

# Antibiotics: What They Are and How to Use Them

CHAPTER

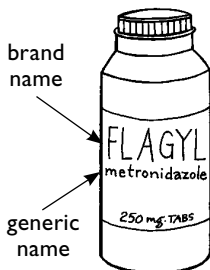
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When used correctly, antibiotics are extremely useful and important medicines. They fight certain infections and diseases caused by *bacteria*. Some well-known antibiotics are penicillin, tetracycline, erythromycin, cotrimoxazole, and ciprofloxacin.

**The different antibiotics work in different ways against specific infections. All antibiotics have dangers in their use, but some are far more dangerous than others. Take great care in choosing and using antibiotics.**

There are many kinds of antibiotics, and each kind is sold under several brand names. This can be confusing. However, the most important antibiotics fall into a few major groups:

antibiotic group (generic name)	examples of brand names	brand names in your area (write in)	see page
PENICILLINS (penicillin, ampicillin, amoxicillin)	<i>Pen-VK</i>	_____	350
MACROLIDES (erythromycin)	<i>Erythrocin</i>	_____	354
TETRACYCLINES (tetracycline, doxycycline)	<i>Terramycin</i>	_____	355
CHLORAMPHENICOL	<i>Chloromycetin</i>	_____	356
SULFAS (SULFONAMIDES) (cotrimoxazole, sulfisoxazole)	<i>Bactrim, Gantrisin</i>	_____	356
AMINOGLYCOSIDES (gentamicin)	<i>Garamycin</i>	_____	357
CEPHALOSPORINS (ceftriaxone, cephalexin)	<i>Keflex</i>	_____	357
QUINOLONES (ciprofloxacin)	<i>Cipro</i>	_____	358



If you have a brand-name antibiotic and do not know to which group it belongs, read the fine print on the bottle or box. For example: Your health worker told you to take *Flagyl*, but the pharmacy does not have it. Ask the pharmacist what the generic name is for *Flagyl*—it is usually printed on the label, box, or package. The generic name medicine is the same as the brand name medicine and often costs less. Or ask for another brand that has the same generic name.

**Never use an antibiotic unless you know to what group it belongs, what diseases it fights, and the precautions you must take to use it safely.**

Information on the uses, dosage, risks, and precautions for the antibiotics recommended in this book can be found in the Green Pages. Look for the brand name or generic name of the medicine in the alphabetical list at the beginning of those pages.

### GUIDELINES FOR THE USE OF ALL ANTIBIOTICS

1. If you do not know exactly how to use the antibiotic and what infections it can be used for, do not use it.
2. Use only an antibiotic that is recommended for the infection you wish to treat. (Look for the illness in this book.)
3. Know the risks in using the antibiotic and take all the recommended precautions (see the Green Pages).
4. Use the antibiotic only in the recommended dose—no more, no less. The dose depends on the illness and the age or weight of the sick person.
5. Never use injections of antibiotics if taking them by mouth is likely to work as well. Inject only when absolutely necessary.
6. Antibiotics must be taken for their full course. Stopping before you have finished all the days of treatment, even if you feel better, can make the infection return in a form that is even harder to cure. (Some illnesses, like tuberculosis and leprosy, need to be treated for many months or years after the person feels better. Follow the instructions for each illness.)
7. If the antibiotic causes a skin rash, itching, difficult breathing, or any serious reactions, the person must stop using it and **never use it again** (p. 70).
8. **Only use antibiotics when they are necessary** to cure the infection you have. When antibiotics are used too much they begin not to work as well.

### GUIDELINES FOR THE USE OF *CERTAIN* ANTIBIOTICS

1. Before you inject penicillin or ampicillin, always have ready ampules of epinephrine (adrenaline) to control an allergic reaction if one occurs (p. 70).
2. For persons who are allergic to penicillin, use another antibiotic such as erythromycin (p. 354) or cotrimoxazole (p. 357).
3. Do not use tetracycline, ampicillin, or another *broad spectrum* antibiotic for an illness that can probably be controlled with penicillin or another *narrow spectrum* antibiotic (p. 58). Broad spectrum antibiotics attack many more kinds of bacteria than narrow spectrum antibiotics.
4. Use chloramphenicol only for certain severe or life-threatening illnesses, such as typhoid, when no other effective medicine is available. It is a dangerous drug. Never use it for mild illness (p. 313).
5. Do not give tetracycline or doxycycline (p. 355) to pregnant women or to children under 8 years old. It can damage new teeth and bones.

6. Use streptomycin only for tuberculosis—and always together with other anti-tuberculosis medicines (p. 361).

7. All medicines in the aminoglycoside group (including kanamycin and gentamicin) are quite toxic (poisonous). Too often they are prescribed for mild infections where they may do more harm than good. Use only for very serious infections for which these medicines are recommended.

8. Eating yogurt or curdled milk helps to replace helpful bacteria killed by antibiotics and to return the body to normal (see next page).

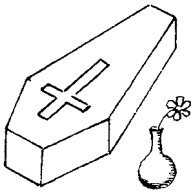
## WHAT TO DO IF AN ANTIBIOTIC DOES NOT SEEM TO HELP

For most common infections antibiotics begin to bring improvement in a day or two. If the antibiotic you are using does not seem to help, it is possible that:

1. The illness is not what you think. You may be using the wrong medicine. Try to find out more exactly what the illness is—and use the right medicine.
2. The dose of the antibiotic is not correct. Check it.
3. The bacteria have become *resistant* to this antibiotic (they no longer are harmed by it). Try another one of the antibiotics recommended for that illness.
4. You may not know enough to cure the illness. Get medical help, especially if the condition is serious or getting worse.

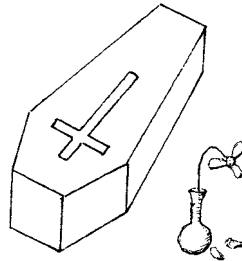
### These three children had a cold...

What was  
the villain?



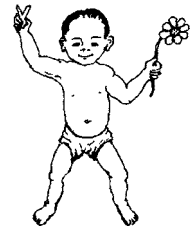
Penicillin!  
(see Allergic  
Shock, p. 70)

What took  
the toll?



Chloramphenicol!  
(see risks and precautions  
for this drug, p. 356)

Why did this child  
get well again?



He got no  
risky medicine—  
just fruit juice,  
good food, and rest.

**Antibiotics do no good for the common cold.  
Use antibiotics only for infections they are known to help.**

## IMPORTANCE OF LIMITED USE OF ANTIBIOTICS

The use of all medicines should be limited. But this is especially true of antibiotics, for the following reasons:

1. **Poisoning and reactions.** Antibiotics not only kill bacteria, they can also harm the body, either by poisoning it or by causing allergic reactions. Many people die each year because they take antibiotics they do not need.

2. **Some bacteria help the body.** Not all bacteria in the body are harmful. Some are necessary for the body to function. Antibiotics kill the good bacteria along with the harmful ones.

People who take ampicillin and other *broad-spectrum* antibiotics for several days often develop diarrhea. Antibiotics kill some kinds of bacteria necessary for digestion, upsetting the way the gut works.

3. **Resistance to treatment.** In the long run, the most important reason the use of antibiotics should be limited is that when antibiotics are used too much, they become less effective.

When an antibiotic is used too often, the bacteria will get used to it instead of being killed by it. They become *resistant* to the antibiotic. For this reason, certain dangerous diseases like typhoid are becoming more difficult to treat than they were a few years ago.

In some places, typhoid has become resistant to chloramphenicol, which is often the best medicine for treating it. Chloramphenicol has been used to treat infections for which other antibiotics would be safer and work as well, or for conditions where no antibiotic at all is needed.

Throughout the world important diseases are becoming resistant to antibiotics—largely because antibiotics are used too often for minor infections. If antibiotics are to continue to save lives, their use must be much more limited than it is at present. This will depend on their wise use by doctors, health workers, and the people themselves.

For most minor infections antibiotics are not needed and should not be used. Minor skin infections can usually be successfully treated with mild soap and water, or hot soaks. Minor respiratory infections are best treated by drinking lots of liquids, eating good food, and getting plenty of rest. For most diarrheas, antibiotics are not necessary and may even be harmful. What is most important is to drink lots of liquids (p. 155), and provide enough food as soon as the child will eat.

**Do not use antibiotics for infections the body can fight successfully by itself. Save them for when they are most needed.**

For more information on learning to use antibiotics sensibly, see *Helping Health Workers Learn*, Chapter 19.