

**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.