

Antibiotic resistance - true or false?

Addressing received wisdom, doubts and misconceptions.

Antibiotics can kill viruses.

FALSE. Antibiotics are pharmaceutical drugs (requiring a prescription) that kill bacteria or prevent them from reproducing. They have no effect against viral diseases (e.g. colds, flu, most forms of gastroenteritis), fungal conditions or parasitic infections (such as malaria).

Antibiotics can help to combat flu or the common cold.

FALSE. Antibiotics have no effect against flu or the common cold, which are caused by viruses. Taking antibiotics in such situations is not only useless but also potentially dangerous due to side effects, and because it increases the risk of developing resistant bacteria which may then be transmitted to others.

Taking antibiotics when not needed can weaken their effectiveness.

TRUE. An antibiotic is a weapon that becomes weaker every time that it is used. This is why it is so important to avoid taking them when not necessary. Each time that an antibiotic is used, a small number of resistant bacteria survive, and these then prosper and multiply because they are the only ones able to do so.

Antibiotics often have adverse effects such as diarrhoea.

TRUE. Antibiotics can have side effects. The most common are digestive problems, diarrhoea, nausea, skin rash or kidney dysfunction. The presence and intensity of these effects varies considerably from one person to another. They also depend on the type of antibiotic used and on any other drugs or substances – including alcohol – that the person may be taking.

Taking antibiotics can make a person become resistant.

FALSE. People do not become resistant to antibiotics, only bacteria can. Then the resistant bacteria can multiply, move from one person to another and make treatment more difficult, longer and even impossible in some cases.

Antibiotic resistance is a recent phenomenon.

FALSE: Antibiotic resistance is a natural phenomenon which has been around for millions of years. Indeed, bacteria and fungi produce antibiotics naturally, to protect themselves or to fight against each other. The first antibiotics used in medicine, including penicillin, were extracted from fungi. By using large quantities of such substances in human and animal health care since the mid-1940s, we have greatly amplified a natural process: each time that an antibiotic is used, resistant bacteria multiply and prosper because they are the only ones able to do so under those particular circumstances.

A course of antibiotics before an operation can be very useful.

TRUE. Antibiotics are necessary to prevent or treat infections linked to surgery or to treat complications which lead to the hospitalisation of the patient.

Patients with chronic diseases or cancer are particularly dependent on antibiotics.

TRUE. Antibiotics are frequently used to prevent infections in cancer patients following chemotherapy. They can also help treat complications of common conditions, such as foot ulcers caused by diabetes.

In swiss hospitals, the risk of acquiring methicillin-resistant *staphylococcus aureus* (MRSA) is very high.

FALSE. The number of skin infections and other infections caused by methicillin-resistant *Staphylococcus aureus* (MRSA) has decreased by two thirds since 2004, thanks to improved detection and rapid treatment of infected patients in hospitals.

The use of antibiotics to stimulate growth in farm animals is illegal in switzerland and the european union.

TRUE. In Switzerland, the Federal Veterinary Medicinal Products Ordinance has prohibited the use of antibiotics to promote growth in animal husbandry since 1999. A similar ban entered into force in the European Union in 2006.