

Histology Team 431



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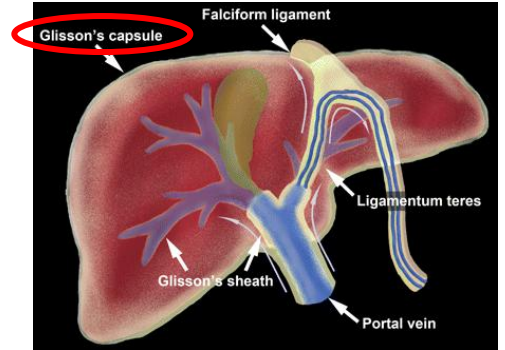
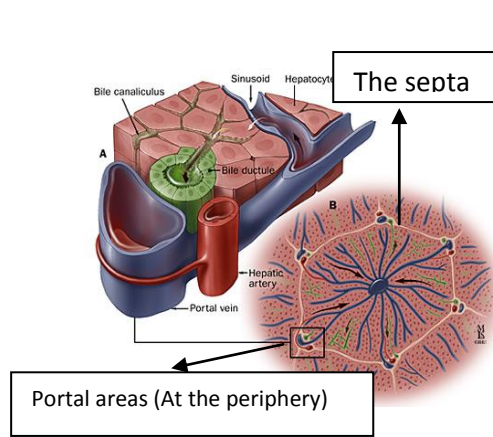
Abeer Al-Suwailem

Nouf Aboalsamh

- 1- **Stroma:** the structural tissue of organs.
- 2- **Parenchyma:** the functional parts of an organ.

Stroma of the liver:

- a-Capsule: **Glisson's Capsule**.
- b- Septa (absent in human) & Portal areas (Portal tracts).
- c- Network of reticular fibers. (**Collagen type 3**)



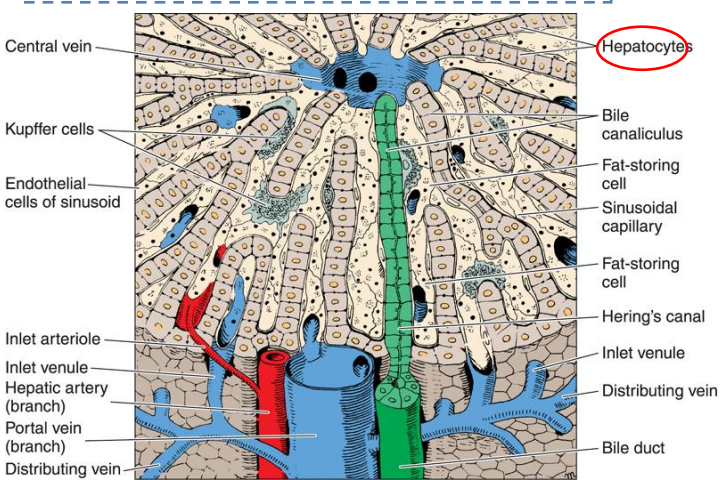
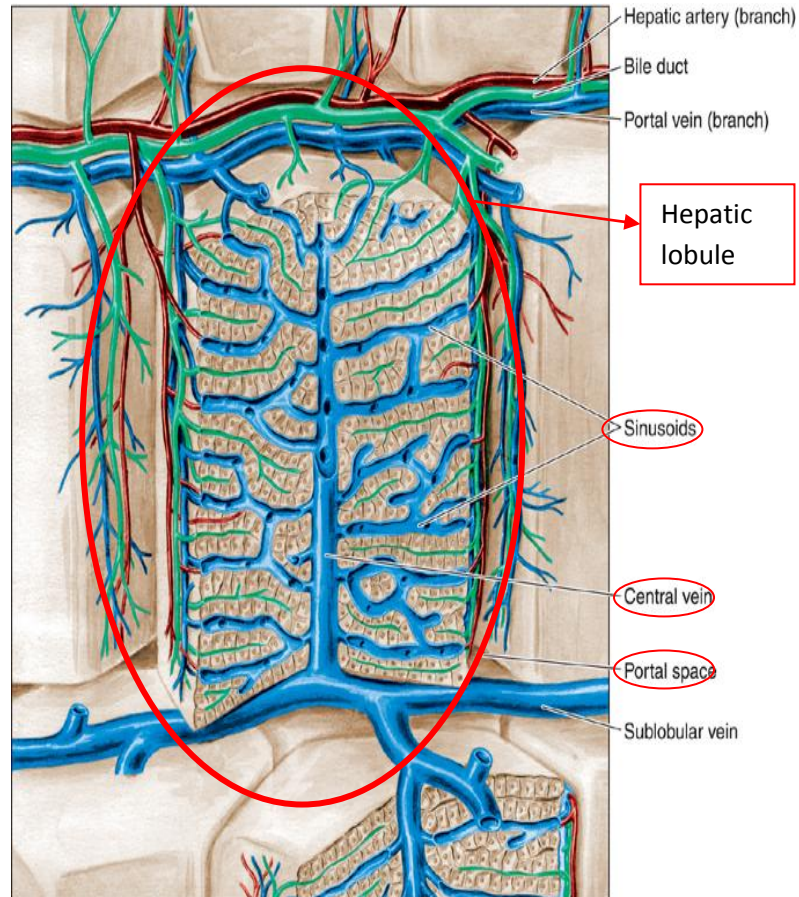
Parenchyma of the liver:

Classic liver (hepatic) lobules: It is formed of a polygonal mass of liver tissue, with portal areas at the periphery & central (centrolobular) vein in the center.

The contents of the lobules:

- 1- **Anastomosing plates of hepatocytes.**
- 2- **Liver sinusoids (hepatic blood sinusoids):** In between the plates.
- 3- **Spaces of Disse (perisinusoidal spaces of Disse).**
- 4- **Central vein.**
- 5- **Bile canaliculi. (The beginning of the biliary system)**

Discussed in the next pages.



Borders of the classic liver lobule

1-Septa: Connective Tissue septa **(It is distinct in the pig liver, but it is not clear in human)**

2-Portal areas (Portal tracts): Are located in the corners of the classic hepatic lobule (usually 3 in No.).

- Contents of portal area:

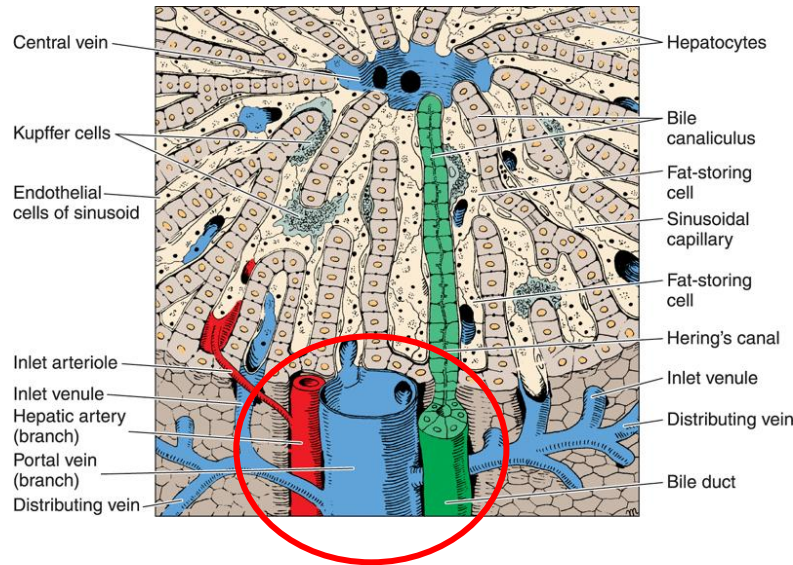
a-Connective Tissue.

b-Bile ducts (interlobular bile ducts).

c-Venule (Branch of portal vein).

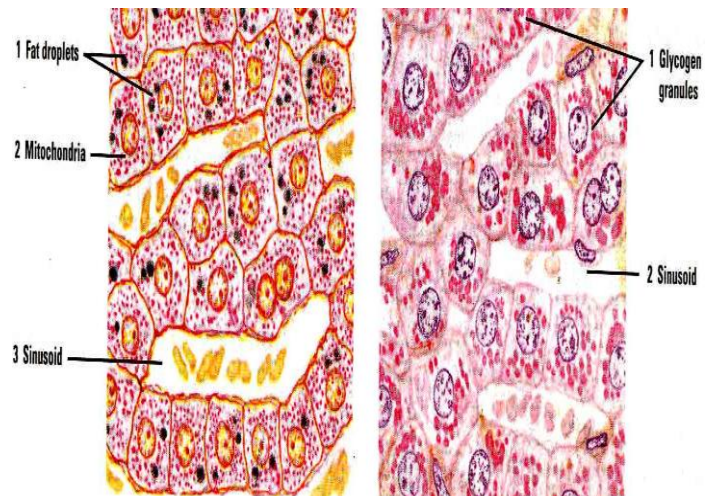
d-Arteriole (Branch of hepatic artery).

NO BRANCH OF HEPATIC VEIN



Hepatocytes (LM)

- Are grouped in interconnected plates.
- Liver sinusoids are located in the spaces between these plates.
- Are polyhedral in shape.
- Nucleus: 1 or 2, vesicular with prominent nucleoli.
- Cytoplasm: acidophilic.



Hepatocytes (EM)

Organelles:

- 1- Mitochondria: numerous
- 2- ER (sER & rER): abundant.
- 3- Golgi complex.
- 4- Lysosomes.
- 5- Peroxisomes.

Inclusions (Deposits):

- 1- Glycogen
- 2- Lipid (few droplets).
- 3- Lipofuscin (old age)



Liver sinusoids

1- Endothelial Cells:

Fenestrated & discontinuous → free passage of plasma.

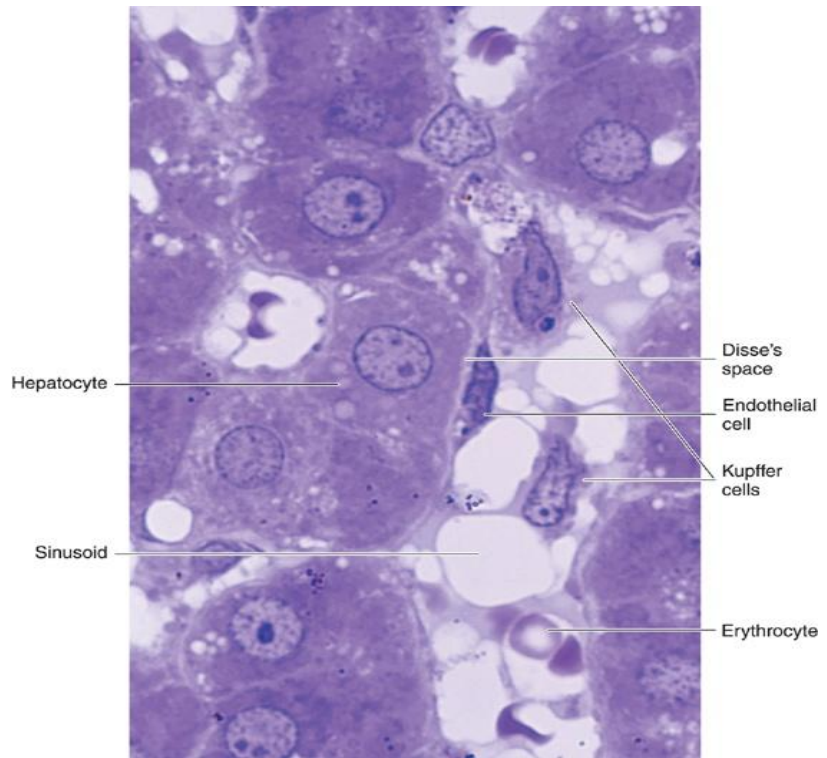
Basal lamina is absent.

2-Kupffer Cells:

Are macrophages.

Are found on the luminal surface of the endothelial cells.

Function: phagocytosis.



Space of Disse (perisinusoidal space)

Contents:

1- Fat-storing cells (Ito cells):

contain vitamin A-rich lipid.

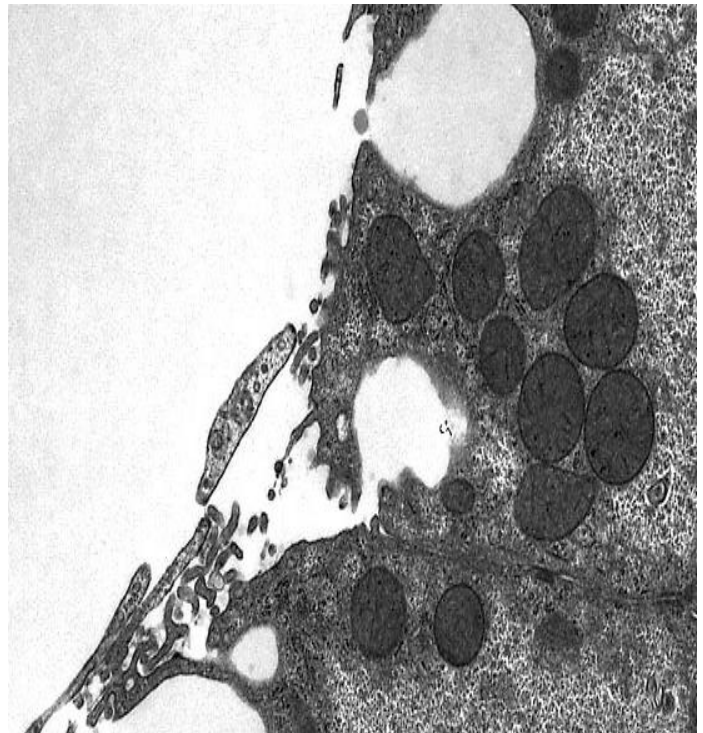
form reticulin.

2- Reticular fibers: (type III collagen).

3- Plasma of blood.

4- Microvilli of hepatocytes.

5- Natural killer cells.



Exocrine portion of the Pancreas

Stroma: capsule, septa & reticular fibers.

Parenchyma:

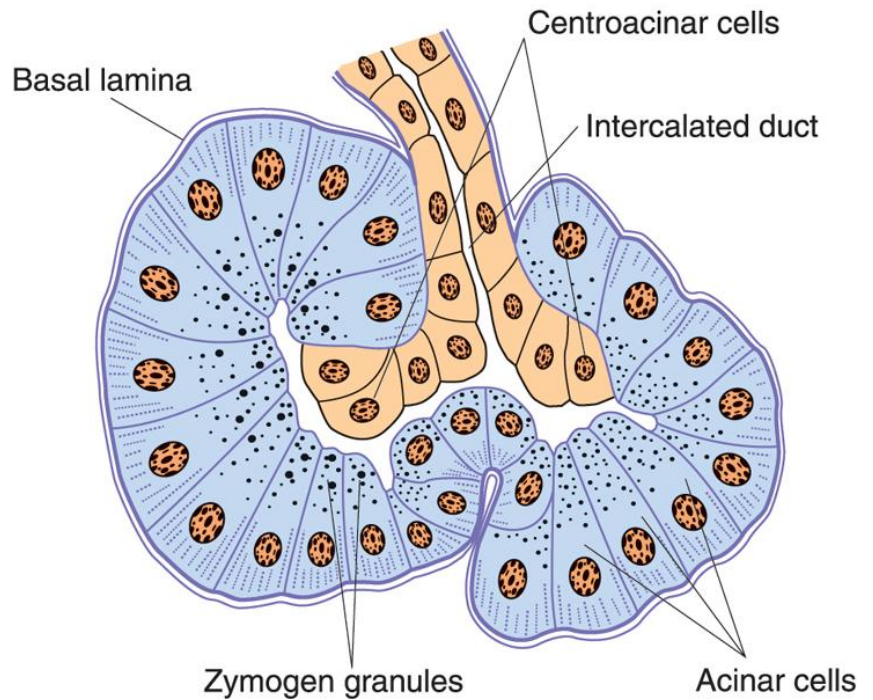
- Pancreatic acini:

- Acini with centroacinar cells.
- No myoepithelial cells.

- Duct system:

Centroacinar cells, intercalated ducts (low cuboidal), intralobular ducts (NOT prominent), interlobular ducts.

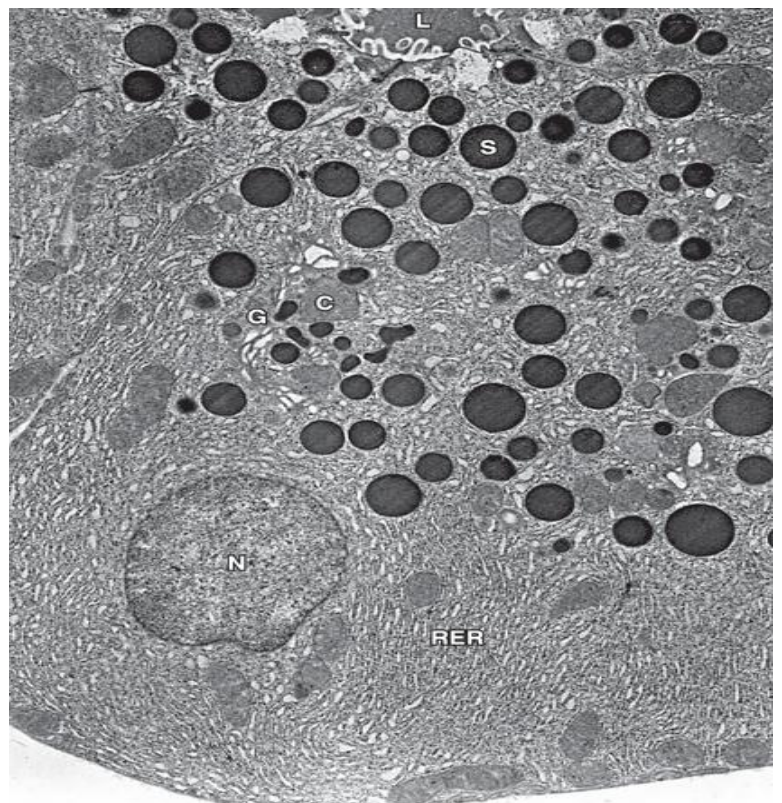
N.B. No striated ducts.



Pancreatic acinar cells

They are pyramidal cells characterized by:

- The **apical** cytoplasm (**acidophilic**) is rich in zymogenic granules.
- The **basal** cytoplasm is rich in RER, so it is **basophilic**.
- The nucleus is basal in position.



The spleen

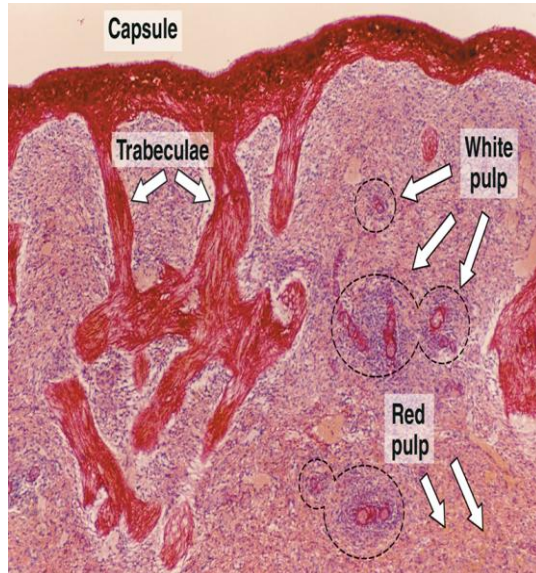
Stroma:

1-Capsule:

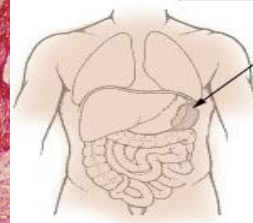
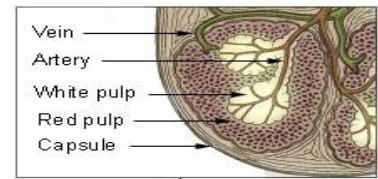
- is covered by visceral layer of peritoneum; mesothelium.
- occasionally contains smooth muscle cells (SMCs).

2-Trabeculae: irregular.

3-Reticular C.T.



Spleen



Spleen

Parenchyma:

1-White Pulp:

a-Periarterial lymphatic sheaths (PALS): housing T lymphocytes.

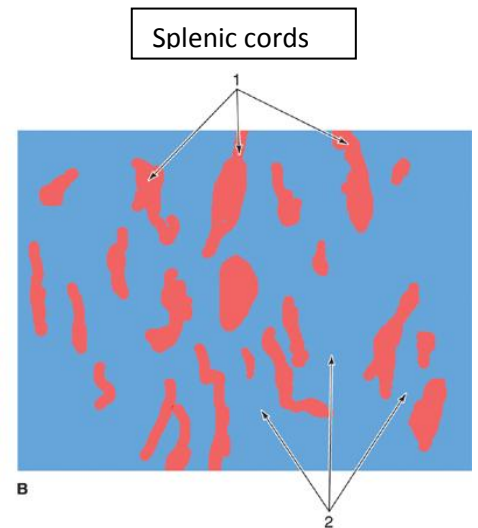
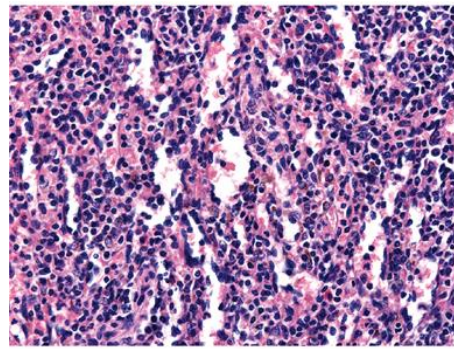
b-Lymphoid nodules (with germinal centers): housing B lymphocytes.

N.B. Both a&b have the acentrically located central artery (central arteriole).

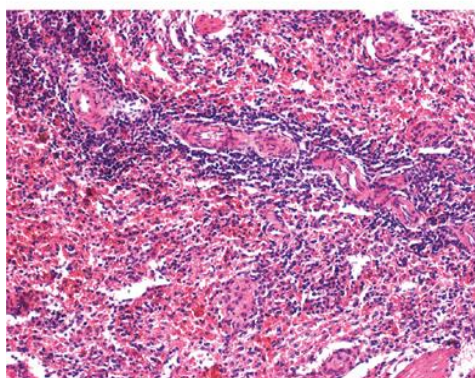
2-Red pulp:

a-Pulp (splenic) cords: Extravasated blood cells, plasma cells, macrophages & reticular cells and fibers.

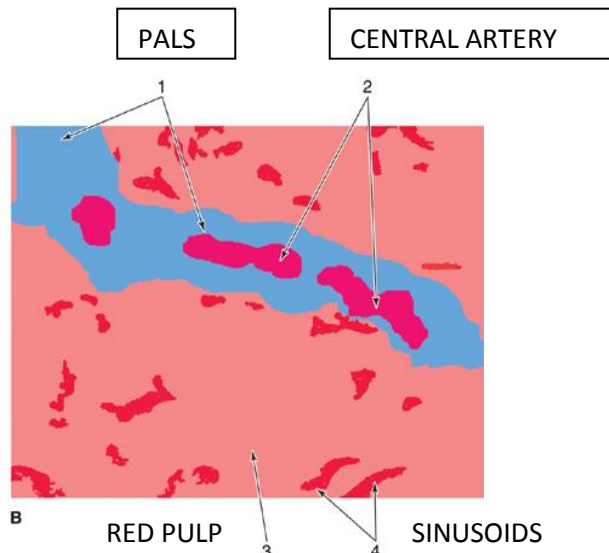
b-Blood sinusoids: Are lined with elongated fusiform endothelial cells with large intercellular spaces & supported by discontinuous, circular basement membrane.



Linig endothelium cells can be seen in many sinusoids



A



B

Questions

1. Which one of the following is the first portion of the biliary passages?

- A. Bile Canaliculi
- B. Canals of Hering
- C. Common bile duct
- D. Interlobular bile duct

2. Which one of the following structures is found in the space of Disse?

- A. Ito cells
- B. Kupffer cells
- C. Plasma cells
- D. Red blood corpuscles

1- A , 2- A