

Text from posters presented at the Great Exhibition Road Festival 2022 by the Institute of Infection at Imperial College.

What are microbes?

A microbe is a very small living creature – too small for us to see without special equipment. Sometimes we call microbes “microorganisms”, where “micro” means small. We might call microbes “germs” if they make us sick.

Microbes are everywhere! They’re in the air, on everything we touch, and they’re in our bodies, too. Most microbes are completely harmless, so we don’t even notice they’re there. Some microbes can make us sick, but some are very good for us, and even protect us from more harmful microbes.

Types of microbes

Viruses

- Viruses are made of genetic material, like DNA, protected by a coat made of protein or a membrane.
- Viruses can only live inside the cells of another living creature. Because of this, some scientists argue that viruses aren’t really alive!
- Viruses can’t be treated by antibiotics.
- Examples include COVID-19, chicken pox, and the common cold.

Bacteria

- Bacteria are made up of just one cell, and can live independently outside of another living creature.
- Bacteria can be grouped into 5 main different shapes: spheres, rods, spirals, commas, and corkscrews.
- Illnesses caused by bacteria can be treated with antibiotics (although sometimes they change (mutate) so that medicines no longer work).
- Examples include Salmonella & E. coli (which can give you food poisoning) and Streptococcus pneumoniae, which can give you ear infection. (Challenge: Can you say Streptococcus pneumoniae?!)

Fungi

- Fungi can be made up of just one cell, or they can be complex and made up of many cells.
- Fungi grow by feeding on other creatures, like dead plants. This causes the plants to break down, and decompose.
- One type of fungus can even break down plastic!
- Examples of fungi include athlete’s foot, yeast and mould.

Parasites

- A parasite is a creature that lives on or inside of another creature, called a ‘host’.
- Parasites get food by taking substances away from the host.
- Parasites can be spread to humans if we eat food or drink water that contains the parasites. Parasites can also be spread through insect bites.
- For example, malaria is caused by a parasite. The parasite is commonly spread by infected mosquitoes.