

LABORATORY EXERCISE 48

LYMPHATIC SYSTEM

MATERIALS NEEDED

textbook
human torso
anatomical chart of the lymphatic system
compound microscope
prepared microscope slides:
 lymph node section
 human thymus section
 human spleen section

The lymphatic system is closely associated with the cardiovascular system and includes a network of capillaries and vessels that assist in the circulation of body fluids. These lymphatic capillaries and vessels provide pathways through which excess fluid can be transported away from intercellular spaces within tissues and returned to the bloodstream.

The organs of the lymphatic system also help to protect the tissues against infections by filtering particles from lymph and by supporting the activities of lymphocytes that furnish immunity against specific disease-causing agents.

PURPOSE OF THE EXERCISE

To review the structure of the lymphatic system and to observe the microscopic structure of a lymph node, thymus, and spleen.

LEARNING OBJECTIVES

After completing this exercise, you should be able to

1. locate and identify the major lymphatic pathways in an anatomical chart or model;
2. locate and identify the major chains of lymph nodes in an anatomical chart or model;
3. describe the structure of a lymph node;
4. identify the major microscopic structures of a lymph node, thymus, and spleen.

PROCEDURE A—
LYMPHATIC PATHWAYS

1. Review a textbook section on *lymphatic pathways*.

2. As a review activity, label figure 48.1.
3. Complete Part A of Laboratory Report 48.
4. Observe the human torso and the anatomical chart of the lymphatic system and locate the following features:

lymphatic vessels

lymph nodes

lymphatic trunks

 lumbar trunk

 intestinal trunk

 intercostal trunk

 bronchomediastinal trunk

 subclavian trunk

 jugular trunk

collecting ducts

 thoracic (left lymphatic) duct

 right lymphatic duct

internal jugular veins

subclavian veins

PROCEDURE B—LYMPH NODES

1. Review a textbook section on *lymph nodes*.
2. As a review activity, label figure 48.2.
3. Complete Part B of the laboratory report.
4. Observe the anatomical chart of the lymphatic system and the human torso, and locate the clusters of lymph nodes in the following regions:

cervical region

axillary region

inguinal region

pelvic cavity

abdominal cavity

thoracic cavity

Lab Report 48 Lymphatic System Anatomy

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Advancement of Science**



Lab Report 48 Lymphatic System Anatomy:

Hole's Human Anatomy & Physiology John Hole, 1996

Human Anatomy and Physiology John W. Hole, 1990

Anatomy & Physiology Laboratory Manual and E-Labs E-Book Kevin T. Patton, 2018-01-24 Using an approach that is geared toward developing solid logical habits in dissection and identification the Laboratory Manual for Anatomy and coloring exercises offer a kinesthetic experience useful in retention of content User friendly spiral binding allows for hands free viewing in the lab setting Step by step dissection instructions with accompanying illustrations and photos cover anatomical models and fresh or preserved specimens and provide needed guidance during dissection labs The dissection of tissues organs and entire organisms clarifies anatomical and functional relationships 250 illustrations including common histology slides and depictions of proper procedures accentuate the lab manual's usefulness by providing clear visuals and guidance Easy to evaluate tear out Lab Reports contain checklists drawing exercises and questions that help you demonstrate your understanding of the labs you have participated in They also allow instructors to efficiently check student progress or assign grades Learning objectives presented at the beginning of each exercise offer a straightforward framework for learning Content and concept review questions throughout the manual provide tools for you to reinforce and apply knowledge of anatomy and function Complete lists of materials for each exercise give you and your instructor a thorough checklist for planning and setting up laboratory activities allowing for easy and efficient preparation Modern anatomical imaging techniques such as computed tomography CT magnetic resonance imaging MRI and ultrasonography are introduced where appropriate to give future health professionals a taste for and awareness of how new technologies are changing and shaping health care Boxed hints throughout provide you with special tips on handling specimens using equipment and managing lab activities Evolve site includes activities and features for students as well as resources for instructors

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Papers from the Tortugas Laboratory of the Carnegie Institution of Washington, 1924 *Anatomy & Physiology Laboratory Manual* Kevin T. Patton, 2007 It's an ideal companion for Thibodeau and Patton's Anatomy and Physiology Sixth Edition as well as any standard anatomy and physiology textbook **BOOK JACKET** **Laboratory Anatomy of the Vertebrates** Robert B. Chiasson, William J. Radke, 1993 **The Latest and Best of TESS**, 1991 Collected Studies from the Bureau of Laboratories New York (N.Y.). Dept. of Health. Bureau of Laboratories, 1919 **A Laboratory Perspectus of Snake Anatomy** Jonathan Clark Oldham, Hobart Muir Smith, Sue Ann Miller, 1970 **Collected Studies from the Research Laboratory. Department of Health, City of New York ...** New York (City). Department of health. Research

laboratories, New York (N.Y.). Department of Health. Research Laboratory, 1915 **Laboratory and Clinical Studies** New York (N.Y.). Memorial Hospital for the Treatment of Cancer and Allied Diseases, 1941 **Cumulated Index Medicus**, 1966
 U.S. Government Research and Development Reports, 1965 **Collected Studies from the Bureau of Laboratories, Department of Health, City of New York** New York (N.Y.). Department of Health. Bureau of Laboratories, 1919 **Lab World**, 1974 Year Book Carnegie Institution of Washington, 1911 List of the names of persons engaged in the various activities v 10 p 243 257 **Report of the ... Meeting of the British Association for the Advancement of Science** British Association for the Advancement of Science, 1893 **Report of the ... Meeting of the British Association for the Advancement of Science**, 1893

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