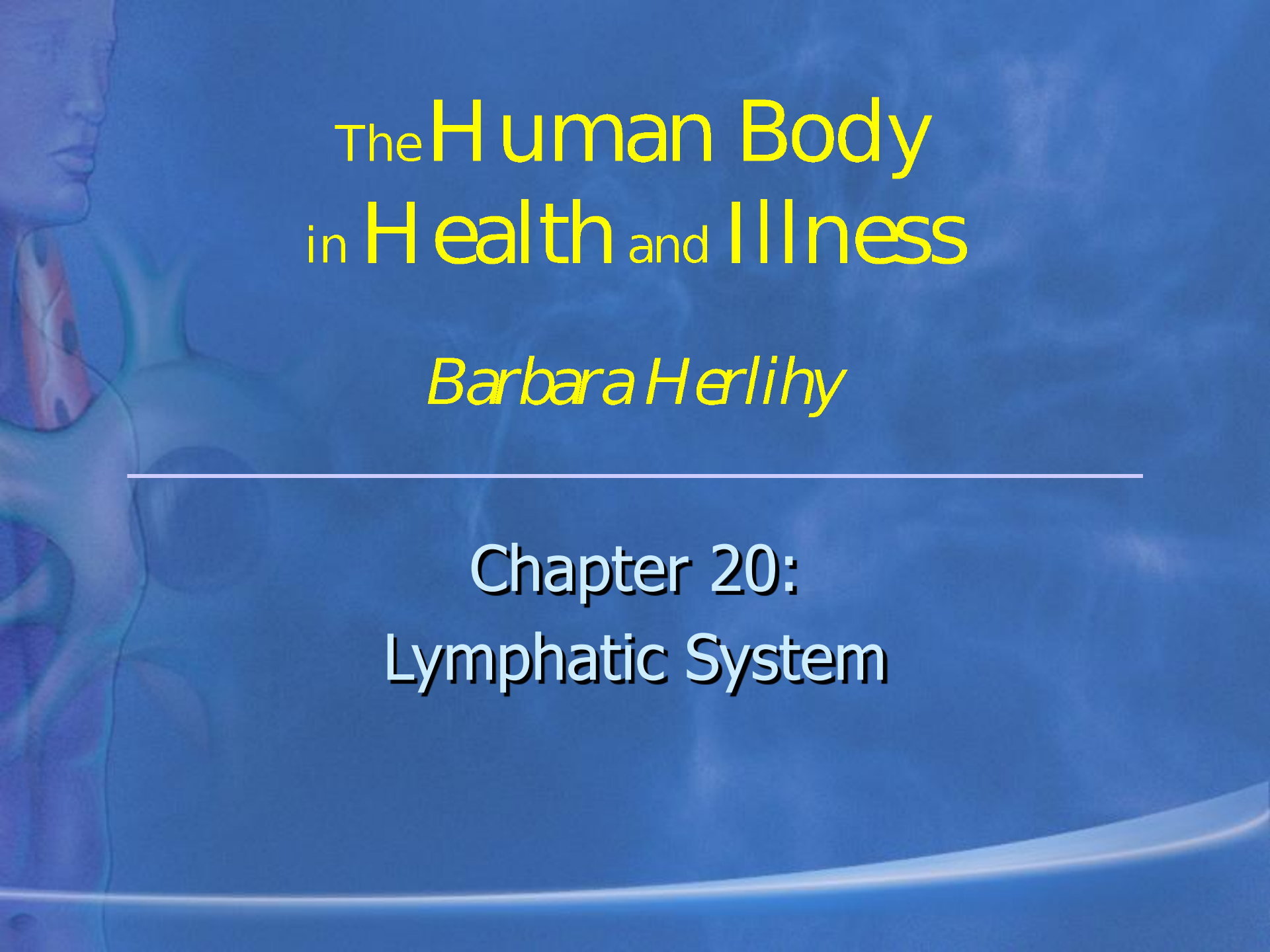


An anatomical illustration of the human lymphatic system is visible in the background. It shows the head, neck, and upper torso with the lymphatic vessels and nodes highlighted in a reddish-pink color against a blue background. The text is overlaid on this illustration.

The Human Body in Health and Illness

Barbara Herlihy

Chapter 20: Lymphatic System

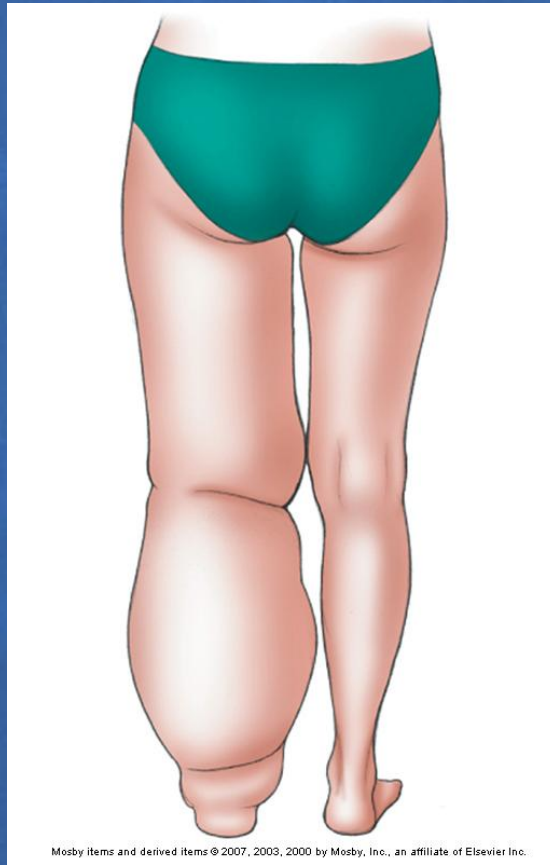
Lesson 20.1 Objectives

- List three functions of the lymphatic system.
- Describe the composition and flow of lymph.
- State the location of the following lymph nodes: cervical nodes, axillary nodes, and inguinal nodes.
- Describe the four lymphoid organs: lymph nodes, tonsils, thymus gland, and spleen

The Lymphatic System

- Main functions:
 - Return tissue fluid to the blood
 - Intestinal absorption of fats and fat-soluble vitamins
 - Helps the body defend itself against disease

The Lymphatic System (cont'd.)



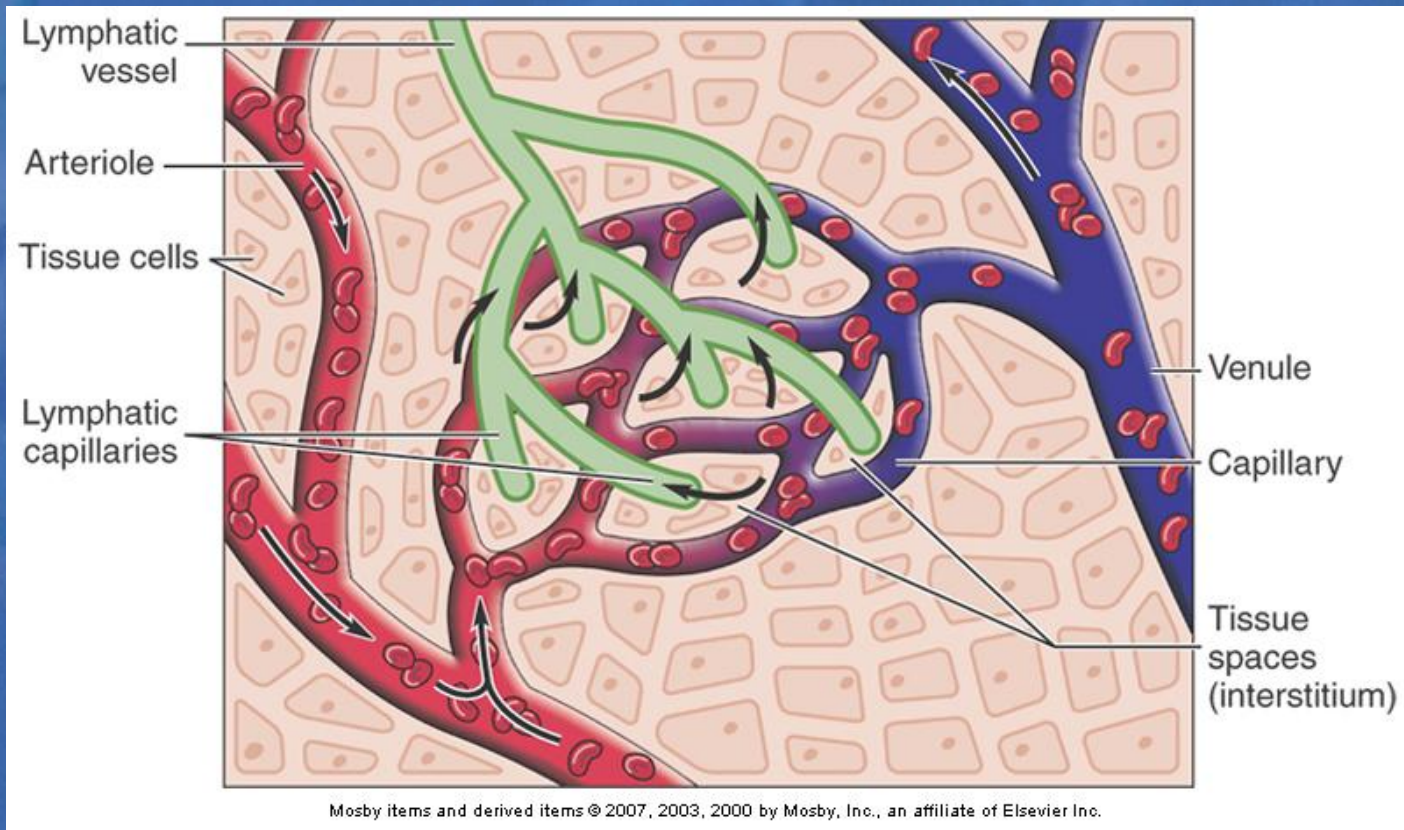
Elephantiasis

The Lymphatic System (cont'd.)

- Lymph: clear fluid that resembles plasma and is formed from plasma during capillary exchange
- Composition of lymph: water, electrolytes, waste from metabolizing cells, and some protein that leaks out of the capillaries of the systemic circulation

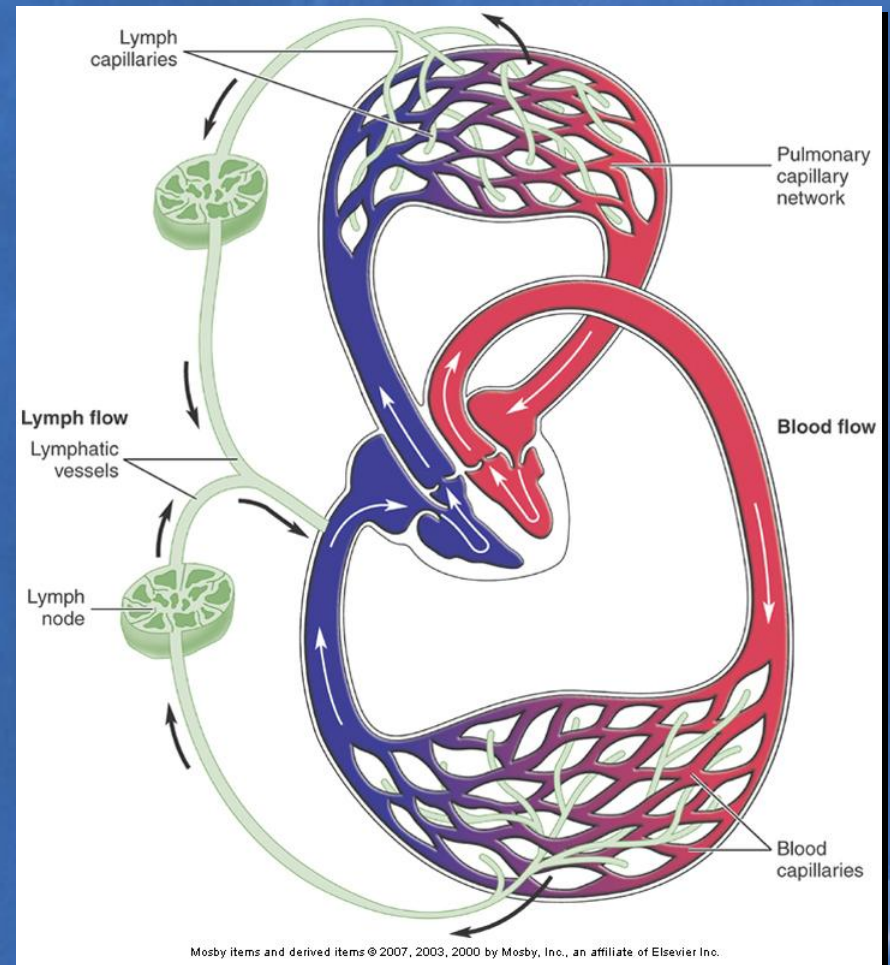
The Lymphatic System (cont'd.)

Lymph capillaries and blood capillaries.

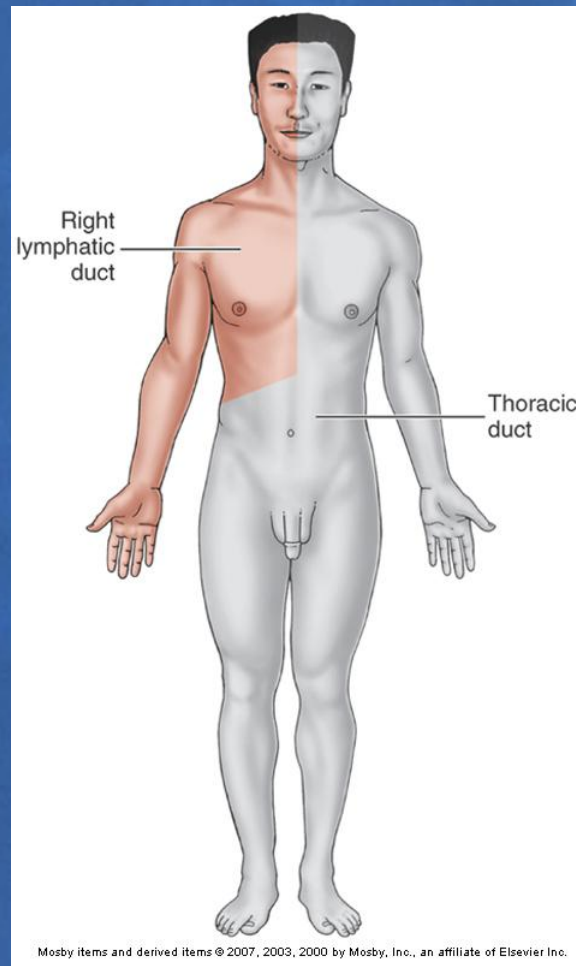


The Lymphatic System (cont'd.)

- Lymphatic vessels: includes lymphatic capillaries and several larger lymphatic vessels; “run with” the veins



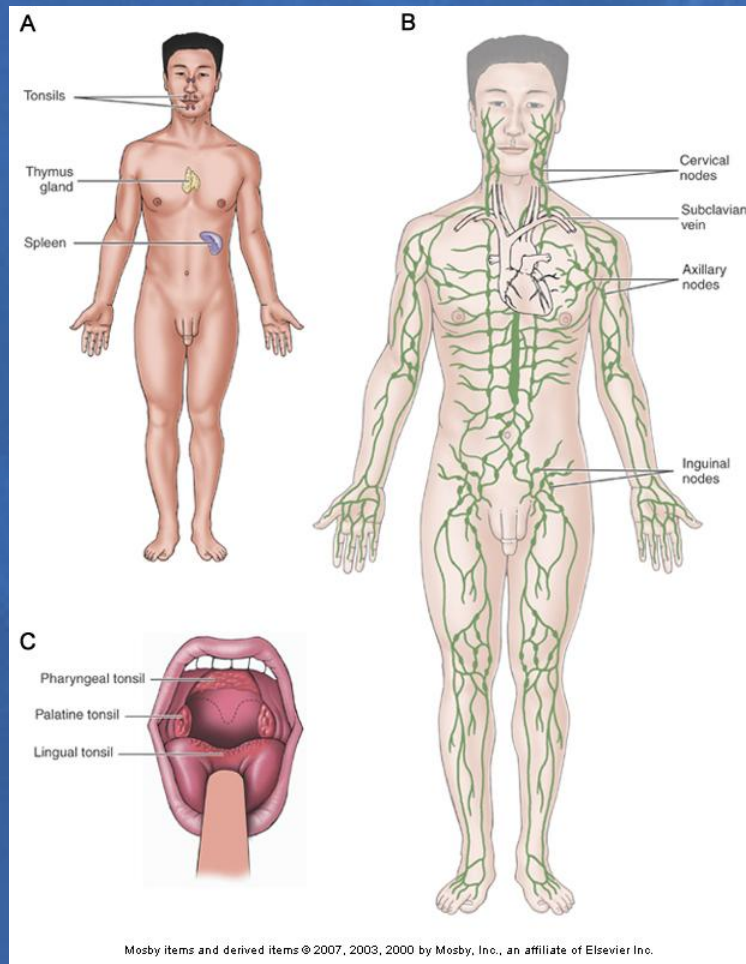
The Lymphatic System (cont'd.)



Lymphoid Organs

- Organs:
 - Lymph nodes
 - Tonsils
 - Thymus gland
 - Spleen
- Functions:
 - Filter particles from lymph, tissue fluid, and blood
 - Support activities of lymphocytes

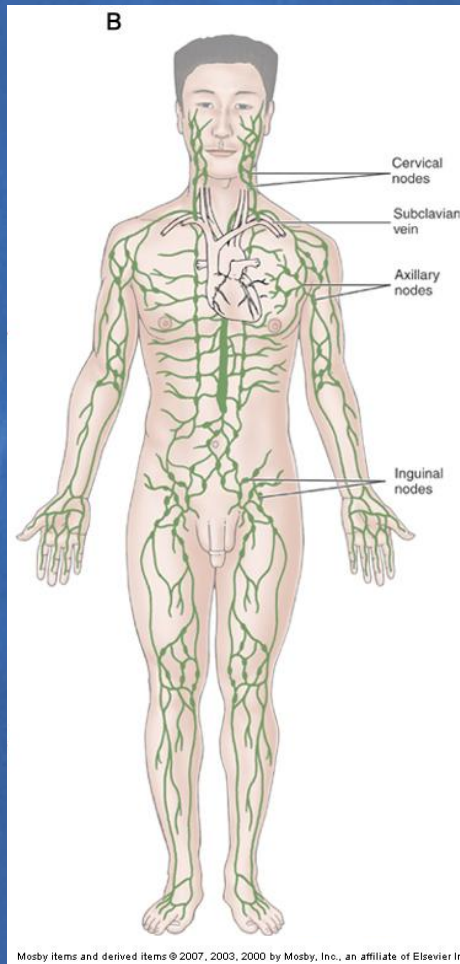
Lymphoid Organs (cont'd.)



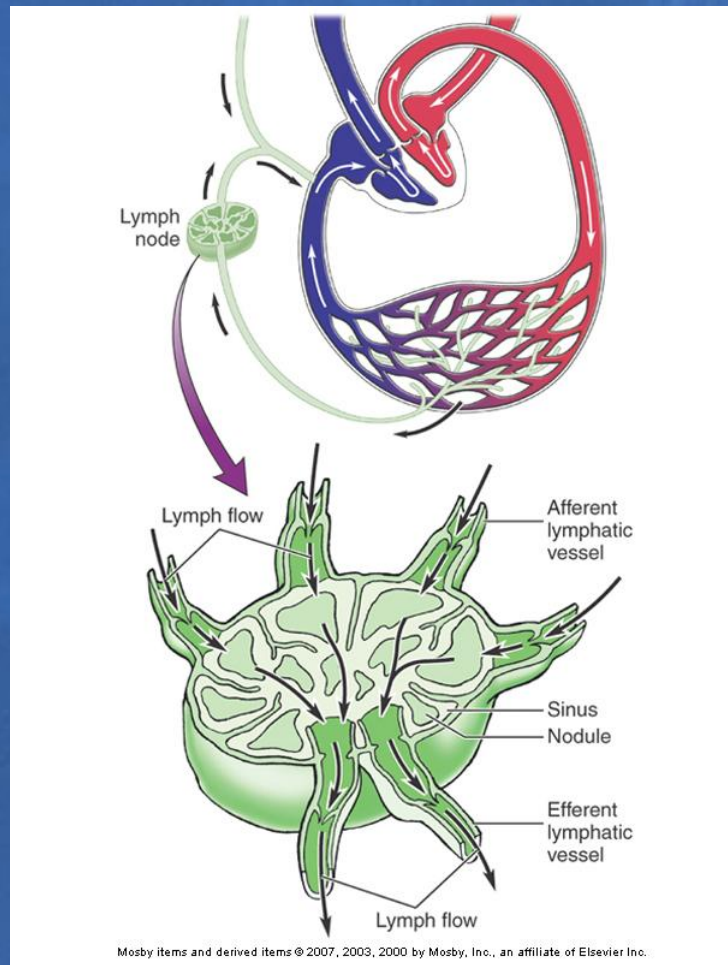
Lymphoid Organs (cont'd.)

- Lymph nodes: small pea-shaped patches of lymphatic tissue that filter lymph as it flows through the lymphatic system
 - Cervical lymph nodes drain and cleanse lymph from head and neck areas
 - Axillary lymph nodes drain and cleanse lymph from upper extremities, shoulders, and breast area
 - Inguinal lymph nodes drain and cleanse lymph from lower extremities and external genitalia

Lymphoid Organs (cont'd.)



Lymphoid Organs (cont'd.)

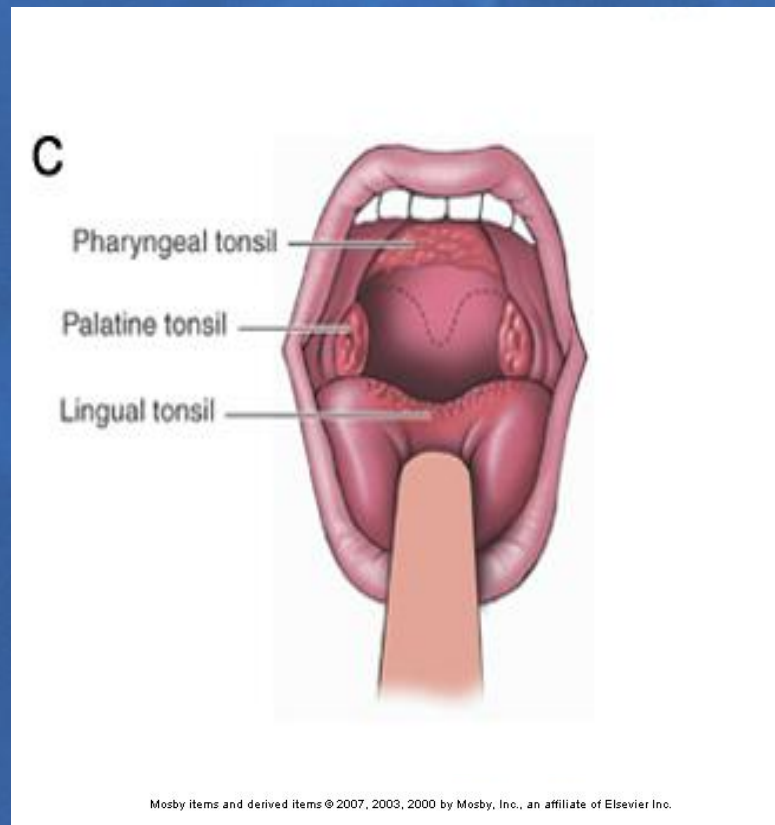


Lymphoid Organs (cont'd.)

- Tonsils: partially encapsulated lymph nodes in the throat area
- Locations:
 - Palatine tonsils: opening of oral cavity into pharynx
 - Pharyngeal tonsils: opening of nasal cavity in upper pharynx
 - Lingual tonsils: back of the tongue

Lymphoid Organs (cont'd.)

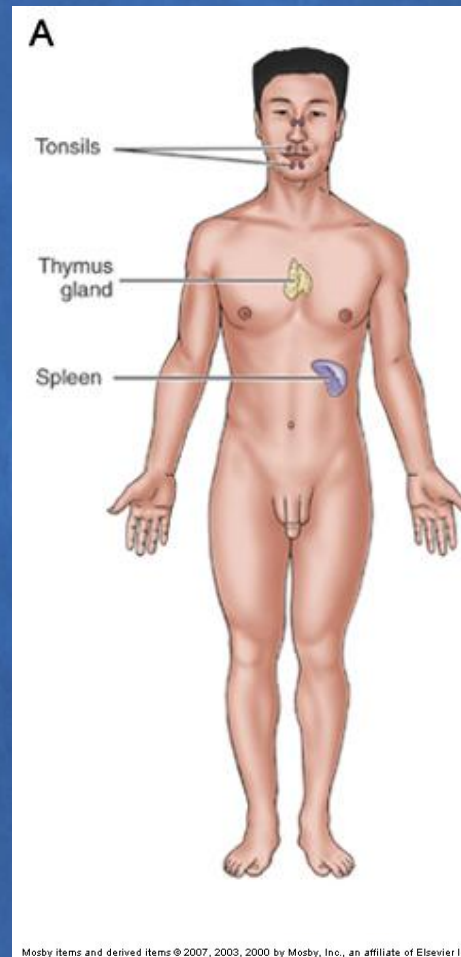
Tonsils



Lymphoid Organs (cont'd.)

- Thymus gland: secretes thymosins, located in the upper mediastinum thoracic cavity
- Thymosins: hormones that promote the proliferation and maturation of T cells in lymphoid tissue

Lymphoid Organs (cont'd.)



Lymphoid Organs (cont'd.)

- Spleen: largest lymphoid organ in the body; located in the upper left quadrant of the abdominal cavity just beneath the diaphragm
- Two types of spleen tissue:
 - White pulp
 - Red pulp

Lymphoid Organs (cont'd.)

- Functions of the spleen:
 - Filters blood
 - Stores blood, especially platelets
 - Destroys and performs phagocytosis on old red blood cells
 - Produces RBCs before birth

Lymphoid Organs (cont'd.)

