

HISTOLOGY OF LYMPHATIC SYSTEM TUCOM

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Lecture 1 .

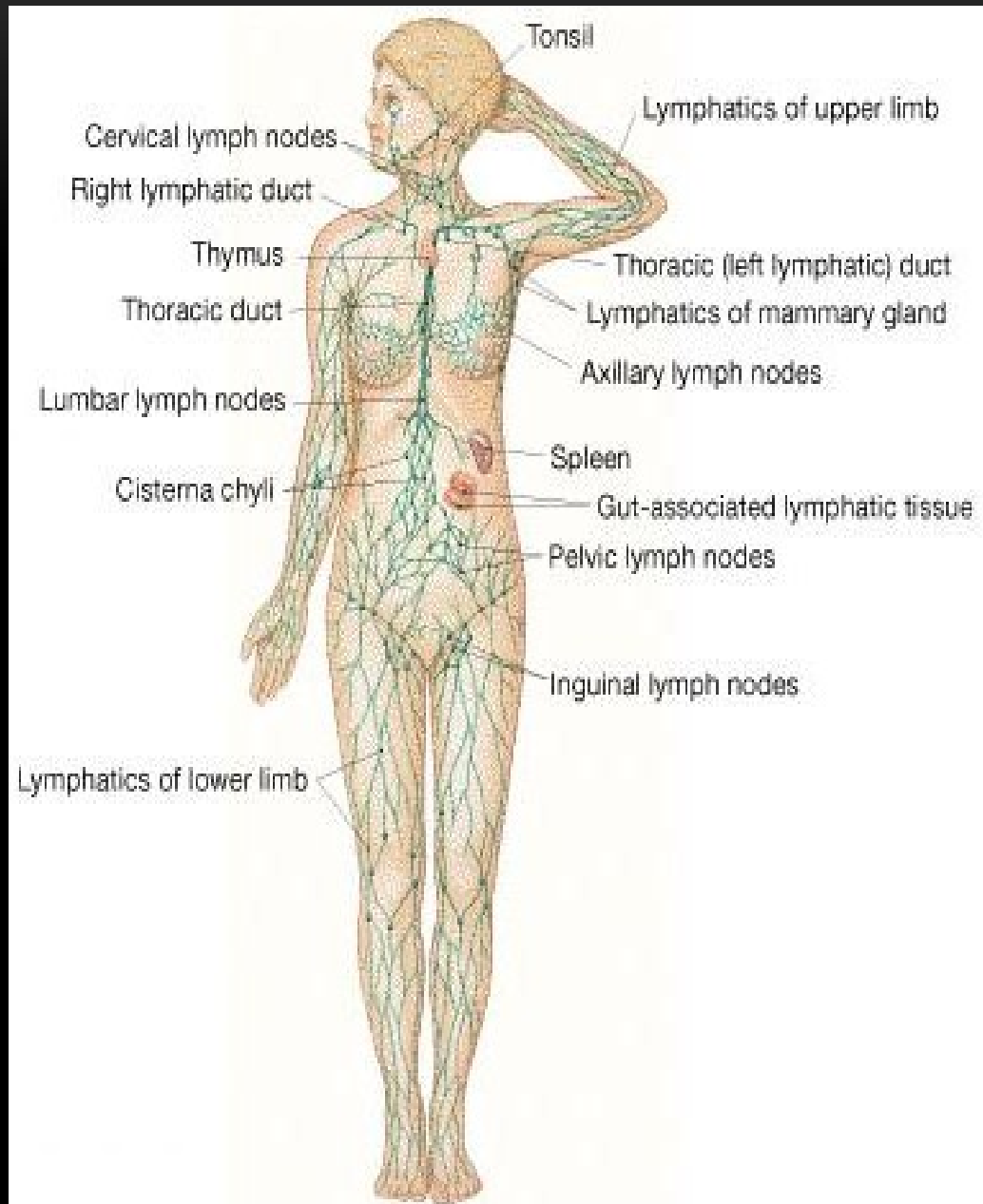
LYMPHOID SYSTEM

It is part of the circulatory system and an important part of the immune system .

It returns fluids that have leaked from the circulatory system back to the blood.

Lymphatic system consists of :

- 1- lymph vessels
- 2- lymphoid tissues
- 3- circulating lymph
- 4- lymphatic organs



FUNCTIONS

- Defense of body
- Phagocytosis of foreign cells
- Involved in production of lymphocytes and plasma cells

LYMPHATIC VESSELS

Originate as lymph capillaries

Lymphatic Capillaries originate in tissues as tiny blind ended sacs

- lie side by side with blood capillaries
- single layer of endothelial cells like blood capillaries
- but much more permeable to solvents, and large solutes and whole cells

Major features of the lymphatic capillaries :-

Composed of simple squamous epithelium/ endothelium

Blind-ended (dead end) capillaries (NOT part of a closed loop)☐

Endothelial cells at capillary ends loosely overlap☐

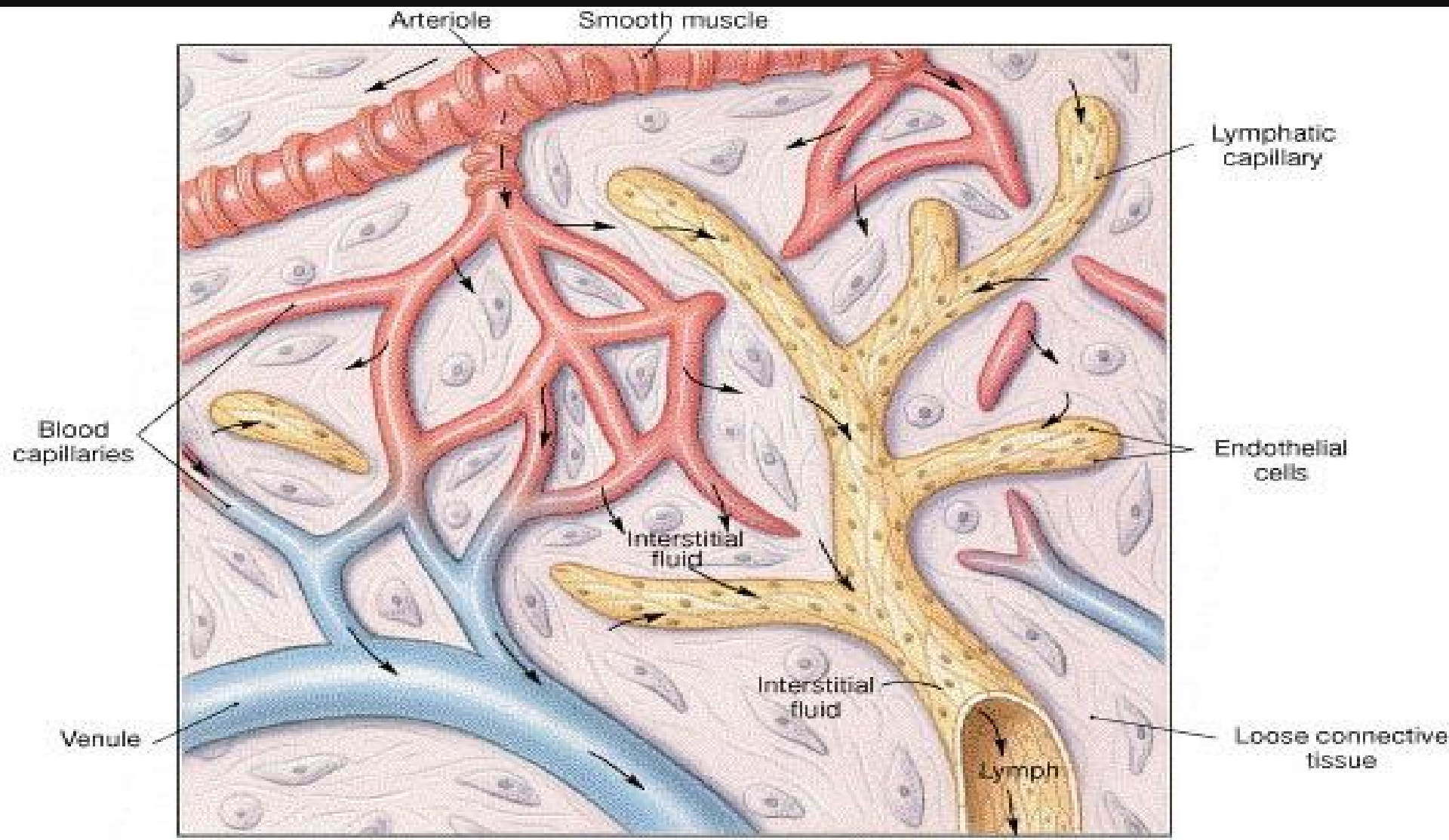
Anchoring filaments attach endothelial cells to surrounding☐

tissues to form one way mini-valves

Highly permeable & allow interstitial fluid to enter capillary☐

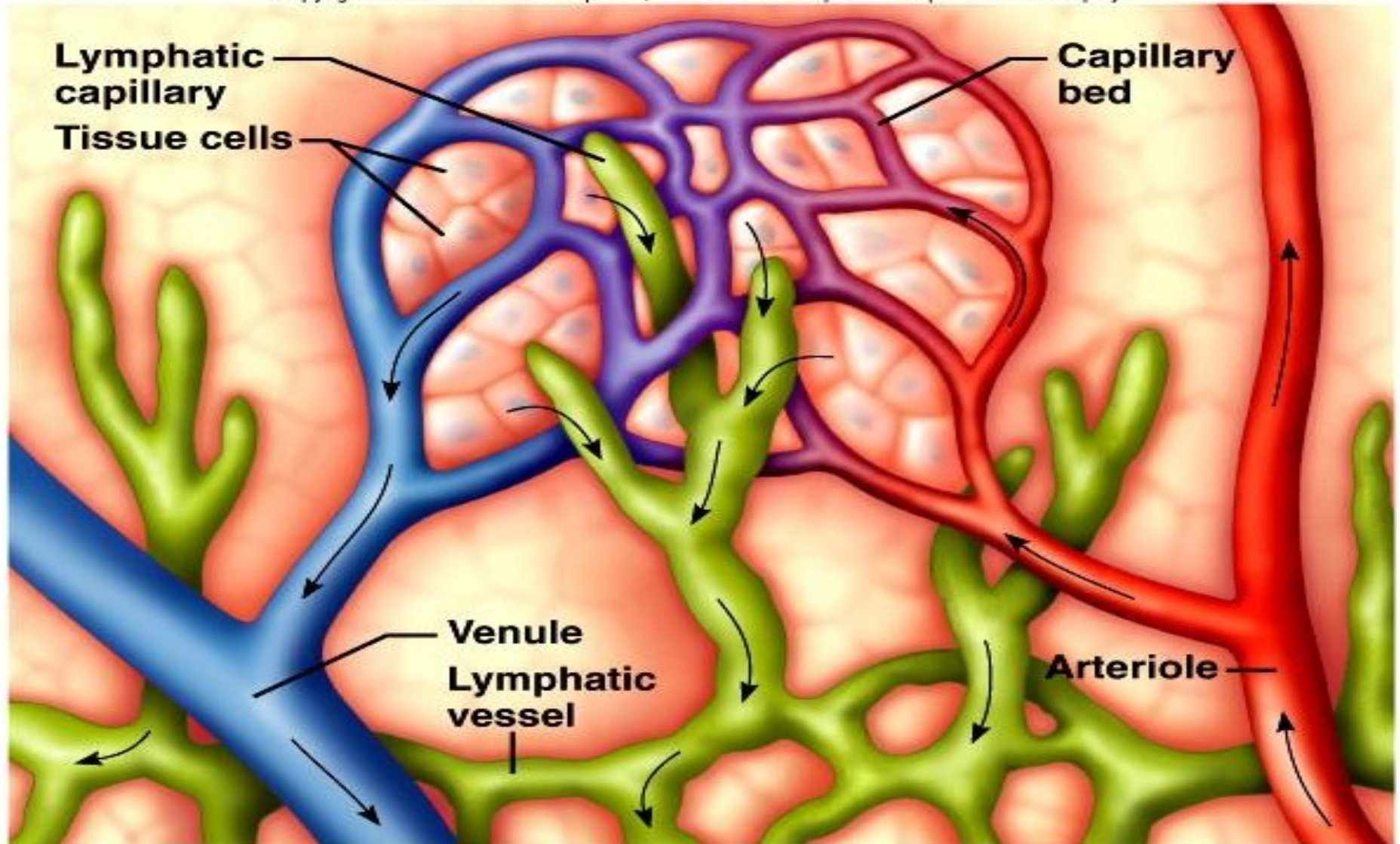
☐**Lacteals** are lymphatic capillaries that facilitate fat

LYMPHATIC CAPILLARIES UNION TO FORM THE LYMPHATIC VESSELS ,
REASSEMBLE TO VEINS WITH EXCEPTION THINNER WALL WITH HIGH NUMBER
OF VALVES TO PREVENT THE BACK FLOW OF THE LYMPH

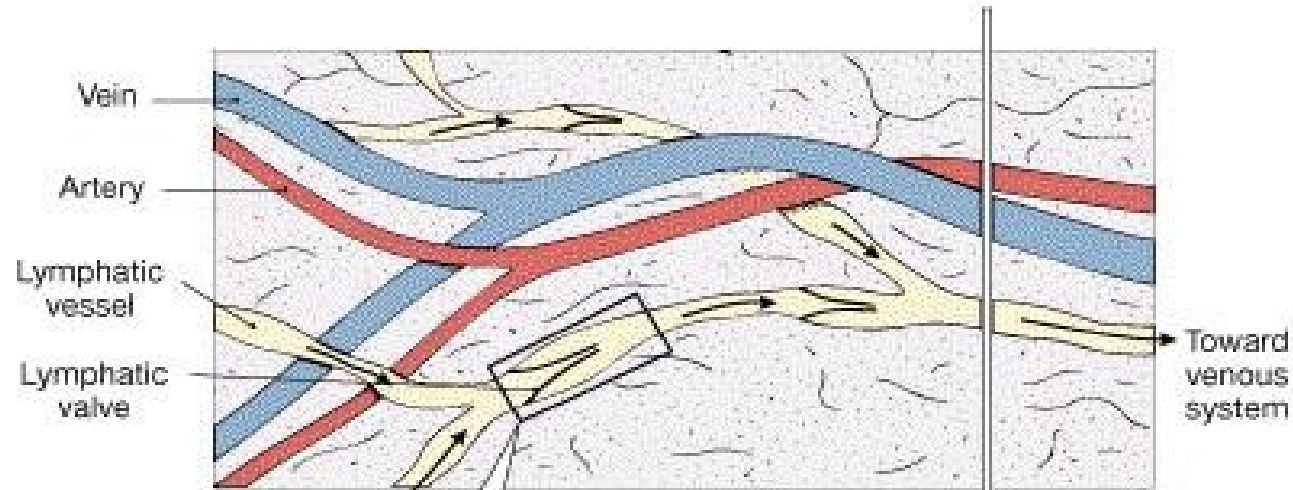


LYMPHATIC CAPILLARY & VESSEL

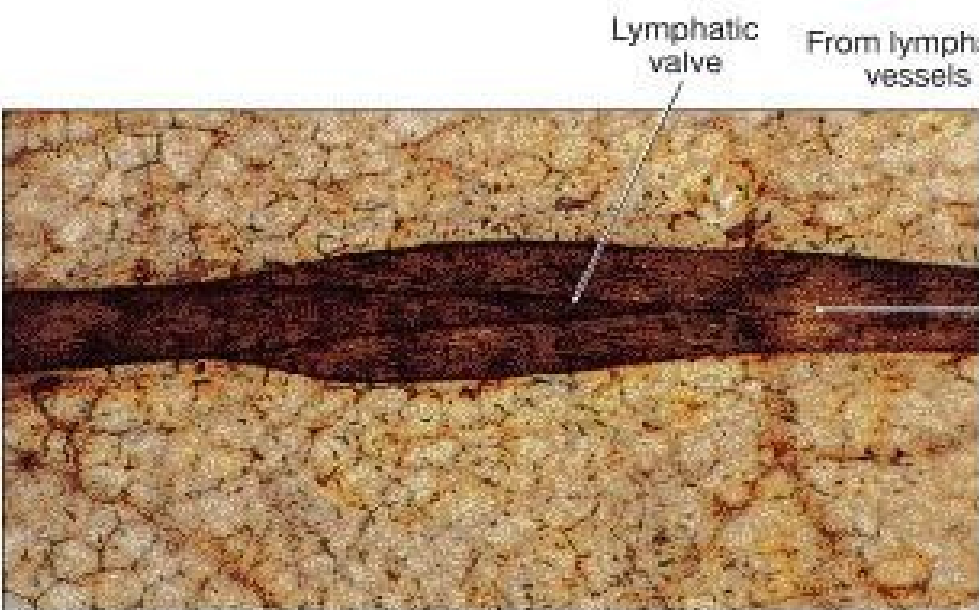
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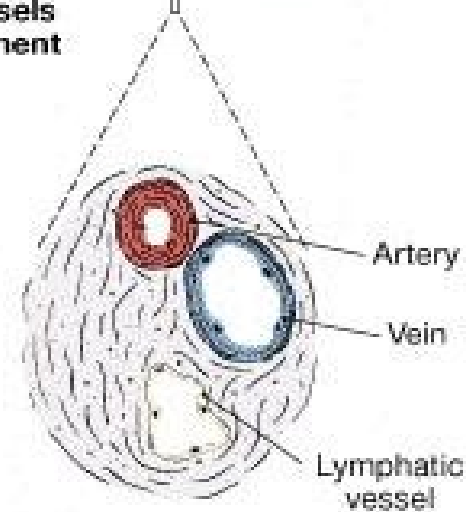
-LYMPHATIC VESSELS



(a) Lymphatic vessels showing arrangement of valves



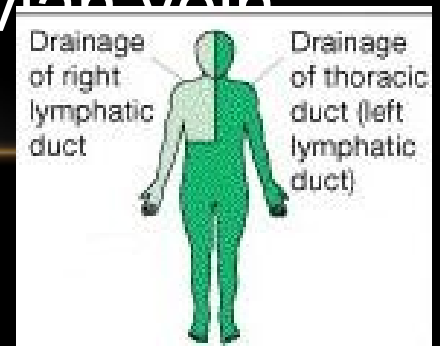
(b) Whole mount of lymphatic vessel with valve (LM × 63)



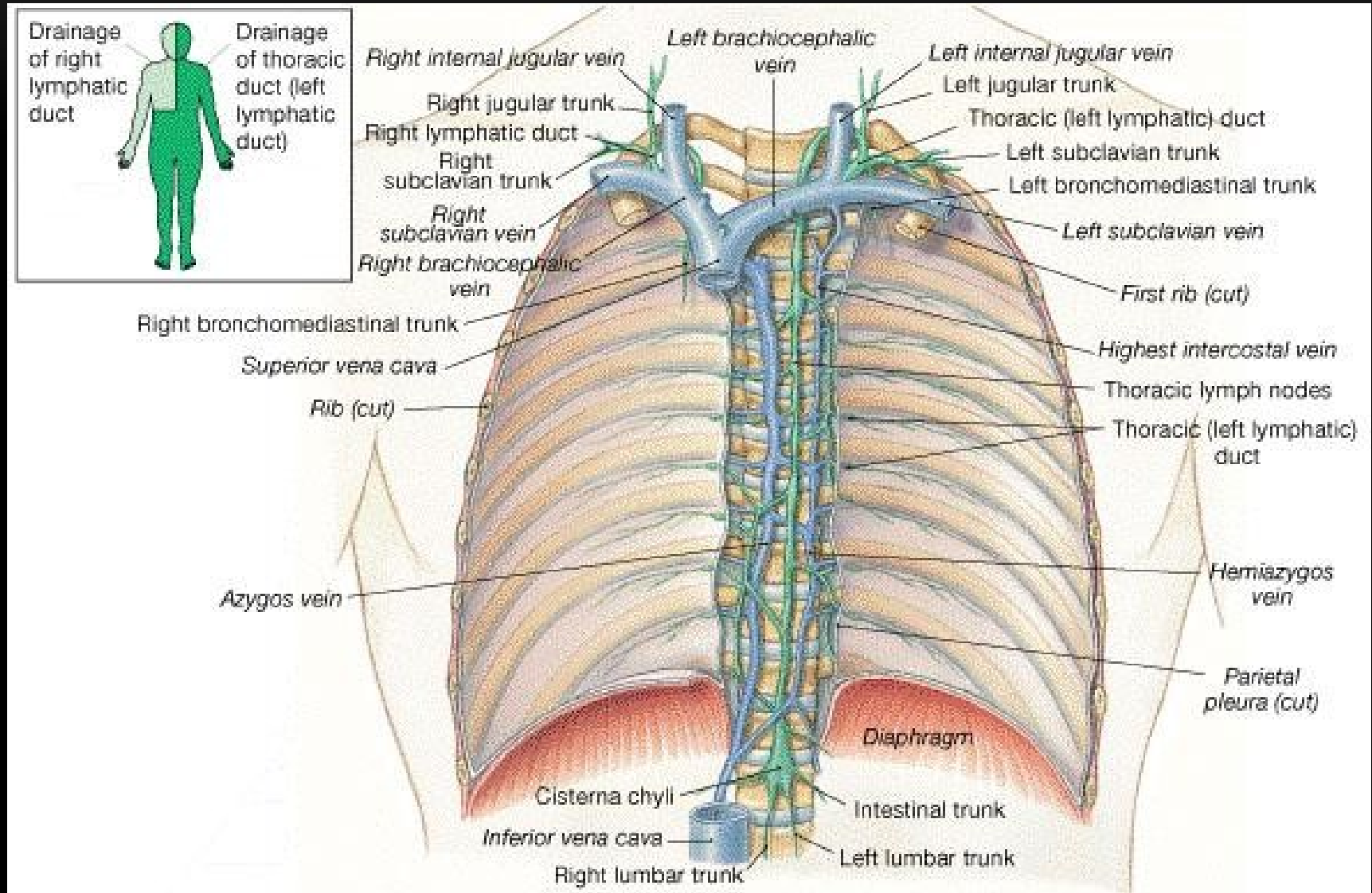
(c) Sectional view

CHANNELS OF LYMPHATICS

- Lymphatics ultimately deliver lymph into 2 main channels
 - Right lymphatic duct
 - Drains right side of head & neck, right arm, right thorax
 - Empties into the right subclavian vein
 - Thoracic duct
 - Drains the rest of the body
 - Empties into the left subclavian vein



CHANNELS OF LYMPHATICS



MAJOR LYMPHATIC VESSEL OF THE TRUNK



— Thoracic aorta

— Thoracic duct

— Pleura

— Cut edge of diaphragm (removed)

— Thoracic aorta entering aortic hiatus

— First lumbar vertebra

— Right renal artery

— Cisterna chyli

— Abdominal aorta

WHAT IS LYMPHOID TISSUE?

Specialized form of connective tissue

Supporting framework: reticular cells & reticular fibres

.Large number of lymphocytes T and B lymphocytes.

.Other cells: Plasma cells & macrophages

- The cells of lymphoid tissues either (regular circular distributed forms the lymphatic nodules considered as the structural unit of the lymphoid system) or irregular distributed

-LYMPHATIC TISSUE

- **Diffuse lymphatic tissue**

- No capsule present
- Found in connective tissue of almost all organs

- **Lymphatic nodules**

- No capsule present
- Oval-shaped masses
- Found singly or in clusters

-Lymphatic organs

.Capsule present

Primary lymphatic organs ,where the lymphocytes originate and matured (Thymus, Bone marrow)

Secondary lymphatic tissue(Lymph nodes, spleen)

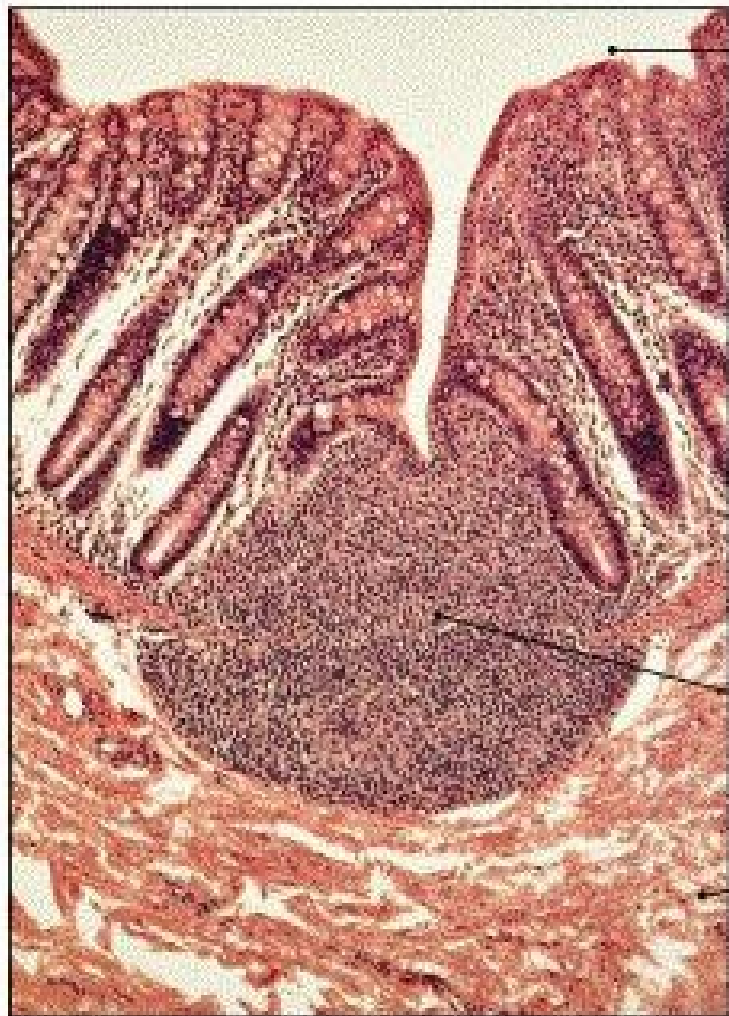
DIFFUSE LYMPHATIC TISSUE

- Called as mucosa associated lymphatic tissue (MALT).
- Accumulation of lymphatic tissue in the mucous membrane of gastrointestinal, respiratory, urinary and reproductive tracts.
- Located where they come in direct contact with antigens.

LYMPHATIC NODULE

- Circumscribed concentration of lymphatic tissue (lymphocytes and related cells).
- Not surrounded by capsule.

LYMPHATIC NODULE



Intestinal lumen

Mucous membrane

Muscularis mucosae (smooth muscle)

Aggregate lymphoid nodule

Underlying connective tissue (submucosa)



TANKS FOR LISITENING

