement helped Greek surgeons?
9. Read Source 6. How might war have helped Greek doctors improve their skills and knowledge?
10. Read Source 8. What new treatment did the Greeks use which the Egyptians had not used?
11. Was this treatment likely to be successful?