

## 3.1.2 Viral diseases

### AQA GCSE Biology (Higher) Question and answer notes

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#### How to use these notes

These notes cover everything you need to know for this part of the specification. They have been written in question-answer format to make them easier for you to study from.

In order to study successfully, I recommend you do the following for each question and answer:

- Read it carefully and make sure you **understand** it.
- **Memorise** the answer.
- **Practice** applying your understanding to past exam questions.

A good way to memorise information is to use **retrieval practice**. This is when you practise retrieving information from your memory. You could do this by making a flashcard for each question with the question on one side and the answer on the other. Or you could use a flashcard app. Alternatively, use a sheet of paper to cover up the answer so you can only see the question. Try to answer the question and then check how you did.

You should practise retrieving each answer from your memory until you can do it perfectly. Even once you can retrieve the answer perfectly, your ability to retrieve it will probably fade as time passes without practising. Therefore you will need to keep going back to the questions that you have previously mastered and practising them again. However, each time you re-learn the answer, the memory will be stronger and will last longer than the time before.

#### What is a viral disease?

A viral disease is a disease caused by a virus.

#### Name three viral diseases.

The following are all viral diseases:

- Measles
- HIV/AIDS
- Tobacco Mosaic Virus (TMV)

**What is measles?**

Measles is a viral disease of humans which produces symptoms of fever and a red skin rash. It is a serious disease and in some cases it leads to death.

**How does measles spread?**

Measles spreads through the inhalation of droplets from coughs and sneezes.

**How is the spread of measles prevented?**

The spread of measles is prevented through vaccination. Most young children are vaccinated against measles.

**What is HIV/AIDS?**

HIV (human immunodeficiency virus) is a virus which infects humans, initially causing symptoms similar to those of flu. If the virus is not successfully controlled with drugs, it attacks the immune system. Eventually, the immune system becomes so weak that the body cannot deal with infections or cancers. This condition is called AIDS (acquired immunodeficiency syndrome). A person with AIDS is susceptible to illness or death from conditions that their immune system would usually have been able to deal with.

**How is HIV infection treated?**

Although people cannot currently be cured of HIV infection (except in very rare cases), drugs called antiretroviral drugs can be used to control the virus and prevent the infected person from getting AIDS. People infected with HIV who are on effective antiretroviral treatment have life expectancies close to those of uninfected people.

**How does HIV spread?**

HIV spreads mainly through the following routes:

- Sexual contact (especially anal and vaginal sex)
- Sharing of needles between recreational drug users
- From mother to baby during pregnancy

HIV **cannot** be transmitted by skin-to-skin contact (e.g. shaking hands, hugging).

**How can the spread of HIV be prevented?**

The spread of HIV can be prevented in the following ways:

- Safe-sex practices, such as the use of condoms
- The use of drugs taken before and after exposure to prevent infection
- Needle exchange programmes for drug users
- The treatment of infected people (people with HIV who are on effective antiretroviral treatment cannot pass on the virus)

**What is Tobacco Mosaic Virus?**

Tobacco Mosaic Virus (TMV) is a virus which infects many species of plants including tobacco and tomatoes. It causes a distinctive pattern of discolouration of the leaves (which looks like a mosaic). This disrupts photosynthesis, resulting in reduced growth of the plant.