

8. LYMPHATIC SYSTEM AND IMMUNITY

Station 1: Lymphatic Structures

References: *Lab Manual, p. 163-165 and complete Fig. 29.6, p. 164.*

Textbook, p. 627-631.

Workbook, p. 201, #1, p. 202, #2 and #3, p. 203, #4 and #5, and p. 204, #6.

- Q1A. When does interstitial fluid become lymph?
- Q1B. What characteristic of lymphatic capillaries makes them unlike any blood vessel?
- Q2A. What characteristic do lymphatic vessels have in common with veins?
- Q2B. How does lymph move?
- Q3A. As lymph enters a lymphatic trunk, the lymph vessels pass through one or more -?-. (Two words)
- Q3B. Why does lymph pass through the structures named in Q3A?

Observe the lymphatic model to answer these questions:

- Q4A. Which letter identifies a lymph vessel?
- Q4B. Which letter identifies the structure that contains most of the lymph drained from the small intestine? Name it.
- Q5A. What nutrient absorbed in the villus of the intestine by the lacteal is found in the lymph draining from the intestine?
- Q5B. Which letter identifies the lymphatic duct that drains the left side and lower body? Name it.
- Q6A. Which letters indicate clusters of lymph nodes that drain into the right lymphatic duct? Name them.
- Q6B. Which letters indicate clusters of lymph nodes that drain into the left lymphatic duct? Name them.

Observe the torso model to answer these questions:

- Q7A. Which letter identifies the blood vessel that receives lymph from the right side of the body? Name it.
- Q7B. Which letter identifies a gland found in the pharynx that is part of the lymphatic system? Name it. Color it orange on p. 203 in your workbook.
- Q8A. Which letter identifies a lymphatic organ that destroys worn-out red blood cells and is a blood reservoir? Name it. Color it green on p. 203.
- Q8B. Which letter identifies an organ where Peyer's patches are found? Name it. Color Peyer's patches yellow on p. 203.
- Q9A. Which letter shows the location of a lymphatic gland responsible for the maturation of lymphocytes? Name it. Color it red on p. 203.
- Q9B. What is the function of the lymphatic system?

Station 2: Lymph Nodes

References: *Lab Manual, p. 163-165,*

Textbook, p. 631-633,

Workbook, p. 204-205, #6.

On the diagram of the lymph node:

- Q10A. Which letter identifies the lymph vessels emerging from the hilum? Name them.
- Q10B. Which letter identifies a lymph nodule? What do lymph nodules contain?
- Q11A. Which letter identifies the outer covering of a lymph node? Name it.
- Q11B. What are the aggregations of lymph nodules found in the intestine called?

Station 3: Genesis of Lymphocytes

References: *Lab Manual, p. 164-165 and Fig. 29.7, p. 165.*

Textbook, p. 639-641.

Workbook, p. 210, #20, p. 211, #21, and p. 214, #27.

- Q12A. Why is bone marrow considered to be part of the lymphatic system?

- Q12B. Where do T-lymphocytes mature?
 Q13A. What kind of immunity do T-lymphocytes produce?
 Q13B. Which lymphocyte produces antibodies?
 Q14A. What type of lymphocyte is responsible for “cell-to-cell” combat, enhancing the immune response and stimulating antibody production?
 Q14B. What type of immunity is achieved by circulating antibodies?
 Q15A. What does a “sensitized” B-lymphocyte become?
 Q15B. Define ANTIGEN.
 Q16A. Once they are mature, where are B- and T-lymphocytes found in the body?
 Q16B. Define IMMUNOGLOBULIN.
 Q17A. What kind of lymphatic cells remain in the lymphoid tissue after a primary immune response?
 Q17B. Antibody response to an antigen is (faster/slower) during the primary response when compared to the secondary response.

Complete Fig. 12-4, p. 210 in your workbook and color it according to your key. Turn it in with your lab report.

Station 4: Types of Immunity

References: *Textbook, p. 648-649.*

Workbook, p. 214, #26.

Immunity can be either Active or Passive, depending on whether the person being immunized is producing the immunity in his own immune system or accepting it from outside himself. Immunity can also be Natural or Artificial, depending on how the antigen was introduced into the person’s body. Classify the following as either Naturally acquired Active immunity, Naturally acquired Passive immunity, Artificially acquired Active immunity, or Artificially acquired passive immunity.

- Q18A. A baby receives a DPT booster shot.
 Q18B. A person recovers from the flu.
 Q19A. A baby is breast-fed.

Station 5: Specific and Non-Specific Body Defenses

References: *Textbook, p. 636-648 and Tablet 16.3, p. 638.*

Workbook, p. 206, #7, #8, and #9, p. 207, #10, #11, #12 and #13, and p. 208, #14 and #15.

Choose your answer from the list on the lab table and write the letters of your choice on your lab report.

- Q19B. Which of these is/are a specific body defense?
 Q20A. Which of these are nonspecific body defenses that act as mechanical barriers?
 Q20B. Which of these are nonspecific body defenses that act through chemical mechanisms?

Q21. CLINICAL APPLICATION QUESTION: (Answer at the bottom of your lab report.)

Explain why vaccination provides long-lasting protection against a disease while gamma globulin provides only short-term protection.

Turn in p. 203 and 210, labeled and colored, with your lab report.