

# OCR (B) Biology GCSE

## Topic B2.1: What are the causes of disease?

### Flashcards

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# Define health



## Define health

A state of physical and mental well-being



# Define disease



## Define disease

A disorder of the body or mind that negatively affects an individual's health



# What are the causes of disease?



# What are the causes of disease?

- Infection by a pathogen
- Gene mutation
- Conditions in the environment e.g. pollution
- Lifestyle e.g. lack of exercise, alcohol, stress
- Trauma



# What is a communicable disease?





## What is a communicable disease?

- A disease that is not passed directly between individuals.
- Caused by a pathogen



# Define pathogen



## Define pathogen

A disease-causing organism e.g. virus, fungi, bacteria, protists



# What is a non-communicable disease?



# What is a non-communicable disease?

- A disease that is not transmitted between individuals
- Generally long lasting with a slow-onset
- Caused by lifestyle, environmental conditions, genetic mutations etc.



Give some examples of  
non-communicable diseases (4)



Give some examples of non-communicable diseases  
(4)

- Cancer
- Diabetes
- Cardiovascular diseases
- Chronic respiratory diseases e.g. asthma



# What is a symptom?





# What is a symptom?

A change experienced by an organism that indicates disease



# What is the 'incubation period'?



# What is the 'incubation period'?

The period of time between contracting an infection and the development of symptoms



List the ways in which communicable diseases can spread



# List the ways in which communicable diseases can spread

- Water
- Air
- Body fluids
- On surfaces
- Animal vectors
- Soil
- Food



# How do bacteria cause disease?



# How do bacteria cause disease?

They produce toxins which damage cells and cause disease symptoms.



Give an example of a disease caused by  
bacteria





Give an example of a disease caused by bacteria

- Cholera
- Food poisoning
- Crown gall disease



Describe how cholera is spread between humans



Describe how cholera is spread between humans

Spread by drinking **water** or washing in water that has been contaminated with infectious faeces



Describe how *Salmonella* is transmitted to humans



## Describe how *Salmonella* is transmitted to humans

- Transmitted to humans in undercooked or out of date **food** (generally animal products)
- Causes food poisoning



Describe how crown gall disease is spread between plants



Describe how crown gall disease is spread between plants

Spread in **soils** contaminated with *Agrobacterium tumefaciens*. Bacteria infect plant wounds.



# Describe the effects of crown gall disease in plants





Describe the effects of crown gall disease in plants

Growths develop at plant crowns,  
reducing water flow and damaging plant  
tissue. This can result in plant death.



# How do viruses cause disease?



## How do viruses cause disease?

They enter host cells and replicate inside of them. The host cells rupture, releasing new viruses.



Give an example of a disease caused by  
a virus



Give an example of a disease caused by a virus

- Influenza
- HIV/AIDS
- Chicken pox
- Tobacco mosaic virus



How do viruses differ from other microorganisms e.g. bacteria, fungi?



How do viruses differ from other microorganisms e.g. bacteria, fungi?

Viruses are not living organisms. They do not reproduce and can only replicate inside a host cell.



Describe how influenza is spread  
between humans





Describe how influenza is spread between humans

It is an **airborne** virus which is spread via droplet infection.



# How is HIV spread between humans?



# How is HIV spread between humans?

HIV is passed on by direct contact with infected **body fluids** e.g. blood, semen, breast milk.



# How does the HIV cause disease?



## How does HIV cause disease?

It destroys white blood cells making the individual immunodeficient and increasingly susceptible to other diseases. This leads to AIDS.



Describe how the tobacco mosaic virus (TMV) is spread between plants



Describe how the tobacco mosaic virus (TMV) is spread between plants

TMV is spread between plants when contaminated leaves come into **contact** healthy leaves.



# How does TMV affect plants?





## How does TMV affect plants?

It infects the chloroplasts, causing discolouration and the wrinkling of plant leaves. This reduces their ability to photosynthesise.



# What are protists?



# What are protists?

## Eukaryotic, single-celled microorganisms



Give an example of a disease caused by protists



Give an example of a disease caused by protists

- Malaria
- Dysentery (causes severe diarrhoea)



Describe how malaria is transmitted  
between humans



Describe how malaria is transmitted between humans

Spread by **mosquito vectors** which pick up the plasmodium protist when feeding on the blood of an infected organism. They transmit malaria to other organisms during feeding.



# How do fungi cause disease? (2)





## How do fungi cause disease? (2)

- Produce spores which spread to other organisms
- Hyphae break through the surface of plants and human skin



Give an example of a disease caused by  
fungi



Give an example of a disease caused by fungi

- Athlete's foot
- Ash dieback disease



Describe how athlete's foot is spread  
between humans



Describe how athlete's foot is spread between humans

It is spread by touching contaminated **surfaces** e.g. shower floors, towels.



Describe how ash dieback disease is transmitted between plants



Describe how ash dieback disease is transmitted between plants

It is spread via **airborne** spores which are carried by the wind.



# How does ash dieback disease affect plants?





How does ash dieback disease affect plants?

It causes dark lesions on bark and blackened leaves which wilt and eventually die.

