

# Activity I

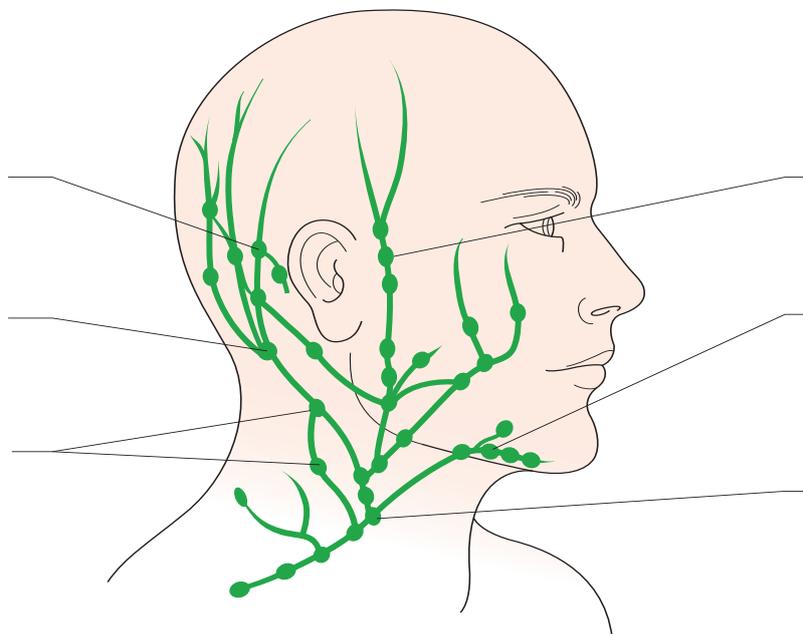
---

Label the following diagram of the lymphatic nodes of the head and neck.

Mastoid nodes  
Parotid nodes

Submandibular nodes  
Deep cervical nodes

Superficial cervical nodes  
Occipital nodes



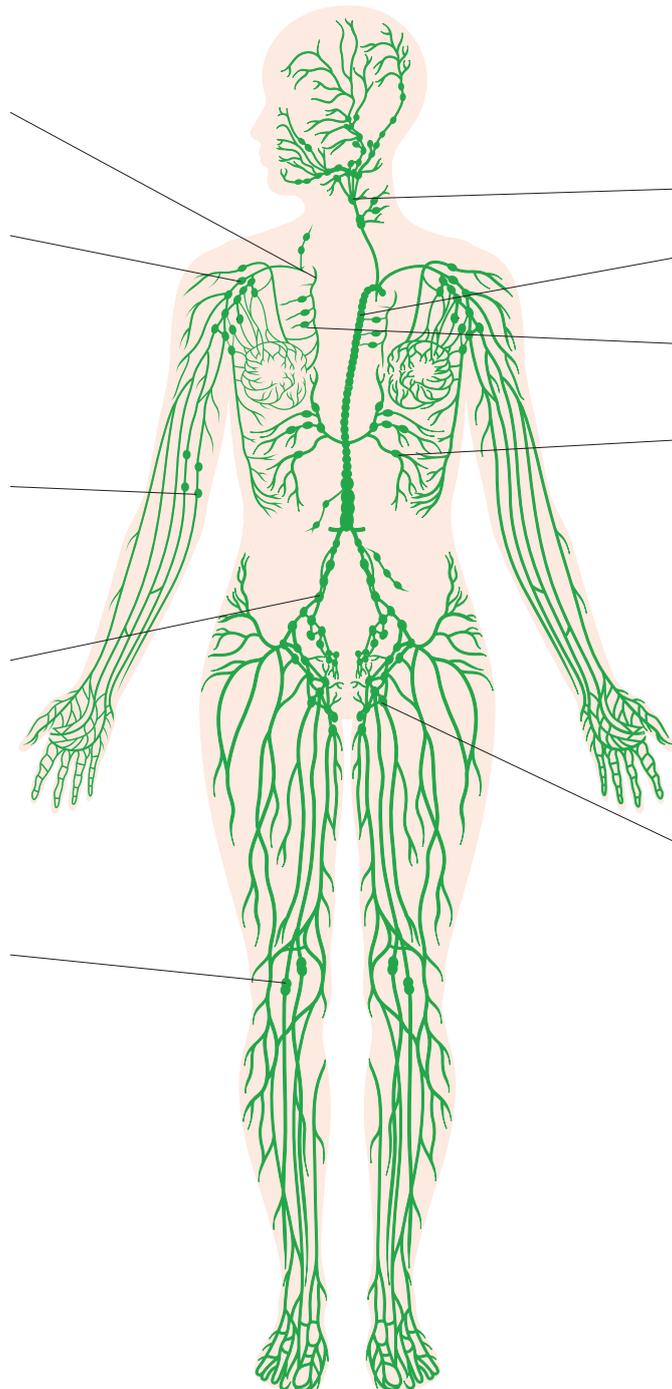
# Activity 2

Label the following diagram of the lymphatic nodes of the body.

Inguinal nodes  
Axillary nodes  
Thoracic duct  
Thoracic nodes

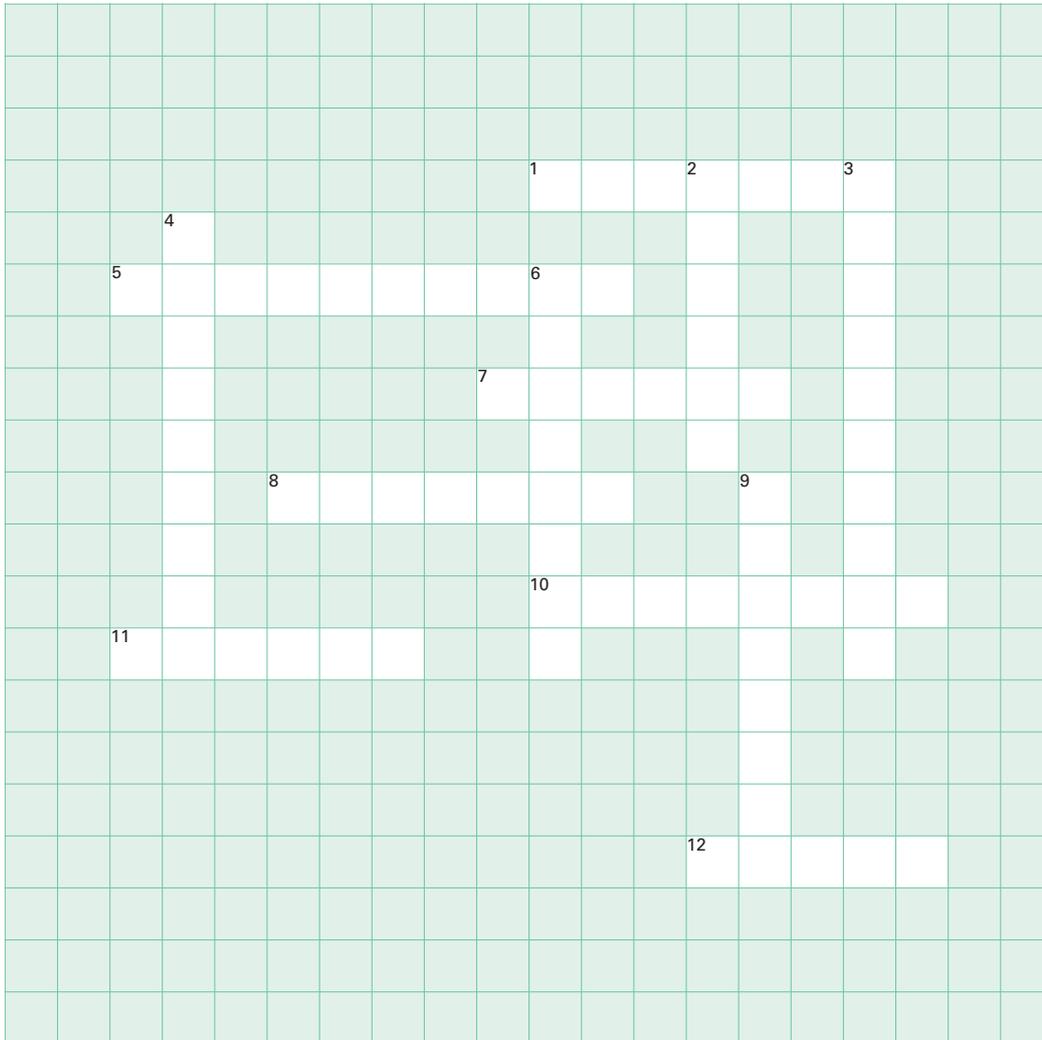
Abdominal nodes  
Popliteal nodes  
Cervical nodes

Right lymphatic duct  
Cubital supratorochlear nodes  
Pelvic nodes



# Activity 3

Complete the crossword.



## Across

1. lymphatic tissue in oral cavity and pharynx
5. type of cell reproduced within lymph nodes
7. outer region of lymph node
8. intestinal lymph vessel
10. nodes draining lymph from lower limbs, external genitalia and lower abdominal wall
11. swelling of body tissues due to accumulation of tissue fluid
12. transparent watery liquid derived from tissue fluid

## Down

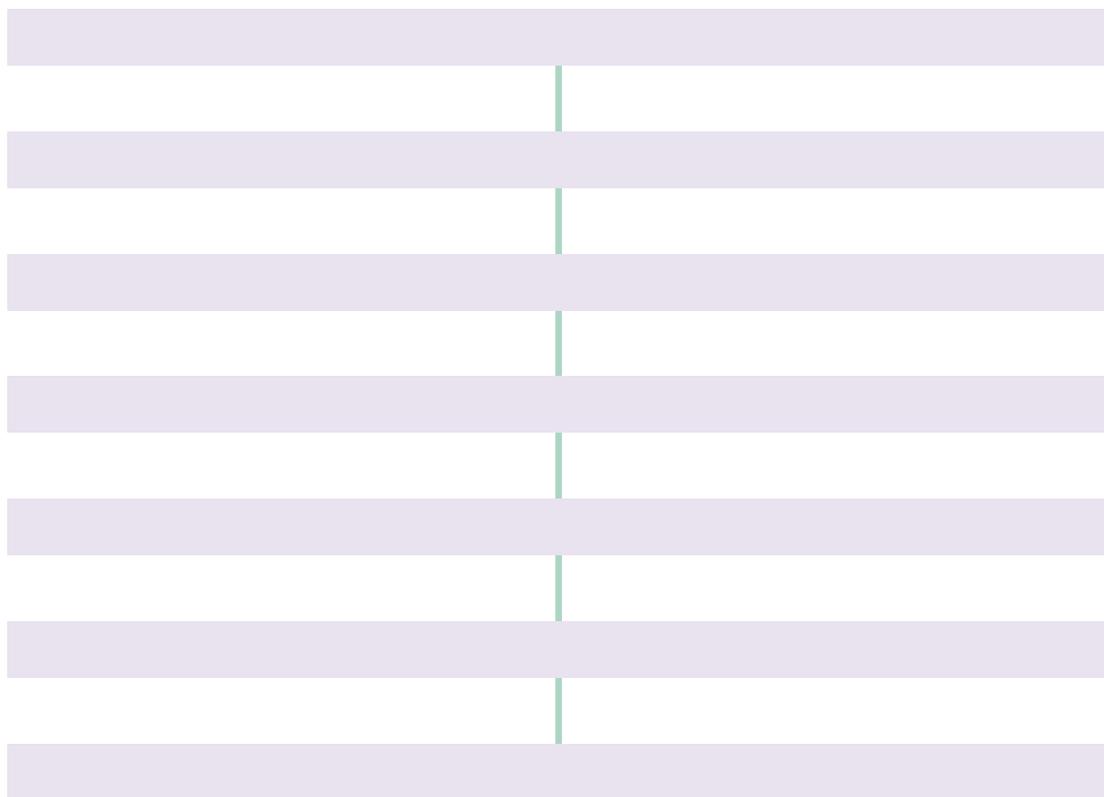
2. largest lymphatic organ in body
3. cleansed lymph is drained into venous circulation via these veins
4. filter of lymph (5, 4)
6. main collecting duct of lymphatic system
9. lymph nodes found under the arm

# Activity 4

---

Complete the following flow diagram showing the circulatory pathway of lymph by inserting the text into the boxes in the correct order.

- Larger lymphatic vessels lead to lymph nodes
- Filtered lymph is collected into lymphatic ducts
- Collected lymph is drained into the venous system via the subclavian veins
- Plasma escapes blood capillary and bathes tissue cells
- Excess fluid flows through a network of lymphatic capillaries
- Lymph passes through at least one lymphatic node where it is filtered
- Tissue fluid enters lymph vessels where it becomes lymph



# Activity 5

---

Match the key words to the definitions in the box

Thymus gland

Afferent

Non-specific immunity

Submandibular nodes

Superficial cervical nodes

Specific immunity

Lymphatic vessel

Spleen

Immunisation

Key words	Definitions
	Stores lymphocytes and releases them as part of the immune response
	Container that transports lymph through its circulatory pathway
	Drain lymph from the lower part of ear and cheek region
	Lymph vessel leading towards a lymph node
	Drain lymph from chin, lips, nose, cheeks and tongue
	Promotes the development and maturation of lymphocytes in childhood
	Artificial stimulation of antibodies
	Defence system programmed genetically from birth
	The interaction between an antigen and an antibody

## Activity 6

---

Complete the following by filling in the blanks with the words listed below.

carbon dioxide  
blood plasma  
proteins  
oxygen

subclavian  
tissue fluid  
plasma  
capillaries

veins  
water  
urea

lymphocytes  
vessels  
lymph

Lymph is a transparent, colourless, watery liquid which is derived from \_\_\_\_\_  
\_\_\_\_\_ and is contained within lymph \_\_\_\_\_.

It resembles \_\_\_\_\_ in composition, except that it has a  
lower concentration of plasma \_\_\_\_\_.

Lymph contains only one type of cell; these are called \_\_\_\_\_.

As blood is distributed to the tissues, some of the \_\_\_\_\_ escapes from  
the \_\_\_\_\_ and flows around the tissue cells, delivering nutrients such as  
\_\_\_\_\_ and \_\_\_\_\_ to the cell and picking up cellular waste such  
as \_\_\_\_\_ and \_\_\_\_\_.

Once the plasma is outside the capillary and is bathing the tissue cells, it becomes tissue fluid.

Some of the tissue fluid passes back into the capillary walls to return to the bloodstream via the  
\_\_\_\_\_, and some is collected up by a lymph vessel where it becomes  
\_\_\_\_\_.

Lymph is then taken through its circulatory pathway and is ultimately returned to the bloodstream  
via the \_\_\_\_\_ veins.

## Multiple-choice questions – Student book, p 188

---

**1. Lymph is derived from**

- a) plasma proteins
- b) tissue fluid
- c) blood plasma
- d) lymphocytes

**2. Lymph is similar in composition to blood, except it has lower concentration of**

- a) water
- b) protein
- c) waste
- d) hormones

**3. Which of the following is NOT a function of the lymphatic system?**

- a) production of lymphocytes
- b) prevention of oedema
- c) production of heat
- d) absorption of fat

**4. The lymphatic system has a close relationship to which other system?**

- a) nervous
- b) respiratory
- c) circulatory
- d) urinary

**5. In order to be cleansed of foreign matter lymph must pass through at least one**

- a) lymphatic vessel
- b) lymphatic node
- c) lymphatic capillary
- d) lymphatic duct

**6. Which of the following statements best describes the structure of a lymph vessel?**

- a) similar to veins
- b) contains a considerable number of valves
- c) thin collapsible walls
- d) all of the above

**7. Lymph flow relies upon**

- a) pressure exerted by skeletal muscles during movement
- b) compression of lymph vessels from the pull of the skin and fascia during movement
- c) changes in internal pressure during respiration
- d) all of the above

**8. Which of the following drains lymph from the lower limbs?**

- a) cervical nodes
- b) axillary nodes
- c) popliteal nodes
- d) supratrochlear nodes

**9. Which of the following drains lymph from the back of the scalp and the upper part of the neck?**

- a) occipital
- b) parotid
- c) deep cervical
- d) superficial cervical

**10. The axillary nodes are situated in the**

- a) neck
- b) groin
- c) underarm
- d) elbow

**11. The two main lymphatic ducts are the**

- a) right and left subclavian
- b) thoracic and left subclavian
- c) thoracic and right lymphatic
- d) right and left lymphatic

**12. Which duct collects the majority of lymph?**

- a) thoracic duct
- b) left lymphatic duct
- c) right lymphatic duct
- d) none of the above

**13. The largest of the lymphatic organs is the**

- a) tonsils
- b) spleen
- c) liver
- d) thymus

**14. Collected lymph is drained into the venous system via the**

- a) subclavian arteries
- b) subclavian veins
- c) superior vena cava
- d) brachiocephalic veins

**15. Which of the following statements is FALSE?**

- a) An allergic reaction may occur when a foreign substance or antigen enters the body
- b) Immunity involves interaction between an antigen and an antibody
- c) Antigens build antibodies on the surface of bacteria
- d) The key cells of specific immunity are lymphocytes

**16. The viral infection which progressively destroys immunity in an individual is**

- a) lupus erythematosus
- b) AIDS
- c) myalgic encephalomyelitis
- d) Hodgkin's disease