## Lymphatic and haematic system worksheet

- 1 Medical interview
- 2 Lymphatic system review

A In pairs, discuss these questions:

- 1 Why is sometimes the lymphatic system referred to as the immune system?
- 2 Where is the excessive fluid which leaks during diffusion collected?
- 3 What happens to lymph in lymph nodes?
- 4 Why do doctors feel your lymph nodes when they examine you?
- 5 Where is the thymus located, and what is its function?
- 6 Which lymphatic organ destroys old red blood cells?
- 7 How can the spleen help if you are haemorrhaging?
- 8 What makes the lymph move?

B Match the terms from the box with their definitions below.

| natural killer cell  | antibody              | B lymphocyte              | T lymphocyte              | antigen                 |
|----------------------|-----------------------|---------------------------|---------------------------|-------------------------|
| macrophages          | help                  | er cell plas              | ma cell                   |                         |
| a lym                | phocyte formed in     | the bone marrow from      | which it migrates to the  | e thymic cortex to      |
| become an immunol    | ogically competen     | t cell                    |                           |                         |
| one of               | f the two major clas  | sses of lymphocytes, w    | which comprises 30% of    | circulating             |
| lymphocytes; respon  | nsible for antibody   | production (interacts w   | vith the appropriate CD4  | 4 T-helper cells        |
| a T ce               | ell that promotes the | e activation and function | ons of B cells and other  | T cells; its surface is |
| marked by CD4 rece   | eptors                |                           |                           |                         |
| white                | blood cells (activa   | ted monocytes) whose      | job is to destroy invadi  | ng microorganisms       |
| small                | lymphocytes havin     | g cytotoxic activity ag   | ainst target cells coated | with specific IgG       |
| antibody             |                       |                           |                           |                         |
| any st               | ibstance capable of   | finducing a specific im   | mune response             |                         |
| an im                | munoglobulin mole     | ecule having a specific   | amino acid sequence w     | hich enables it to      |
| adhere to a specific | antigen               |                           |                           |                         |
| an ant               | ibody-producing ly    | mphocyte derived from     | m a B cell after reaction | with a specific antiger |
| 3 English medical te | erminology            |                           |                           |                         |
| 1 tonsillectomy      |                       | 7 a post-mortem of        | examination of a body _   |                         |
| 2 splenectomy        |                       | 8 infection & swe         | elling of the tonsils     |                         |
| 3 thymectomy         |                       | 9 cutting/dissection      | on of muscle tissue       |                         |
| 4 laparoscopy        |                       | 10 surgical excisi        | on of a muscle            |                         |
| 5 thymitis           |                       | 11 surgical incision      | on of the heart           |                         |
| 6 angiotomy          |                       | 12 removal of tiss        | sue (for diagnoses)       |                         |

## 4 Pathologies

Listen and complete the grid.

| What is Hodgkin disease?                            |  |
|---|--|
| Where do you find enlarged lymph nodes in the body? |  |
| Symptoms  |  |
| Diagnosis is done by                                |  |
| Goals of the treatment                              |  |

What does the staging evaluation consist of?

Why is the evaluation performed?

Compare the two types of disease:

| Limited-stage disease | Advanced-stage disease |
|-----------------------|------------------------|
|                       |                        |
|                       |                        |
|                       |                        |
|                       |                        |
|                       |                        |

What is **durable remission**?

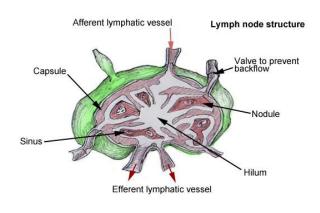
When is the *autologous stem cells transplant* done?

Do all Mayo Clinic patients have a 100% good outcome?

## 5 Revision

Lymph nodes are bean-shaped structures that are widely distributed throughout the lymphatic pathway, providing a filtration mechanism for the lymph before it rejoins the blood stream. \_\_\_\_ (1) Lymph nodes constitute a main line of defence by hosting 2 types of immunoprotective cell lines, T lymphocytes and B lymphocytes.

Lymph nodes have 2 distinct regions, the cortex and the medulla. \_\_\_\_ (2) At the centre of the follicles is an area called germinal centres that predominantly host B-lymphocytes while the remaining cells of the cortex are T-lymphocytes. Vessels entering the lymph nodes are called



afferent lymphatic vessels and, likewise, those exiting are called efferent lymphatic vessels.

Extending from the collagenous capsule inward throughout the lymph node are connective tissue trabeculae that incompletely divide the space into compartments. Deep in the node, in the medullary portion, the trabeculae divide repeatedly and blend into the connective tissue of the hilum of the node. \_\_\_\_ (3) Within this framework, a delicate arrangement of connective tissue forms the lymph sinuses, within which lymph and free lymphoid elements circulate.

A subcapsular or marginal sinus exists between the capsule and the cortex of the lymph node. Lymph passes from the subcapsular sinus into the cortical sinus toward the medulla of the lymph node. \_\_\_\_ (4) From there, lymph is collected into several efferent vessels that run to other lymph nodes and eventually drain into their respective lymphatic ducts

## Complete the gaps with one of these sentences.

- a) Thus the capsule, the trabeculae, and the hilum make up the framework of the node.
- b) Medullary sinuses represent a broad network of lymph channels that drain toward the hilum of the node.
- c) The cortex contains follicles, which are collections of lymphocytes.
- d) They are arranged in an overlapping pattern, so that pressure from the surrounding capillary forces at these cells allows fluid to enter.
- e) The average human body contains approximately 600-700 of them, predominantly concentrated in the neck, axillae, groin, thoracic mediastinum, and mesenteries of the GI tract.