

**Higher Human Biology**

**Unit 3 Neurobiology and Immunology:**

**Key area 7: Immunisation**

**Key area 8: Clinical trials of vaccines and drugs**

By the end of this topic I will be able to:

**Key area 7: Immunisation**

1. Describe the process of vaccination,

relating it to the primary and secondary immune response.

2. Give examples of the range of agents used in a vaccine.

3. Describe the role played by an adjuvant in a vaccine

4. Understand the importance and meaning of herd immunity,

giving examples of established mass vaccination

programmes.

5. Know that the herd immunity threshold depends on the

type of disease, the effectiveness of the vaccine and the

population density.

6 . Understand that mass vaccination programmes are designed

to establish herd immunity to a disease.

7. State reasons why herd immunity may be lacking in some

countries; to include lack of public health policy, financial

factors and adverse publicity about vaccines.

8. Understand that many pathogens have evolved mechanisms

to evade the specific immune system which has consequence

for vaccination strategies.

9. Describe how some pathogens can change their antigens to

avoid immunological memory and name examples of diseases

that display this technique.

**Key area 8: clinical trials of vaccines and drugs**

10. Understand that vaccines are subject to clinical trials before

licence to establish their safety and effectiveness.

11. Know that to be successful, these trials should use

randomised, double-blind, placebo-controlled protocols and be

able to describe what these terms mean.

12. State that trial groups need to be of a suitable-size to

reduce the magnitude of experimental error and are compared

to determine whether there are any statistical differences

between the groups.