

WHEN ANTIBIOTICS STOP WORKING



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DEAR READER,

Antibiotics are medicines that can inhibit the growth of bacteria and kill them. However, *resistance* can develop if they are taken incorrectly or too frequently. Then the antibiotics stop working. This can be dangerous in the long term. This patient information leaflet describes how antibiotic resistance develops and what you can do about it yourself.

At a glance: Antibiotic resistance

- Antibiotics are only effective against illnesses triggered by bacteria.
- Bacteria sometimes become insensitive to antibiotics. Most antibiotics are no longer effective against these bacteria. The term used to describe this in medical jargon is *antibiotic resistance*. This can lead to illnesses becoming life-threatening.
- You can do something to prevent the emergence of resistance. To protect yourself from infection, you should follow personal hygiene rules and get yourself vaccinated. The fewer infections that occur, the fewer antibiotics are needed.
- Common colds are normally caused by viruses. Antibiotics are of no use here. They won't help you to recover more quickly. You shouldn't therefore expect your doctor to prescribe you an antibiotic.

▶ WHAT IS ANTIBIOTIC RESISTANCE?

Antibiotics combat bacteria by killing them or by inhibiting their multiplication and growth. But bacteria can easily adapt and are real survival artists. They multiply very rapidly in large numbers. This may lead to changes in their genetic make-up. Some of these changes render the bacteria insensitive (resistant) to antibiotics.

▶ WHY DOES RESISTANCE OCCUR?

Antibiotic resistance mainly occurs when antibiotics are not used correctly:

- People take antibiotics too frequently, over too short a period or at too low a dose.
- People take antibiotics although they are not effective, for instance to treat viral infections.
- Antibiotics are frequently used in intensive livestock farming. This encourages the emergence of resistant bacteria.

▶ WHAT ARE THE CONSEQUENCES?

The more frequently antibiotics are prescribed and taken, the higher the risk of resistant bacteria developing and spreading.

This can have serious consequences particularly for small children, the elderly or the sick:

- Infections last longer.
- Illnesses are more difficult to treat.
- Infections that had been easy to treat in the past may become life-threatening.
- For a few bacterial illnesses there are scarcely any antibiotics that still work.
- Infected people need special antibiotics that may have more side-effects.
- Hospital stays last longer and become more frequent.
- Patients have to be isolated more frequently from other people.
- Bacteria may emerge that are resistant to numerous antibiotics. The term used to describe these bacteria is *multi-resistant organisms* (MROs). Many common antibiotics are then no longer effective. You can find out more about this in other information leaflets: see box overleaf.

▶ IMPORTANT FACTS

Antibiotics are not effective against illnesses caused by viruses. For instance, viruses trigger most common colds. So antibiotics do not alleviate common colds. They won't help you to recover more quickly. Don't expect to be prescribed an antibiotic every time you fall ill. What's more, antibiotics may also have side-effects. Sometimes it's enough to rest and wait and see. If you are given an antibiotic, take it as prescribed. It is important to take a high enough dose at regular intervals for a sufficiently long period. Do not take any antibiotics prescribed for someone else and do not give your antibiotics to anyone else.

▶ WHAT YOU CAN DO

The best protection against infections is not to spread germs further. Hygiene is important here. Experts estimate that up to 30 out of 100 infections could be avoided by hygiene measures. You, for instance, can help by doing the following:

- The most important thing here is: regular and thorough washing of your hands with soap and water. This is because many germs are spread through direct contact with the hands.
- It is particularly important to wash your hands before eating, and after going to the toilet, changing nappies, contact with animals or handling raw meat.
- Always use paper tissues when blowing your nose and throw them away immediately. If possible, wash your hands right away to avoid transferring germs to other people.

▶ MORE INFORMATION

Sources, methodology and links

This information is based on the latest scientific research findings and recommendations for patients from patients.

Methodology and sources: www.patienten-information.de/kurzinformationen/antibiotikaresistenzen#methodik

Information leaflets "Antibiotics – Treatment" and "Multi-Resistant Organisms": www.patienten-information.de

The German original version is by 2020.

- If possible, don't cough into your hand but into your sleeve or into a hankie. This keeps your hands clean. Keep your distance from other people when you cough.
- Try and keep your hands away from your face.
- Towels, flannels and hygiene articles such as toothbrushes should be for your personal use only.
- Wash raw fruit and vegetables thoroughly. When preparing food, be sure to clean chopping boards and knives with washing-up liquid and water, especially when you are handling raw meat.
- In enclosed spaces the number of germs in the air may increase. Air rooms several times a day for a few minutes.
- Most germs cannot survive at temperatures above 60°C. Regularly wash your dishes and your laundry at higher temperatures.
- Make sure that you and your family have the recommended vaccinations. Remember to get the necessary booster inoculations.
- If skin is damaged, bacteria may penetrate. Cover wounds or injuries with a plaster or dressing.
- Try and stay home if you have an infectious illness. Avoid touching other people, for instance shaking hands.
- Do not dispose of old or unused medicines in the toilet or washbasin. This places a burden on the environment and could contribute to the development of resistance. You can discard medicines in household waste.

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