

Biology Topic B5: Communicable diseases

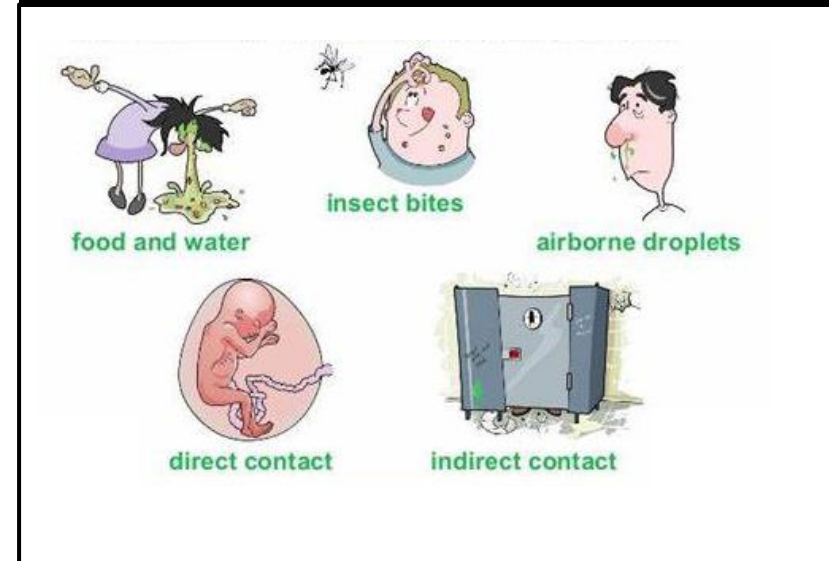
1. Keywords

Communicable (infectious) disease	A disease which can be spread to others.
Pathogen	Micro-organisms that cause infectious disease (eg bacteria, protists, fungi and viruses).
Bacteria	Prokaryotic cells. Some can cause disease by making toxins.
Protists	Eukaryotic cells. Some can cause disease.
Fungi	Class of organisms that includes mushrooms. Some can cause disease.
Virus	The smallest organisms. Much smaller than bacteria. They reproduce inside host cells damaging them and causing disease.
Droplet inhalation	When a disease is spread through coughs and sneezes.
Direct contact	When a disease is only spread from physical contact.
Antibiotics	A group of chemicals which can kill bacteria (eg penicillin).
Antiviral drugs	A group of chemical which can prevent viruses reproducing. Hard to develop safe ones.
Fungicides	A group of chemicals which kill fungi.
Painkillers	A type of drug that treats pain symptoms but does not kill pathogens.
Lymphocyte	White blood cell.

2. Health and disease

Health	A state of physical and mental well-being
Disease	An abnormal condition that gives specific symptoms
Communicable disease	A disease which can be transferred
Non-communicable disease	A disease which can not be transferred
Lifestyle factors	Factors which can increase the chances of developing a non-communicable disease (eg smoking, diet, drugs, carcinogens)

3. How pathogens are spread



4. Preventing infections



Stay home when you are sick



Avoid contact with people who are sick



Get adequate sleep and eat well-balanced meals



Wash hands often with soap and water – 20 seconds or longer



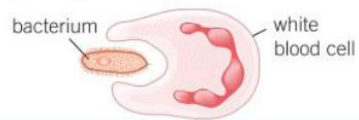
Cover your mouth with a tissue or sleeve when coughing or sneezing



Clean and disinfect “high touch” surfaces often

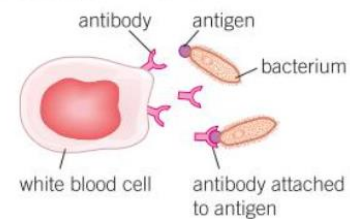
4. Preventing infections using white blood cells

Ingesting microorganisms



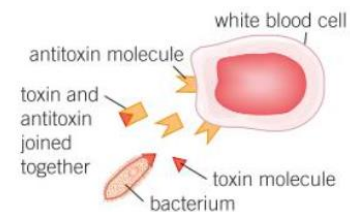
Some white blood cells ingest, digest and destroy pathogens.

Producing antibodies



Some white blood cells produce **antibodies** these are specific to particular pathogens and will destroy them.

Producing antitoxins



Some white blood cells produce **antitoxins**, which destroy the toxins produced by pathogens.

5. Examples of infectious disease

	Disease	Infected	Symptoms	Spread by	Fatal	Treatment
Virus	Measles	Human	Fever Skin rash	Droplet inhalation	Yes	Vaccination
	HIV	Human	Reduced immune system	Unprotected sex	Yes	Antiviral drugs
	Tobacco mosaic virus (TMV)	Plants	Discolours leaves Stunts growth	Direct contact	No	Remove infected leaves and burn
Bacteria	Salmonella	Human	Fever Stomach cramps Vomiting Diarrhoea	Food	No	Take fluids to prevent dehydration
	Gonorrhoea	Human	Thick yellow/green discharge from vagina or penis	Unprotected sex	No	Antibiotics (if not resistant)
Fungal	Rose black spot	Plants	Black spots on leaves Stunts growth	Direct contact	No	Fungicides
Protist	Malaria	Human	Fever	Mosquito bite	Yes	Drugs to kill/prevent parasite. Prevention using nets to stop bites