

**LYMPHATIC SYSTEM** (Ch. 22)  
Human Anatomy lecture

**I. OVERVIEW**

A. Structure

1. fluid
2. vessels
3. lymphatic tissue =
4. lymphatic organs –

B. Functions

1. Return tissue fluid and proteins to blood
2. Absorb and transport lipids from gut
3. Protection from pathogens

**II. Lymph**

A. Transparent fluid derived from interstitial fluid

B. Formed at rate of 3 liters/day

**III. Lymph Vessels and Flow of lymph** - Fig. 22.5

A. Sequence

Interstitial fluid

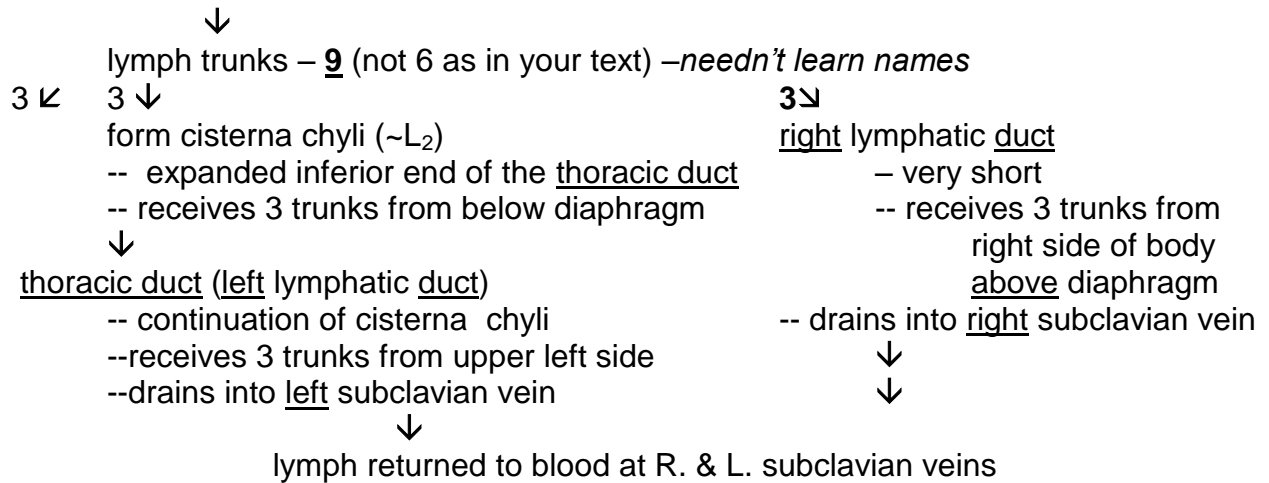


lymphatic capillaries (terminal lymphatics) - Fig. 22.3



collecting vessels – Fig. 22.4





B. Flow powered by

1. rhythmic contractions of smooth muscle in vessel walls
- 2.
- 3.

→

**IV. Lymphatic tissues** (NRF cells)

A. diffuse lymphatic tissue

- MALT (Mucosa Associated Lymphatic Tissue)

→

B. lymphatic nodules

- denser masses,
- appendix, tonsils,

**V. Lymph organs** (well-defined sites, c.t. capsules)

A. Primary lymphatic organs: produce B & T cells (WBCs)

1. red bone marrow

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2. thymus gland – Fig. 18.5

-- bilobed, superior mediastinum,

-- largest at puberty,

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B. Secondary lymphatic organs : site of most immune responses

1. lymph nodes – Fig. 22.11 (NRF details)

- arranged like beads on a lymphatic string
- superficial (in subcutaneous tissue) & deep (between muscles) groups
- parietal & visceral groups → in body cavities

-Sketch-

**cortex** (“bark”) & **medulla**

c.t. trabeculae extend inward from capsule

**afferents** in; **efferents** out (at hilum)

valves force one-way flow

sinuses (sinusoids) slow and trap pathogens

-- node function:

① filter lymph → reticular c.t. traps pathogens



WBCs attack & destroy

② activate T & B cells

2. spleen

--largest lymphatic organ; L. hypochondriac against diaphragm

--structure:

-sketch-

--c.t. capsule & trabeculae

--no afferents (only efferents)

--hilum w/large splenic a & v

-- blood sinusoids

--functions

-- filters blood:

- 
- 

--stores platelets

-- produces blood cells in fetus (and adults?)

3. Tonsils – Fig. 22.13

– form protective ring at back of oral cavity

- pharyngeal tonsil [adenoids](1) –
- palatine tonsils [“tonsils”](2) –
- lingual tonsils (?) –