

الصيدلة	الكلية
العلوم المختبرية السريرية	القسم
Histology	المادة باللغة الانجليزية
علم الانسجة	المادة باللغة العربية
الاولى	المرحلة الدراسية
م.م زهراء خليل مروح	اسم التدريسي
Lymphatic system	عنوان المحاضرة باللغة الانجليزية
جهاز اللمفاوي	عنوان المحاضرة باللغة العربية
الثالثة	رقم المحاضرة
Junqueira's Basic Histology: Text and Atlas	المصادر والمراجع

محتوى المحاضر

Lymphatic System consists of:

1- Lymph

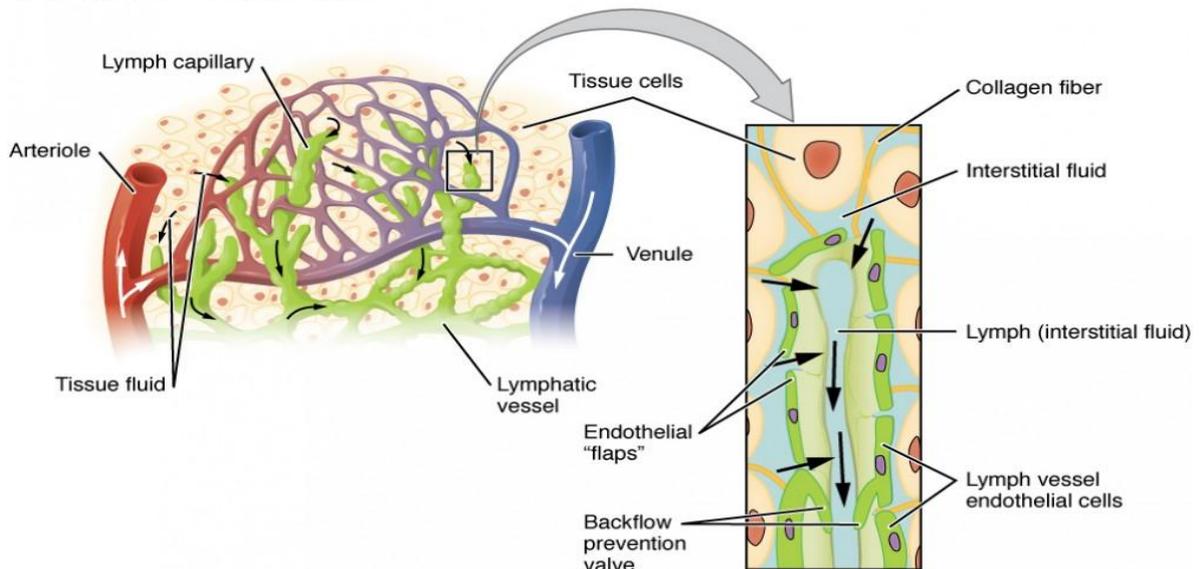
2- Lymphatic Vessels

3- Lymphatic Organs

4- Lymphatic cells

- ❖ Lymph is a **clear to white fluid** made of: White blood cells, especially lymphocytes, the cells that attack bacteria in the blood. Fluid from the intestines, which contains proteins and fats.

Lymph capillaries in the tissue spaces



Cells of lymphatic tissue

- ❖ Also called lymphoid cells.
- ❖ Work together to elicit an immune response.

Types of lymphatic cells are :

1. macrophages
2. epithelial cells
3. dendritic cells
4. lymphocytes

Lymphocyte:

T- lymphocytes (T- cells)

B- lymphocytes (B-cells)

Lymph Vessels

- ❖ Lymph vessels are lined by endothelial cells ,thin layer of smooth muscles and adventitia.

1- Lymphatic capillaries

tiny thin-walled vessels, closed at one end and located in the spaces between cells.

2- Lymphatic collecting vessels

receive lymph fluid from many capillaries

3- Lymphatic trunks :

small lymphatic vessels join to form larger tributaries, called lymphatic trunks, which drain large regions.

4- Lymphatic ducts :

largest lymphatic vessels. two ducts drain lymph into veins

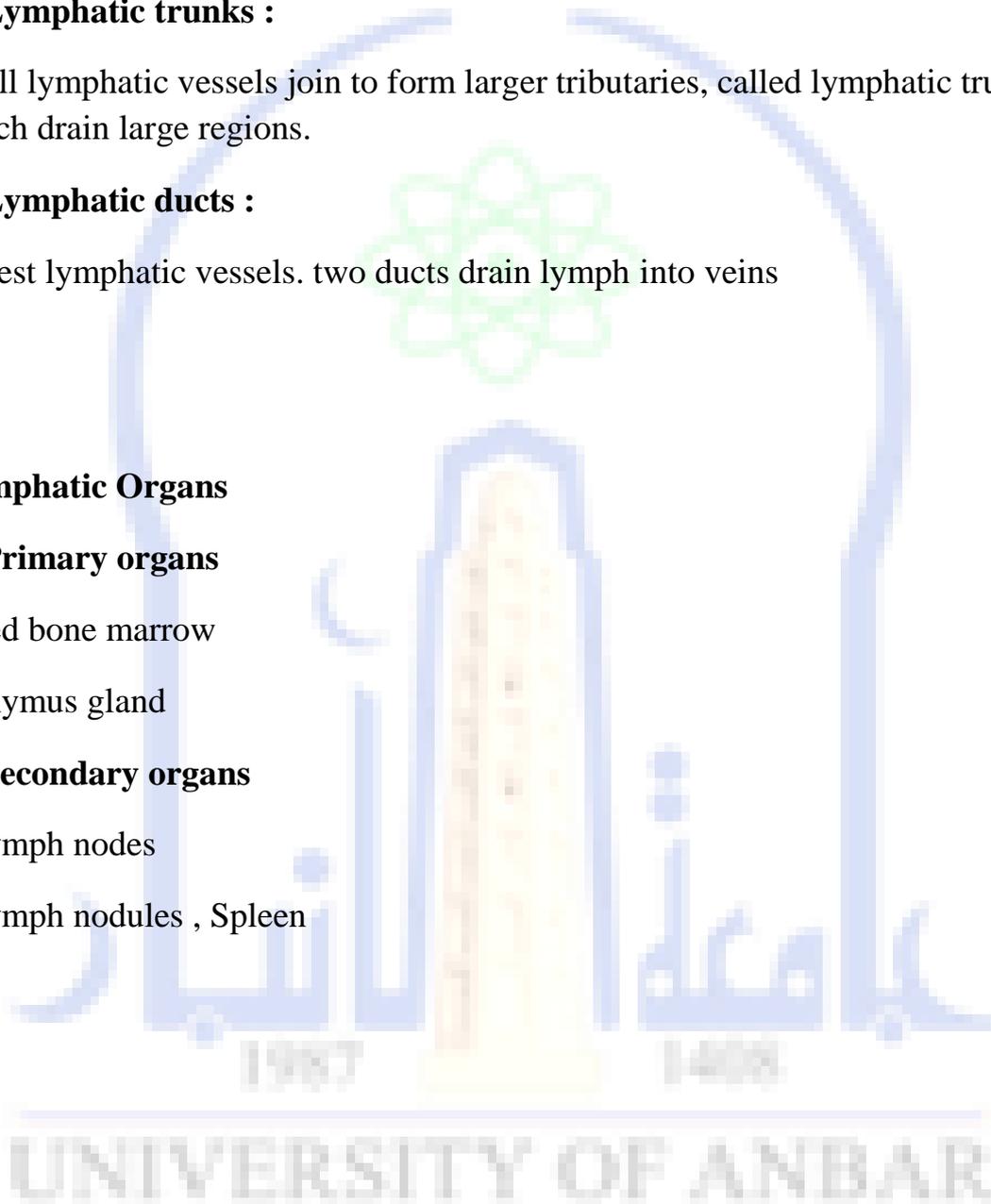
Lymphatic Organs

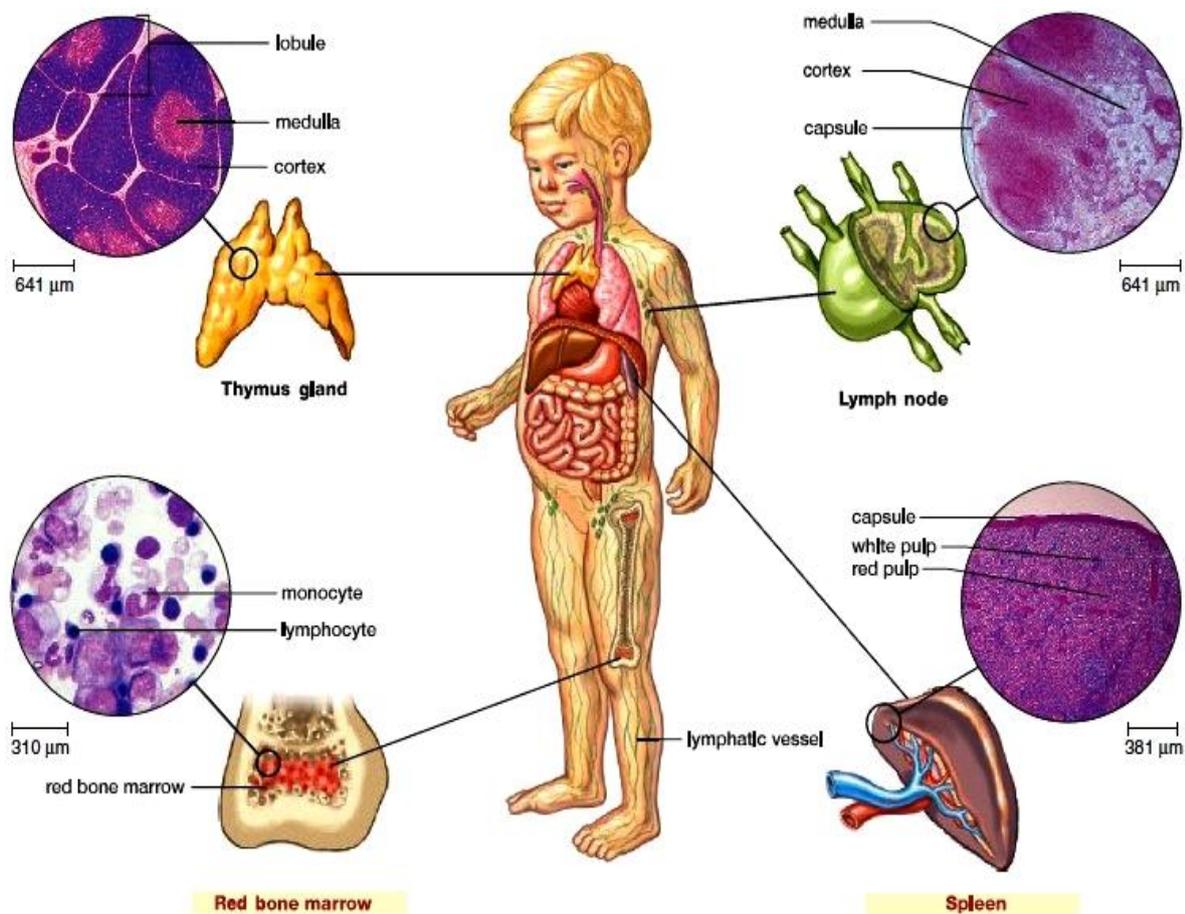
1- Primary organs

- Red bone marrow
- Thymus gland

2- Secondary organs

- Lymph nodes
- Lymph nodules , Spleen





► Histology of lymph nodes

1- capsule

2- cortex

3- inner medulla

1. Capsule

Capsule consist of dense connective tissue comprised of elastin and collagen with fibroblast the convex surface of lymph nodes is pierce by afferent lymphatic vessels , that extend deeply forming trabecular ,as trabeculae penetrate lymph nodes.

2. Cortex

3. Cortex darky stained part of lymph node

1- outer cortex: contain B lymphocytes with spherical lymph nodules some of these nodules show a light stained zone in center called germinal cells.

2- inner cortex: It lies under the outer cortex it is mainly T lymphocytes no lymphoid nodules .

4. Medulla

Medulla is composed of large lymph sinuses surrounded by lymphoid cells organized in clusters, known as medullary cords.

Lymph node sinuses:

1- subcapsular sinuses

2- intermediate sinuses

3- medullary sinuses

Tonsils

Tonsils are aggregates of lymphatic nodules associated with the pharynx and oropharynx.

These structures are spread through different areas - oropharynx, nasopharynx, and tongue - and form the

- ❖ **palatine**
- ❖ **pharyngeal**
- ❖ **lingual tonsils**

SPLEEN

The largest lymphoid organ in the body.

❖ Splenic stroma

The spleen has a three dimensional network of reticular fibers attached to the capsule as well as to the trabeculae and forms the architectural framework of this organ.

❖ splenic parenchyma

(the white pulp surrounded by the red pulp)

White pulp: contains lymphoid aggregations, mostly lymphocytes, and macrophages which are arranged around the arteries.

Red pulp: composed of splenic sinuses and splenic cords.