

TYPES OF VACCINES:

What are the four different components of different vaccines?

- Attenuated viruses are viruses that have been weakened so they are harmless e.g. measles vaccine.
- Killed bacteria e.g. whooping cough.
- A toxin that has been altered into a harmless form e.g. diphtheria vaccine.
- An antigen-bearing fragment of the pathogen e.g. meningitis C.

What is herd immunity?

- This is where enough people are immunised so disease is less likely to be transferred and less disease in the community.

What drugs are used to prevent the production of more viruses?

- Antiretroviral drugs

What are the two main types of antiretroviral drugs?

- Reverse transcriptase inhibitors which prevent the viral RNA from making DNA for integration into the host's genome.
- Protease inhibitors which inhibit the proteases that catalyse the cutting of larger proteins into small polypeptides for use in the construction of new viruses.

ANTIBIOTICS:

What two antibiotics are commonly used?

- Bactericidal – these are antibiotics that destroy bacteria.
- Bacteriostatic – these are antibiotics that prevent the multiplication of bacteria. The host's own immune system can then destroy the pathogens.

How do antibiotics disrupt bacterial cell growth and division?

- Inhibition of bacterial cell wall synthesis. If a weak wall forms, this can lead to lysis (bursting) of the cell.
- Disruption of the cell membrane, causing changes in permeability that leads to cell lysis.
- Inhibition of nucleic acid synthesis, replication and transcription. This prevents cell division and/or synthesis of enzymes.
- Inhibition of protein synthesis meaning enzymes and other essential proteins are not produced.
- Inhibition of specific enzymes found in the bacterial cell but not the host.