

Drugs

IGCSE Biology 0610 · Topic 15 revision notes

Everything from the 1 lessons of this topic on a few pages: the key idea of each lesson, the diagram to remember, the points to learn and the traps examiners set. Read it, cover it, test yourself.

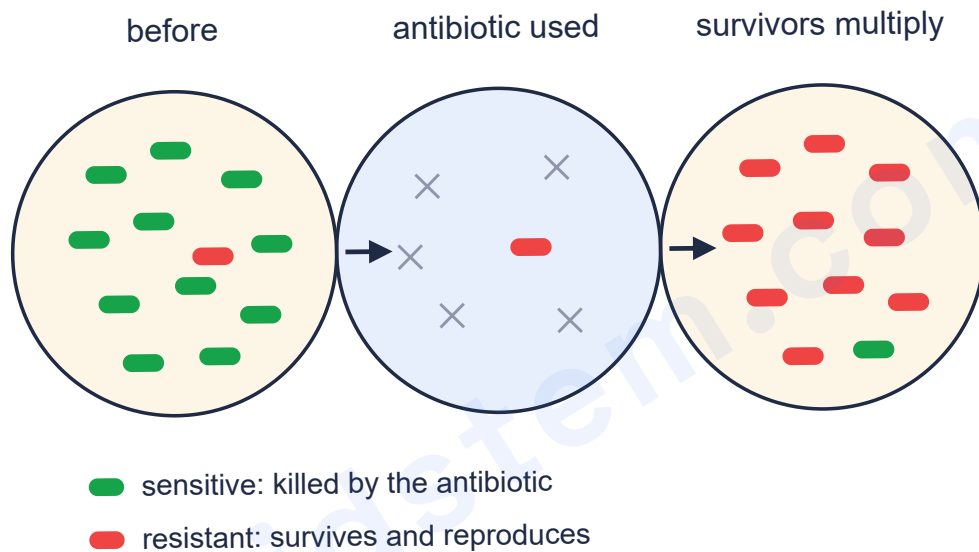
1. Drugs and antibiotics

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1 Drugs and antibiotics

Syllabus 15.1

A **drug** is any substance taken into the body that modifies or affects chemical reactions in the body. **Antibiotics** are drugs used to treat **bacterial infections**: they kill bacteria (or stop them growing) but they **do not affect viruses**. Some bacteria are **resistant** to antibiotics, which reduces how effective antibiotics are. Extended: using antibiotics only when they are essential limits the development of resistant bacteria such as **MRSA**.



each use of an antibiotic selects for the resistant bacteria

Fig. 1: a few bacteria in a population are resistant; the antibiotic kills the sensitive ones, so the resistant survivors multiply and become most of the population

Drug, bacteria, resistance.

- ✓ **Drug:** any substance taken into the body that modifies or affects chemical reactions in the body.
- ✓ **Antibiotics:** treat bacterial infections; they kill bacteria but do not affect viruses.
- ✓ **Resistance:** some bacteria are resistant, which reduces the effectiveness of antibiotics. The mutation is random; the antibiotic selects it.
- ✓ **Extended:** use antibiotics only when essential (never for viruses, full course) to limit resistant strains such as MRSA.

Watch out!

Do not define a drug as "a medicine" or "an illegal substance". The syllabus definition is about effect: any substance taken into the body that modifies or affects chemical reactions in the body.

Antibiotics kill *bacteria*, not viruses, and they do not "kill germs" in general. Taking an antibiotic for a cold does nothing to the virus but still gives resistant bacteria in the body an advantage.

The antibiotic does not cause the mutation, and bacteria do not "get used to" or become immune to the drug. The resistance mutation arises at random; the antibiotic only kills the bacteria without it, so the resistant ones are left to multiply.