

Lymph Nodes :

(LLec.2)

1. Present along the course of lymphatic vessels, in axilla, cervical area, thoracic/abdominal mesenteries

2. Oval or bean shaped bodies surrounded by a dense connective tissue capsule.

- Histological structure of lymph node :

- 1-They have stroma (define stroma ?).It is connective tissue skeleton

Which is :

Coarse stroma (Capsule, trabeculae)fibro elastic connective tissue capsule send trabeculae inside lymph node.

Fine stroma : in the form of reticular fibers and reticular cell

(stromal cells, fibroblast ,ffollicular dendritic cells)

2-And they have parenchyma of lymph nodes (define Parenchyma ?)

Which is :

Lymphoid cells: Include

- T- lymphocytes
- B- lymphocytes
- plasma cells
- Accessory immunological cells which are:
 - Macrophages
 - Antigen-presenting cells(APC)
- Lymph nodes have concave Side where hilum is found, arteries; veins enter and leave the nodes through this area and efferent lymphatic vessels leave the organ. While afferent lymphatic vessels enter convex surface .

Septa or trabeculae extend from capsule into lymph node.

Each lymph node consists of:

1-Cortex

consists of numerous lymphatic nodules. Many lymphocytes, macrophages, other antigen presenting cells (APCs), plasma cells .Germinal centers in lymphatic nodules may be found.

2-Paracortical area :

Is located internal to the cortex, between cortex and medulla, composed of diffused lymphatic tissue,(T-lymphocytes , macrophages, and antigen – presenting cells (interdigitating cells).

This area contains post- capillary venules that have unusual endothelium, they are lined by tall cuboidal cells.

3-Medulla:Is inner layer faintly stained (lighter than cortex).

Composed of :

Medullary cords: aggregates of cells as cords B cells & T cells

plasma cells; are embedded in reticular tissue.

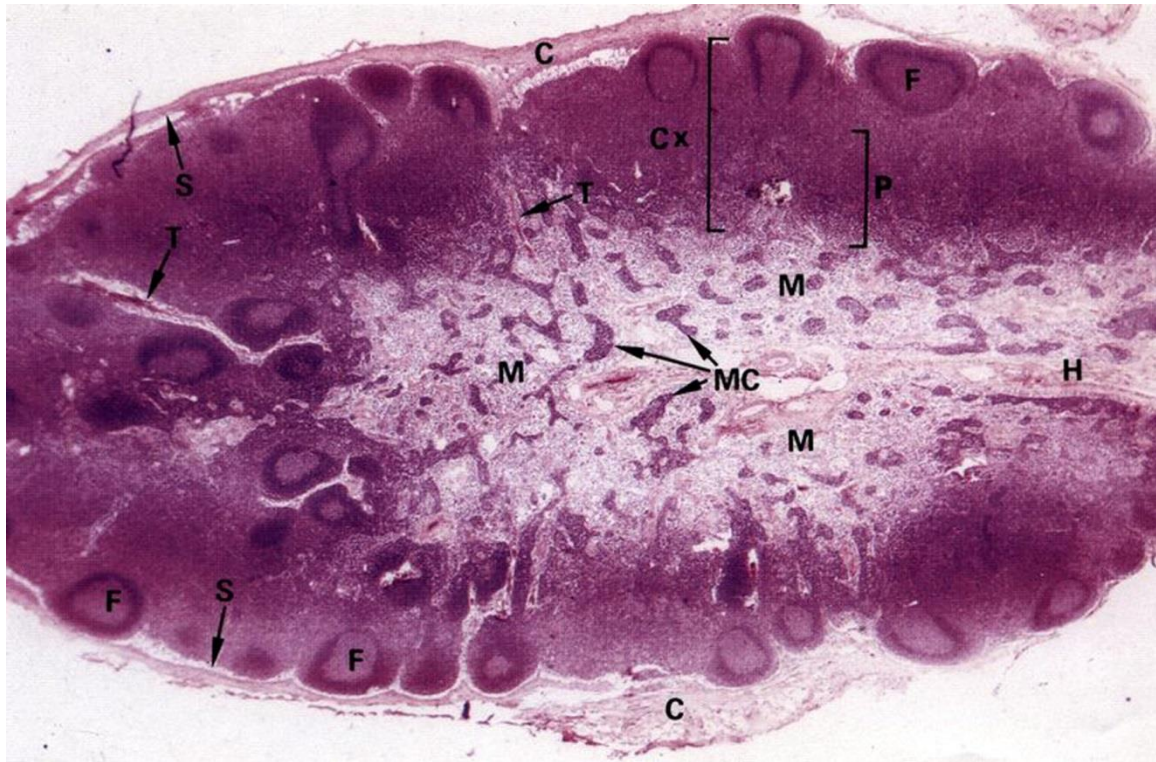
Medullary sinuses :Have discontinuous endothelium.

Incomplete layer of reticular cells.

Macrophages(Littoral cells)are found all are

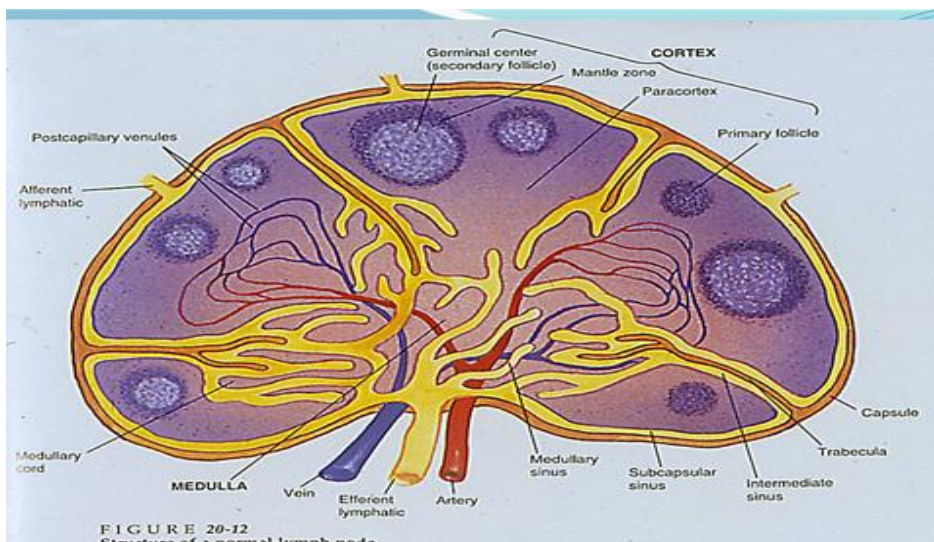
supported by reticular fiber.

Wall of sinuses allows free movement of lymphocytes between its endothelial cells.



.How can lymph transported through the lymph node?

The afferent lymphatic vessels enter the node through the capsule then they open into the sub capsular spaces which then open into the cortical sinuses then into the medullary sinuses and finally delivered to the efferent vessels at the hilum.



Circulation of lymphocytes in lymph nodes (Recirculation of lymphocytes):

T and B cells, enter the lymph node via an artery and migrate out of the bloodstream through post capillary venules.

A typical circulation cycle takes about 12–24 hours.

The lymphocytes have the ability to move between endothelial cells. They can recognize the cuboidal endothelium that have receptors on their surfaces.

Theses lymphocytes leave the venules to penetrate the para cortical area and enter the medullary sinuses, leave the node through efferent lymphatic v. to return to the blood circulation

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Functions of lymph nodes?(See your text book and all the related figures).