

Edexcel Biology GCSE

Topics 5.1 to 5.8 - Causes of disease

Flashcards

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Define health



Define health

A state of complete physical, mental and social well-being (as defined by the World Health Organization, WHO)



Define disease



Define disease

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



What are the two types of disease?



What are the two types of disease?

- Communicable
- Non-communicable



What is a communicable disease?



What is a communicable disease?

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



What is a symptom?



What is a symptom?

A change experienced by an organism that indicates disease



Why does having an illness make an individual more likely to contract another disease?



Why does having an illness make an individual more likely to contract another disease?

A disease may weaken an individual's immune system making them increasingly susceptible to other infections.



Describe cholera



Describe cholera

- Caused by *Vibrio cholerae* **bacterium**
- Spread by drinking **water** or washing in water that has been contaminated with infectious faeces
- Symptoms: diarrhoea, vomiting



How can the incidence of cholera be reduced?



How can the incidence of cholera be reduced?

- Access to clean water
- Improved sanitation (sewage disposal etc.)



Describe tuberculosis (TB)



Describe tuberculosis (TB)

- Caused by *Mycobacterium tuberculosis* **bacterium**
- It is an **airborne** bacteria spread by droplet infection
- Symptoms: lung damage, chesty cough, wheezing



How can the transmission of TB be reduced?



How can the transmission of TB be reduced?

- Improved hygiene (washing hands, sneezing into tissues etc.)
- Infected individuals should avoid crowded areas
- Increased ventilation in the individual's home



Describe Chalara ash dieback



Describe Chalara ash dieback

- Caused by a **fungus** that infects ash trees
- Spread via **airborne** spores which are carried by the wind
- Causes dark lesions on bark and blackened leaves which wilt and eventually die



How can the transmission of Chalara ash dieback disease be reduced?



How can the transmission of Chalara ash dieback disease be reduced?

- Control the movement of ash trees
- Kill infected plants
- Replant with a different species



Describe malaria



Describe malaria

- Caused by plasmodium **protist**
- Spread by **mosquito vectors** which pick up the plasmodium protist when feeding on the blood of an infected organism and transmit malaria to other organisms during feeding
- Flu-like symptoms, damage to red blood cells, liver damage



How can the incidence of malaria be reduced?



How can the incidence of malaria be reduced?

- Mosquito nets
- Insect repellent
- Cover arms and legs



Describe stomach ulcers (biology only)



Describe stomach ulcers (biology only)

- Caused by *Helicobacter pylori* **bacterium**
- Transmitted orally by eating infected foods or drinking infected water
- Symptoms: stomach pain, vomiting, nausea



How can the transmission of
Helicobacter pylori be reduced?
(biology only)



How can the transmission of *Helicobacter pylori* be reduced? (biology only)

- Access to clean water
- Improved hygiene
- Improved sanitation (sewage disposal etc.)



Describe Ebola (biology only)



Describe Ebola (**biology only**)

- Caused by Ebola **virus**
- Spread by direct contact with infected **body fluids** e.g. blood, semen, saliva, mucus, vomit
- Symptoms: fever, diarrhoea, vomiting, internal bleeding



How can the transmission of Ebola be reduced? (biology only)



How can the transmission of Ebola be reduced? (biology only)

- Improved hygiene
- Isolating infected individuals
- Sterilisation of outbreak areas



Describe simply how viruses cause
disease (biology only)



Describe simply how viruses cause disease
(biology only)

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



How do viruses differ from other microorganisms e.g. bacteria, fungi?
(biology only)



How do viruses differ from other microorganisms e.g. bacteria, fungi? (biology only)

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



By what two pathways do viruses
replicate inside living cells?
(biology only)



By what two pathways do viruses replicate inside living cells? (**biology only**)

- Lytic pathway
- Lysogenic pathway



Describe the lytic pathway (biology only)



Describe the lytic pathway (biology only)

1. Virus binds to specific receptors on host cell
2. Virus injects its DNA into host cell and replicates its DNA using host cell machinery
3. New viral structures are produced and assembled
4. Host cell ruptures, releasing new viruses



Describe the lysogenic pathway (biology only)



Describe the lysogenic pathway (biology only)

1. Virus binds to specific receptors on host cell
2. Viral DNA injected into host cell and becomes integrated into host cell genome
3. Viral DNA replicates each time the host cell divides. However, the cell remains normal.
4. Trigger causes the activation of viral DNA. It enters **lytic** pathway.



Describe HIV



Describe HIV

- Caused by human immunodeficiency **virus**
- Spread by direct contact with infected **body fluids** e.g. blood, semen, breast milk.
- Destroys white blood cells making the individual immunodeficient and increasingly susceptible to other diseases. Leads to **AIDS**.



How can the spread of HIV be reduced?



How can the spread of HIV be reduced?

- Use of condoms and protected sex
- Needle exchange
- Screening blood for HIV
- Deterring infected mothers from breastfeeding



Describe Chlamydia



Describe Chlamydia

- Caused by *Chlamydia* **bacterium**
- Spread through **sexual contact** or direct contact with infected genital fluids
- Can result in infertility



How can the transmission of *Chlamydia* be reduced?



How can the spread of *Chlamydia* be reduced?

- Use of condoms and protected sex
- Screening

