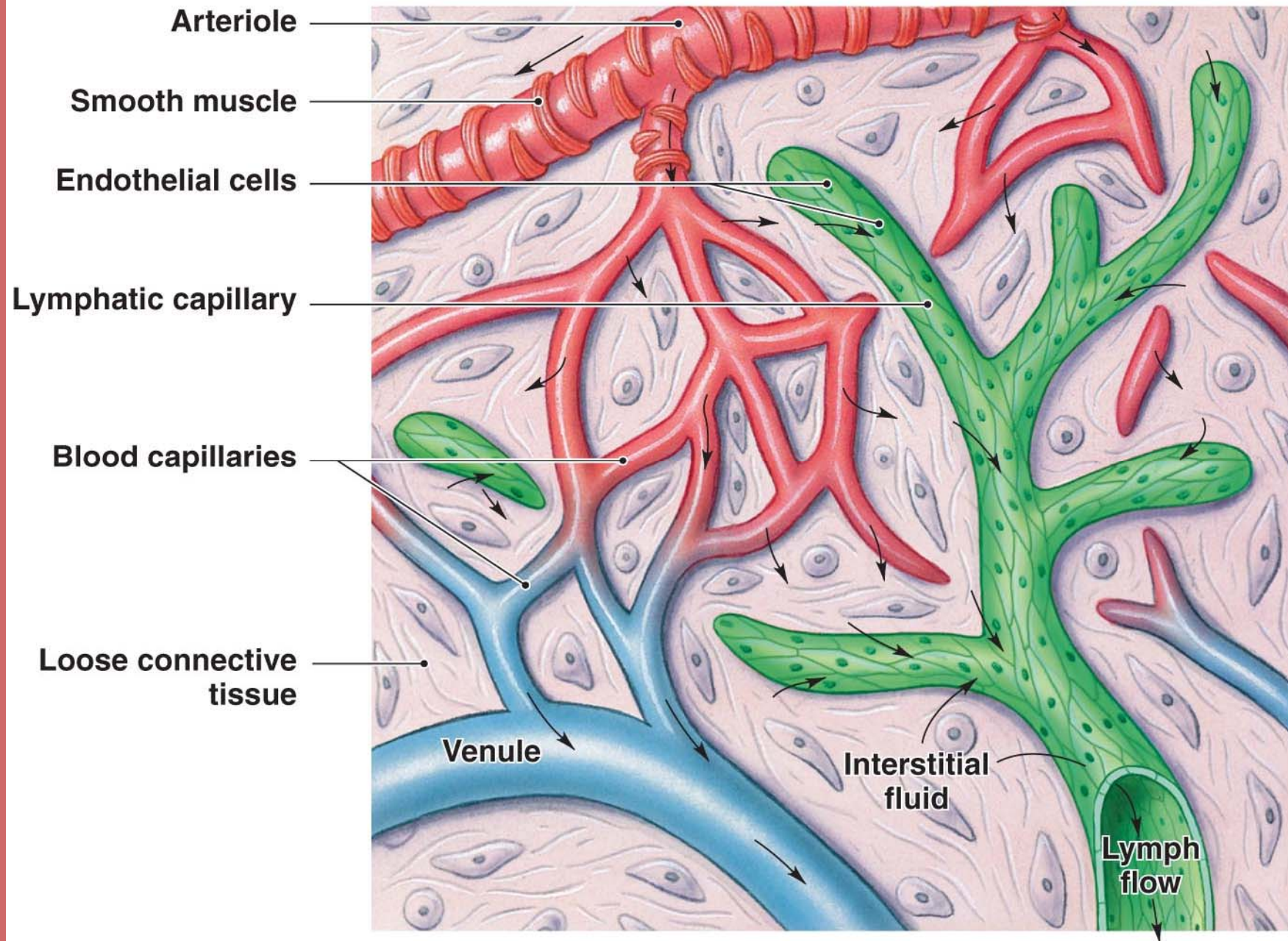


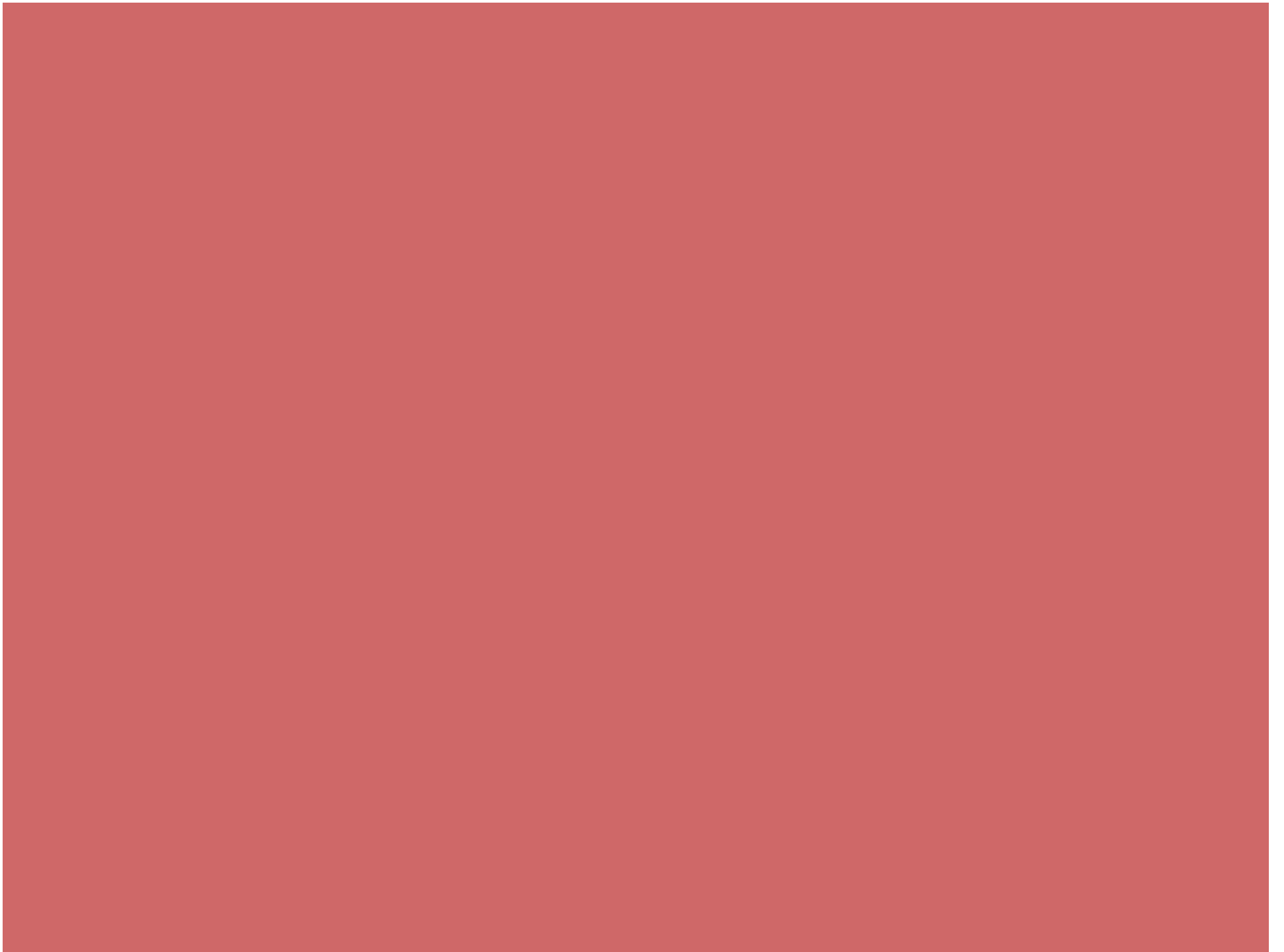
Closed system of vessels which ramify in tissue spaces in and around the blood capillaries

lymph

- Tissue fluid/interstitial fluid when enters into the lymphatic system-*lymph*
- Tissue fluid and lymph are very similar
- Location is different:.....

The flow of interstitial fluid into lymphatic capillaries, where it is called lymph



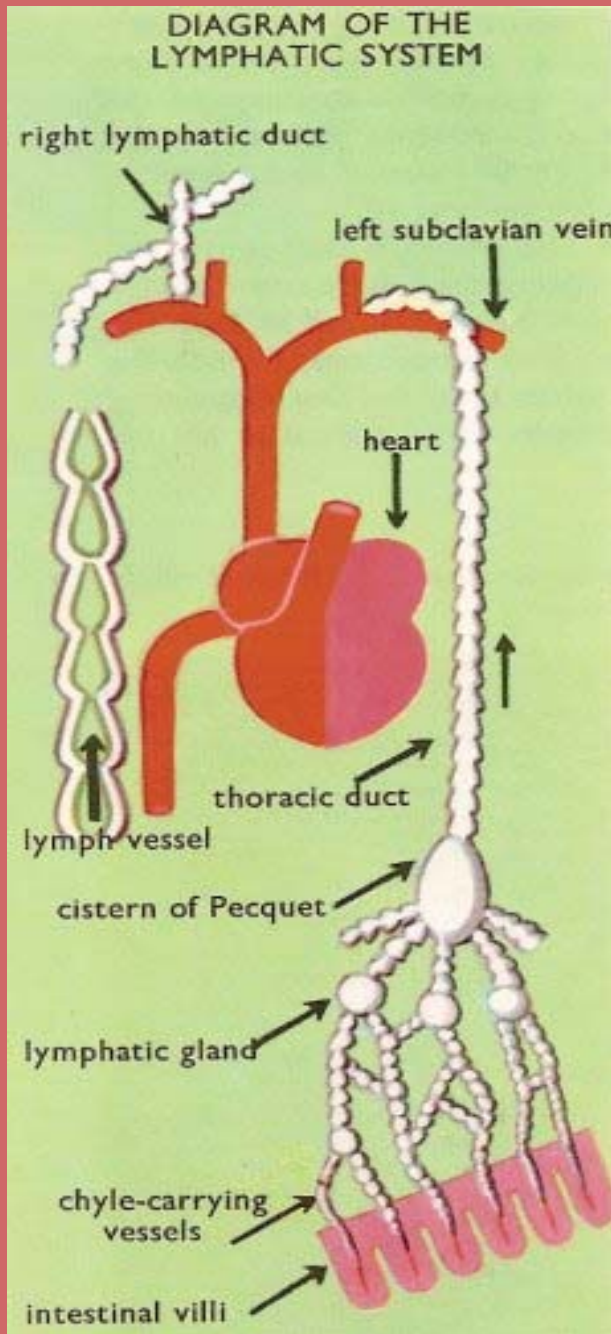


lymph

- Functions of lymphatic system :
 - 1.drain large molecules –drainage system of coarse type
 - 2.absorption of digested fat directly into cisterna chyli
 - 3.filters noxious agents of lymph by phagocytic action of the macrophage cells
 - 4.lymphocytes production: lymphatic follicles of the lymph nodes
 - 5.channels for the spread of infection / malignant cells

components

- lymph
- Lymph vessels
- Central lymphoid tissues
- Peripheral lymphoid organs
- Circulating lymphocytes



Lymph capillaries

Lymphatic vessels proper

Terminal lymphatic ducts

Central lymphoid tissues

Bone marrow

all pluripotent cells are produced in bone marrow.

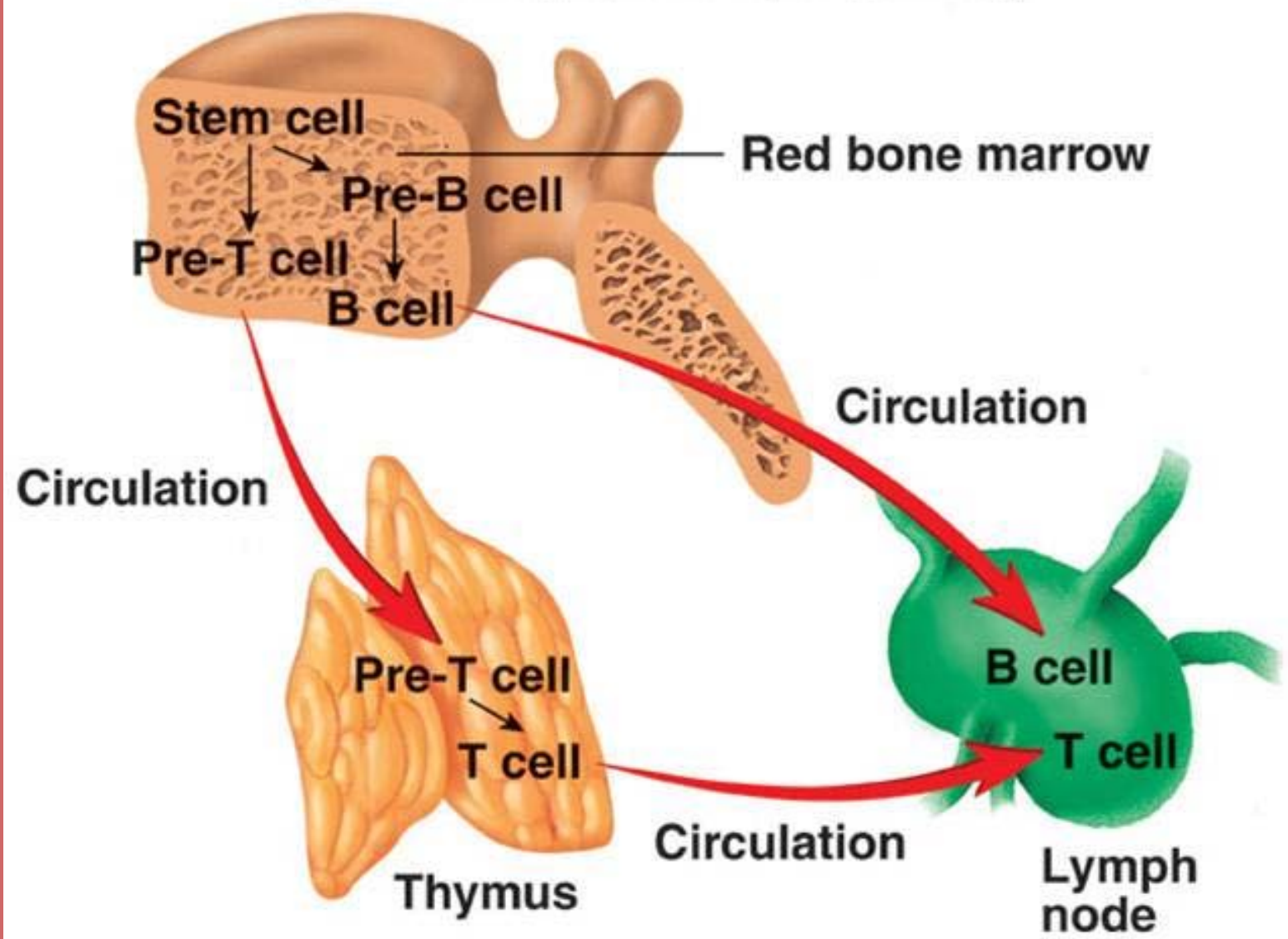
-Precursors of B cells are processed and differentiate into effective B cells after getting transformed into plasma cells.

-settle in non- thymic lymphoid tissues

thymus

Stem cells of T lymphocytes are derived from bone marrow and leave it through the circulatory system, settle in thymus

-in thymus they develop immuno-competent maturity.



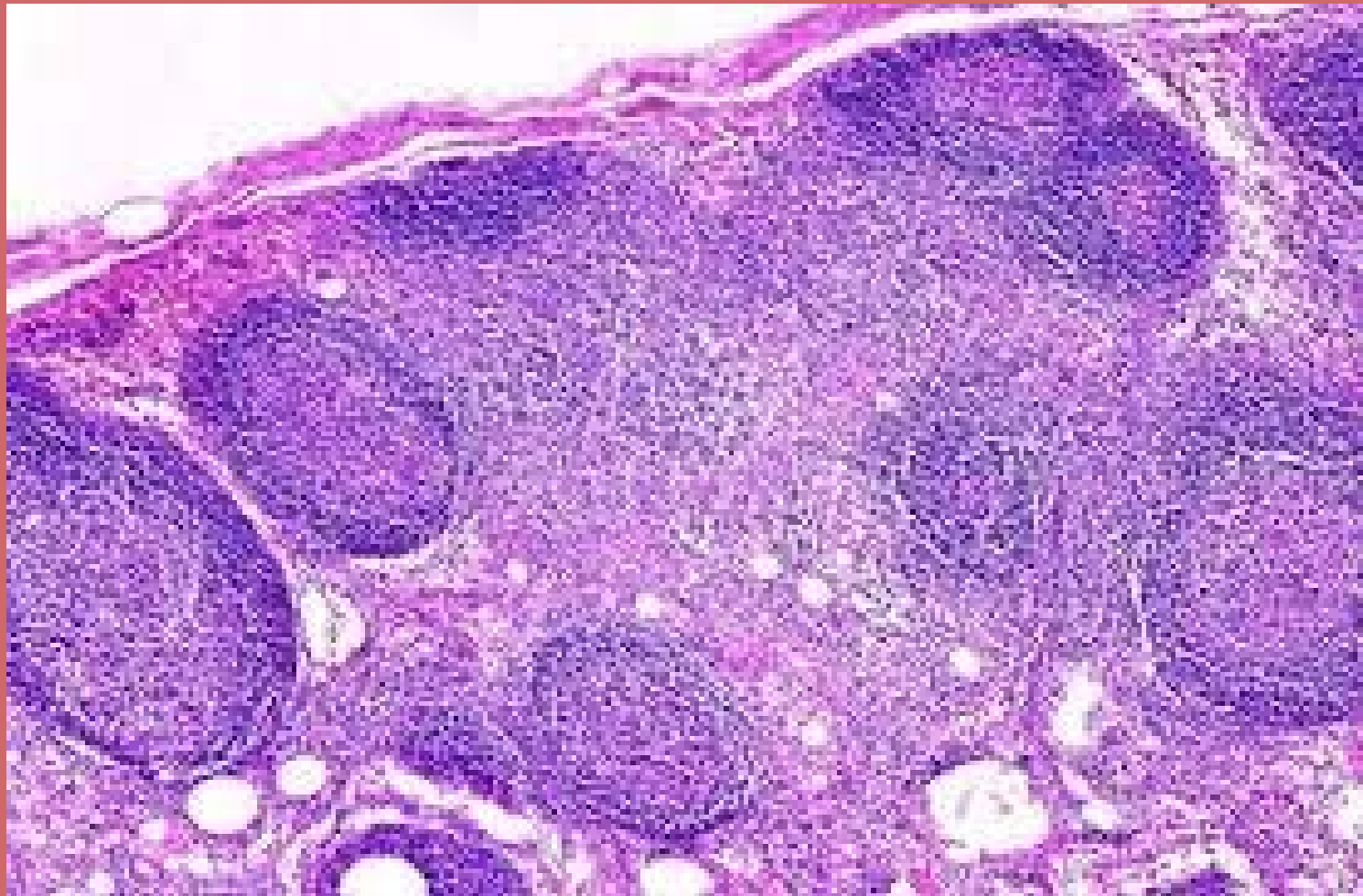
peripheral lymphoid tissues

- thymus
- palatine tonsils
- lymph nodes
- spleen
- lymphoid nodules in alimentary tract and respiratory tract

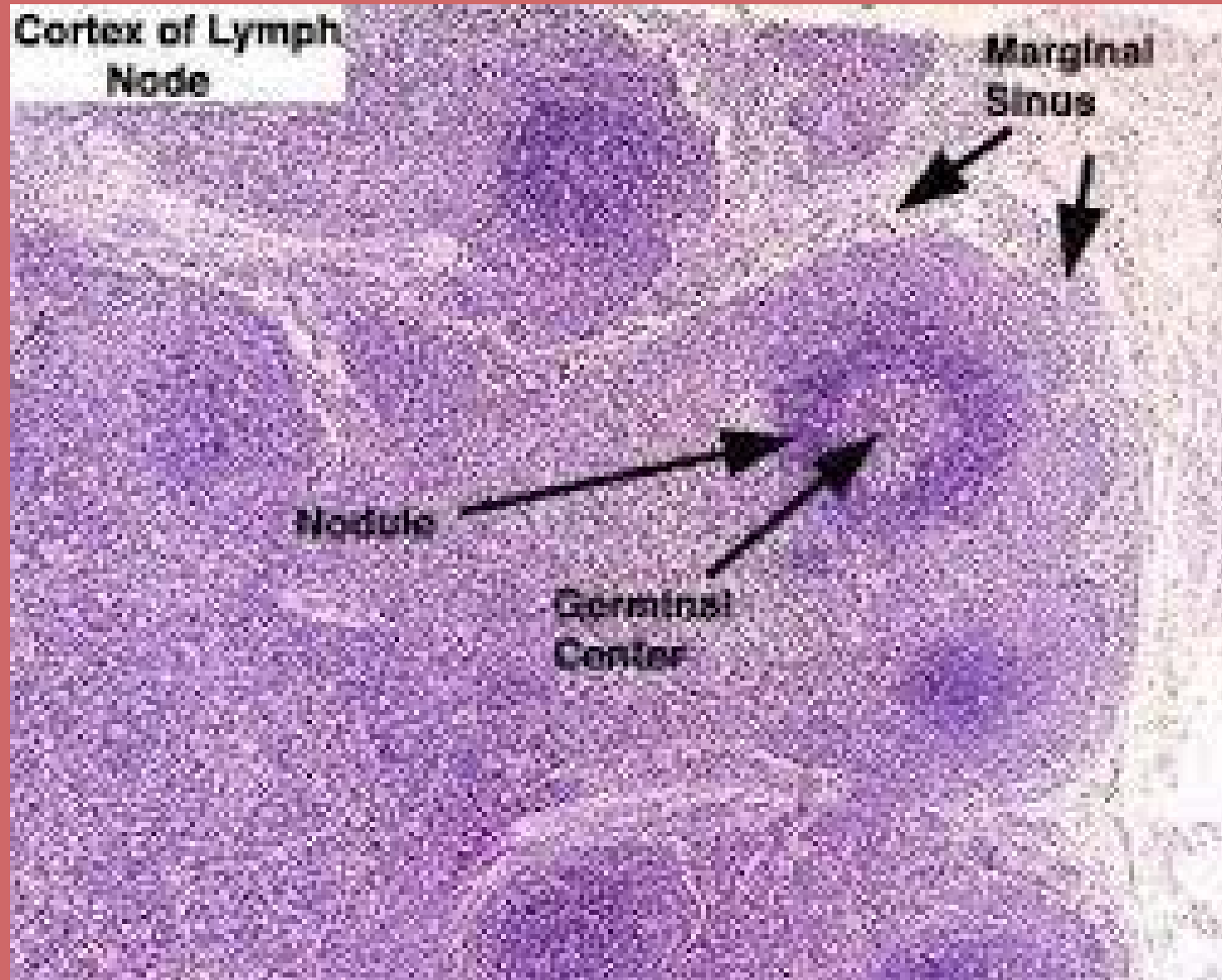
Lymph node

- Encapsulated
- Trabeculae
- Supporting elements in the organ is reticular fibers and cells forming meshwork
- Between meshwork in spaces: cells: lymphocytes, macrophages, plasma cells
- Cells are arranged in the form of cords: **medullary cords**

- Cortex: outer and deeper
- Outer cortex : lymphatic nodule
- **primary nodule and secondary nodule**
- **Secondary nodules : germinal center surrounded by deeply stained lymphocytes**
- Deeper cortex : lymphocytes are not well organized as in outer cortex



Cortex of Lymph Node

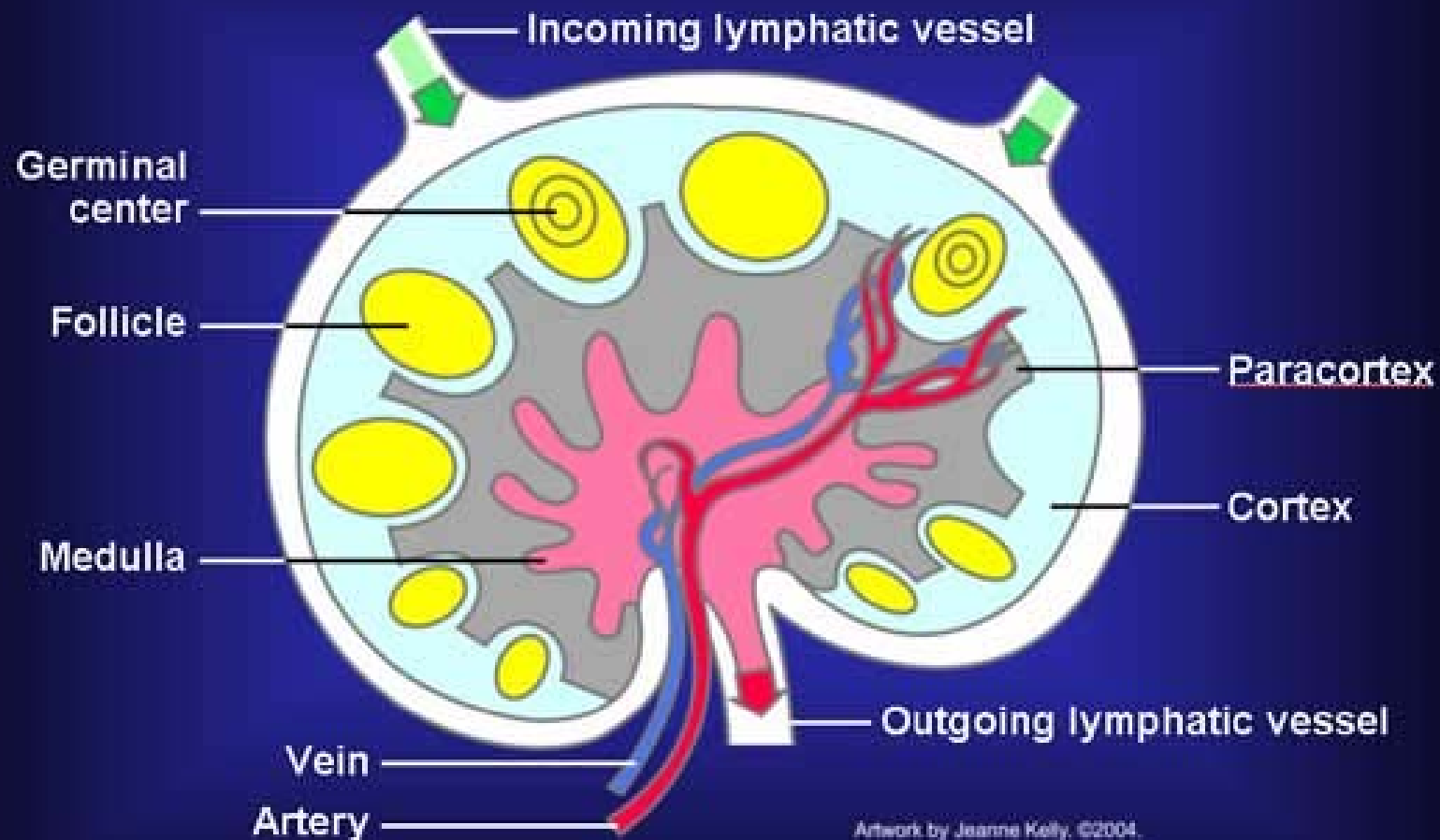


Marginal Sinus

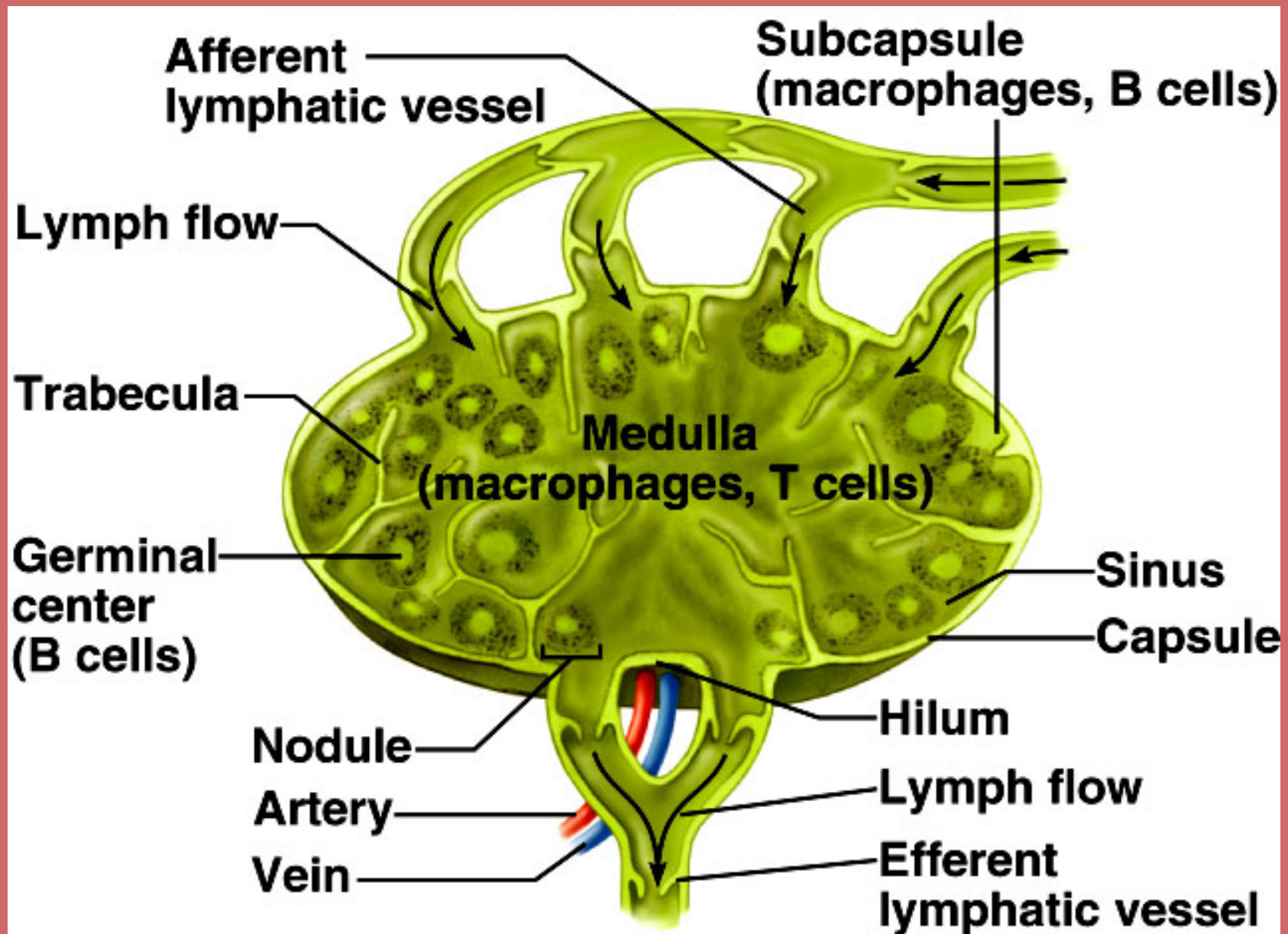
Nodule

Germinal Center

Lymph Node

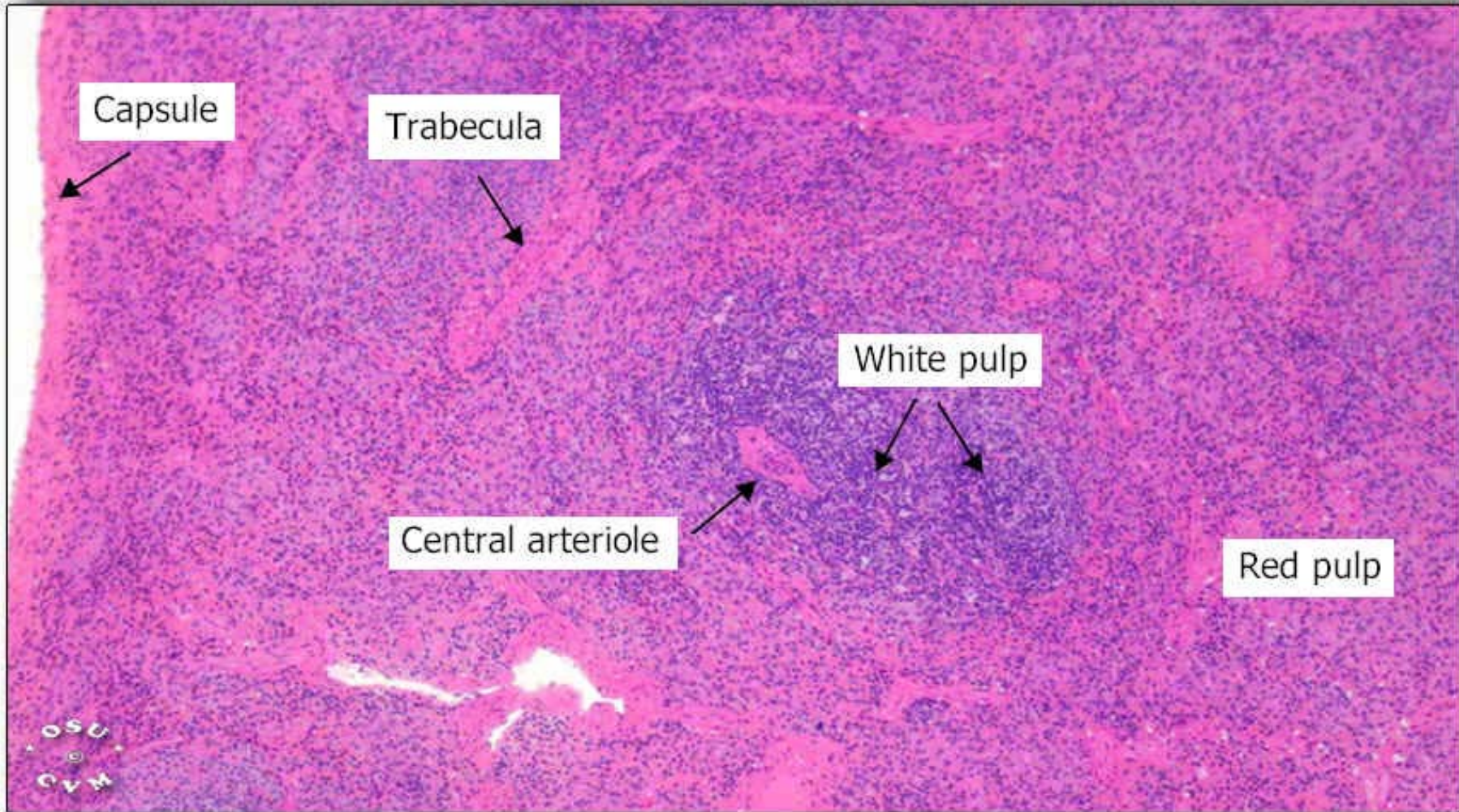


Artwork by Jeanne Kelly, ©2004.



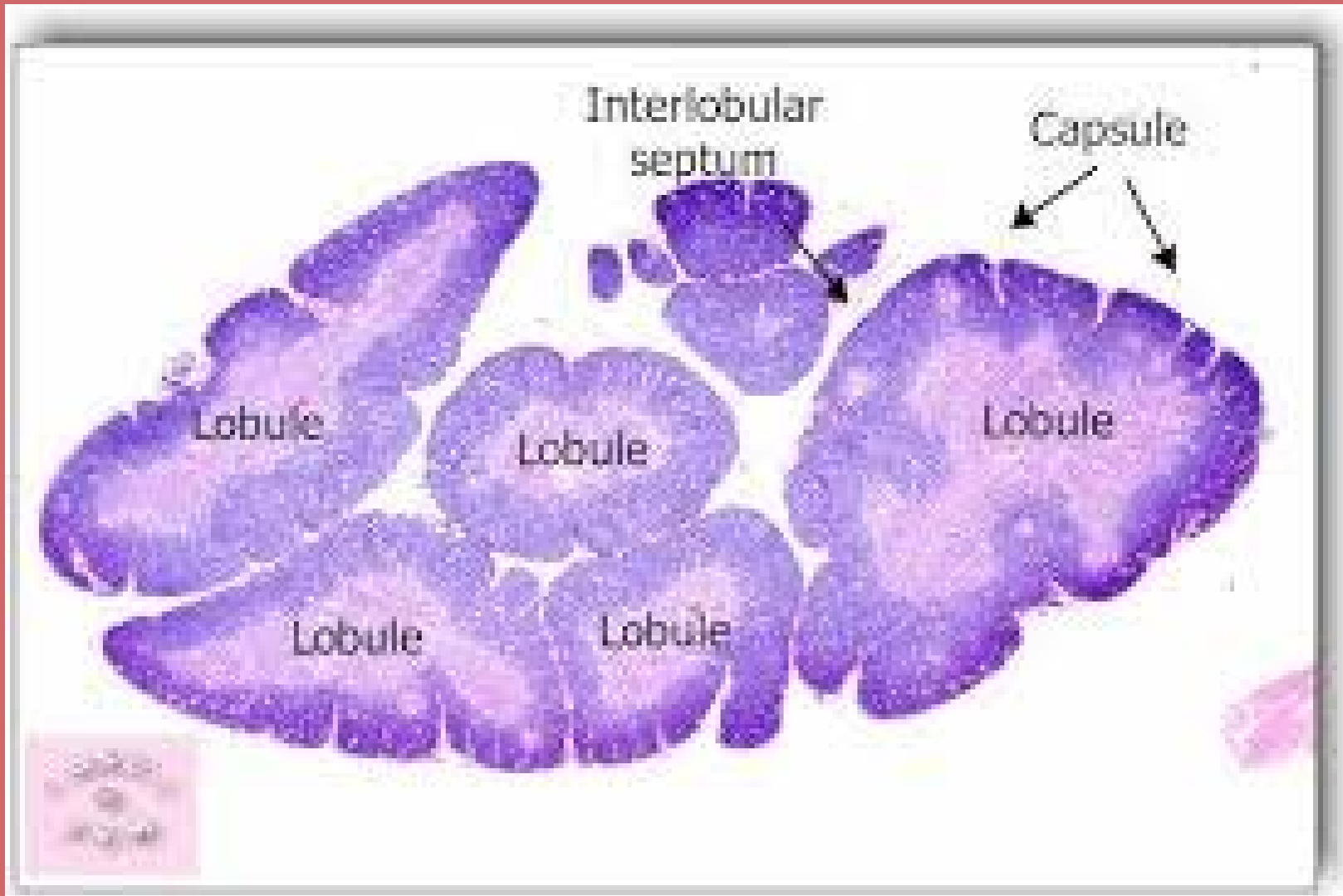
spleen

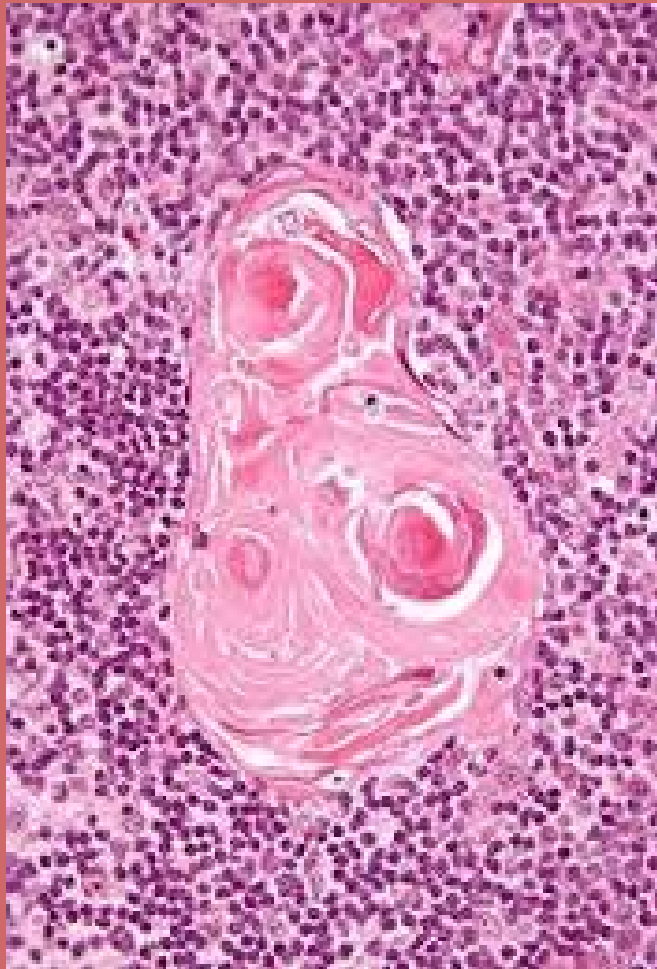
- Capsule
- Trabeculae
- White pulp : lymphatic nodule surrounding central arteriole. **splenic nodule(Malpighian corpuscle)**
- Red pulp : cells : cord like arrangement : **SPLENIC CORDS.(cords of Billroth)**
- lymphocytes , red blood cells , macrophages in the spaces between meshwork



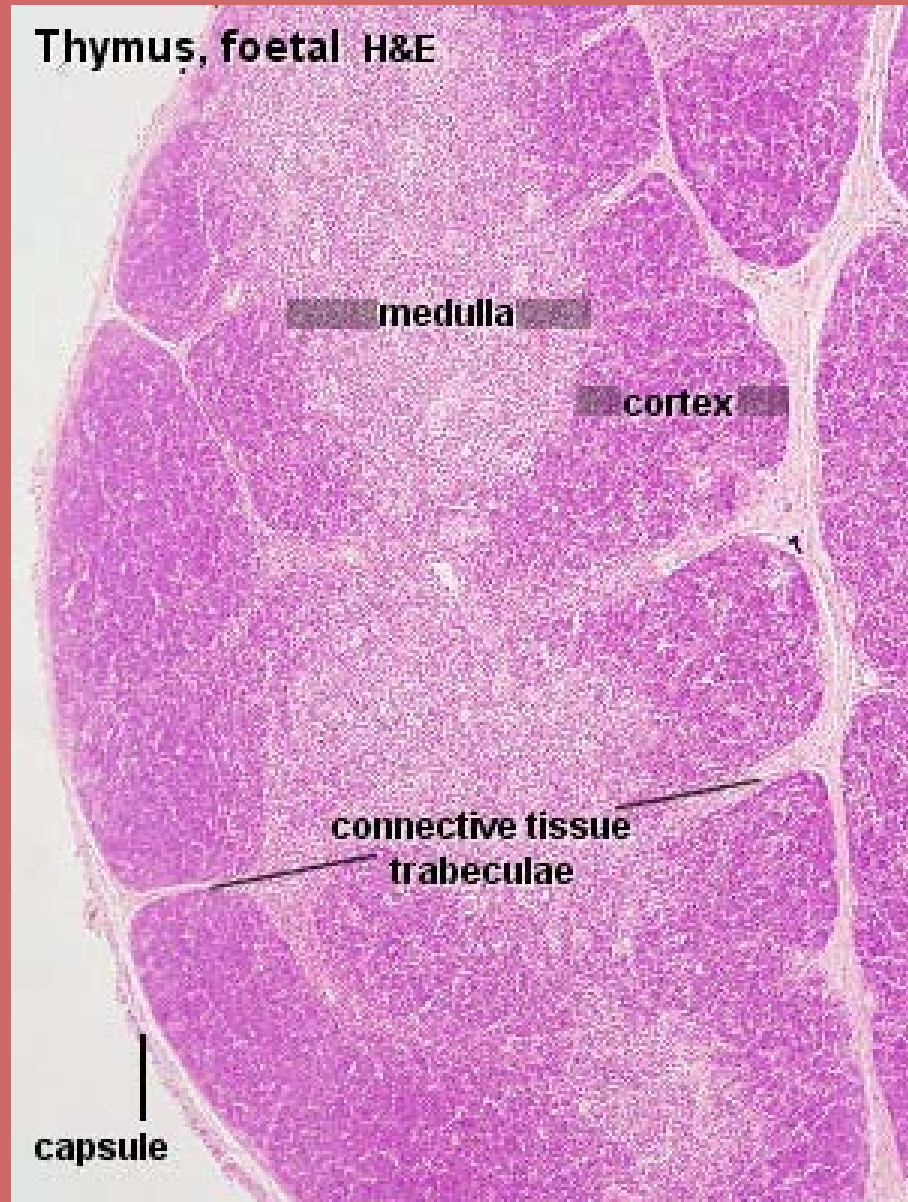
THYMUS

- Capsule
- Divide whole organ into thymic lobules
- Delicate supporting stroma is formed by epithelio-reticular cells : stellate in shape
- This reticulum differs from reticulum of lymphnode and spleen
- **Hassall's corpuscles**





Thymus, foetal H&E



medulla

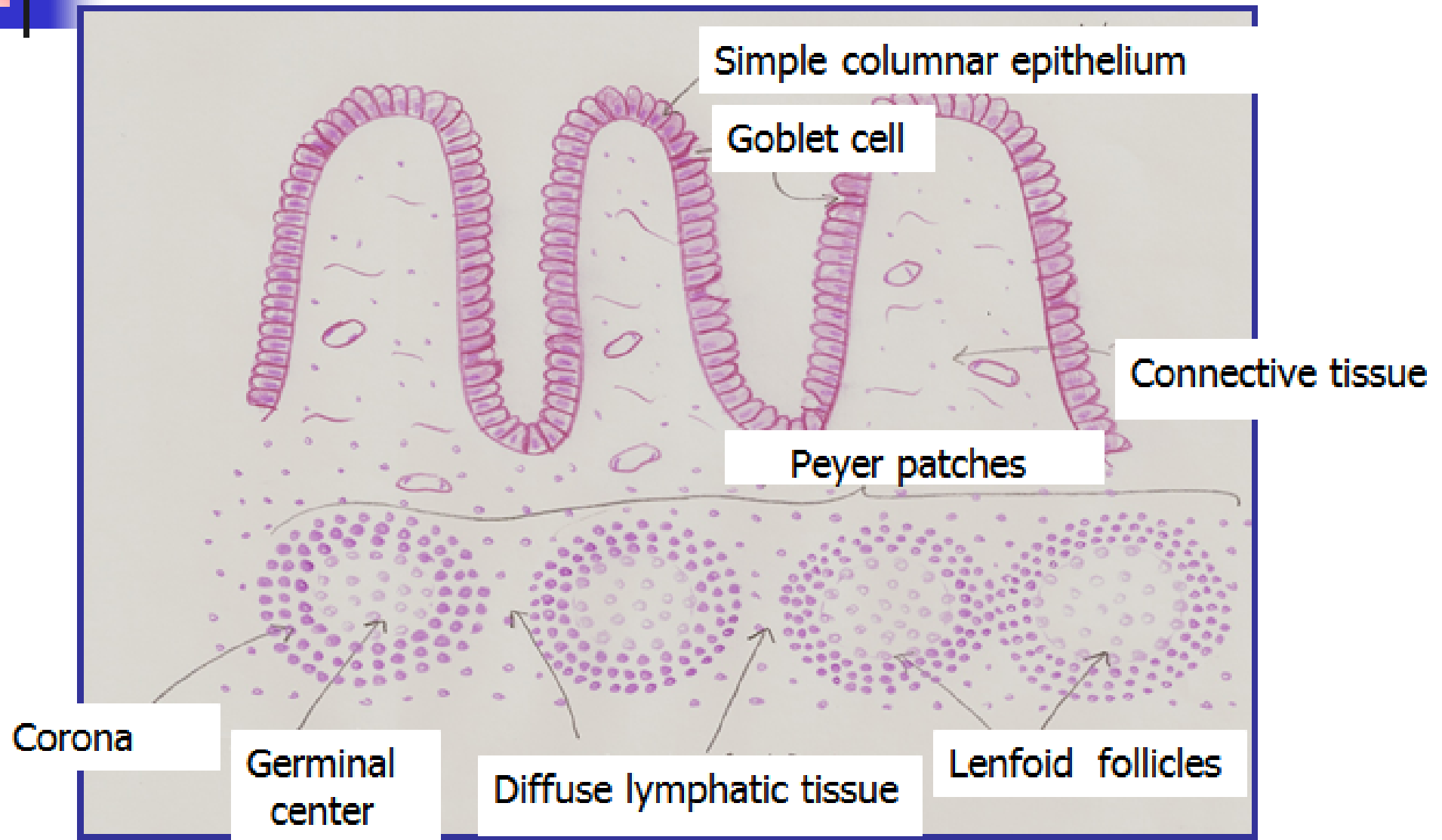
cortex

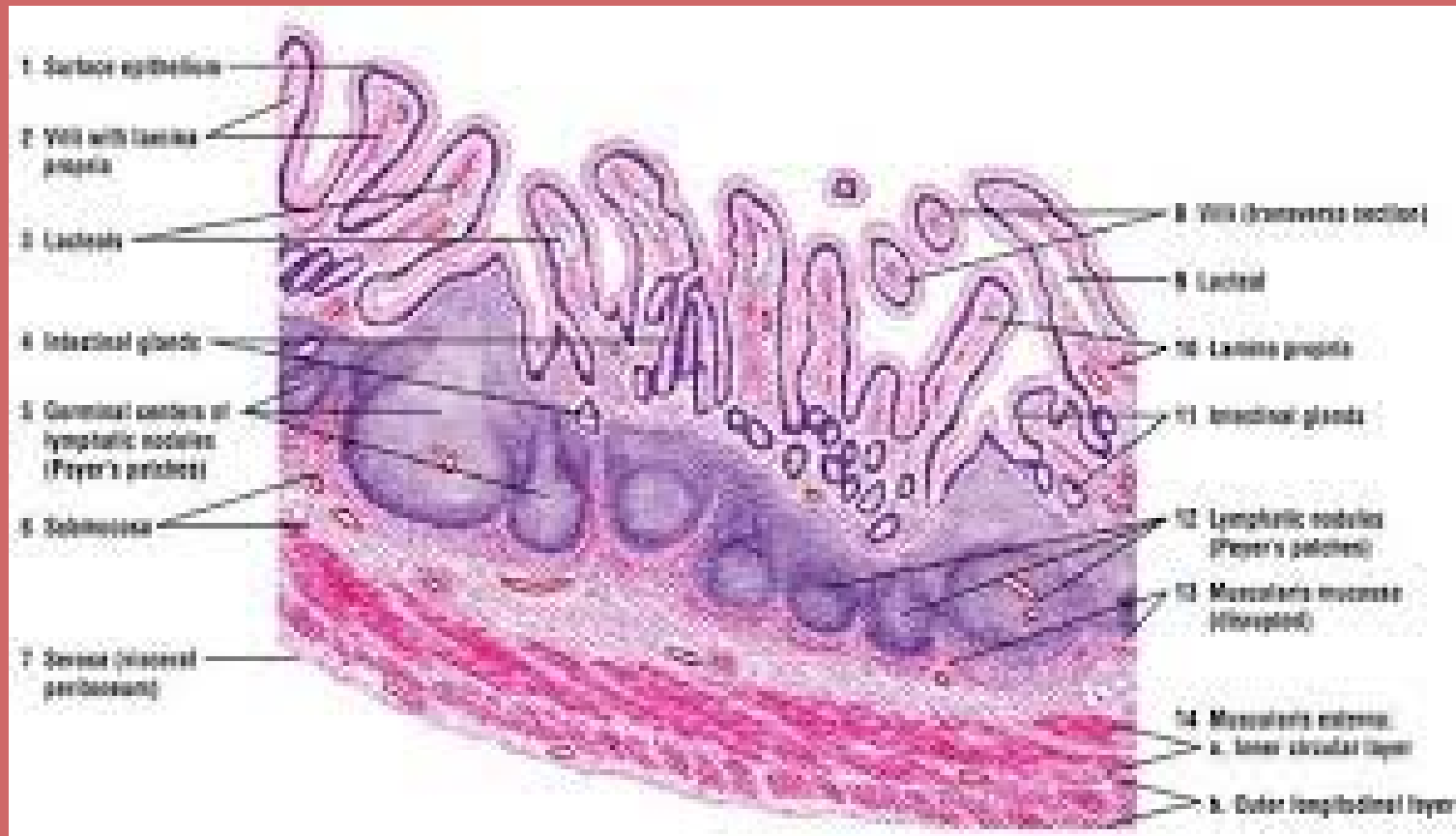
connective tissue
trabeculae

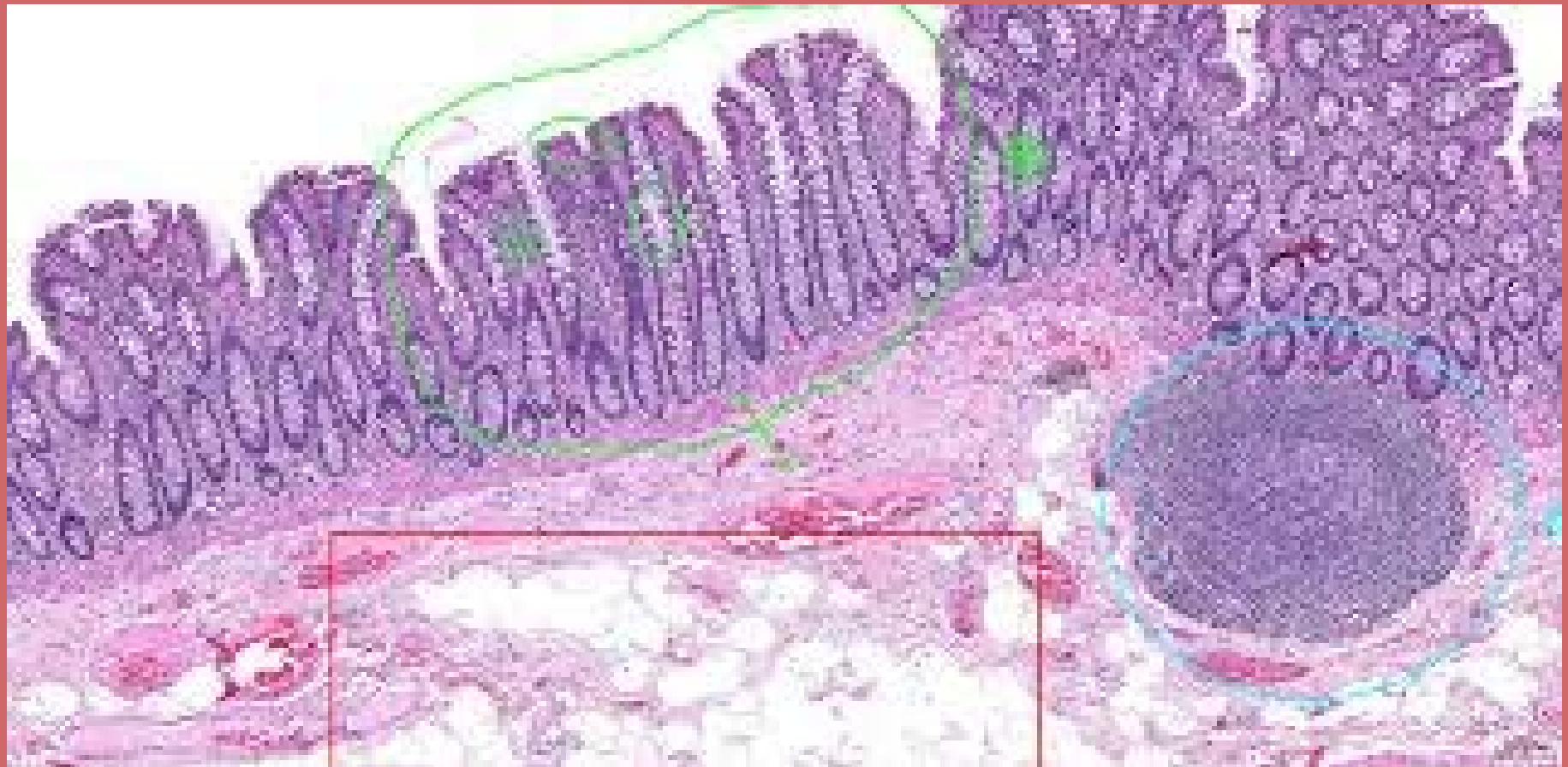
capsule

Peyer's patches

- Collection of lymphoid tissue in the form of lymphatic nodules in lamina propria of Ileum
- Protect the gut from toxins and micro-organism

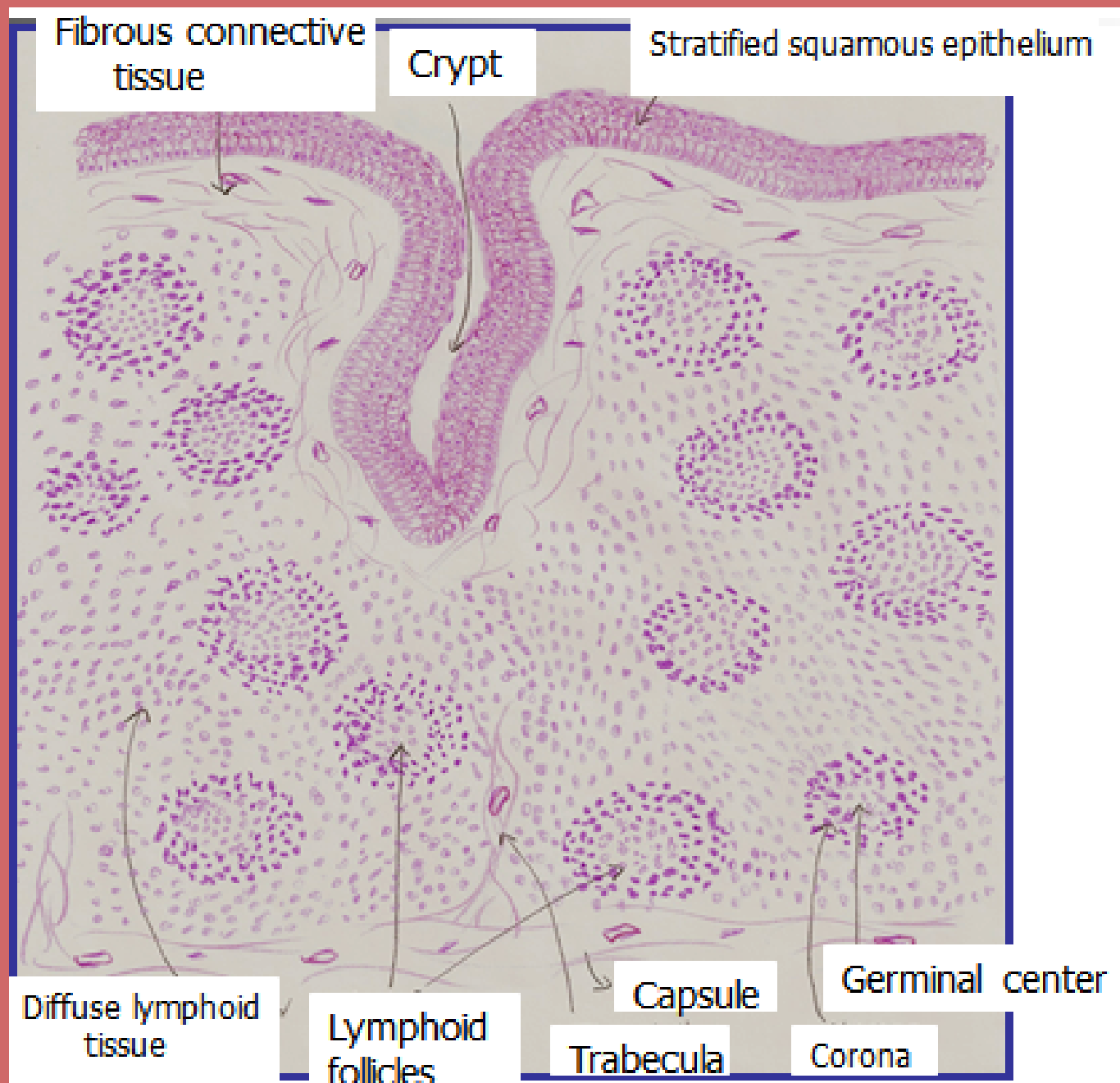


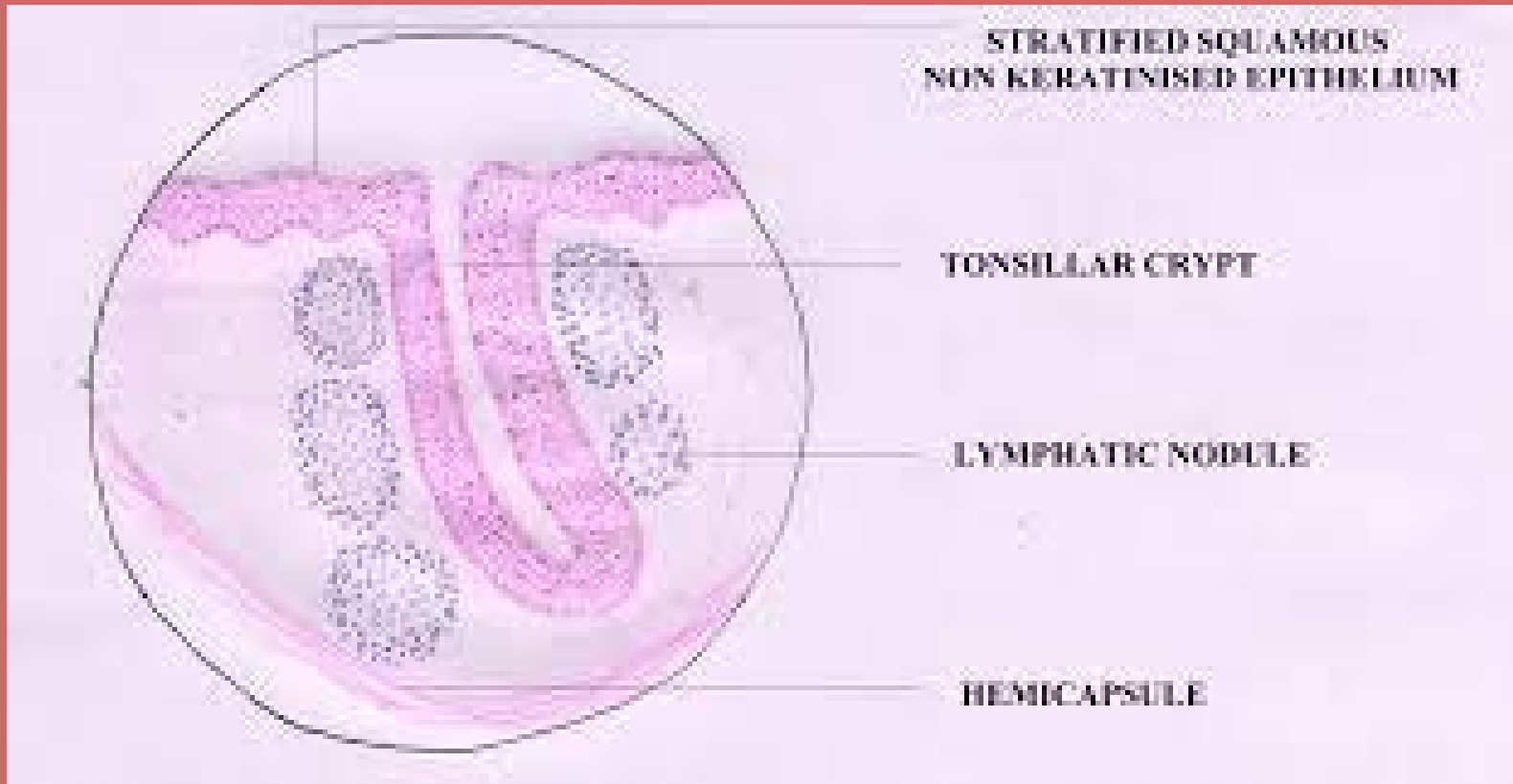




Palatine tonsil

- Stratified squamous epithelium
- Lymphatic nodules just beneath the epithelium in the mucosa
- Tonsilar crypts







Micrograph showing a large, pale, eosinophilic area, likely a fibrin deposit or necrotic debris, surrounded by a dense cellular reaction. The surrounding tissue is stained purple, indicating nuclei. Several thin, dark lines are visible, possibly representing blood vessels or connective tissue fibers.

Applied anatomy

- The first line of defence of the body
- Lymphadenitis/lymphangitis
- Lymphedema
- Hodgkin's lymphoma
- Elephantiasis : wuchereria bancrofti : massive swelling & enlargement of limbs.

