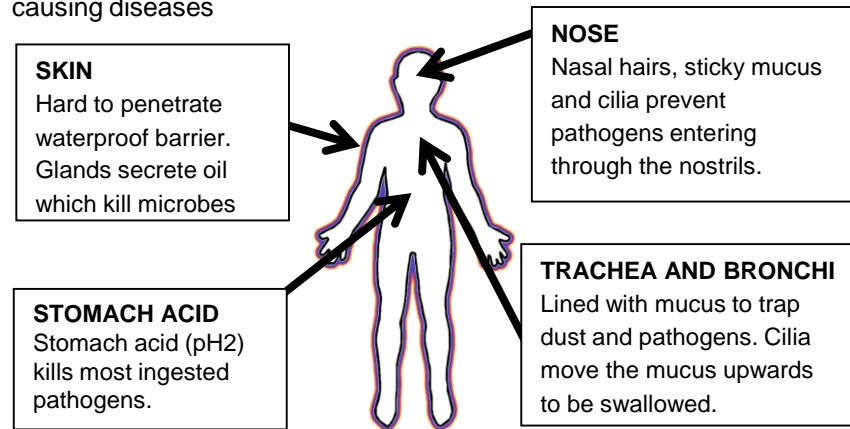


## AQA B3a Infection and response: Communicable diseases Combined Higher (Page 1 of 2)

Key word	Definition
health	This is the state of physical and mental wellbeing.
ill health	Disease is a major cause of ill health but this can also be caused by poor diet, stress and life situations.
disease	A major cause of ill health. Diseases can be both communicable and non-communicable.
communicable disease	A disease that can be passed from one organism to another by direct contact, water or air e.g. measles
non-communicable disease	A disease that cannot be spread between organisms e.g. asthma, cancer, coronary heart disease.
antigen	Surface proteins found on pathogens that are recognised by white blood cells
pathogen	microorganisms such as viruses and bacteria that cause infectious diseases in animals and plants.
phagocytes	A type of white blood cell that engulfs pathogens and digests them by phagocytosis
lymphocytes	They recognise antigens on the surface of pathogens, and produce antibodies or antitoxins

**Human defence systems-** The human body has several non specific ways of defending itself from pathogens and preventing them from causing diseases



Pathogen	Disease	Symptoms	Transmission (how they are spread)	Reducing or preventing spread
<b>virus</b> Reproduce rapidly in the body. Viruses live and reproduce inside cells, causing cell damage	Measles	Fever, red skin rash, can be fatal	Droplet inhalation from coughs and sneezes	Vaccination as a child
	HIV	Initially flu like symptoms, serious damage to immune system caused when HIV develops into AIDS	Sexual contact and exchange of bodily fluids e.g. blood	Anti-retroviral drugs/ use of condoms
	Tobacco Mosaic Virus	Mosaic pattern of discolouration on leaves in plants. Affects growth of plant due to lack of photosynthesis	Spread via gardening tools or workers hands	Remove infected leaves and destroy, clean gardening equipment, don't use infected soil, wash hands
<b>bacterium (pl. bacteria)</b> Reproduce rapidly in the body. Bacteria may produce toxins (poisons) that damage tissues and make us feel ill.	Salmonella	Fever, cramp, vomiting and diarrhoea	Food prepared in unhygienic conditions or being undercooked	Improve food hygiene, was hands, vaccinate poultry and cook food thoroughly
	Gonorrhoea	Green discharge from penis or vagina, pain when urinating	Direct sexual contact or exchange of bodily fluids	Use condoms, treat using antibiotics
<b>protist</b>	Malaria	Recurrent fever, can be fatal	By animal vector- mosquitoes	Prevent breeding of mosquitoes use of nets to prevent bites Use of insecticides
<b>fungus (pl. fungi)</b>	Rose Black Spot	Purple/ black spots on leaves that turn yellow and drop early. Affects growth of plant due to lack of photosynthesis	Spores carried by wind or water	Remove infected leaves, spray with fungicides.

### Different types of disease may interact

Defects in the immune system (the system your body uses to fight off infection) mean that an individual is more likely to suffer from infectious diseases.

Viruses living in cells can be the trigger for cancers e.g. HPV (human papilloma virus) which can cause cervical cancer in women.

Immune reactions initially caused by a pathogen can trigger allergies such as skin rashes and asthma.

Severe physical ill health can lead to depression and other mental illness, particularly when they impact on a person's ability to carry out everyday activities.

**White blood cells can help to defend against pathogens in 3 ways**

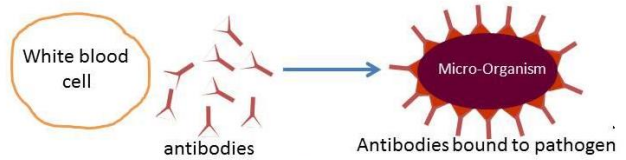
**phagocytosis**

White blood cells can ingest pathogens



**antibody production**

White blood cells can produce antibodies which bind to pathogens



**antitoxin production.**

White blood cells can produce antitoxins which bind to toxins produced by the pathogen, making them harmless

