

# Ancient Medicine



# Prehistoric Medicine

## Prehistoric Civilisation

Some knowledge of prehistoric times will help you to understand prehistoric medicine.

The defining characteristic of prehistoric societies is that the people of these societies **could not write**. They could not therefore pass on any medical knowledge beyond that which could be remembered.

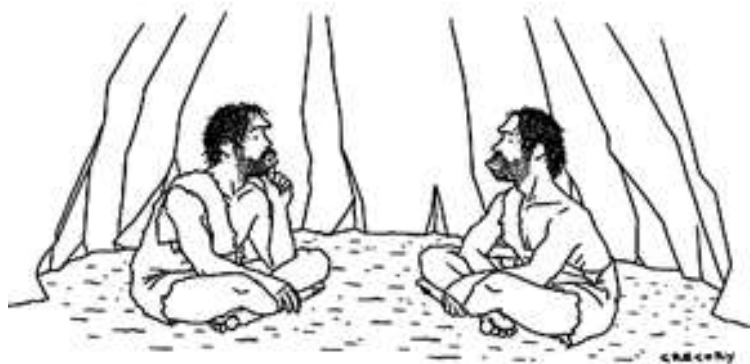
Most prehistoric people were **nomadic** - so they did not settle down and build things like hospitals, neither did they have enough consistency in their own lives to observe how all human bodies work in the same way.

## Prehistoric knowledge about the body and causes of disease

If we assume that prehistoric people were similar to the few remaining primitive people of the modern age, we can also assume they **knew little** about the inner workings of the body.

Some of their burial practices (where bones were stripped of the flesh, bleached and buried in different piles), however, suggest that they **must have known** at least something about **bone structure**.

It is believed that prehistoric people thought that at least some illnesses were caused by **evil spirits**.



*"Something's just not right—our air is clean, our water is pure, we all get plenty of exercise, everything we eat is organic and free-range, and yet nobody lives past thirty."*

### Prehistoric Surgery

Australian aborigines in recent times were able to stitch up wounds and to set broken bones by encasing them in **mud**. The presence of healed but **badly set bones** in prehistoric graves, however, suggests that perhaps prehistoric people had not perfected this art.

Archaeologists have certainly found examples of trephined (or trepanned) skulls in excavations of prehistoric sites. This has suggested that the motivation of these operations was medical, in so far as it was intended to **remove an evil spirit** which, for example, was causing epilepsy or headaches. This may be true, but cannot be proved.

### Prehistoric methods of diagnosis and treatment

There is **no archaeological evidence** that proves how prehistoric people were diagnosed or treated illness, but it seems likely that these people knew next to nothing about the real nature of disease.

The Australian **Aborigines** of recent times diagnosed disease in a purely **spiritual** way, by 'seeing' the cause of an illness in a trance, or through magic rituals. Many of their cures were spiritual too, using pointing bones, beads, magic paintings, dancing and ceremonies. It is believed that prehistoric people used similar cures.

### Prehistoric Public Health

Prehistoric people would not have had any concept of public health - they did not settle in one place, so would have seen no need to build things like **sewers** or **hospitals**.

It's unlikely that they had any idea of personal health either. The Australian Aborigines of recent times did have some practices that seem 'healthy' - for instance, they buried their excrement far from the camp - but they did so for **religious reasons** (to stop an enemy finding it and stealing their spirit) rather than for **medical/health** reasons.

### Prehistoric Doctors

It's unlikely that prehistoric people had amongst them anyone that we would recognise today as real doctors. However, if they were like the primitive people of more recent times, such as Australian Aborigines, they probably did have **witch doctors** to turn to when they were ill.

Prehistoric doctoring provides the **base point** from which we can measure the progress of medicine through subsequent ages.

# Ancient Egyptian Medicine

## When was Ancient Egypt?

The Ancient Egyptian civilisation was in existence from approximately 3000BC to 400AD. In reality the era is a number of different periods in Egyptian history, when different families (dynasties) ruled Egypt.

## How was society different to prehistoric times?

The Egyptians developed a system of writing things down. They used hieroglyphics to record their findings. They also lived in organised, permanent settlements and built towns and cities. Unlike prehistoric man, the Egyptians also had a system of law and order based on a system of government led by a ruling Pharaoh.

## Other than writing, what advances were made in the Egyptian period?

The Egyptian period was very long, so lots changed over the course of the era. The Egyptians developed a complicated set of religious beliefs and rituals, many of which related to medicine and the human body. They also became expert builders and engineers, building the great pyramids, temples and roads.

## Religious beliefs? How do they affect medicine?

The Egyptians believed that life on earth was part of a cycle. Once a person died their spirit passed into the afterlife. The quality of the afterlife would be improved if the person's remains were treated in certain ways. This meant that Egyptian doctors couldn't dissect bodies as they had to remain intact for the afterlife. However the process of preserving the body, mummification, did mean that some knowledge of the human anatomy was acquired.



### **So, religion just prevented them from cutting up bodies?**

No. Religious beliefs also required cleanliness in temples, which had a knock on effect of improving health. Religion also meant that prayer was used extensively by doctors, as their beliefs led them to require doctors to ask the gods for forgiveness and mercy.

### **What about surgery?**

The Egyptians observed that water from the River Nile could become blocked in irrigation channels. They used this simple observation to establish that blockages in the veins could be removed in much the same way as a blocked channel was opened up. The Egyptians believed that blockages in the veins were caused by food rotting in the bowels and letting off bad gases, which would travel round the body and cause a blockage. Based on these observations they began performing operations to remove cysts and abscesses.

### **How would they try and cure illnesses then?**

A combination of natural and supernatural cures was used. These were based on their beliefs about the cause of disease and an element of trial and error. Herbal remedies were used to help cure things such as stomach pains. Combinations of natural elements could be used to induce vomiting, for example. These were often prescribed alongside a prayer, as the disease was thought to have been sent by the gods. Sometimes the illness would simply be treated with a prescribed prayer.

### **Examples:**

The following are all taken from the Papyrus Ebers, an Egyptian scroll that doctors had to use when treating a patient.

#### **Cure for Cataracts:**

Mix brain-of-tortoise with honey. Place on the eye and say:

There is a shouting in the southern sky in darkness, There is an uproar in the northern sky, The Hall of Pillars falls into the waters. The crew of the sun god bent their oars so that the heads at his side fall into the water, Who leads hither what he finds? I lead forth what I find. I lead forth your heads. I lift up your necks. I fasten what has been cut from you in its place. I lead you forth to drive away the god of Fevers and all possible deadly arts.

### **Cure for Burns:**

Create a mixture of milk of a woman who has borne a male child, gum, and, ram's hair. While administering this mixture say: Thy son Horus is burnt in the desert. Is there any water there? There is no water. I have water in my mouth and a Nile between my thighs. I have come to extinguish the fire.

### **Head Wounds**

If thou examines a man having a gaping wound in his head penetrating to the bone, smashing his skull, and rending open the brain of his skull, thou shouldst palpate his wound. Shouldst thou find that smash which in his skull like those corrugations which form in molten copper, and something therein throbbing and fluttering under thy fingers, like the weak place of an infant's crown before it becomes whole- when it has happened there is no throbbing and fluttering under thy fingers until the brain of his skull is rent open and he discharges blood from both his nostrils, and he suffers with stiffness in his neck.

### **Who treated illness?**

Egyptian doctors were a mixture of doctor and priest. They were carefully trained, studying the medical papyri recording cases and treatments. Some were general doctors, a little like our GPs, treating soldiers or labourers on huge building projects. However, some doctors were specialists, treating only specific parts of the body.

Specialist doctors developed because the Pharaoh and his lords were very rich and could afford to spend money employing their own doctors - and so the doctors themselves were wealthy enough to spend their time improving their medical knowledge by studying the medical papyri and discussing cases.



# Ancient Greek Medicine

## Asclepeia

Much of Greek medicine was based on religion and the belief that the world was controlled by gods. The God of healing was Asclepius.

Every large town in Greece had a temple called an Asclepion. They were a cross between a religious shrine and a health resort. A new patient would be made to have a series of baths and change their diet over the next few days. When ready they would sleep in the abaton. It was believed that Asclepius and his daughters, Hygeia and Panacea, would visit the patient in their dreams.

We know that some of the patients got better because they left behind votives (stone carvings of body parts) as thanks. It is likely that the patients that recovered did so because of the treatments given to them by the priests. The treatments ranged from herbal remedies to carrying out simple surgery. One record example is the removal of fragments of a spearhead from the sufferer's cheek.

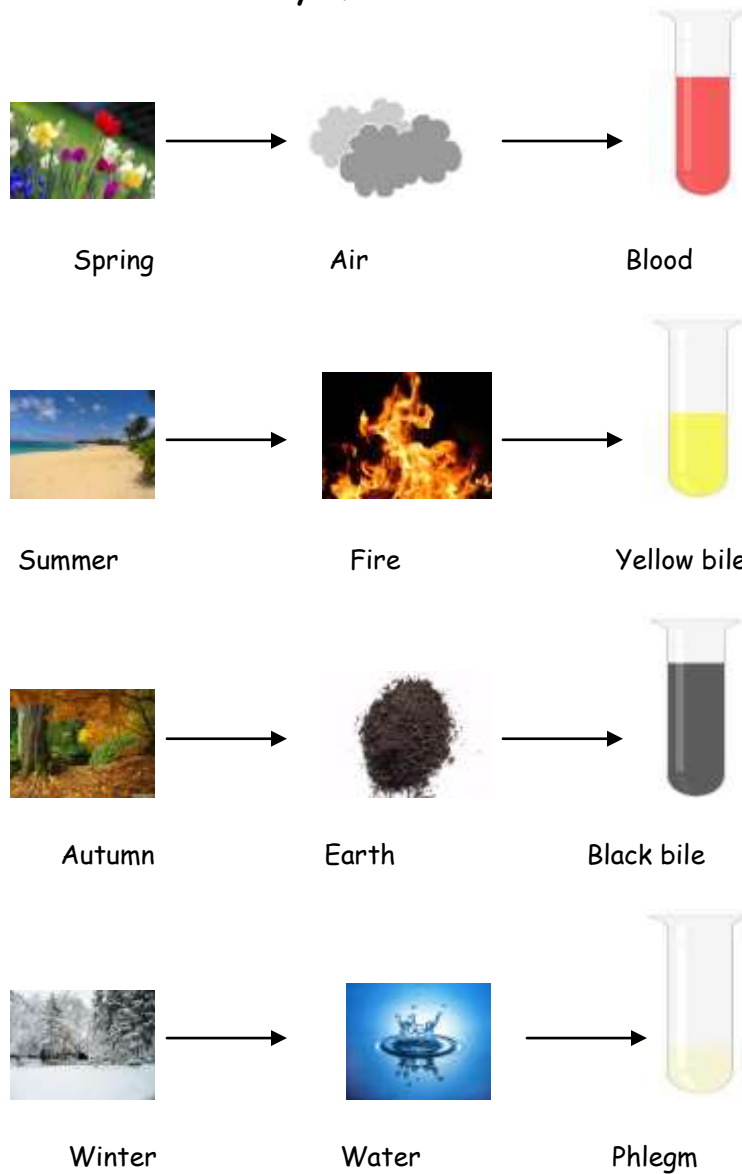
## Hippocrates

The Greeks were very interested in the natural world in which they lived and some philosophers started thinking about medicine. One Greek philosopher, Hippocrates, came up with the Theory of the Four Humours.

The Greeks believed that when the humours (liquids) were in balance a person was healthy, but when they were out of balance a person became ill.

Greek doctors were encouraged to try and restore the balance of the humours when treating patients. Normally they did this by changing the patient's diet and telling them to get plenty of rest. Sometimes they would try and get rid of the humour by making them sick or by bleeding.

## The Theory of the Four Humours



Hippocrates was the most famous Greek doctor. He lived on the island of Cos. He wrote a number of books about medicine and taught others how to be good doctors.

Hippocrates encouraged doctors to carefully observe their patients and record their observations. He said doctors should:

- ask questions
  - examine the patient carefully
  - ignore nothing
- and then decide on an appropriate treatment.



Hippocrates even made doctors swear an oath to ensure that they maintained high standards. The oath (The Hippocratic Oath) is still taken by doctors in many parts of the world today.

### Ancient Greek Healers

If you lived in a Greek city and had a little money to spare you could have a choice of healers. A holy man or magician could sell you a prayer or a charm to save you from ill health or you could see a physician, one of the followers of Hippocrates. These physicians usually trained for several years as apprentices to another doctor, often their father or uncle. They would have studied the books in the Hippocratic Collection.

However, women were the only healers most people saw. Wives and mothers used remedies passed down through families, often using herbal cures. Experienced older women were also called in as midwives.

### Ancient Greek Surgery

The Greeks made some improvements in surgery. They made new instruments out of iron and steel. They also developed good techniques for setting broken bones and would treat wounds by pouring wine or vinegar on them. They learned to drain the lungs of people who had pneumonia, but very few operations were done inside the body. Greek doctors were much more interested in understanding the causes of illness and in remedies based on the four humours than in surgery - probably because it was so dangerous.

### Ancient Greek Public Health

The Greeks also failed to improve public health. While they encouraged healthy habits such as a good diet and exercise, only the rich could follow most of the advice. There were few public toilets and no sewage systems in Ancient Greece.

City governments left people to keep clean and prevent illnesses in their own ways. The rich could afford their own baths and lavatories, but more people lived in small, dirty houses with only basins to wash in. The streets were filthy, but the city governments did not organise any cleaning.

# Ancient Roman Medicine

## Claudius Galen

Claudius Galen was a **Greek** physician who went to Rome and revived the ideas of **Hippocrates** and other **Greek** doctors. The Romans had shown little interest in the work of **Hippocrates** and it took Galen to push it forward in Rome (Remember, Galen counts as **Roman**).

Galen was born in 131 AD. He was highly intelligent and studied at the famous medical school in Alexandria in Egypt. At the age of 28, Galen became the surgeon to a school of gladiators, but in 161 AD he moved to Rome, apparently with the sole intention of seeking fame and fortune. He certainly achieved his fame, but for some Romans this became too much. As a Greek, many Romans viewed Galen with suspicion and in 166 AD, he was forced to flee the city. Two years later he went back to the city in response to an invitation by the emperor. With this protection, Galen remained in the city until his death, aged about 70, in 201 AD.

Galen revived the methods favoured by Hippocrates and other Greek doctors who lived at the time of Hippocrates. He put great emphasis on clinical observation - examining a patient very thoroughly and noting their symptoms. Galen also accepted the view that disease was the result of an imbalance between blood, phlegm, yellow bile and black bile. Galen also believed in the healing power of nature and he developed treatments to restore the balance of the four humours. Galen believed in the use of opposites - if a man appeared to have a fever, he treated it with something cold; if a man appeared to have a cold, he would be treated with heat. People who were weak were given hard physical exercises to do to build up their muscles. People who had breathing problems due to a weak chest were given singing exercises.

Galen extended his knowledge of anatomy by dissecting pigs and apes and studying their bone structure and muscles. Galen was also interested in human anatomy, but as dissecting humans was not allowed in most parts of the Roman Empire he had to rely on dissecting animals, most often pigs and apes. In "On Anatomical Procedures", Galen advised his students to dissect apes but take whatever opportunities that existed to study the human body. Galen also studied how the body worked, concentrating on the movement of blood and the working of the nervous system. For the latter, he experimented with the spinal cords of pigs.

Galen's influence was great. Protected by the emperors, he could work free from his jealous rivals in Rome. Galen also believed that his knowledge should be shared and he was a prodigious writer of books. These books were still being used in the

Middle Ages and, for many medical students, they were the primary source of information on medicine.



### Ancient Roman Public Health

Roman rulers needed healthy soldiers to control the Empire. Healthy workers and merchants were needed to keep the Empire fed and prosperous. Therefore they built their towns, villas or army forts in healthy places, away from marshland and polluted water. They tried to keep army forts and cities clean and made sure people had fresh water.

Their public health schemes used their great skills as builders and engineers. Engineers, often from the army, kept everything running and dealt with repairs.

Roman public health schemes were the best there had been - and better than anything in Europe for the next 1500 years. But they were not perfect. For example:

- The Romans could not stop plagues spreading. In the AD160s a plague (known as Galen's plague) killed 5 million people. A Roman writer said 'plague polluted everything with death. Everywhere fields and towns have no farmers or inhabitants.' Part of the trouble was the army because soldiers carried disease wherever they were sent to fight or defend the Empire.
- Sewers sometimes spread disease. In York the sewers were too large so water did not flow through quickly enough to clear sewage in the bottom of

the sewers. The rough surface of stone sewers also trapped the bacteria that cause disease.

- Towns could still be dirty places. People had to carry water upstairs. If they did not want to carry it down again they just heaved it out of a window. The poet Juvenal warned: 'Each open window may be a death trap. So hope and pray, poor man, that the local housewives drop nothing worse on your head than a bedpan full of slops!'

### **The key features of Roman public health schemes in towns**

- Fresh water from springs was carried many miles to towns by aqueducts.
- Reservoirs held the water supply and distributed it to the piping system.
- Public latrines were often flushed by water from the public baths and then drained into the sewers. They often seated twenty people in one room.
- Private homes of the rich were supplied with water, but even here the water had to be carried upstairs in buckets by slaves. If there was a drought, the supply to houses was cut off to save water.
- Forts had their own bath-house, water supply and latrines. Many also had hospitals for the soldiers.
- Sewers carried away waste from houses, latrines and baths. They were built of stone and depended on there being enough water in the system to flush them out. If there wasn't enough rain the waste built up in the sewers, spreading disease instead of stopping it. The sewers emptied into rivers, which were used to wash clothes and also for washing and drinking water.
- Bath-houses were places for washing, exercise, talk and business. Even small towns had a bath-house charging users only a quadrans, the smallest Roman coin. In a large town such as Lincoln, 5000 people used the baths every week, though the water was only changed once a week.
- Public fountains provided water for drinking and washing. Most people got their water from fountains, street pumps and rain barrels because they were not rich enough to have water piped to their houses.
- Water pipes carrying the water around towns were made from lead or timber. Some people would have developed lead poisoning but the Romans did not know this was happening.