

# METHODS OF ADMINISTRATION

The majority of drugs must be absorbed into the bloodstream in order for them to reach the site where their effects are needed. The method of administering a drug determines the route it takes to get into the bloodstream and the speed at which it is absorbed into the blood.

When a drug is meant to enter the bloodstream it is usually administered in one of the following ways: through the mouth or rectum, by injection, or by inhalation. Drugs that are implanted under the skin or enclosed in a skin patch also enter the bloodstream. These types are discussed under Slow-release preparations (p.18).

When it is unnecessary or undesirable for a drug to enter the bloodstream in large amounts, it may be applied topically so that its effect is limited mainly to the site of the disorder, such as the surface of the skin or mucous membranes (the

membranes of the nose, eyes, ears, vagina, or rectum). Drugs are administered topically in a variety of preparations, including creams, sprays, drops, and suppositories. Most inhaled drugs also have a local effect on the respiratory tract.

Very often, a particular drug may be available in different forms. Many drugs are available both as tablets and injectable fluid. The choice between a tablet and an injection depends on a number of factors, including the severity of the illness, the urgency with which the drug effect is needed, the part of the body requiring treatment, and the patient's general state of health, in particular his or her ability to swallow.

The various administration routes are discussed in greater detail below. For a description of the different forms in which drugs are given, see Drug forms (p.19).

## ADMINISTRATION BY MOUTH

Giving drugs by mouth is the most common method of administration. Most of the drugs that are given by mouth are absorbed into the bloodstream through the walls of the intestine. The speed at which the drug is absorbed and the amount of active drug that is available for use depend on several factors, including the form in which the drug is given (for example, as a tablet or a liquid) and

whether it is taken with food or on an empty stomach. If a drug is taken when the stomach is empty (before meals, for example) it may act more quickly than a drug that is taken after a meal when the stomach is full.

Some drugs (like antacids, which neutralize stomach acidity) are taken by mouth to produce a direct effect on the stomach or digestive tract.

### In-mouth administration

Products are available that are placed in the mouth but not swallowed. They are absorbed quickly into the bloodstream through the lining of the mouth, which has a rich supply of blood vessels. Sublingual tablets are placed under the tongue, wafers are placed on the tongue, and buccal tablets are placed in the pouch between the cheek and teeth.

## HOW DRUGS PASS THROUGH THE BODY

Most drugs taken by mouth reach the bloodstream by absorption through the wall of the small intestine. Blood vessels supplying the intestine then carry the drug to the liver, where it may be broken down into a form that can be used by the body. The drug (or its breakdown product) then enters the general circulation, which carries it around the body. It may pass back into the intestine before being reabsorbed into the bloodstream. Some drugs are rapidly excreted via the kidneys; others may build up in fatty tissues in the body.

Certain insoluble drugs cannot be absorbed through the intestinal wall and pass through the digestive tract unchanged. These drugs are useful for treating bowel disorders, but if they are intended to have systemic effects elsewhere they must be given by intravenous injection.

