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| *Human Perspectives ATAR Units 3 & 4* |

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Worksheet 7.2 Specific resistance to infection

Using Chapter 7 of *Human Perspectives ATAR Units 3 & 4*, complete the following activities.

**1** Define the term ‘pathogen’.

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**2** What is the difference between lymphocytes and macrophages?

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**3** Where are B and T lymphocytes matured before being released into the bloodstream?

**B cells:**

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**T cells:**

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**4** Define the term ‘antigen’. What is the difference between a self and non-self antigen?

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**5** Define the term ‘antibody’. To what group of proteins do antibodies belong?

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**6** Draw a diagram showing the main steps involved in the humoral response to disease.

**7** Draw a graph showing the change over time in the concentration of an antibody after an initial exposure to an antigen followed by a subsequent exposure to the same antigen four weeks later. Clearly label the graph, including any lines drawn.

**8** Antigen–antibody complexes form once an antibody makes contact with an antigen for which it is specific. List some responses that occur once antigen–antibody complexes have been formed.

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**9** Draw a diagram showing the main steps involved in the cell-mediated response to infection.

**10** Describe any differences between killer T cells and helper T cells.

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**11** State the differences between:

**a** passive and active immunity

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**b** natural and artificial immunity.

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**12 a** What is the purpose of vaccination?

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**b** Is there a difference between immunisation and vaccination? Explain.

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**13** Complete the following table.

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| **Type of vaccine** | **Description of vaccine preparation** | **Used for immunisation against** |
| Live attenuated vaccine |  |  |
| Inactivated vaccine |  |  |
| Toxoids vaccine |  |  |
| Sub-unit vaccine |  |  |

**14** Draw a graph showing the change over time in the concentration of an antibody following injection of a vaccine, and following a second injection four weeks later. Clearly label the graph, including any lines drawn. Are there similarities between this graph and the graph you drew in your answer to Question 7?

**15** Draw a graph showing the change over time in the concentration of an antibody following the injection of a vaccine, and then exposure to a different pathogen four weeks later. Clearly label the graph, including any lines drawn. Explain any differences between this graph and the graph you drew in your answer to Question 14.