

Was the Roman Empire different from the Greek Empire?

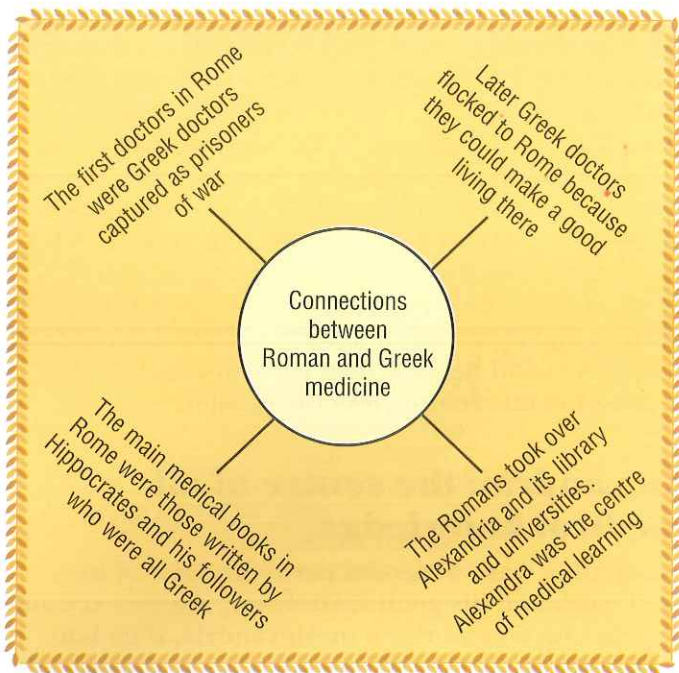
FROM AROUND 300BC the Greek Empire was growing weaker. At the same time, the new Roman Empire was steadily growing stronger. By AD120 Rome controlled most of the Mediterranean lands and western Europe (see Source 4 on page 15). The Romans took over almost all the Greeks' old empire, and as you might expect, the two empires were very closely connected (see Source 1). These connections affected Roman medicine. However, there were also important differences between the two empires (see Source 2) which affected medicine too.

Some people say that the Romans simply borrowed all the Greeks' ideas about medicine. In the rest of this chapter you are going to investigate whether that really was the case or did the Romans produce new ideas of their own?

- 1. Study Source 2. How might each of these features affect Roman medicine?
- 2. What do you expect? Do you expect that Roman medicine will show:
 - a) continuity from Greek ideas
 - b) change from Greek ideas?

Greek Empire	Roman Empire
Mostly small cities – less than 20,000 people – which did not pose health problems.	Large cities – Rome itself had a million people. Many people living cramped together posed health problems.
Not very centralised. Each city was independent. Ideas spread slowly.	Very centralised with strong government. Quick communication around the empire. New ideas and treatments spread quickly. So too could diseases.
Greek philosophers were famous for having ideas and theories about everything.	Romans were less interested in theories. They were efficient, well-organised people who liked practical solutions to illness as well as to everything else.
Had only a small army for each city, which got together only when there was a war.	The Roman army had hundreds of thousands of soldiers, permanently stationed all over the empire. Frequently at war. The government provided the army with the best medical care as they depended on the army to control the empire.
There were wealthy people who could afford to pay for doctors to care for them.	There were even more wealthy people than in the Greek Empire.

SOURCE 2 Contrasts between the Greek and Roman Empires



SOURCE 1 Connections between the Roman and Greek Empires

A Roman army hospital

'Best amputate, whilst he has some strength.'

Historical novels can be a very good way of learning about the past simply because reading novels doesn't feel like hard work. History can be fun! However, you only learn about the past if the story is accurate, and describes the real ideas, clothes or houses of that period. *The Silver Pigs* is a carefully researched novel. The author has worked hard to ensure that her historical detail is as accurate as possible. This extract is about medicine

The story is set in AD70 and it is told by Marcus Didius Falco, a 'private informer' employed by the Emperor Vespasian to uncover details of a plot to smuggle silver from Britain to Rome. Falco goes to Britain ('the province out beyond civilization') but, working undercover as a slave in a silver mine, he breaks his leg and several ribs and has to be rescued ...

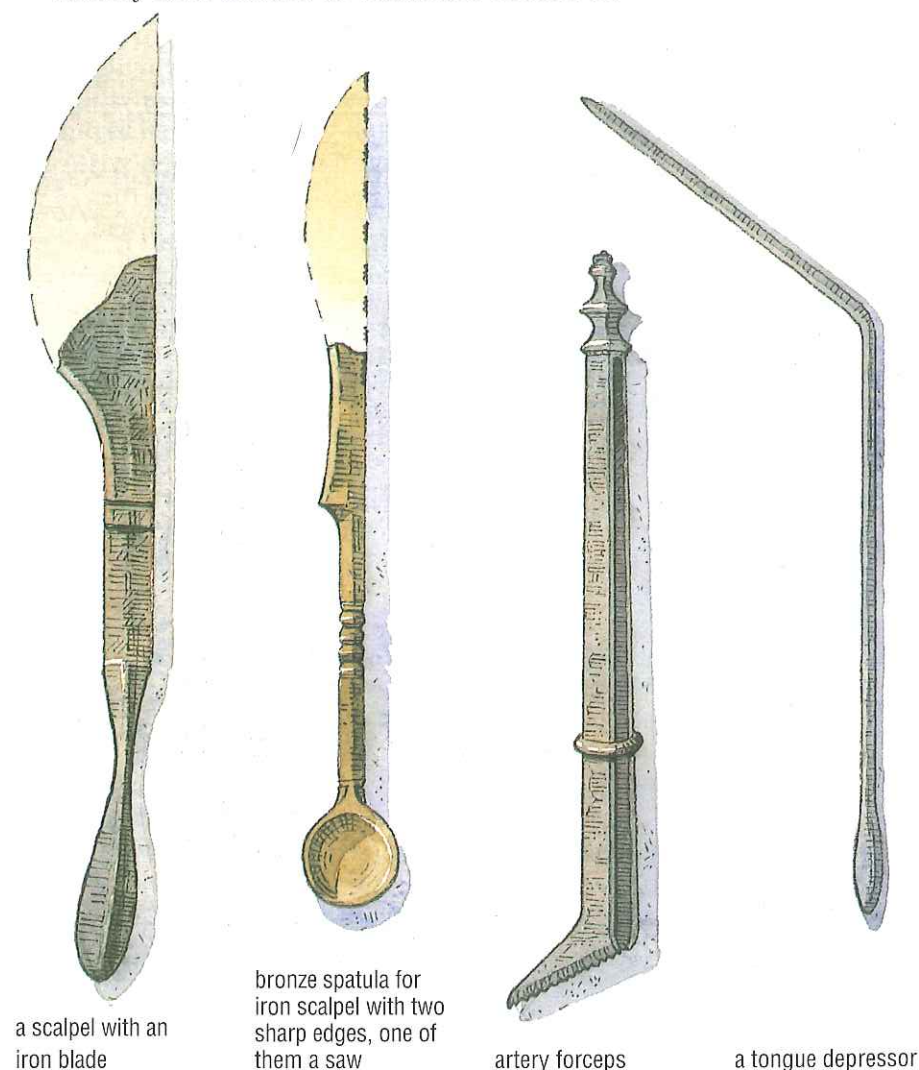
- 1. Read Source 1. Describe the impression it gives of Roman surgery. You could use some of these words: skilful, hygienic, gentle, painful, dirty, brutal.
- 2. What actually happened to Marcus?

SOURCE 1 From *The Silver Pigs* by Lindsey Davis (reproduced with permission from Pan Books)
"I was lying on a high, hard bed in a small, square room at a legionary hospital. Unhurried footsteps sometimes paced the long corridor round the courtyard at the back of the administration block. I recognized the evil reek of antiseptic turpentine. I felt the reassuring pressure of neat, firm bandaging. I was warm. I was clean. I was resting in tranquillity in a quiet, caring place ... Their opium had ebbed away. When I moved pain shot back. A red tunic, brooched on one shoulder with the medical snake and staff, loomed over me, then sheered off again when I stared him in the eye. I recognized the complete absence of bedside manner: must be the chief (medical) orderly. Pupils stretched their necks behind him like awestruck ducklings jostling their mother duck. 'Tell me the truth, Hippocrates!' I jested. They never tell you the truth. He tickled me up and down my ribs like a moneychanger on an abacus. I yelped, though not because his hands were cold. 'Still in discomfort – that will last several months. He can expect a great deal of pain. No real problems if he avoids getting pneumonia ...' He sounded disappointed at the thought that I might. 'Emaciated specimen; he's vulnerable to GANGRENE in this leg! My heart sank. 'Best amputate, whilst he has some strength! I glared at him with a heartbreak that brightened him up. 'We can give him something!' he consoled his listeners. Did you know, the main part of a surgeon's training is how to ignore the screams? ...

The surgeon was called Simplex ... Simplex had spent fourteen years in the army. He could calm a sixteen-year-old soldier with an arrow shot into his head. He could seal blisters, dose dysentery, bathe eyes, even deliver babies from the wives the legionaries were not supposed to have. He was bored with all that. I was his favourite patient now. Among his set of spatulas, scalpels, probes, shears, and forceps, he owned a shiny great mallet big enough to bash in fencing stakes. Its use in surgery was for amputations, driving home his chisel through soldiers' joints. He had the chisel and the saw too: a complete toolbag, all laid out on a table by my bed. They drugged me, but not enough. Flavius Hilaris wished me luck, then slipped out of the room. I don't blame him. If I hadn't been strapped down to the bed with four six-foot set-faced cavalymen grappling my shoulders and feet, I would have shot straight out after him ... 'Stop it at once!' cried Helena Justina. I had no idea when she came in. I had not realized she was there. 'There's no gangrene!' stormed the senator's daughter. She seemed to lose her temper wherever she was. 'I would expect an army surgeon to know – gangrene has its own distinctive smell. Didius Falco's feet may be cheesy, but they're not that bad!' Wonderful woman; an informer in trouble could always count on her. 'He has chilblains. In Britain that's nothing to wonder at – all he needs for those is a hot turnip mash! Pull his leg as straight as you can, then leave him alone; the poor man has suffered enough!' I passed out with relief. "

- ACTIVITY
- 1. On the copy of Source 1 provided by your teacher underline each phrase referring to medicine, medical methods or doctors.
- 2. Look at the sources on pages 38–39. If a source provides evidence to support anything which you underlined about Roman medicine then write the source number in the margin next to the phrase.

1. Some references to medicine in Source 1 are not supported by Sources 2–8. Do you think that they are likely to be based on other sources? Explain your answer.
2. Is Source 1 an accurate description of medical treatments in Roman Britain? Explain your answer.
3. Do you think that historical novels are a better way of learning history than lessons or textbooks in school?



SOURCE 2 A Roman doctor's surgical instruments found in Britain. The dotted lines show reconstruction

SOURCE 3 Celsus, *De Medicina*, Book V. Celsus was a Roman doctor. This gives instructions for making opium, a sedative used in surgery

“... take a good handful of wild poppy-heads when just ripe for collecting the juice and put into a vessel and boil with water sufficient to cover it. When this handful has been well boiled there, after being squeezed out it is thrown away; and with its juice is mixed an equal quantity of raisin wine and heated ... when the mixture has cooled, pills are formed ... they procure sleep.”



SOURCE 4 A tombstone found at Housesteads, one of the major forts on Hadrian's Wall. It reads 'To the spirits of the departed [and] to Anicius Ingenuus, medical orderly of the First Cohort of the Tungrians: he lived 25 years'

SOURCE 5 From *De Medicina*, Book VII, part of an encyclopaedia compiled by the Roman writer, Celsus in the first century AD.

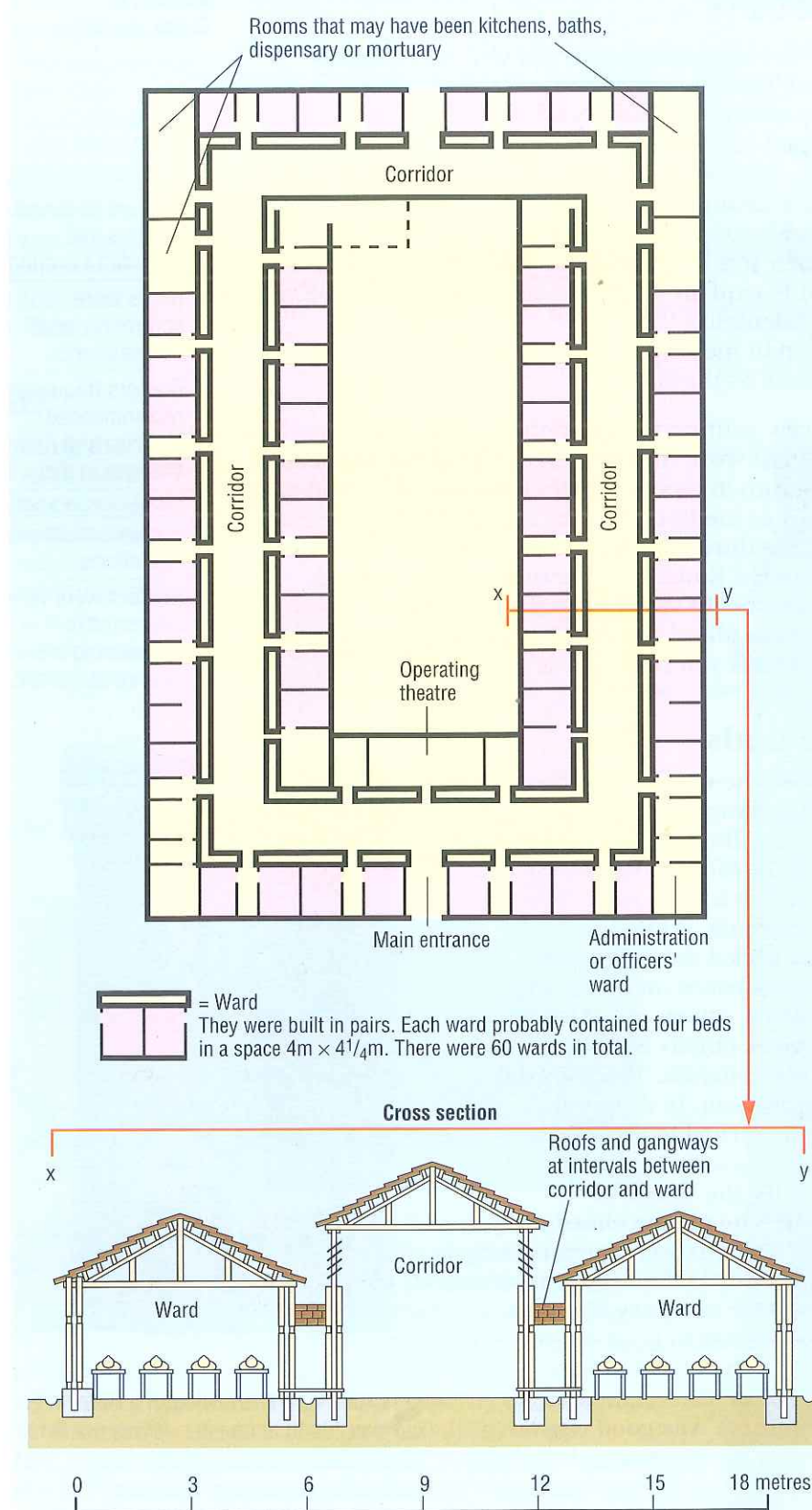
“When gangrene has developed ... the limb ... must be amputated. But even that involves very great risk; for patients often die under the operation ... It does not matter, however, whether the remedy is safe enough, since it is the only one. Therefore between the sound and the diseased part, the flesh is cut through with a scalpel down to the bone, but this must not be done actually over a joint, and it is better that some of the sound part should be cut away than that any diseased part should be left behind ... the bone is then to be cut through with a small saw ...”

SOURCE 6 Celsus, *De Medicina*, Book VII concerning the training of surgeons

“... a surgeon should be youthful or at any rate nearer youth than age; with a strong and steady hand which never trembles, and ready to use the left hand as well as the right; with vision sharp and clear, and spirit undaunted; filled with pity, so that he wishes to cure the patient, yet is not moved by his cries, to go too fast, or cut less than is necessary; but he does everything just as if the cries of pain cause him no emotion.”

SOURCE 7 Pliny the Elder, *Natural History*, Book XX, written in the first century AD

“A hot application of [turnips] cures chilblains, besides preventing the feet from being chilled. A hot decoction of it is good even for gout, and raw turnip, pounded and mixed with salt, for every ailment of the feet.”



SOURCE 8 A plan of the hospital at the Roman fort of Inchtuthil, Perthshire, which was excavated in the 1950s. There were separate roofs over the outer row of wards, the corridor and the inner wards

Were Roman medical ideas the same as those of the Greeks?

ACTIVITY

Over the next eight pages you will investigate Roman medicine to see how far the Romans copied and used Greek ideas about medicine and whether they had any new ideas of their own.

Your aim is to fill out a chart like this. You could work in groups, each taking one of the six questions to investigate, or you could work on your own.

When you have filled out your chart you will be asked to explain whether you agree or disagree with this statement:

‘Roman medical ideas and methods were exactly the same as the Greeks.’

1. Draw your own copy of this chart.
2. As you work through pages 40–47 use the second column to record whether the Romans used each idea or method.
3. In the third column record examples you have found of Romans using that idea or method.
4. Underneath the chart write the heading ‘New Roman ideas’ and list any new Roman ideas or methods you come across.

The gods

In 295BC the people of Rome were in grave danger – from PLAGUE. Normally illnesses were treated within the family, using remedies passed down from parents and grandparents. While some Romans tried these age-old remedies, based on herbs and vegetables, others appealed to their gods, chiefly Salus, the goddess of health. The gods did not hear them. In desperation, the Romans turned to an outsider – they built a temple, dedicated to Asclepius, the Greek god of healing. The plague ebbed away.

Few Romans were surprised by the power of Asclepius. Gods were part of their everyday life and were expected to be powerful. When medical treatment was costly, risky, uncertain and painful there was good reason to use every means available to help protect against illness. Asking for the help of the gods would often have been a first, not a last resort.



SOURCE 1 Drawing of a Roman Altar found at Chester. It was made for Titus, a senior Roman official. It is dedicated to Asclepius. It shows Asclepius’ snake winding around surgical instruments

Aspects of Greek medicine	Did the Romans use this idea or method – a lot – a little – not at all	Example
1. Gods could cure illnesses and injuries.		
2. Doctors observed patients and recorded symptoms.		
3. Herbs were commonly used as treatments.		
4. Doctors frequently recommended exercise and changes in diet.		
5. Doctors successfully carried out simple operations.		
6. Doctors were very interested in discovering the causes of disease.		

SOURCE 2 Inscriptions from altars found at Overborough in Lancashire, Chester and Binchester in County Durham

“ To the Holy God Asclepius and to Hygeia, Julius Saturninus [set this up].

To the mighty Saviour gods I, Hermogenes, a doctor, set up this altar.

To Asclepius and Salus for the welfare of the Cavalry regiment. ”

1. Which Greek god did the Romans pray to?
2. Why do you think the Romans used both Roman and Greek ideas?
3. Fill in the first row of your chart.

Doctors

Doctors were employed in many Roman cities to give free treatment to the poor. Some were women, mostly specialising in treating women’s illnesses. One woman doctor, Antiochus, was so successful that her home town allowed her to erect a statue to herself, ‘in recognition of her skill as a medical practitioner’, which probably included discovering medicines for treating RHEUMATISM and SCIATICA. Women in general played a vital role in treating illnesses. ‘The science of [charms and herbs] is the one outstanding skill of women’ admitted the writer, Pliny the Elder.

How were doctors trained?

Some medical students learned by reading the Hippocratic Collection but only the wealthiest owned copies because books were very expensive. Others read them in the great libraries of Rome or Alexandria but more often students became apprentices to experienced doctors, watching, then copying, their methods. This was not always popular! One writer complained: ‘I was sickening; but you at once attended me, Symmachus, with a train of a hundred apprentices. A hundred hands frosted by the north wind have pawed me. I had no fever before, Symmachus, now I have!’ This writer did not realise how lucky he was. Medical training was not compulsory for doctors. Anyone could call him – or herself – a doctor!



SOURCE 3 This drawing of a second-century carving shows a midwife and her assistant delivering a baby. Soranus, a Roman medical writer, said that ‘we call a midwife faultless if she merely carries out her medical task; whereas we call her the best midwife if she goes further and in addition to her management of cases is well versed in theory [and] ... is trained in all branches of THERAPY ...’

The most famous Roman doctor of all was Galen whom you can read about on pages 43–45. He savagely criticised other Roman doctors who did not reach his high standards. He said they ‘talk any nonsense that comes to their tongues – stupid, insane language.’ One Roman writer, Pliny, described Greek doctors in Rome as profiteers, simply trying to get rich.

1. According to this page what roles did women play in healing the sick?
2. Do you think these are the only roles they played?
3. The text and sources mention various ways of training doctors. Which do you think would be most effective?
4. How important were doctors to the Roman army?
5. Read the information on the next page, then fill out row 2 of your chart.



SOURCE 4 A carved scene from Trajan’s column which celebrated his victories over the Dacians. This probably shows medical orderlies at work pouring ointment on a war wound. Each legion had a doctor and medical orderlies but they rarely held high rank. The military writer, Vegetius, noted that ‘generals believe that daily exercise is better for soldiers than treatment by physicians.’ Prevention was better than cure, especially when doctors often had very little chance of saving the sick



Treatments

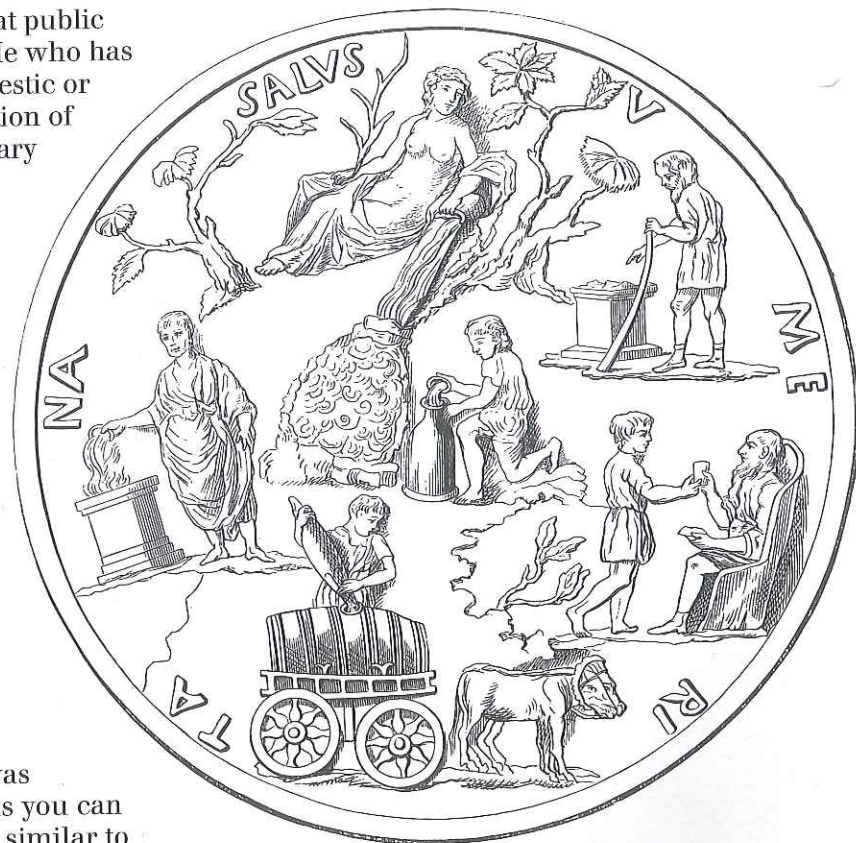
Like the Greeks, Roman doctors used three main methods of helping their patients. They recommended more exercise, changes in diet or prescribed herbal medicines as 'opposites' (see page 44).

Most Romans agreed with Hippocrates that people should take daily exercise to stay fit. Many took exercise with trainers at public baths or the gymnasium. Celsus wrote: 'He who has been engaged in the day, whether in domestic or on public affairs, ought to keep some portion of the day for the care of the body. The primary care ... is exercise, which ... ought to come to an end with sweating.'

Roman families used herbs and vegetables in medical treatments. Roman doctors used opium as a weak anaesthetic. Turpentine and pitch were used as antiseptics. Around AD64 Dioscorides, a former army doctor, wrote a huge book listing 600 herbal remedies. Modern doctors have calculated that 20 per cent of these remedies would have been effective. Amidst the good remedies there were many others like the one in Source 5 recorded by Pliny the Elder.

SOURCE 5

"The best of all safeguards against serpents is the saliva of a fasting human being, but our daily experience may teach us yet other values of its use. We spit on epileptics in a fit, that is, we throw back infection. In a similar way we ward off WITCHCRAFT and the bad luck that follows meeting a person lame in the right leg."



SOURCE 6 An engraving of a third-century Roman coin which shows various stages of a treatment associated with the goddess Salus

1. Look at Source 6. Identify these stages in the treatment:

- an offering is made on an altar
- healing water flows from the goddess's pitcher
- a slave boy collects the water
- a man drinks the water
- the man thanks the goddess for healing.

2. What was the treatment of opposites?
3. Why did Galen use the treatment of 'opposites'?
4. Use the information on this page to fill out the last four rows of your chart.

What made Galen famous?

THE PIG SQUIRMED on the table. Galen cut into its neck and found the nerves. The pig squealed. 'Watch,' said Galen to his audience, 'I will cut this nerve but the pig will keep on squealing.'

He cut. The pig kept squealing. Galen cut another nerve. Again the pig squealed.

'Now,' said Galen, 'I will cut another nerve which controls the pig's voice. It will not squeal.'

Galen cut the nerve. The room was silent.

Galen had just arrived in Rome. He wanted to win fame and a fortune. His public experiments were his way of attracting attention from other doctors. In this experiment Galen proved that the brain controlled the body, not the heart.

Where did Galen come from?

Galen was born in AD129 in Greece. He began studying medicine at the age of sixteen and spent twelve years travelling to improve his knowledge, including a visit to the famous medical school at Alexandria in Egypt (see page 35).

He gained practical experience as a surgeon at a gladiators' school. Gladiators were trained to fight with other gladiators and with wild animals in amphitheatres around the Roman Empire. They suffered stab wounds, broken bones, and other major injuries yet they were usually very healthy and fit young men. It was an ideal place for a young ambitious surgeon to learn his craft.

In AD162 he travelled to Rome. He soon became famous as doctor to the Roman emperor and teacher of other doctors.



SOURCE 1 A medieval illustration showing Galen's famous experiment

What were Galen's ideas and methods?

Observation

Galen emphasised the importance of Hippocrates' methods. He told doctors to observe, record and use their experience of past cases to decide how to treat an illness.

The four humours

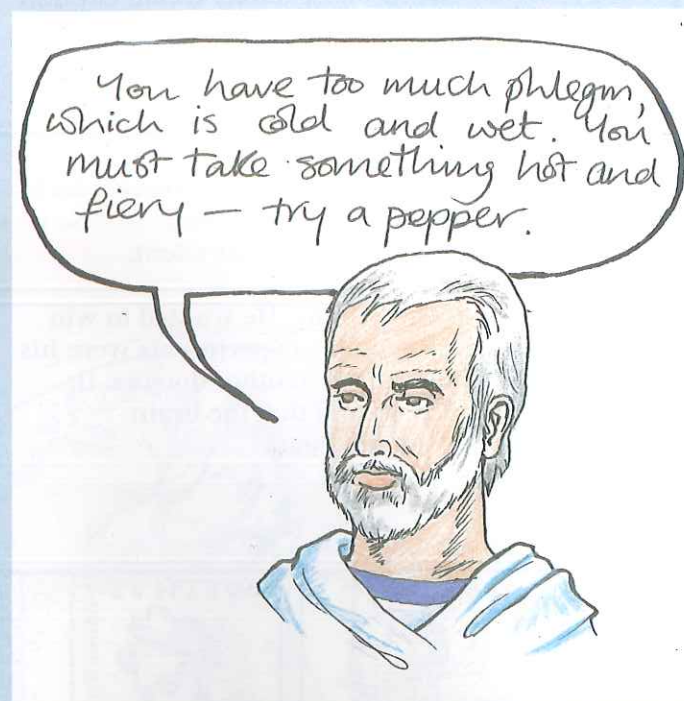
Like Hippocrates he believed in the theory of the four humours and that treatments should restore the balance of the humours. However, Galen did not just copy Hippocrates.

Galen believed in using 'opposites' to balance the humours. If the symptom was too much phlegm then the patient's problem was caused by cold. Galen recommended an opposite treatment – a hot treatment such as taking pepper.

Galen also followed Greek ideas in telling people who were weak to take physical exercise.

Dissection

Galen dissected human bodies in Alexandria to increase his knowledge of the body. In Rome, however, he usually had to make do with animals for his experiments. This meant that some of the detail of his work was wrong. However, much of it was very precise. He proved that the brain, not the heart, controlled speech and that arteries as well as veins carried blood. Although he used animals for dissection he proved that animals' anatomy is different from that of humans, and he told his students that they should dissect human corpses whenever possible.



SOURCE 3 From Galen's *On Anatomy*, AD190

“ Human bones are the subject which you should first get to know. At Alexandria this is very easy, since the physicians in that country let their students inspect human bodies for themselves. Try to get to Alexandria. But if you can't manage this it is not impossible to get to see human bones. I have often had the chance to do this where tombs have been broken. Once I examined the skeleton of a robber lying on a mountain-side. If you don't have the luck to see anything like this, you can still dissect an ape. For this you should choose apes which most resemble men. In the apes which walk and run on two legs you will also find other parts as in man. ”

Writing

What really made Galen famous were the 60 books he wrote. They combined Greek ideas, with what he had learned from his own work in Alexandria and Rome and presented it all so convincingly that they became the basis for medical teaching and learning for the next 1500 years. For most of that time nobody dared to say that Galen was wrong!

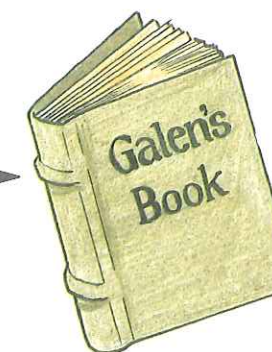
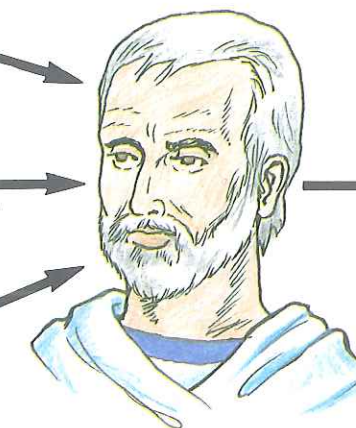
Careful observation

The four humours

- Hippocrates' ideas
- His own ideas about 'opposites'

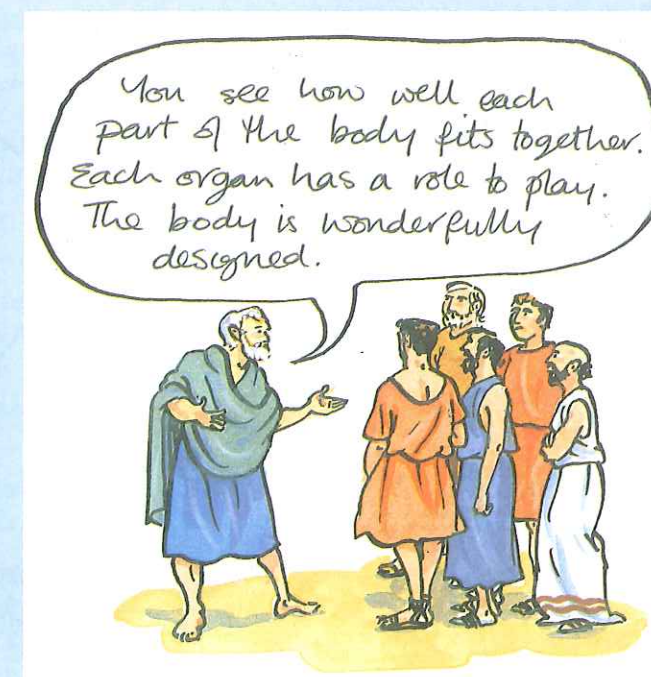
Dissection and surgery

Knowledge of anatomy



Galen wrote 60 books on medicine. They were the main books used by medical students for over 1500 years

SOURCE 4 Galen's work



Design

Galen tried to show his students how different parts of the body all fitted together into a well-designed whole. This idea was particularly important in later centuries because the Christian Church saw that Galen's explanations of the body fitted in with the Christian belief that God created human beings.

■ ACTIVITY

Galen is applying for a job as the Roman emperor's doctor. Write a CV for him. Your teacher can give you a sheet to get you started.

What was the Romans' big idea?

Public health

Public health means action taken by governments to improve the health of their people.

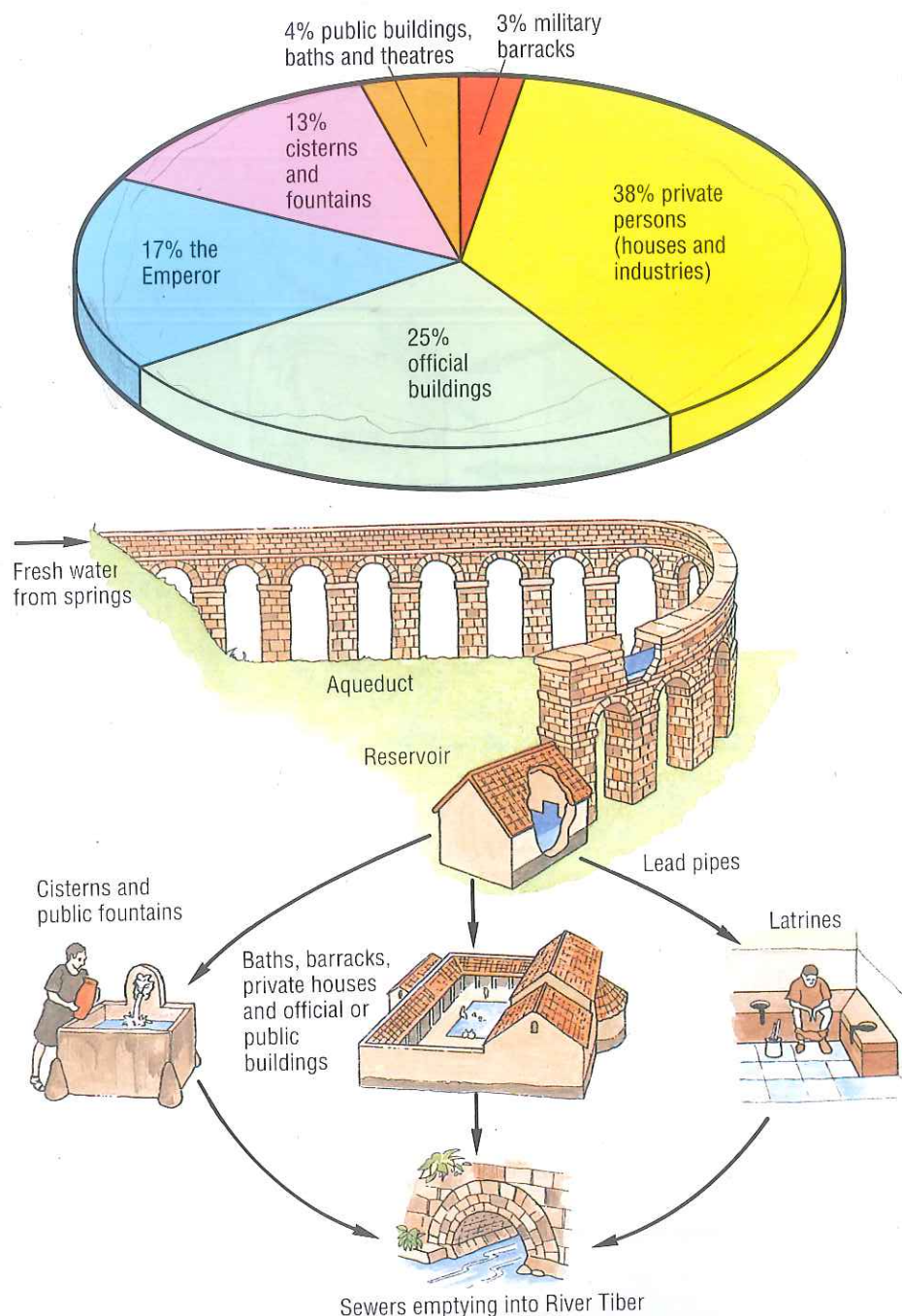
Even though the Romans were not so interested in theories about the causes of illness, their practical skills produced the best public health schemes yet seen anywhere in the world. These did much to protect people against disease.

In the crowded city of Rome sewers were essential if the city was to be fit to live in. But the Romans didn't limit their schemes to Rome. Throughout the Empire fresh water was supplied to major towns along aqueducts and brick conduits. Sewers were built to take away sewage from private houses and public toilets. Even small towns had public baths, open to anyone for a quadrans, the smallest Roman coin. The baths helped rid people of fleas which spread disease. Public toilets were also built in towns. Up to twenty people could be seated at once around three sides of the room. Individual cubicles were rare. Other public health measures included rules about burying the dead, and preventing fires.

Engineers took great care over the siting of towns, forts and villas. In his book on country life Marcus Varro wrote:

SOURCE 1

"When building a house or farm especial care should be taken to place it at the foot of a wooded hill where it is exposed to health-giving winds. Care should be taken when there are swamps in the neighbourhood because certain tiny creatures which cannot be seen by the eyes breed there. These float through the air and enter the body through the mouth and nose and cause serious diseases."



SOURCE 2 Water supply and sewage system in ancient Rome. Not everyone had equal access to clean water. Even in homes which had a water supply it could not reach the upper floors. The pie chart shows how the water supply was shared out

ACTIVITY

You have been asked to make a leaflet promoting the Romans' public health schemes. It should summarise the main measures taken, the reasons for them, and the effects they have had.

Use evidence from Sources 1-5 to draw up your leaflet.

In Rome water commissioners were appointed to ensure good supplies of clean water. One of them, Sextus Julius Frontinus (who held the post in AD97), wrote of the improved health of the city:

SOURCE 3

"... as a result of the increase in the number of works, reservoirs, fountains, and water-basins ... the air is purer; and the causes of the unwholesome atmosphere, which gave the air of the City so bad a name ... are now removed ... With such an array of indispensable structures carrying so many waters, compare, if you will, the idle Pyramids or the useless, though famous, works of the Greeks."

Frontinus exaggerated. Toilets were still built in kitchens, and sewage pits dug near wells. There was no clear understanding of how dirt caused disease. However, the improvements did help, especially in the Roman army.

To help the legionaries stay fit, each fort had a bath house with drains and fresh water and also a hospital carefully sited in the quietest part of the camp. The military writer, Vegetius, added:

SOURCE 4

"Soldiers must not remain for too long near unhealthy marshes. A soldier who must face the cold without proper clothing is not in a state to have good health or to march. He must not drink swamp water."

SOURCE 5 K. Branigan, *Roman Britain: Life in an Imperial Province*, 1980

The baths

In Britain, in towns like Chichester, Leicester and Wroxeter in Shropshire, probably as many as 500 people a day used the [public baths], even if they only visited them once a week. One of the finest suites of public baths in Britain was at Wroxeter, which also included an outdoor swimming pool and a massive exercise hall.

Water supply

... Water in most large towns in Britain was supplied by aqueduct - contoured channels dug in the ground and perhaps lined with clay. The most impressive surviving example is the one running into Dorchester; an eight-mile [13km] channel, 5 ft [1.6m] wide and more than 3 ft [1m] deep.

The aqueduct at Wroxeter could deliver two million gallons of water each day, distributed through the town by a complex system of timber and lead pipes. Mains ran along the principal streets to side channels from which sluices diverted the water into individual buildings.

If, during a drought, the level of water in the mains dropped below 7 in. [18cm], then the supply to private houses was automatically cut off. Householders often supplemented their needs with wells, lined with stone or with old topless and bottomless barrels.

Drains and sewers

Timber-lined drains were constructed in many towns, and substantial stone-built sewers have been found beneath the streets of Roman Colchester and York...

Main sewers collected water from the public baths, and recycled it to flush the latrines. These were usually built within the bath-house, though at Wroxeter a very large public latrine next to the baths was flushed by water that had already coursed through another lavatory in the market hall. The original source was rainwater collected from the roof of the market...

1. Read Source 1. What did Varro think was the cause of disease?
2. Was this an intelligent explanation?
3. Read Source 3. Why did some Romans feel superior to the Greeks?
4. How did public health schemes help the Roman army?

ACTIVITY

Divide into groups of three. One of you is a wealthy Roman living in Rome, one a soldier serving in Wroxeter, and the other a poor person living in Rome.

Each of you work out (from the information and sources on these two pages) what public health facilities you have available.

Compare your facilities with the others in your group and decide who has the best facilities.

TASK

Look back to your completed chart from page 40. Write an essay explaining whether you agree or disagree with this statement: 'Roman medical ideas were the same as the Greeks.' You can get a sheet from your teacher to help you.