

Antibiotics

Antibiotics are a group of medicines that are used to treat infections caused by bacteria and certain parasites. They do not work against infections that are caused by viruses - for example, the common cold or flu. Antibiotics are normally only prescribed for more serious bacterial infections - for example, pneumonia. When prescribed, it is important to take the entire course of antibiotics which helps to prevent resistance developing to that antibiotic. Most side-effects of antibiotics are not serious - for example, diarrhoea, or mild stomach upset such as nausea.

Although some people develop a serious allergy to some antibiotics, this is rare.

What are antibiotics?

Antibiotics are a group of medicines that are used to treat infections caused by bacteria and certain parasites. They are sometimes called antibacterials. Antibiotics can be taken by mouth as liquids, tablets, or capsules, or they can be given by injection. Usually, people who need to have an antibiotic by injection are in hospital because they have a severe infection. Antibiotics are also available as creams, ointments, or lotions to apply to the skin to treat certain skin infections.

It is important to remember that antibiotics only work against infections that are caused by bacteria and certain parasites. They do not work against infections that are caused by viruses (for example, the common cold or flu), or fungi (for example, thrush in the mouth or vagina), or fungal infections of the skin.

Occasionally, a viral infection or minor bacterial infection develops into a more serious secondary bacterial infection.

There are various antibiotics available and they come in various different brand names. Antibiotics are usually grouped together based on how they work. Each type of antibiotic only works against certain types of bacteria or parasites. This is why different antibiotics are used to treat different types of infection. The main types of antibiotics include:

- **Penicillins** - for example, penicillin V, flucloxacillin, and amoxicillin.
- **Cephalosporins** - for example, cefaclor, cefadroxil, cefalexin.
- **Tetracyclines** - for example, tetracycline, doxycycline, and minocycline.
- **Aminoglycosides** - for example, gentamicin, amikacin, and tobramycin.
- **Macrolides** - for example, erythromycin, azithromycin, and clarithromycin.
- **Clindamycin**.
- **Sulfonamides and trimethoprim** - for example, co-trimoxazole.
- **Metronidazole and tinidazole**.
- **Quinolones** - for example, ciprofloxacin, levofloxacin, and norfloxacin.

As well as the above main types of antibiotics, there are a number of other antibiotics that specialist doctors, or hospital doctors may prescribe for more uncommon infections such as tuberculosis (TB).

The rest of this leaflet only discusses antibiotics that your GP may prescribe.

How do antibiotics work?

Some antibiotics work by killing bacteria or the parasite. This is often done by interfering with the structure of the cell wall of the bacterium or parasite. Some work by stopping bacteria or the parasite from multiplying.

When are antibiotics usually prescribed?

Antibiotics are normally only prescribed for more serious bacterial infections, and for some parasitic infections.

Most common infections are caused by viruses, when an antibiotic will not be of use. Even if you have a mild bacterial infection, the immune system can clear most bacterial infections. For example, antibiotics usually do little to speed up recovery of bronchitis, or most ear, nose, and throat infections that are caused by bacteria.

So, do not be surprised if a doctor does not recommend an antibiotic for conditions caused by viruses or non-bacterial infections, or even for a mild bacterial infection.

However, you do need antibiotics if you have certain serious infections caused by bacteria such as meningitis or pneumonia. In these situations, antibiotics are often life-saving. When you are ill, doctors are skilled at checking you over to rule out serious illness, and to advise if an antibiotic is needed.

Antibiotics can also be prescribed to treat acne - a less serious condition. For acne, antibiotics can be taken orally or applied directly to the skin.

Which antibiotic is usually prescribed?

The choice of antibiotic mainly depends on which infection you have and the bacterium or parasite your doctor thinks is causing your infection. This is because each antibiotic is effective only against certain bacteria and parasites. For example, if you have pneumonia, the doctor knows what kinds of bacteria typically cause most cases of pneumonia. He or she will choose the antibiotic that best combats those kinds of bacteria.

There are other factors that influence the choice of an antibiotics. These include: how severe the infection is, how well your kidneys and liver are working, dosing schedule, other medications you may be taking, common side-effects, a history of having an allergy to a certain type of

antibiotic, or if you are pregnant or breast-feeding. Even if you are pregnant or breast-feeding there are a number of antibiotics that are thought to be safe to take.

Doctors sometimes choose certain antibiotics if they know there is a certain pattern of infection in your community.

When taking an antibiotic

It is important to take antibiotics in the correct way. If you do not, this may reduce how well they work. For example, some antibiotics need to be taken with food and others should be taken on an empty stomach. If you do not take your antibiotics in the right way it will affect their absorption (how much gets into the body), and therefore they may not work as well. So, follow the instructions as given by your doctor and on the leaflet that comes with the antibiotic you are prescribed.

Always take the entire course of antibiotics as directed by your doctor. Even though you may feel better before your medicine is entirely gone, follow through and take the entire course. This is important for your healing. If an antibiotic is stopped in mid-course, bacteria may be partially treated and not completely killed. Bacteria may then become resistant to that antibiotic. Overuse of antibiotics has led to some bacteria mutating and becoming resistant to some antibiotics, which may then not work when really needed. For example, methicillin-resistant *Staphylococcus aureus* (MRSA) is a bacterium that has become resistant to many different antibiotics and is difficult to treat.

What are the possible side-effects?

It is not possible to list all the possible side-effects of each antibiotic in this leaflet. However, as with all medicines, there are a number of side-effects that have been reported with each of the different antibiotics. If you want more information specific to your antibiotic then you should read the information leaflet that comes with the medicine.

Most side-effects of antibiotics are not serious. Common side-effects include: soft stools, diarrhoea, or mild stomach upset such as nausea. Less commonly, some people have an allergic reaction to an antibiotic, and some have died from a severe allergic reaction - this is very rare.

Antibiotics can kill off normal defence bacteria which live in the bowel and vagina. This may then allow thrush or other bad bacteria to grow.

You should tell your doctor if you have any of the following side-effects:

- Severe watery diarrhoea and abdominal cramps (signs of a serious bacterial infection of the gut - *Clostridium difficile* infection).
- Shortness of breath, hives, rash swelling of lips, face, or tongue, fainting (signs of an allergic reaction).
- Vaginal itching or discharge (signs of vaginal thrush).
- White patches on the tongue (signs of oral thrush).
- Vomiting.

Some antibiotics may interact with other medicines that you might take. This may cause reactions, or reduce the effectiveness of one or other of the treatments. So, when you are prescribed an antibiotic you should tell a doctor if you take other medicines.

Oral contraceptive pill

In the past it was recommended that, if you were taking antibiotics and were also taking the pill, you should use additional contraception. This is no longer the current recommendation after more recent evidence has been reviewed. Antibiotics (other than one called rifampicin) do not interfere with the effectiveness of the pill. You should continue taking your pill as normal if you also need to take any antibiotics.

Can I buy antibiotics?

No, they are only available from your chemist, with a doctor's prescription.

What is the usual length of treatment?

The length of treatment varies a lot. It depends on what kind of infection you have, how severe it is and how quickly you get better after starting treatment. Treatment can be for just a few days (urinary tract infection - water infection), one or two weeks (pneumonia), a few months (bone infections), or for many months (acne).

Who cannot take antibiotics?

It is very rare for anyone not to be able to take some type of antibiotic. The main reason why you may not be able to take an antibiotic is if you have had an allergic reaction to an antibiotic in the past. Even if you have had an allergic reaction to one antibiotic, your doctor will usually be able to choose a different type of antibiotic, which you will be able to take.

How to use the Yellow Card Scheme

If you think you have had a side-effect to one of your medicines you can report this on the Yellow Card Scheme. You can do this online at the following web address: <http://yellowcard.mhra.gov.uk>

The Yellow Card Scheme is used to make pharmacists, doctors and nurses aware of any new side-effects that your medicines may have caused. If you wish to report a side-effect you will need to provide basic information about

- The side-effect.
- The name of the medicine which you think caused it.
- Information about the person who had the side-effect.
- Your contact details as the reporter of the side-effect.

It is helpful if you have your medication and/or the leaflet that came with it with you while you fill out the report.

References

- British National Formulary; 62nd Edition (Sep 2011) British Medical Association and Royal Pharmaceutical Society of Great Britain, London ([link to current BNF](#))
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[Management of Infection - Guidance for Primary Care](#), Health Protection Agency, various dates; (*including diagnosis - quick reference guides*)

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