What Is the Lymphatic System?

Worksheet

The lymphatic system is a network of lymph capillaries, vessels, lymph nodes, and lymphoid organs (spleen, thymus, tonsils, bone marrow) that returns interstitial fluid to the blood, absorbs dietary fats, and supports immune surveillance.

Questions

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

A) Returning interstitial fluid to the blood
B) Transporting absorbed dietary fats
C) Producing red blood cells
D) Supporting immune responses

2. Where does lymph ultimately drain back into the bloodstream?

A) Hepatic portal vein
B) Subclavian veins
C) Renal vein
D) Pulmonary vein

3. What are lacteals?

A) Lymphatic capillaries in the small intestine that absorb fats
B) Lymph nodes in the neck
C) Valves in leg veins
D) Immune cells in the spleen

4. Which structure filters lymph before it returns to the bloodstream?

A) Thoracic duct
B) Lymph node
C) Spleen
D) Vena cava

5. After standing all day, a person notices swollen ankles (edema). What role does the lymphatic system play?

6. A patient has a swollen, tender lump behind the ear after a scalp infection. Explain what is happening using lymphatic anatomy.

7. After eating a fatty meal, where does the absorbed fat initially enter the circulation, and by what route?

8. Define: What is the lymphatic system?

9. Define: What are the two main functions of lymph nodes?

10. Define: Where does the thoracic duct drain?

Answer Key

1. C) Producing red blood cells - Red blood cell production (hematopoiesis) is a function of bone marrow, not the lymphatic system's role.

2. B) Subclavian veins - The thoracic duct and right lymphatic duct empty lymph into the left and right subclavian veins.

3. A) Lymphatic capillaries in the small intestine that absorb fats - Lacteals are specialized lymph capillaries in intestinal villi that absorb dietary fats as chyle.

4. B) Lymph node - Lymph nodes act as filtering stations along lymphatic vessels, trapping pathogens and debris.

5. Gravity increases capillary fluid filtration in the legs, pushing fluid into tissue spaces Normally, lymphatic capillaries pick up this excess interstitial fluid and return it to the blood Prolonged standing or reduced muscle-pump activity slows lymphatic drainage When fluid filtration outpaces lymphatic drainage, fluid accumulates, causing visible swelling

6. Pathogens and debris from the scalp infection enter the interstitial fluid Lymph capillaries pick up this fluid, now carrying the pathogens It travels to the nearest regional node group draining that area (posterior auricular/occipital nodes) Immune cells in the node proliferate to fight the infection, causing the node to swell (lymphadenopathy)

7. Dietary fats are absorbed by intestinal villi into specialized lymph capillaries called lacteals The fat-rich fluid, now called chyle, travels through intestinal lymphatic vessels Chyle passes through the cisterna chyli and up the thoracic duct The thoracic duct empties into the left subclavian vein, so fat enters the bloodstream there - bypassing the liver's portal circulation initially

8. A network of vessels, nodes and organs that returns fluid to the blood, absorbs fats, and supports immunity.

9. Filtering lymph to trap pathogens/debris, and activating immune cells (lymphocytes) against infection.

10. Into the left subclavian vein, returning lymph from most of the body to the bloodstream.