9 Medicines (medical drugs)

Medicines are substances taken to relieve pain or fight disease. They are designed to make a patient well again.

The word drug is a general term for any chemical that affects the way the body works. Drugs designed to make the body well are called **MEDICINES**.

Long ago, people discovered that substances in some plants helped to cure illness. These 'natural' cures included the pain-killer aspirin (which came from a material extracted from a willow tree) and the drug to help heart-attack sufferers called digitalis (which comes from the foxglove).

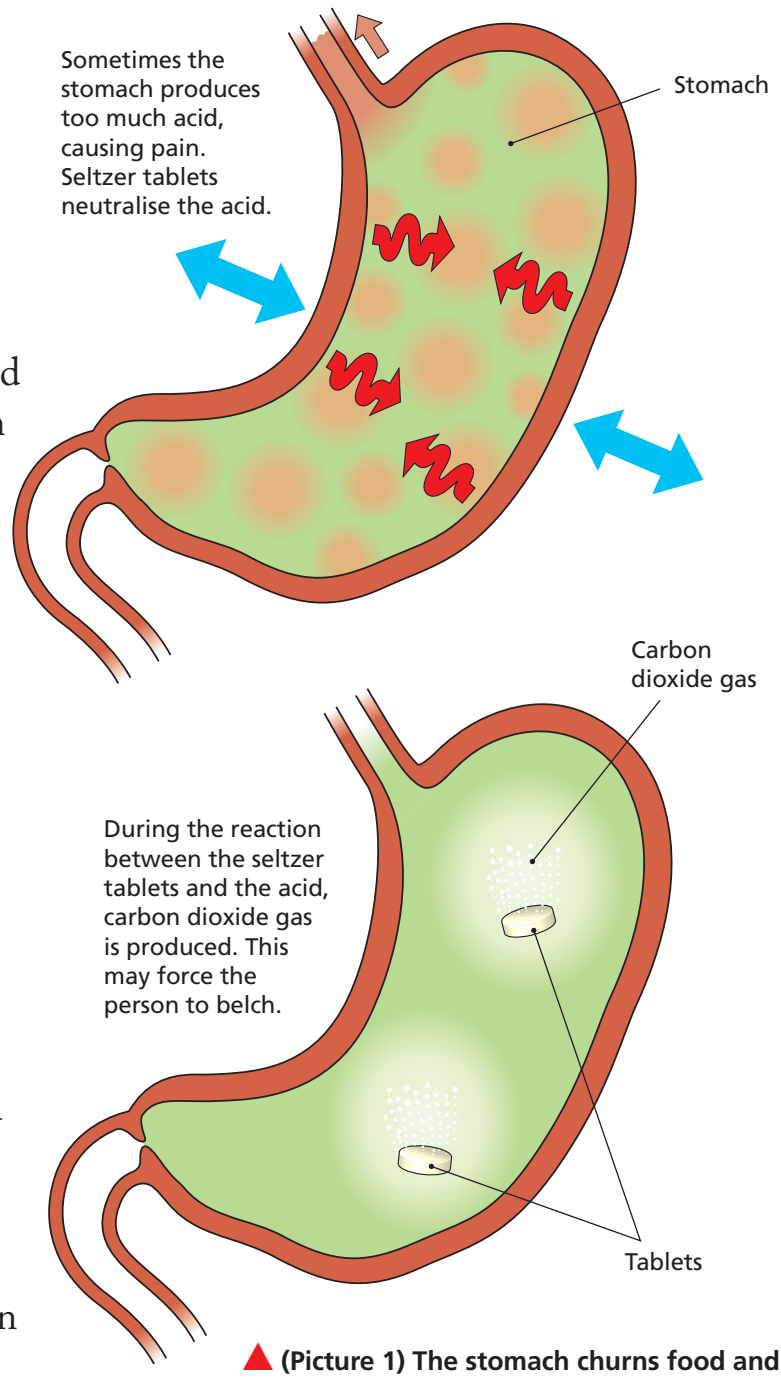
How drugs work

Today we have a much clearer understanding of how drugs work. This has allowed chemists to make a wide range of drugs that can treat more ailments than the natural cures could.

Drugs do one of two things: they balance materials that the body lacks or has too much of, or they change the way cells work.

Replacing chemicals

There are different kinds of substances in the body that drugs help to replace, or keep in balance. Some illnesses are due to lack of vitamins (see pages 6 and 7). Other illnesses occur when the body fails to produce important substances



▲ **(Picture 1) The stomach churns food and mixes it with acids and other substances. Sometimes too much acid collects, causing stomach ache, indigestion or 'heart burn'.**

Seltzer tablets (which are made of a substance that reacts with acid and neutralises it) are used to stop these forms of stomach ache.

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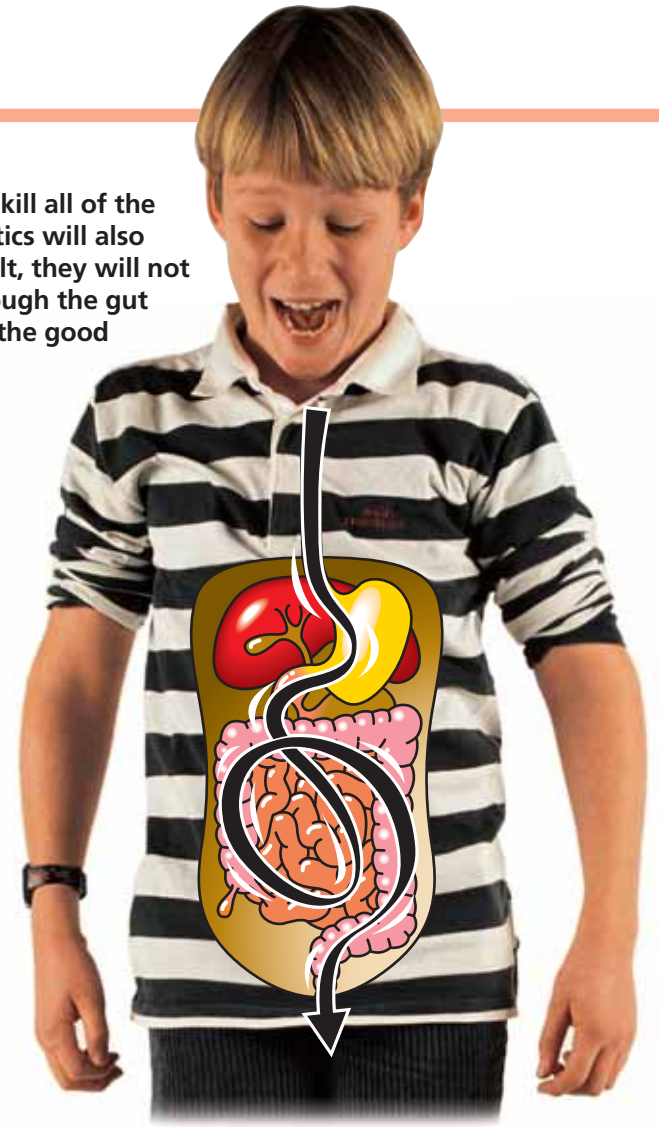

(Picture 2) When antibiotics are taken, the drug will kill all of the bad bacteria, making you well again. However, antibiotics will also kill most of the good bacteria lining your gut. As a result, they will not be able to help absorb food and the food will pass through the gut quickly, causing DIARRHOEA. This is the side effect. Once the good bacteria have multiplied again, the diarrhoea will stop.

called hormones – such as insulin, which prevents diabetes. Sometimes, the body makes too much of a substance, such as stomach acid. Balancing medicines, in this case seltzer tablets, can correct this (Picture 1).

Changing how cells work

Drugs can act on cells throughout the body. When the body becomes injured (for example by straining a muscle), the natural reaction of the body is to cause the injured area to swell up and become inflamed. This can be reduced by slowing down the natural processes, which also relieves pain. Other drugs can be used to make the body's defences speed up.

The other way drugs can be used is to destroy germs such as bacteria. Some drugs can seek out and destroy germs or stop the germs from multiplying and give the body's own defences time to kill them.

Side effects

Once drugs get into the body they will change all of the cells of a certain type. For example, a drug designed to reduce a digestive problem may also cause the mouth to become dry, and make it more difficult to go to the toilet.

These unwanted results (which occur with natural cures as well as chemical ones) are called side effects (Picture 2).

In general, all drugs have side effects, but usually they are small compared to the effect of making someone well. Doctors prescribe doses of medicines that will give the best results with the smallest side effects. This is why following the correct dosage exactly is so important.

Summary

- **Medicines are drugs designed to help you to get well.**
- **One group of drugs replaces substances that the body lacks.**
- **Other groups of drugs help the cells in the body.**