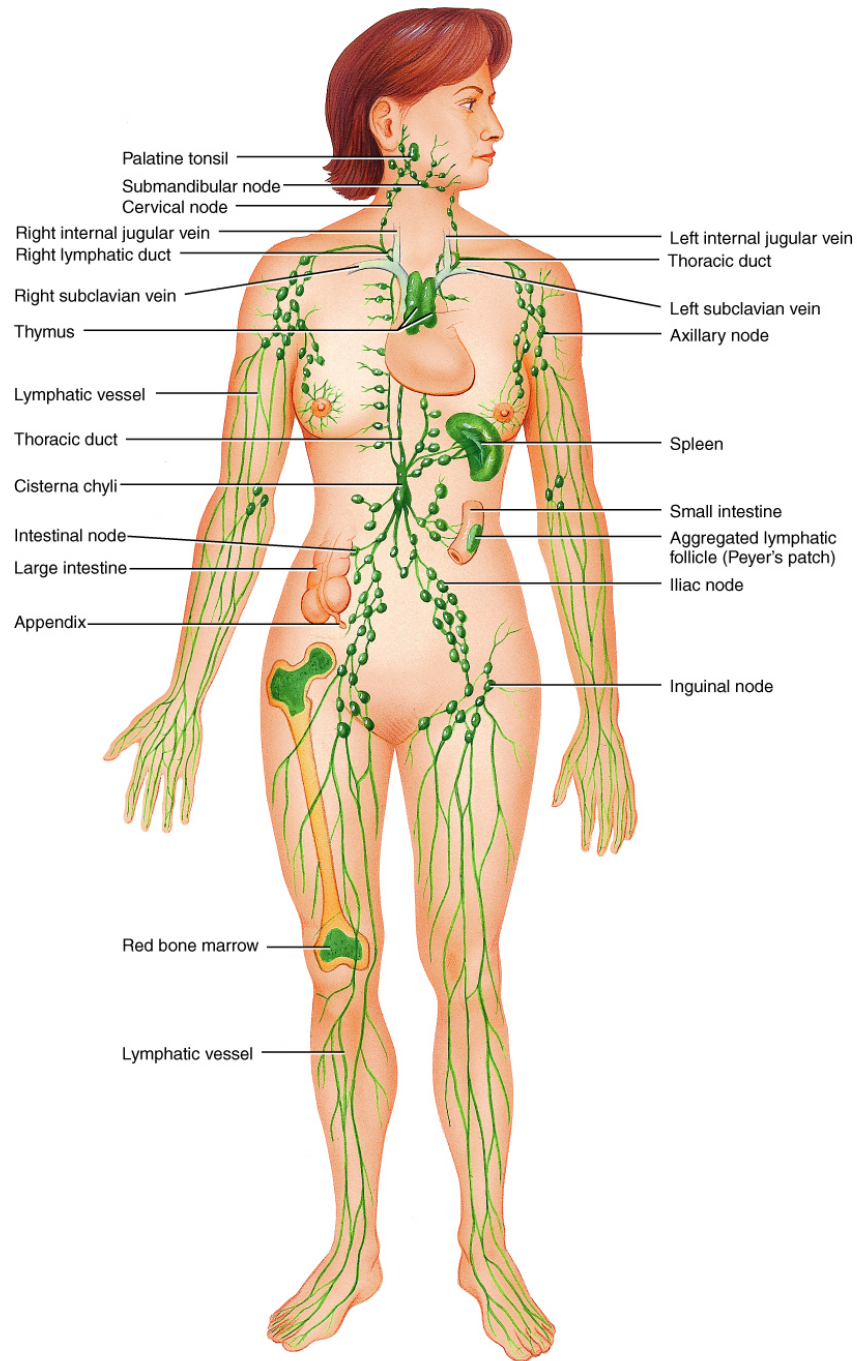


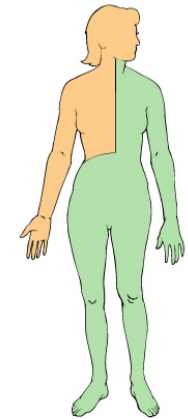
The Lymph System

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Lymphatic System



(a) Anterior view of principal components of lymphatic system

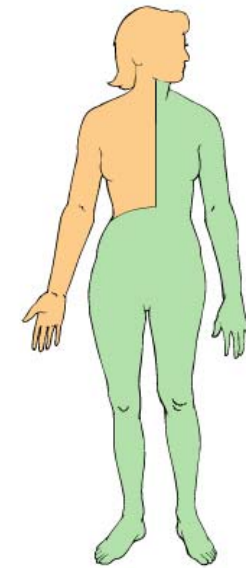
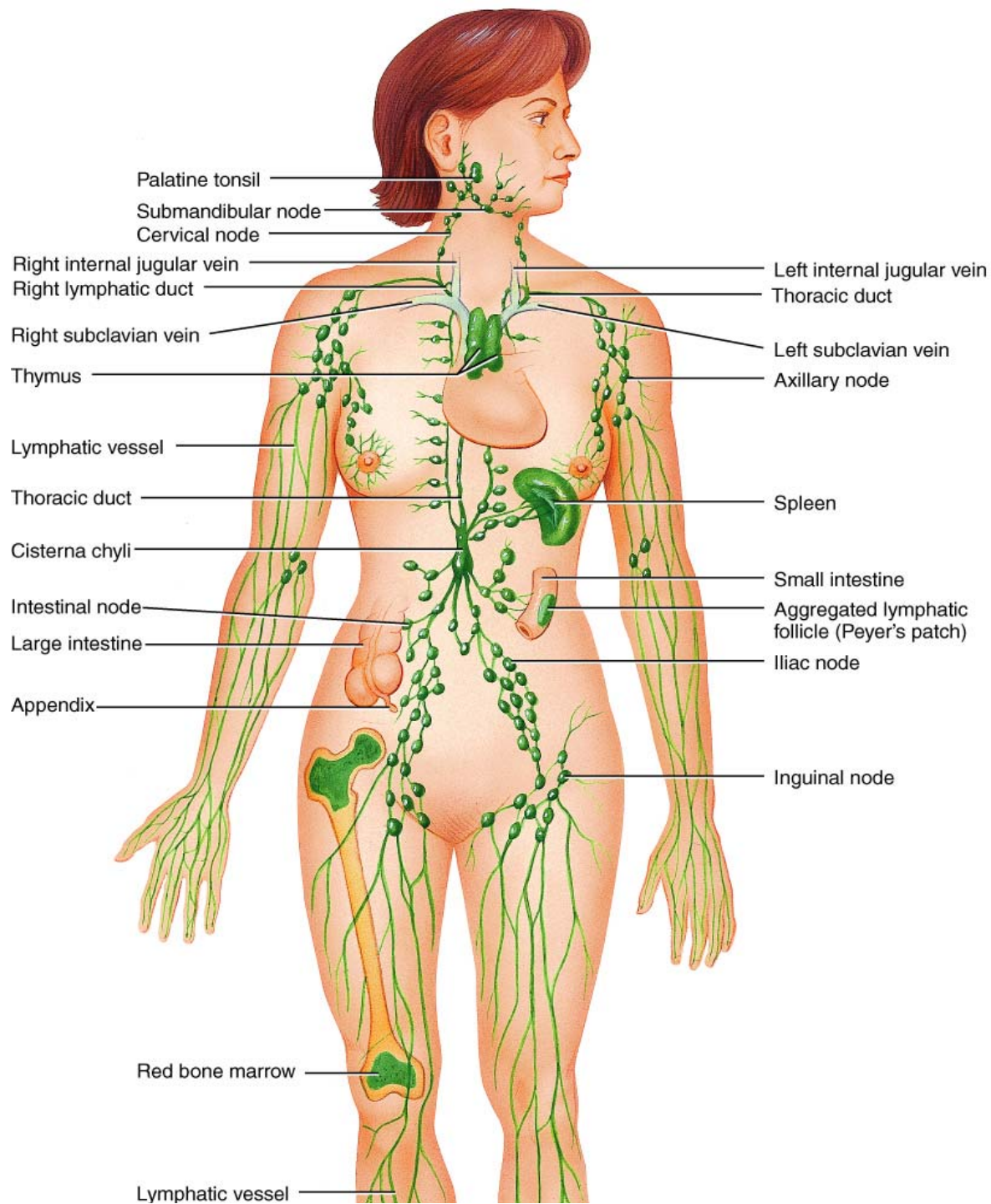


(b) Areas drained by right lymphatic and thoracic ducts

- Area drained by right lymphatic duct
- Area drained by thoracic duct

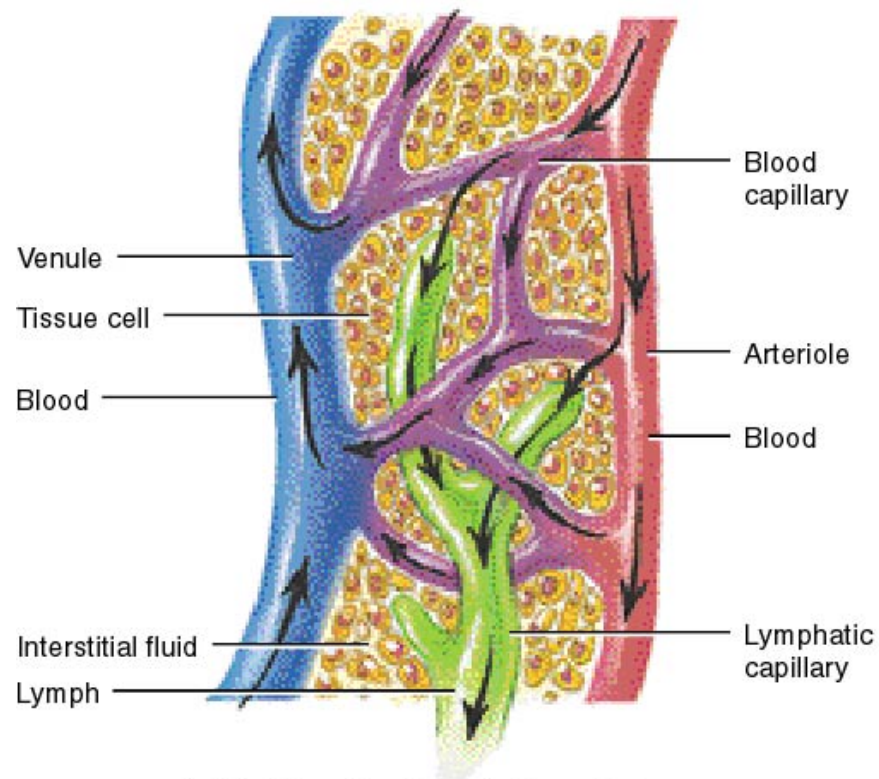
Lymphatic words

- Lymphangiogram
- Lacteals
- Chyle
- Thoracic duct
- Right lymphatic duct
- Cisterna chyle
- Nodes

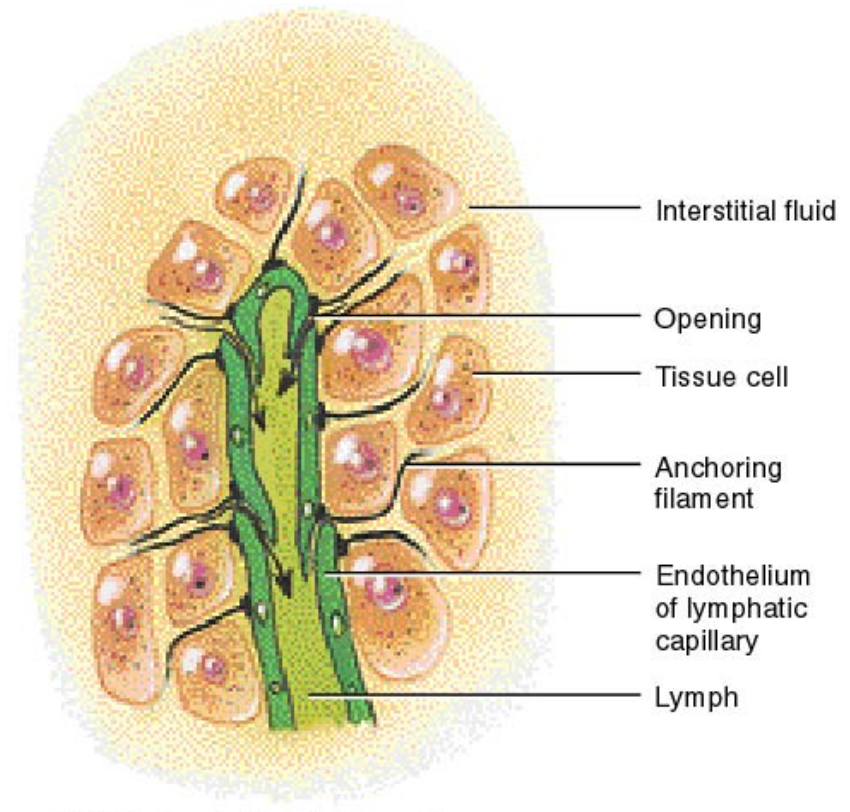


(b) Areas drained by right lymphatic and thoracic ducts

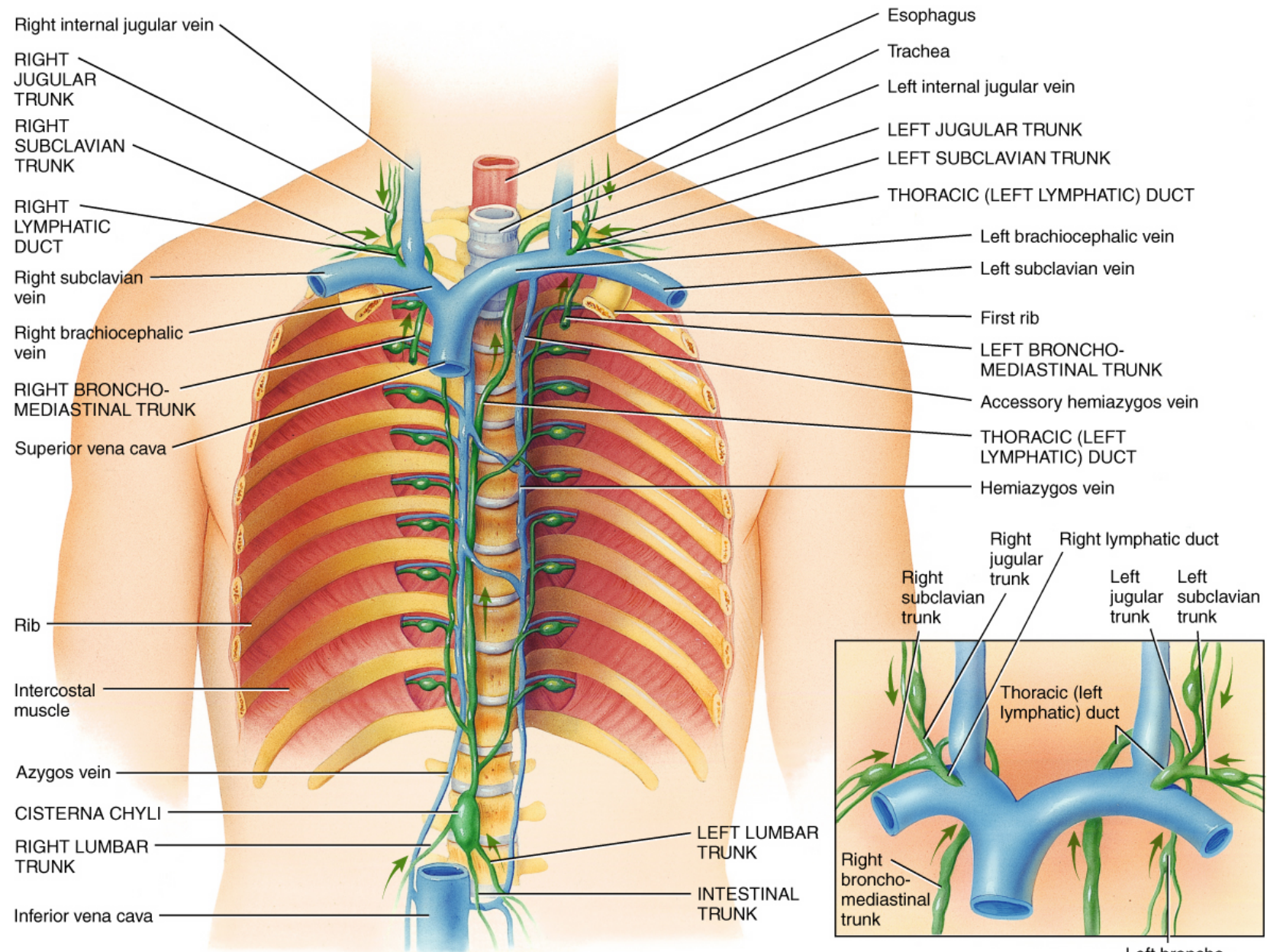
Orange box: Area drained by right lymphatic duct
 Green box: Area drained by thoracic duct



(a) Relationship of lymphatic capillaries to tissue cells and blood capillaries

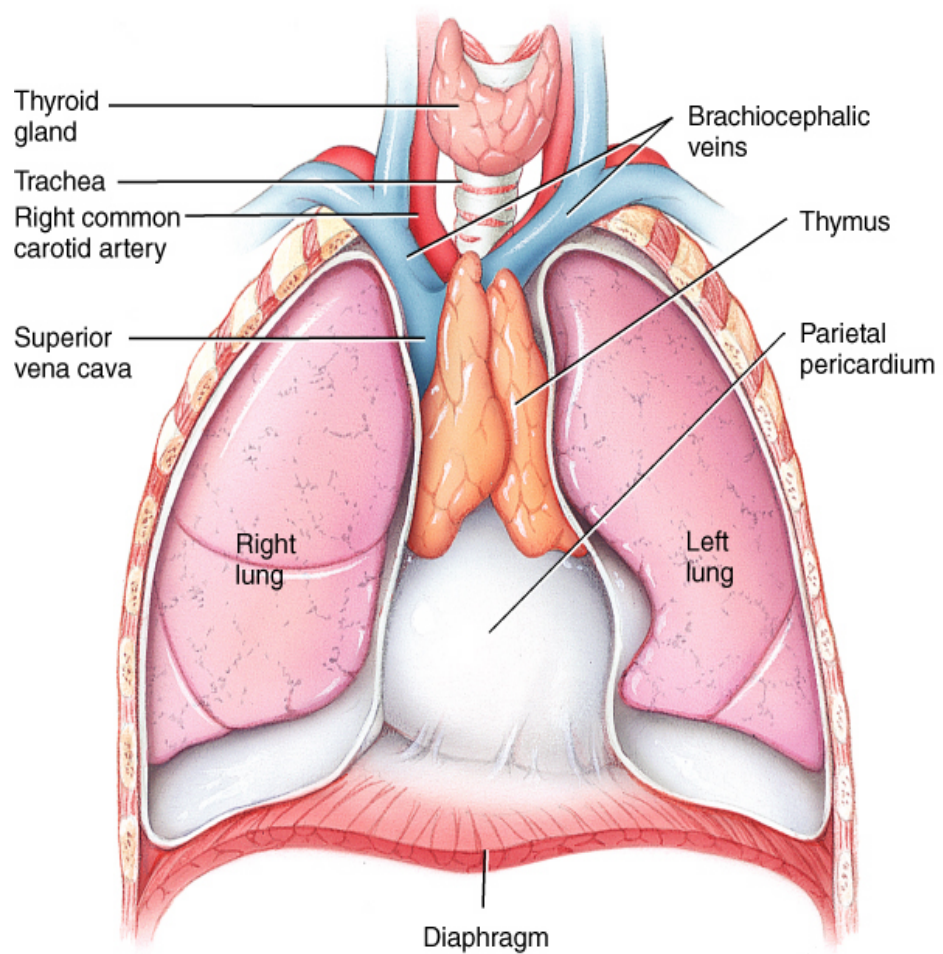


(b) Details of a lymphatic capillary

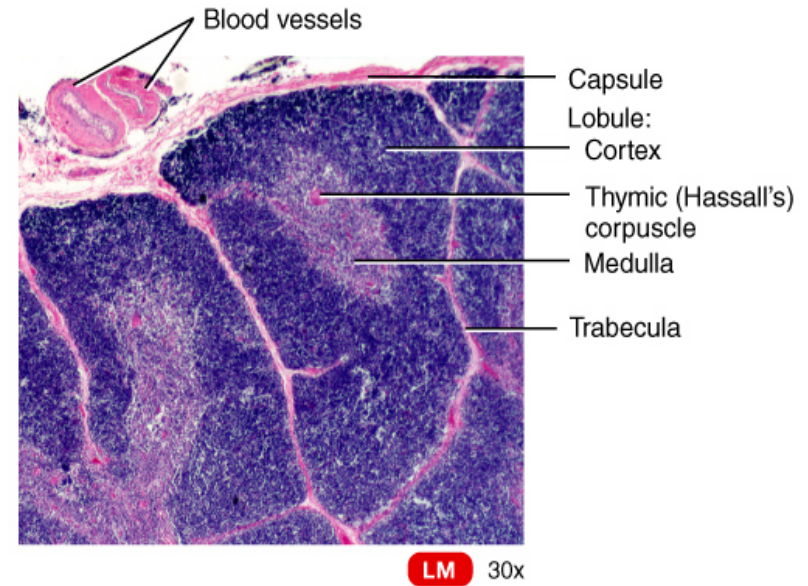


Lymphatic organs

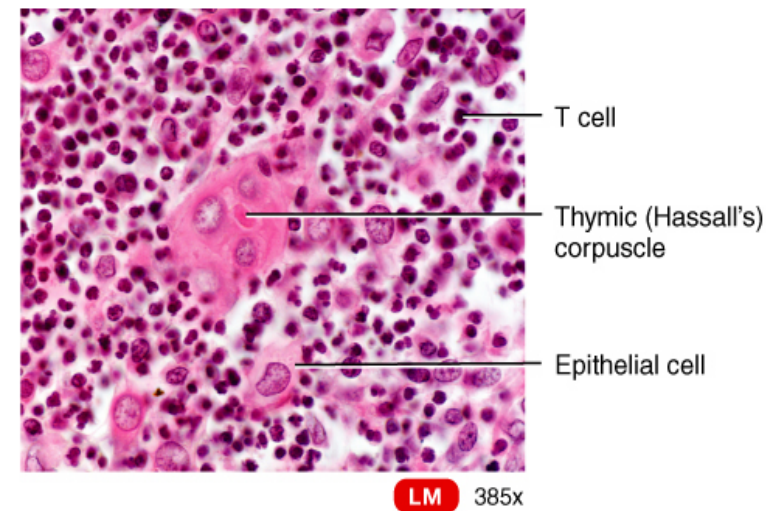
- Nodes
- Spleen
- Thymus
- Tonsils
- Peyer's patches
- Mucosa associated lymphatic tissue



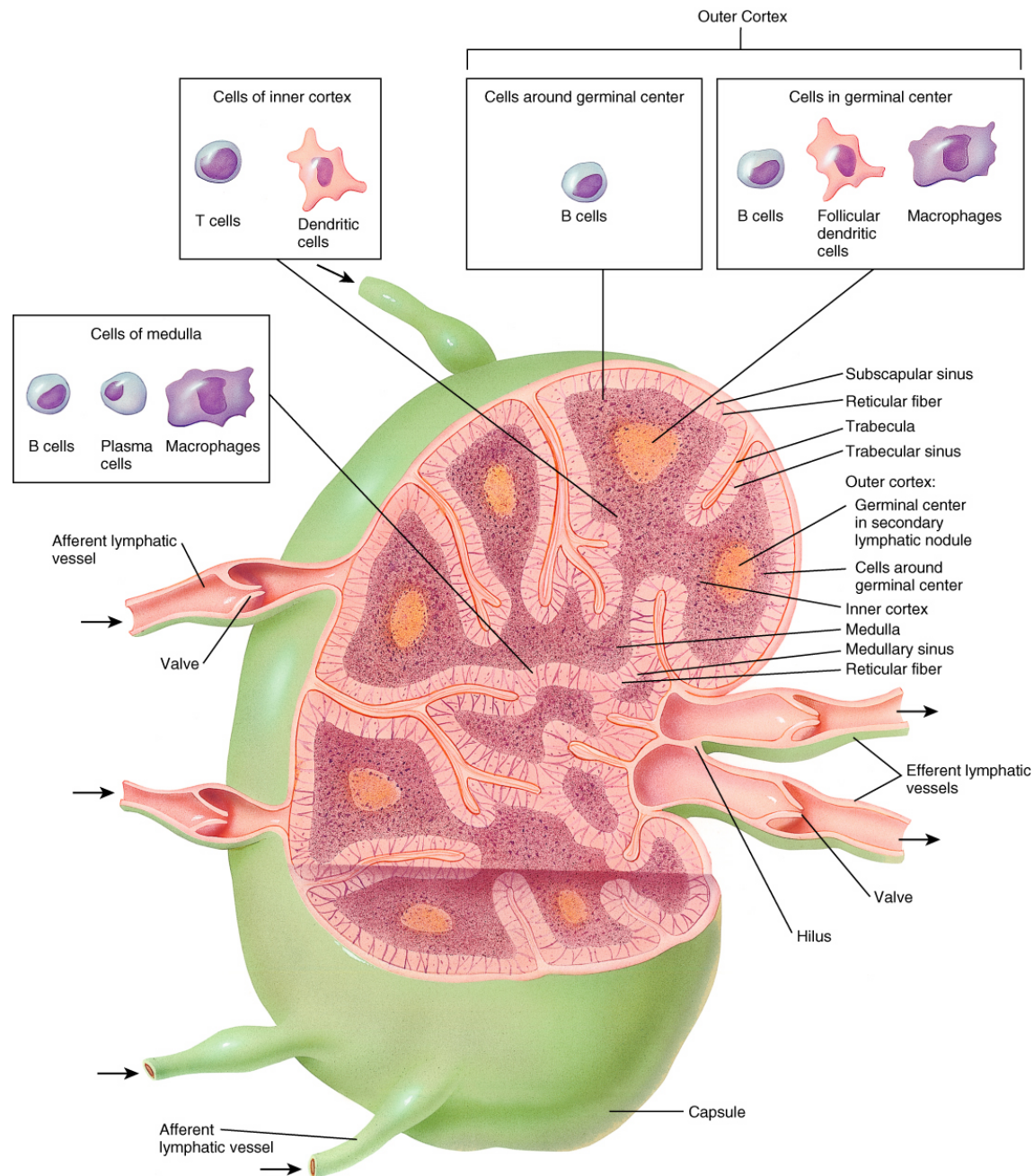
(a) Thymus of adolescent



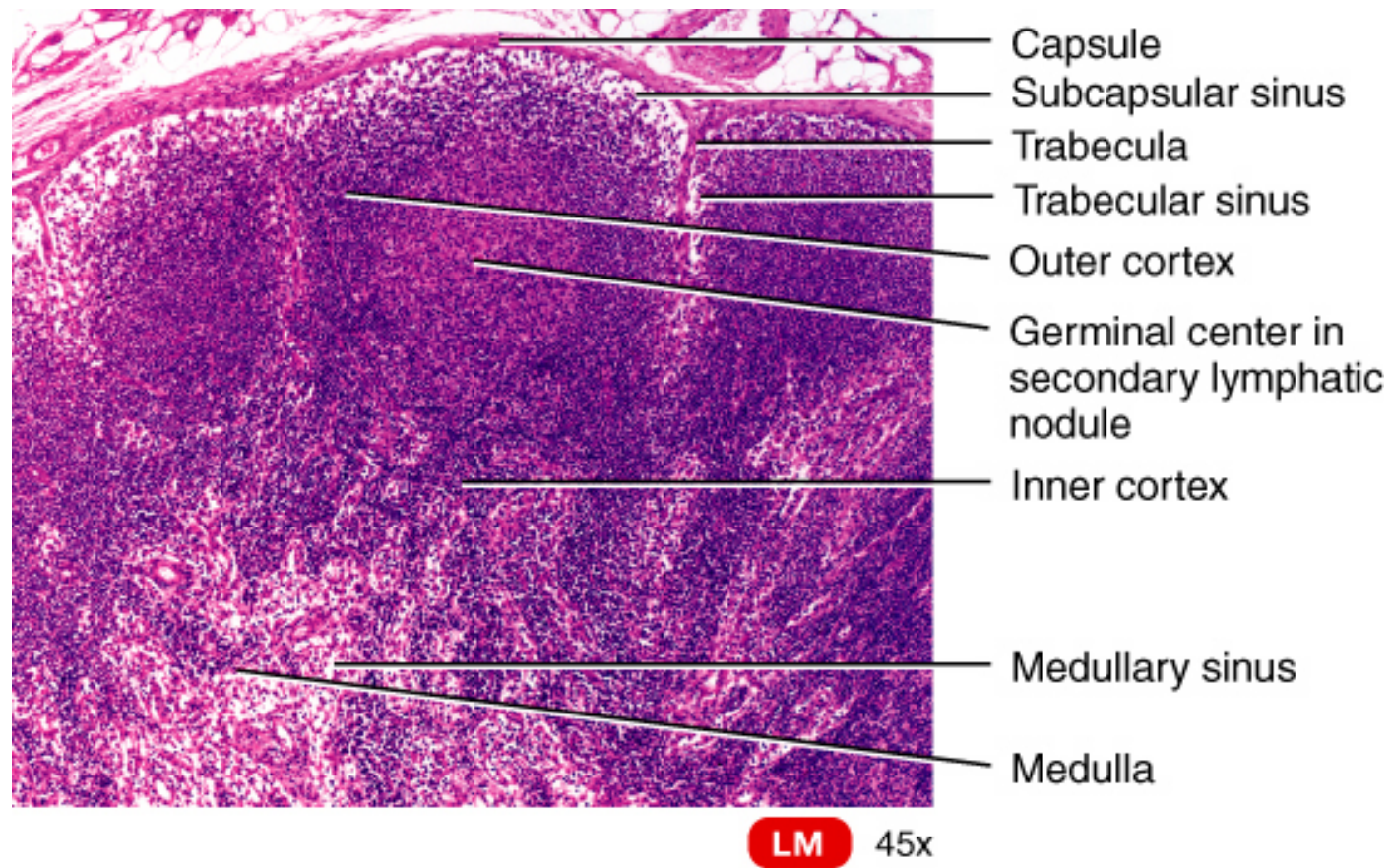
(b) Thymic lobules



(d) Details of the thymic medulla



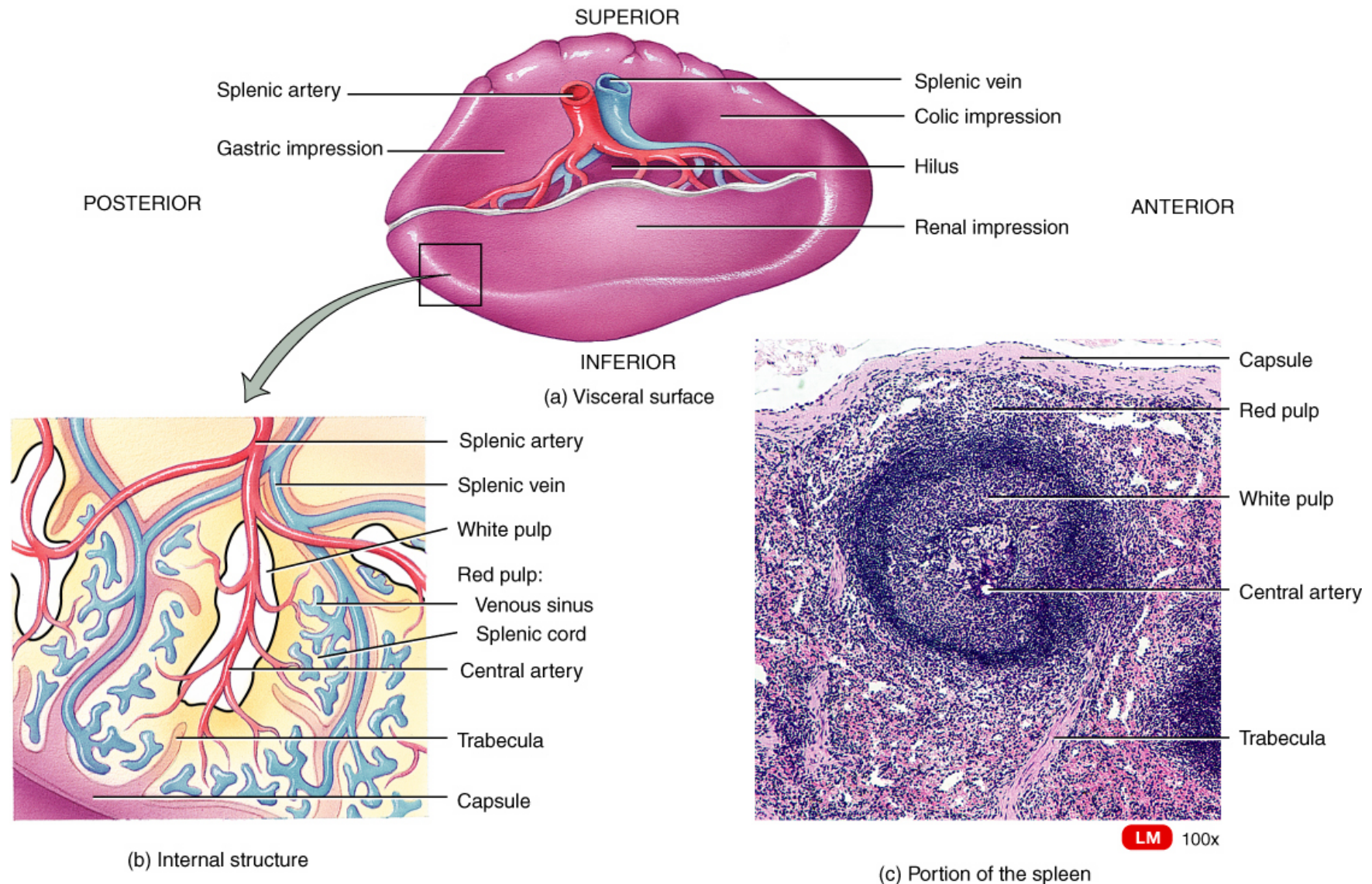
(a) Partially sectioned lymph node showing overall structure



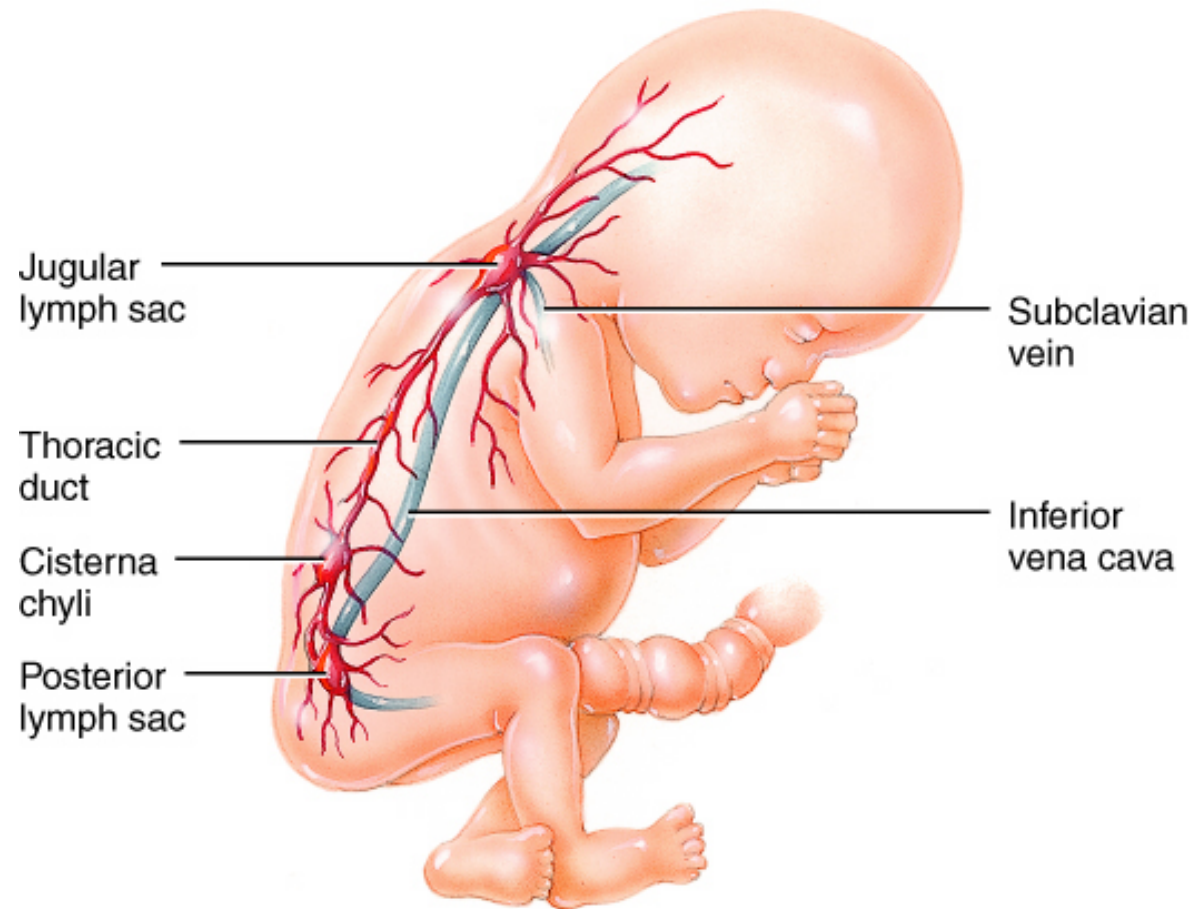
(b) Portion of a lymph node

22.06b

Structure of spleen



Development of lymph



Invaders

- Bacteria
- Viruses
- Fungi
- Foreign objects
- Cancer cells

Non-Specific Resistance

- Skin and mucous membranes
- Tears, sweat, oil, urine, vomiting, saliva, etc.
- Sebum, lysozymes, gastric acid.
- Interferon
- Complement
- Transferrins
- N-K cells and Phagocytes
- Inflammation
- Fever

Edward Jenner

Created the first
Immunization

The disease: smallpox

Specific Resistance

- Cellular immunity via T-Cells. Attack fungi, parasites, viruses, cancer cells and foreign tissue
- Humoral defense with B-cells. B-cells become plasma cells, leave the nodes and produce antibodies (Ig's). Attack bacteria and viruses.
- Both systems have memory cells

AIDS / HIV

- Origin of infection in the U.S.
- Method of viral attack
- Retroviruses
- Delayed symptoms
- Where did the virus come from?
- Who is at risk?
- Treatment / cure???
- Are there other viruses?

Words to Learn

- Eczema
- Immunization
- Septic shock
- Systemic lupus
- Hypersensitivity
- Anaphylactic reaction
- Autoimmune disease

More Words

- Lymphoma and Hodgkins
- Allograft
- Autograft
- Gamma globulin
- Lymphadenopathy
- Splenomegaly
- Xenograft