

This is the **Higher Separate** version — includes all Higher Tier content (marked ★) and all Separate Science content.

Communicable diseases are caused by pathogens — microorganisms that can spread from one host to another and cause illness.

- Pathogens: bacteria, viruses, fungi and protists can all cause communicable disease.
- Bacteria cause disease by reproducing rapidly inside the body and releasing TOXINS — poisonous waste products.
- Viruses invade host cells, use the cell's machinery to replicate, then burst out (cell lysis), destroying the host cell.
- Fungi cause disease by growing on or in host tissues (e.g. athlete's foot, rose black spot).
- Protists are single-celled eukaryotes. Some cause disease via insect vectors (e.g. malaria spread by mosquitoes).
- Pathogens spread by: contaminated water/food, droplets (coughing/sneezing), direct contact, sexual contact, vectors.
- Reducing spread: hand washing, vaccinations, antibiotics, safe food preparation, using condoms, vector control.

Key Terms

Pathogen	A microorganism that causes disease
Communicable disease	Disease caused by a pathogen that can spread between organisms
Toxin	A poisonous substance produced by bacteria that causes the symptoms of disease
Vector	An organism (e.g. mosquito) that transmits a pathogen from one host to another

■ **Exam Tip:** Bacteria cause disease via TOXINS. Viruses cause disease by destroying HOST CELLS. This distinction is often tested. Antibiotics only work against bacteria (not viruses) — because they target bacterial toxin production and cell wall synthesis.