What is the Lymphatic System?

Worksheet

The lymphatic system is a body-wide network of lymph vessels, lymph nodes, and lymphoid organs (spleen, thymus, tonsils) that returns excess interstitial fluid to the blood and filters out pathogens as part of the immune system.

Questions

1. What fluid enters lymph capillaries and becomes lymph?

A) Blood plasma directly
B) Interstitial fluid
C) Cerebrospinal fluid
D) Synovial fluid

2. Where does the thoracic duct empty lymph back into the blood?

A) Right atrium
B) Left subclavian vein
C) Hepatic portal vein
D) Pulmonary artery

3. Which organ filters blood and stores lymphocytes but is not a lymph node?

A) Thymus
B) Tonsil
C) Spleen
D) Appendix

4. Swollen lymph nodes usually indicate

A) Dehydration
B) Active immune response to infection
C) Low blood pressure
D) Muscle fatigue

5. Trace the path of lymph draining from a mosquito bite on the ankle back into the bloodstream.

6. Why do lymph nodes in the neck swell during a throat infection?

7. Explain how the lymphatic system prevents edema (tissue swelling).

8. Define: What is the primary function of the lymphatic system?

9. Define: Name the two main lymphatic ducts.

10. Define: What happens inside a lymph node?

Answer Key

1. B) Interstitial fluid - Interstitial fluid absorbed by lymph capillaries becomes lymph.

2. B) Left subclavian vein - The thoracic duct drains into the left subclavian vein.

3. C) Spleen - The spleen filters blood and recycles red blood cells while also housing immune cells.

4. B) Active immune response to infection - Enlarged nodes reflect increased lymphocyte activity fighting a pathogen.

5. Fluid leaks from ankle capillaries into tissue absorbed by lymph capillaries Flows into larger lymph vessels of the leg, passing through inguinal (groin) lymph nodes for filtering Continues up through the abdomen into the thoracic duct Thoracic duct empties into the left subclavian vein, returning fluid to blood circulation

6. Pathogens from the throat drain into nearby cervical lymph nodes via lymphatic vessels Lymphocytes inside the nodes multiply rapidly to fight the infection Increased cell number and fluid causes the node to enlarge and feel tender Swelling subsides once the infection clears and lymphocyte numbers normalize

7. Blood capillaries constantly leak small amounts of plasma into tissues If left uncollected, this fluid would accumulate and cause swelling Lymph capillaries continuously absorb the excess fluid The fluid is returned to the bloodstream via lymph vessels and ducts, keeping tissue volume stable

8. To drain excess interstitial fluid back into the blood and to support immune defense.

9. The thoracic duct and the right lymphatic duct.

10. Lymph is filtered and lymphocytes are activated to attack pathogens.