

INTRODUCTION

The *British Medical Association New Guide to Medicines and Drugs* has been planned and written to provide clear information and practical advice on drugs and medicines in a way that can be readily understood by a non-medical reader. The text reflects current medical knowledge and standard medical practice in this country. It is intended to complement and reinforce the advice given by your doctor, pharmacist, or other prescriber.

How the book is structured

The book is divided into four parts. The first part, *Understanding and Using Drugs*, provides a general introduction to the effects of drugs and gives advice on practical questions, such as administration and storage of drugs. Part 2, *Major Drug Groups*, will help you to understand the uses and mechanisms of action of the principal classes of drugs. Part 3, the A-Z of Drugs, consists of 278 detailed profiles of commonly prescribed generic drugs, profiles of

vitamins, minerals, and drugs of abuse, and information on complementary and alternative medicines, drugs in sport, and medicines and travel. Part 4 contains useful resources, a glossary of drug-related terms, the drug finder, which helps locate information on specific drugs through an index to over 2,500 generic and brand-name drugs, and a general index.

Finding your way into the book

The information you require, whether on the specific characteristics of an individual drug or on the general effects and uses of a group of drugs, can be easily obtained without prior knowledge of the medical names of drugs or drug classification through one of the two indexes: the drug finder or the general index. The diagram on the facing page shows how you can obtain information throughout the book on the subject concerning you from each of these starting points.

1 UNDERSTANDING AND USING DRUGS

The introductory part of the book, *Understanding and Using Drugs*, gives a grounding in the fundamental principles underlying the medical use of drugs. Covering such topics as classifications of drugs, mechanisms of action, and the

proper use of medicines, it provides valuable background information that backs up the more detailed descriptions and advice given in Parts 2 and 3. You should read this section before seeking further specific information.

2 MAJOR DRUG GROUPS

Subdivided into sections dealing with each body system (for example, heart and circulation) or major disease grouping (for example, malignant and immune disease), this part of the book contains descriptions of the principal classes of drugs. Information is given on the uses, actions, effects, and risks associated with each group of drugs and is backed up by helpful illustrations and diagrams. Individual drugs in each group are listed to allow cross-reference to Part 3.

WHAT ARE DRUGS?

The medical, nursing, and health professions use the word "drugs" to refer to medicines - substances that can cure or arrest diseases, relieve symptoms, ease pain, and provide other benefits. This definition includes substances which are used to prevent disease or to correct deficiency diseases. Powerful drugs often have marked adverse effects. Drugs with less potential to cause harm are sold over the counter in pharmacies and supermarkets. More powerful drugs (those that the Medicines and Healthcare products Regulatory Agency, or MHRA, has ruled cannot be used safely without medical supervision) require a doctor's prescription. A different use of the word "drugs" refers to those substances on which a person may become dependent. These range from mild stimulants such as caffeine found in tea and coffee to powerful agents that alter mood and behavior. Some addictive drugs have no medical use and cannot be obtained legally.

Where drugs come from
One of the only available drugs were substances extracted from plants, such as opium from the poppy. Herbal medicines have been used since the beginning of time. In the early 20th century, many drugs were synthesized in the laboratory and are manufactured through various chemical processes. About a quarter of these are derived from plants or other organisms. For example, insulin, produced from animal sources, but some are still extracted from natural sources. For example, tetracycline antibiotics, including penicillin, are made from a moulded fungus. Aspirin is made from salicylic acid, which is derived from willow bark. The main difference between drugs of plant and "herbal" medicinal origin is that drugs have been thoroughly tested to ensure that they can be used safely.

How drugs are classified
Drugs are classified according to their main effect on the body. Some are used to relieve pain (analgesics), some to reduce fever (antipyretics), some to reduce inflammation (anti-inflammatories), and some to kill or destroy microorganisms (antibiotics). Some are used to correct deficiencies of vitamins, minerals, and other substances. Some are used to correct abnormal functions of the body (e.g. insulin for diabetes). Some are used to correct abnormal functions of the body (e.g. insulin for diabetes). Some are used to correct abnormal functions of the body (e.g. insulin for diabetes).

HOW DRUGS ARE CLASSIFIED

The 5,000 or so substances loosely called drugs are described in many ways. Scientists and pharmacologists, interested in chemical structure, use one system. Doctors, concerned with use, employ another. Manufacturers and advertisers, although using their multiple uses and effects in several categories, "classify" them in a different manner altogether, according to their legal status.

Legal classification
Indicates specifying which drugs can be sold over the counter and which require a doctor's prescription. Government regulations determine the degree of potential harm associated with a drug. Drugs are classified according to use (antibiotics or sedatives) and to their potential for abuse (stimulants). Most drugs fall into one group.

Specific names
All drugs in general use only on three letters, the generic name, and chemical names. The generic name, which is the official name for the drug, is used by the Medicines Division of the British Pharmaceutical Convention. The brand name is chosen by the manufacturer, usually on the basis that it is easy to remember, or is well recognized, or is well known. There may be several brands for a different drug. The brand name is used by the manufacturer and the consumer. The generic name is used by the doctor and the pharmacist. The chemical name is used by the scientist and the pharmacist.

General terms
Drugs may be grouped according to chemical activity, for example, the degree of potential harm associated with a drug. Drugs are classified according to use (antibiotics or sedatives) and to their potential for abuse (stimulants). Most drugs fall into one group.

Controlled Drugs
The Misuse of Drugs Regulations 2001 define those people who are authorized to take, supply, or administer drugs. The regulations are divided into three parts: Schedule 1, Schedule 2, and Schedule 3. Schedule 1 drugs are those which have no therapeutic value and are not used in medicine. Schedule 2 drugs are those which have a therapeutic value but are subject to special controls. Schedule 3 drugs are those which have a therapeutic value and are not subject to special controls.

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.

DEVELOPMENT STAGES OF A NEW DRUG OR MEDICINE

Phase A Studies The drug is given to patients to determine whether it is safe to use. The drug is given to a small group of patients to determine whether it is safe to use. The drug is given to a larger group of patients to determine whether it is safe to use. The drug is given to a very large group of patients to determine whether it is safe to use.

Phase B Studies The drug is given to patients to determine whether it is effective. The drug is given to a small group of patients to determine whether it is effective. The drug is given to a larger group of patients to determine whether it is effective. The drug is given to a very large group of patients to determine whether it is effective.

Phase C Studies The drug is given to patients to determine whether it is safe and effective. The drug is given to a small group of patients to determine whether it is safe and effective. The drug is given to a larger group of patients to determine whether it is safe and effective. The drug is given to a very large group of patients to determine whether it is safe and effective.

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.

ANTI-ANXIETY DRUGS

A certain amount of stress can be helpful, providing a stimulus to action. But too much will often result in anxiety, which might be described as an over-reaction to a stimulus. Anxiety is a state of mind characterized by a feeling of apprehension or fear, and is often accompanied by physical symptoms such as a racing heart, sweating, and trembling. Anxiety can be caused by a variety of factors, including stress, worry, and fear. It can also be a symptom of a medical condition, such as a phobia or a panic disorder. Anti-anxiety drugs are used to relieve anxiety and its symptoms. They work by affecting the brain's chemistry, specifically the neurotransmitters serotonin and gamma-aminobutyric acid (GABA). There are several types of anti-anxiety drugs, including benzodiazepines and barbiturates. Benzodiazepines are the most commonly used anti-anxiety drugs. They are used to treat anxiety disorders, insomnia, and alcohol withdrawal. Barbiturates are used to treat anxiety and insomnia, but they are less commonly used due to their potential for abuse and dependence.