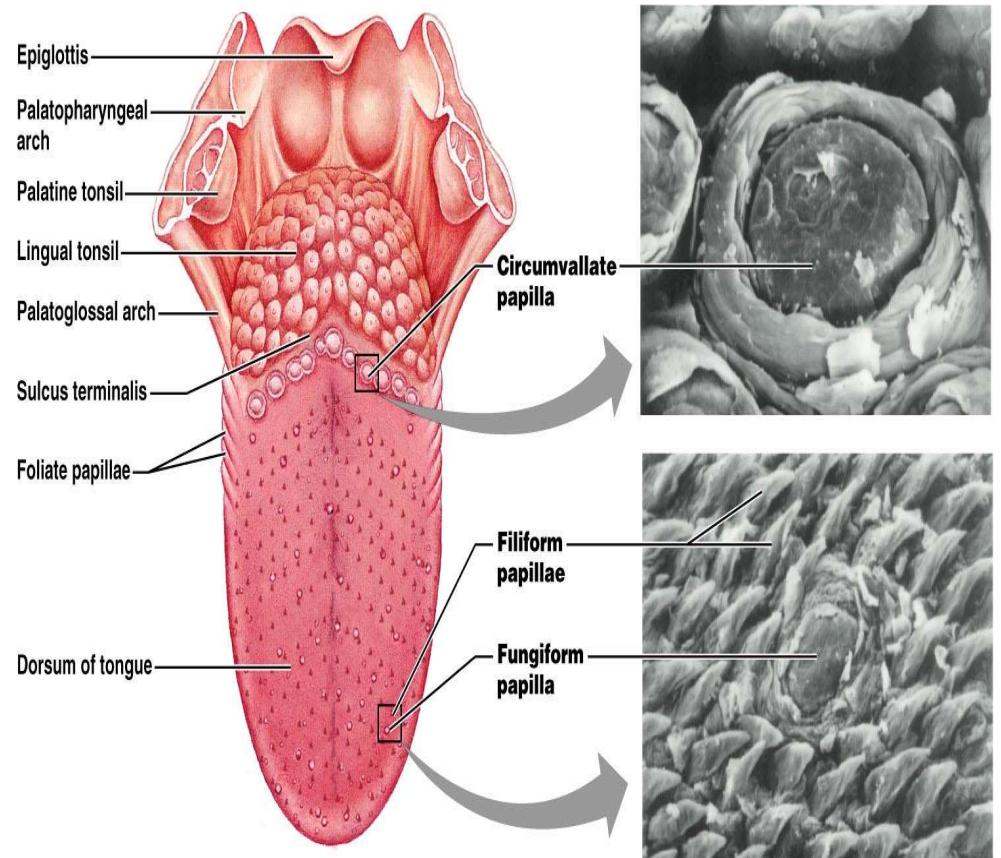
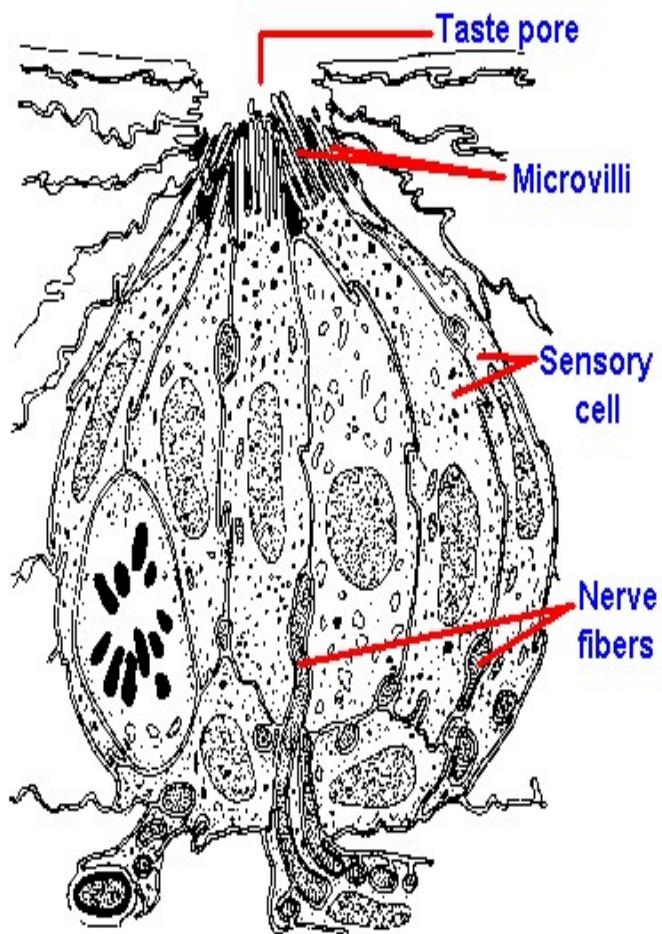




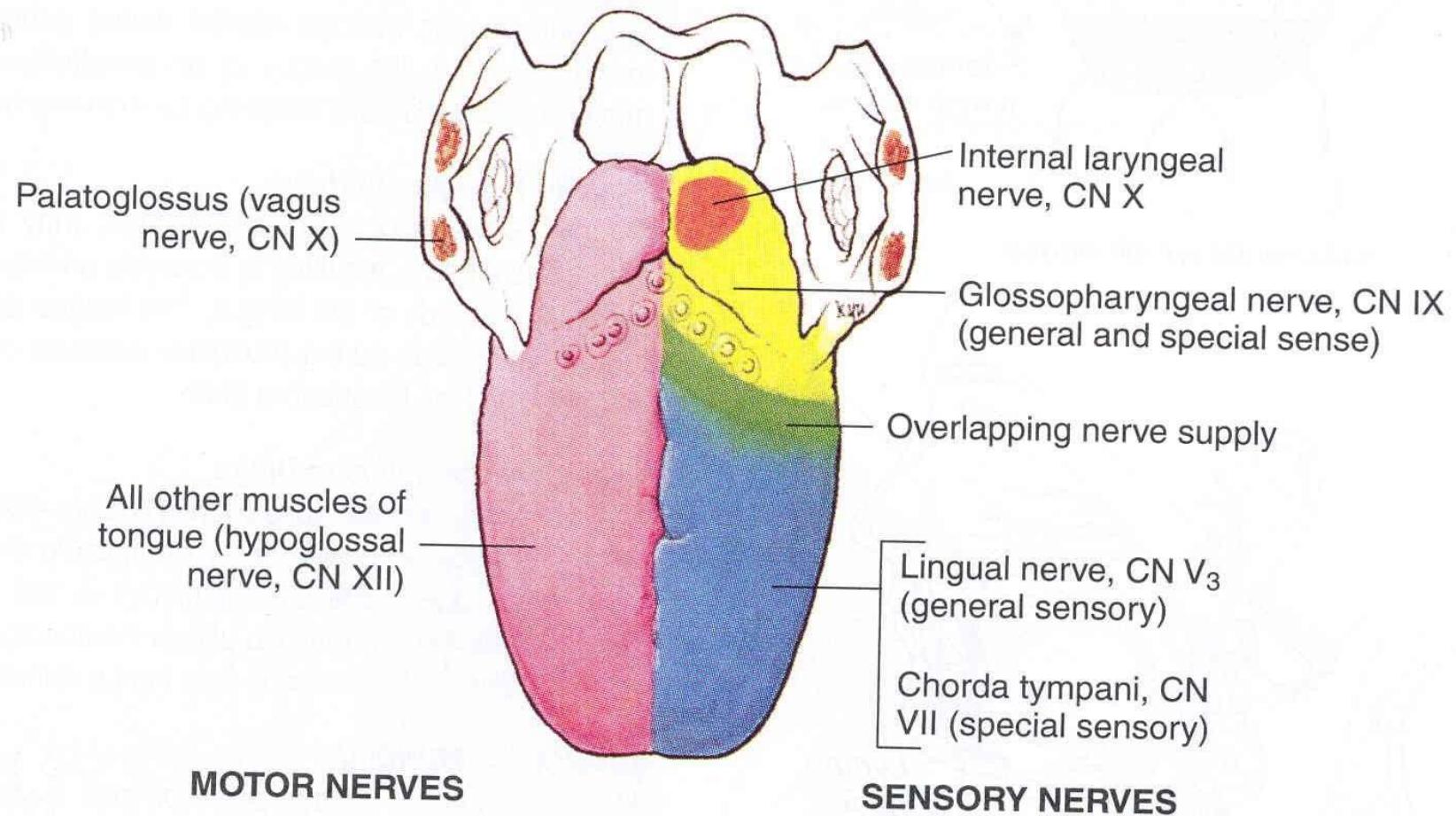
A COMPILATION

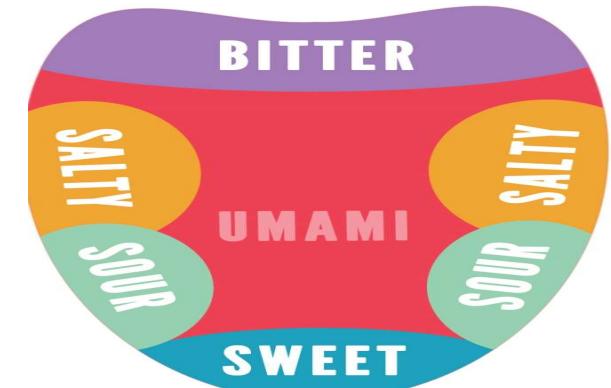
MODELS GI





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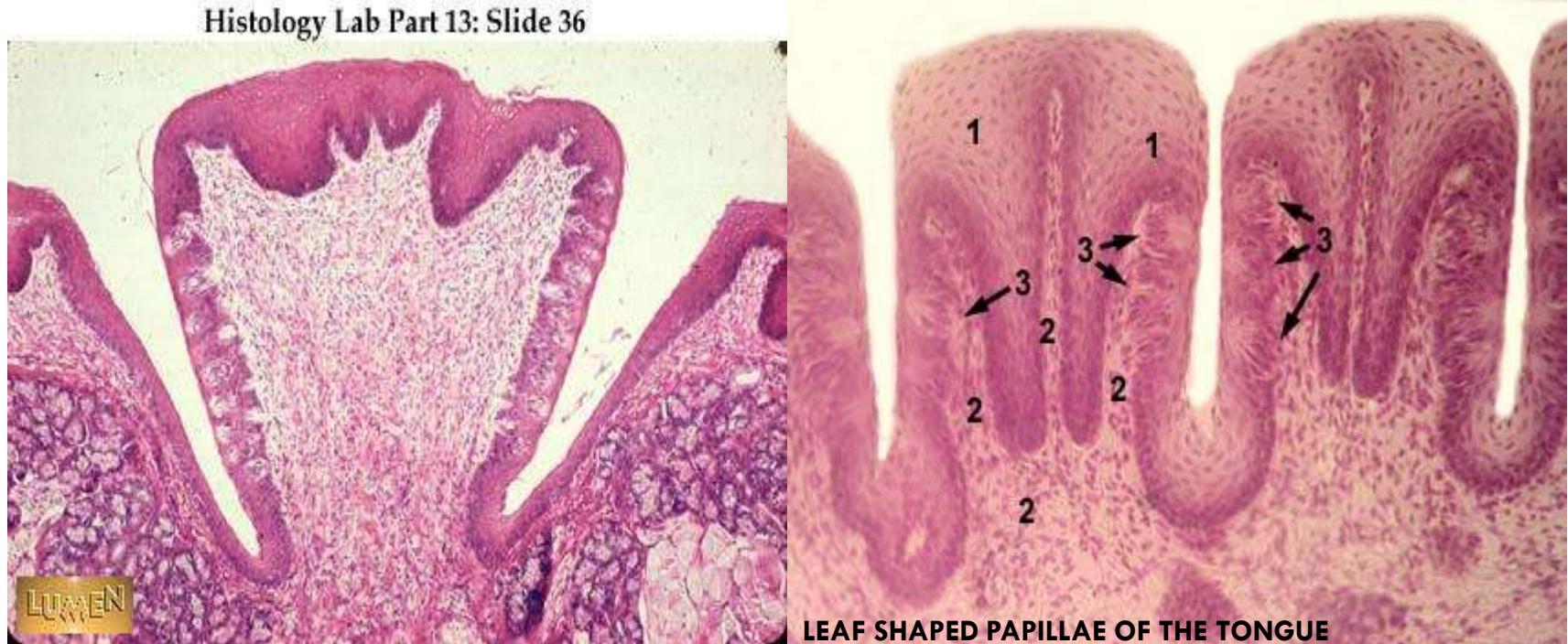




Taste areas on the human tongue



Histology Lab Part 13: Slide 36



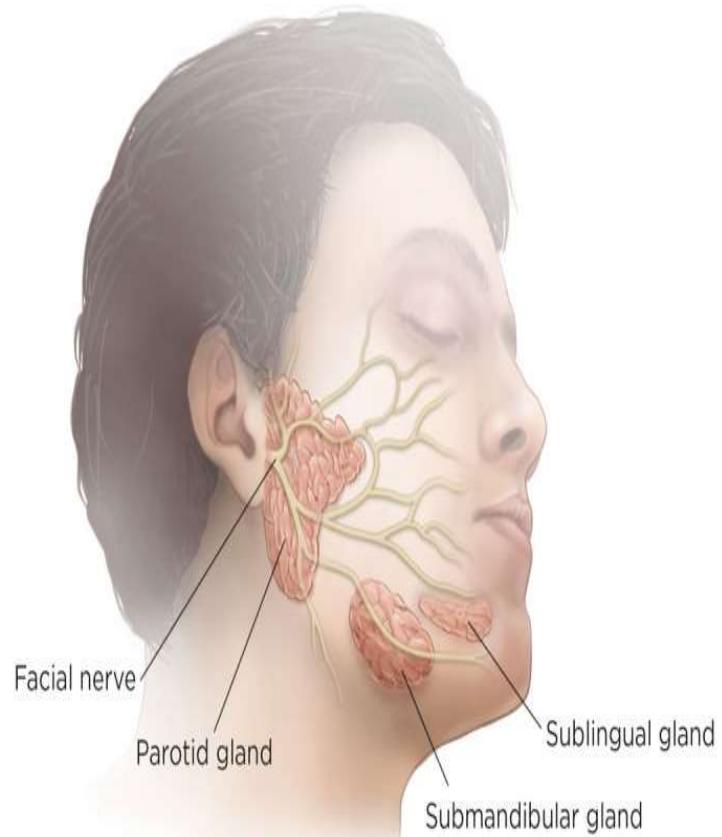
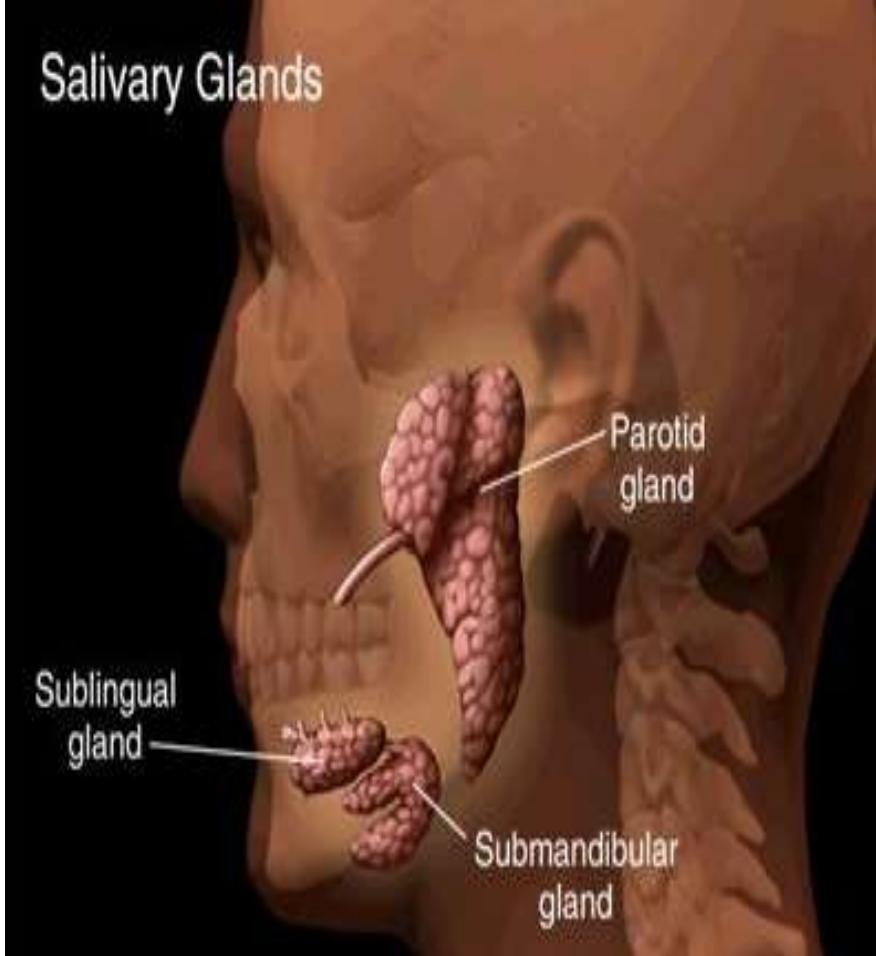
Detail of circumvallate papilla, showing pale taste buds opening into the lumen of the furrow that surrounds the papilla.

LEAF SHAPED PAPILLAE OF THE TONGUE

Stained with haematoxylin and eosin
1 - epithelium covering papilla

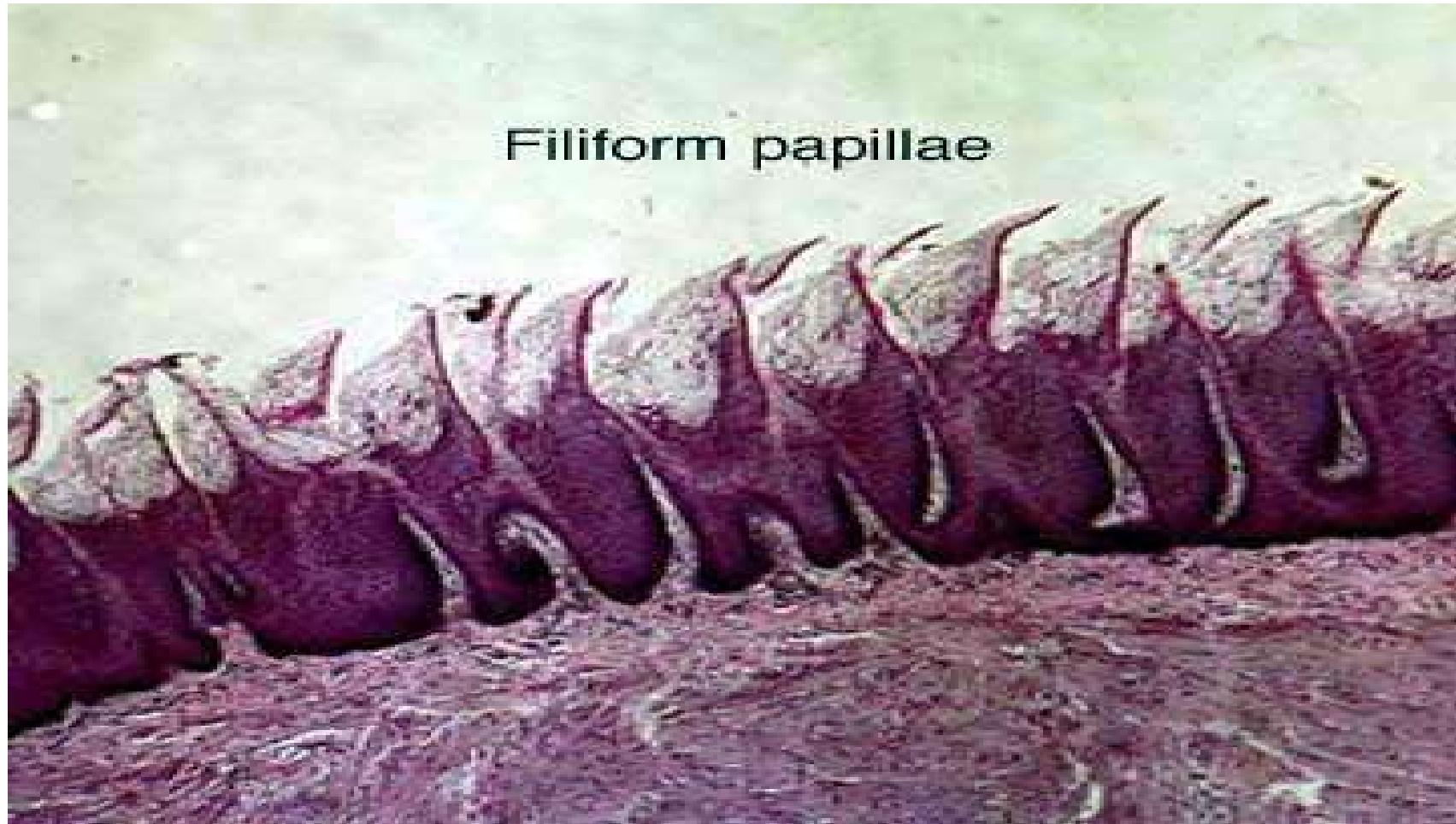
(stratified squamous nonkeratinizing)

2 - core of the papilla (lamina propria
of the mucosa of dorsal surface of the tongue)
3 - taste bud



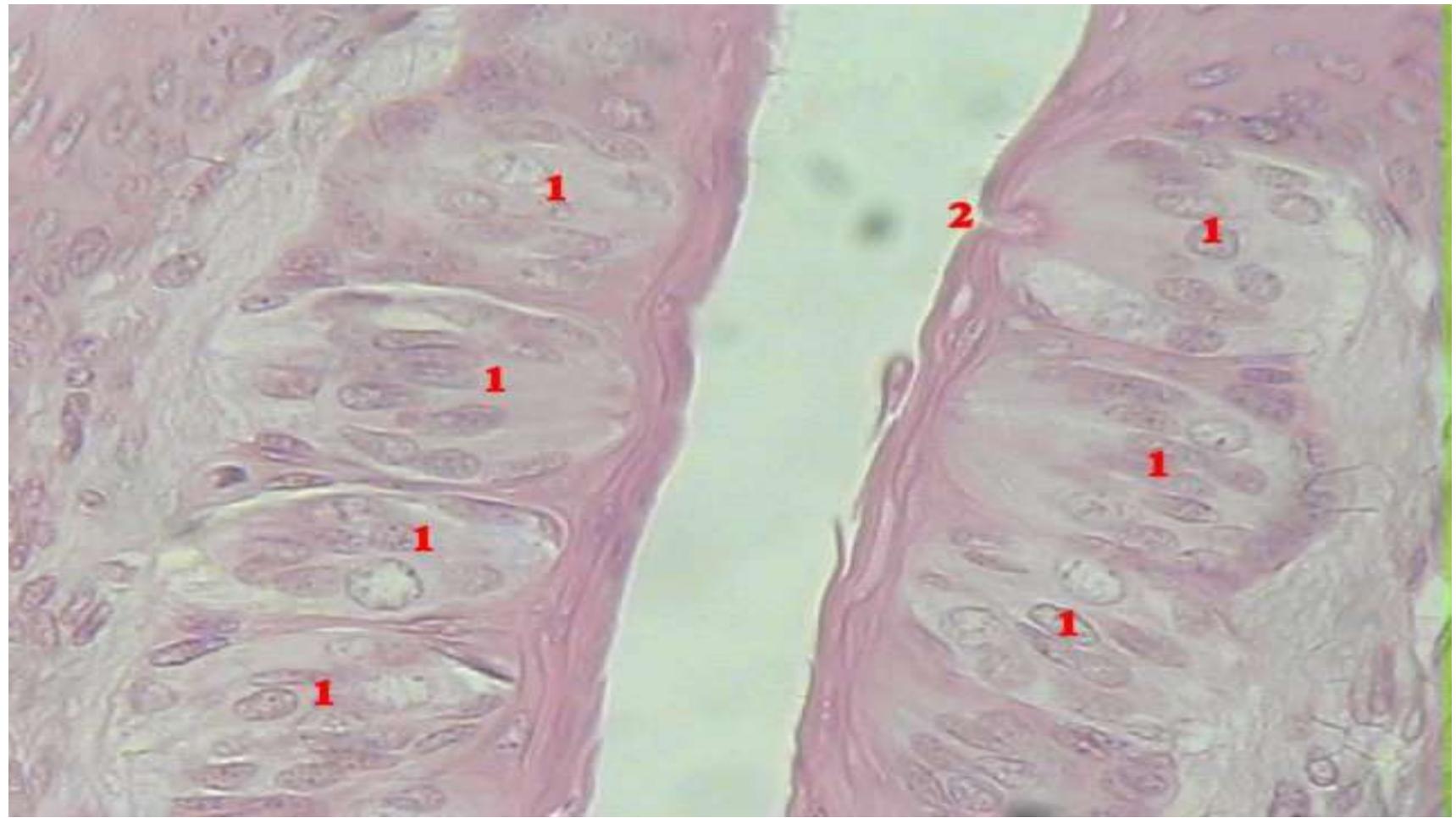


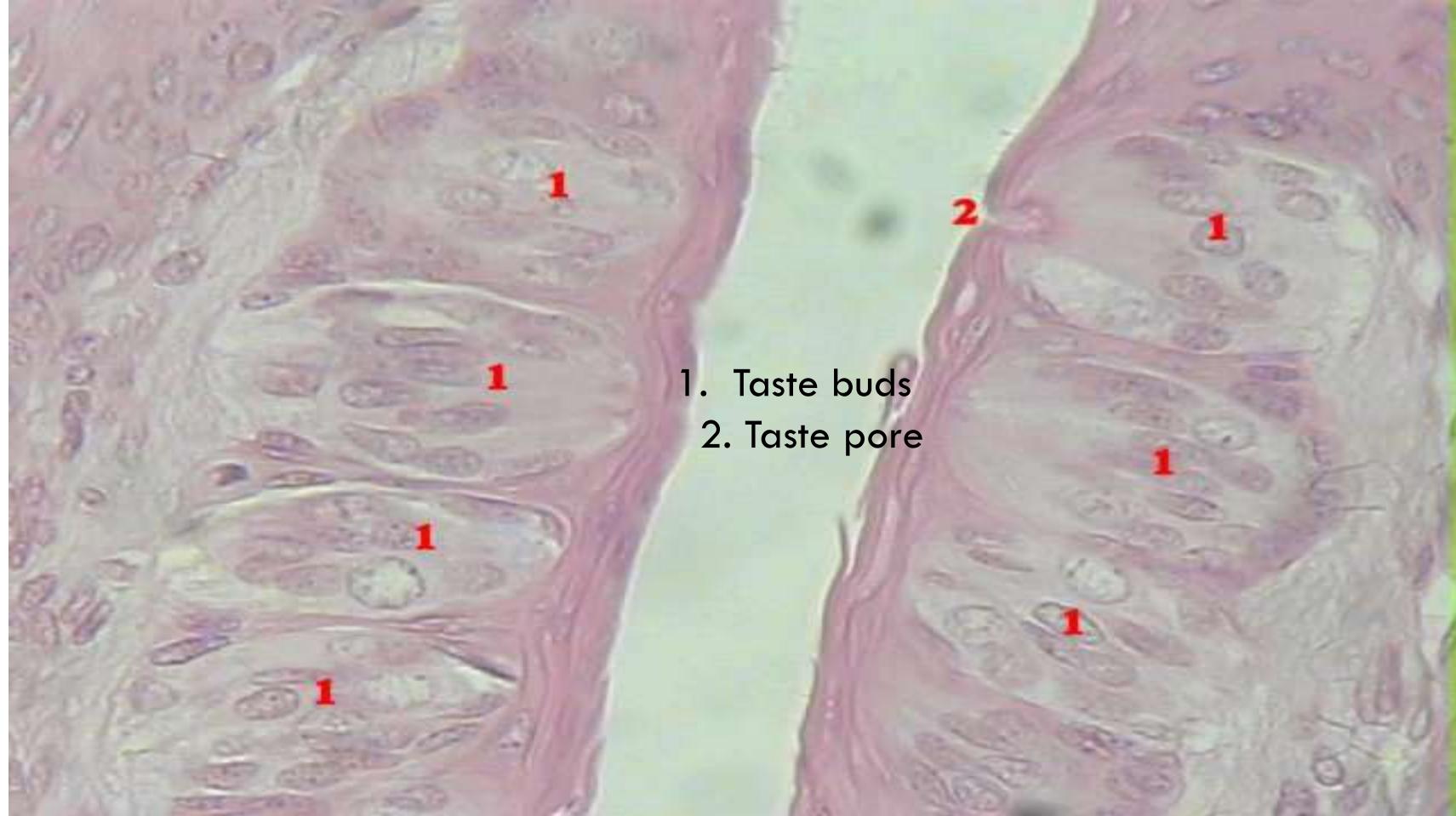
Filiform papillae





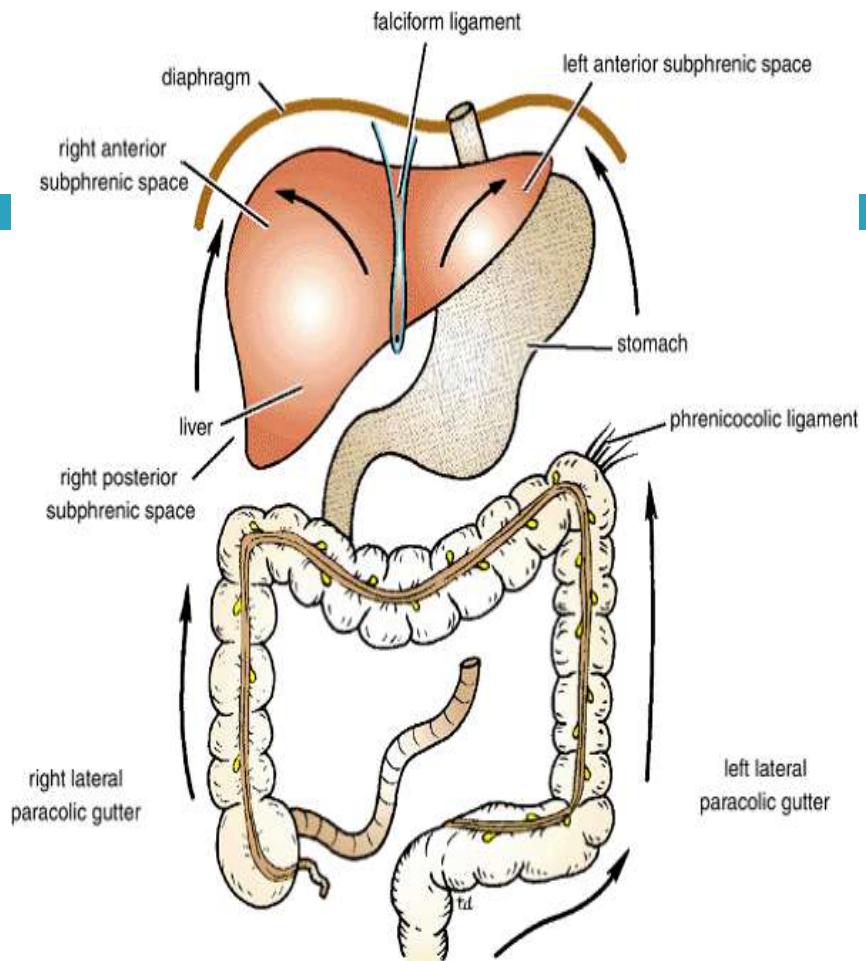


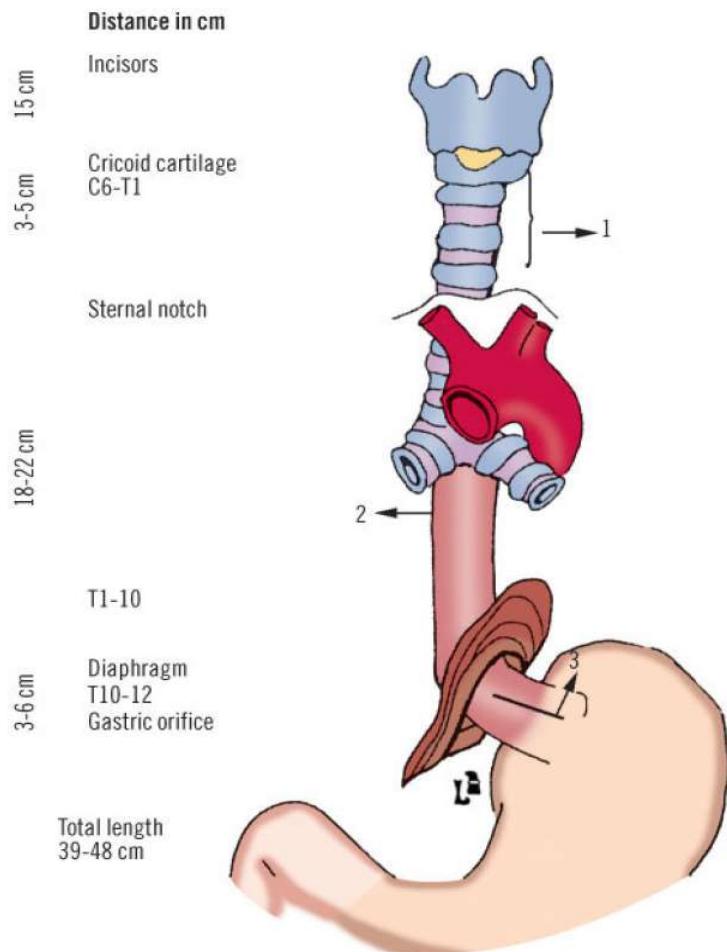




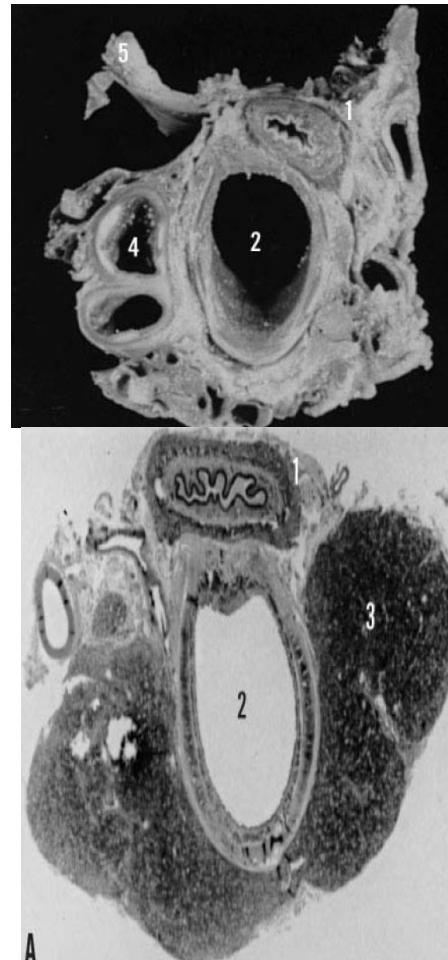
PERITONEAL CAVITY

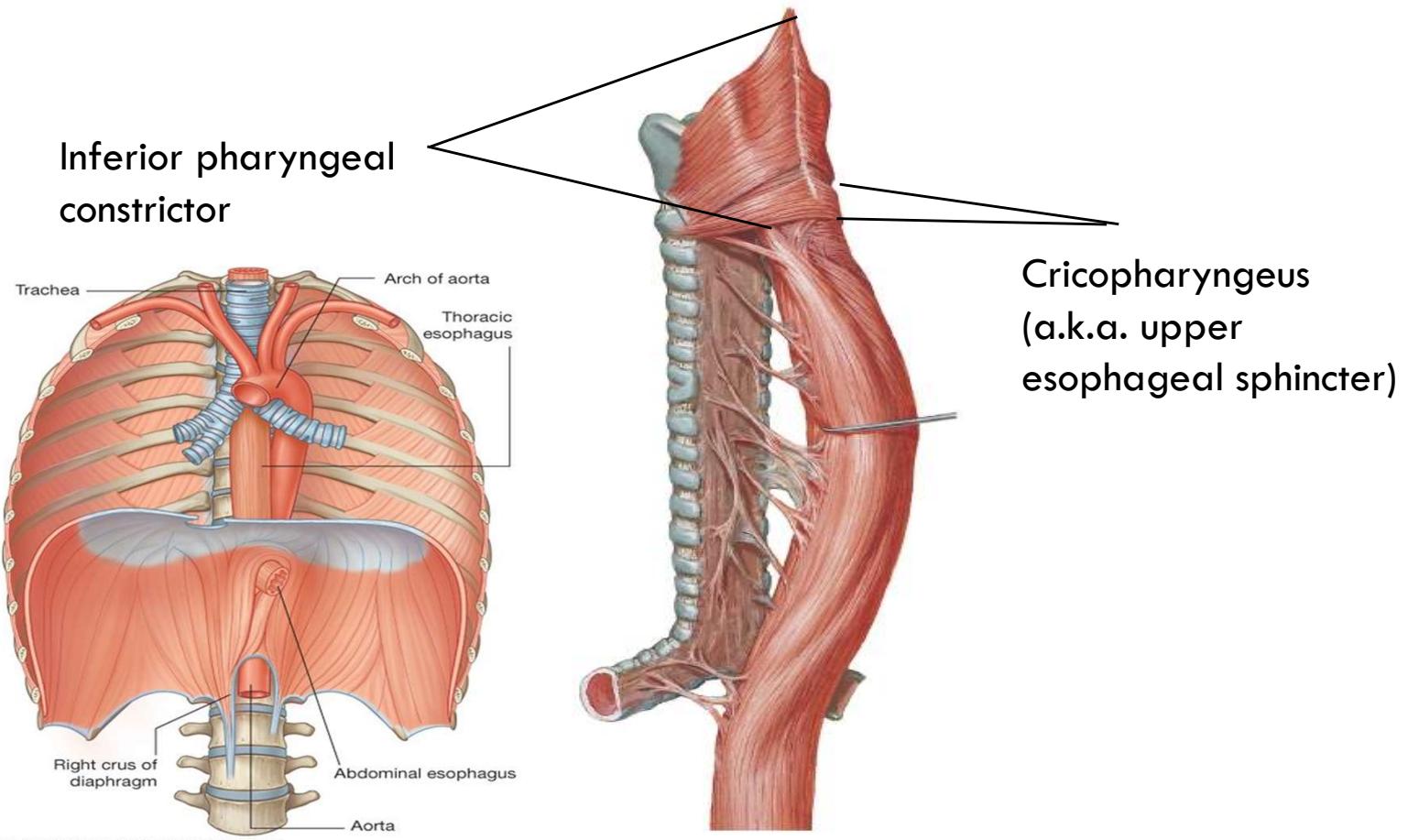
Normal direction of flow of the peritoneal fluid from different parts of the peritoneal cavity to the subphrenic spaces



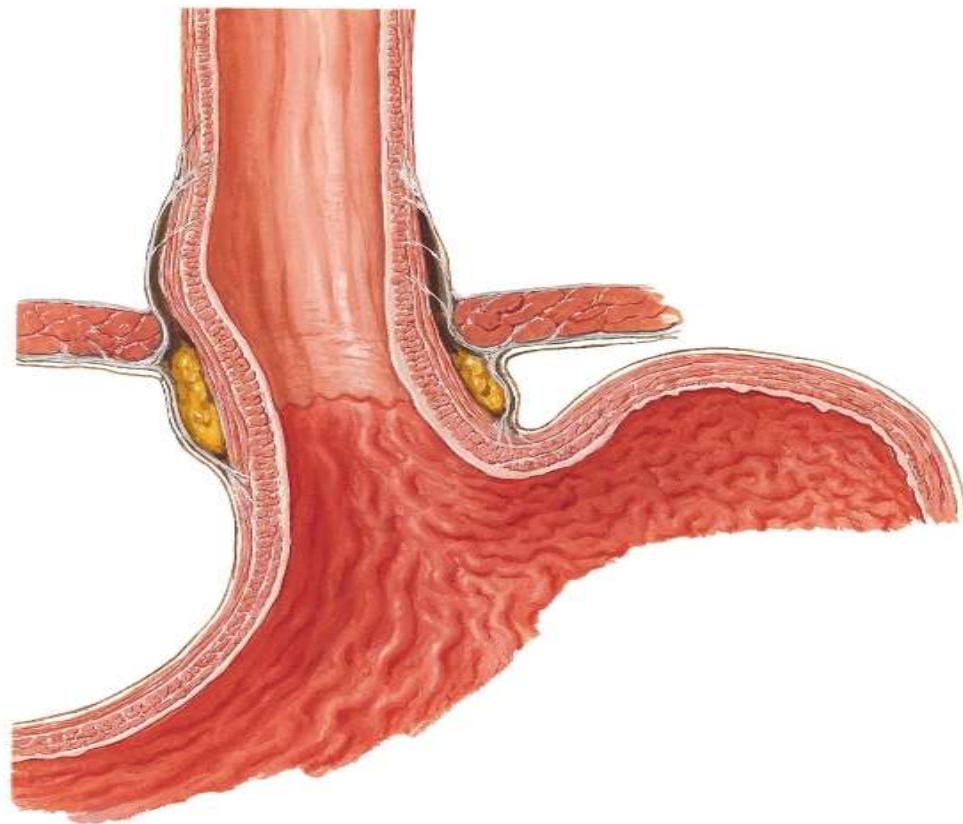


Terminology of esophageal sections in regard to		
Anatomy	Function	Surgery
cervical (1)	UES	proximal
thoracic (2)	tubular	cervical
(3) abdominal	LES	thoracic
		distal thoracic
		abdominal

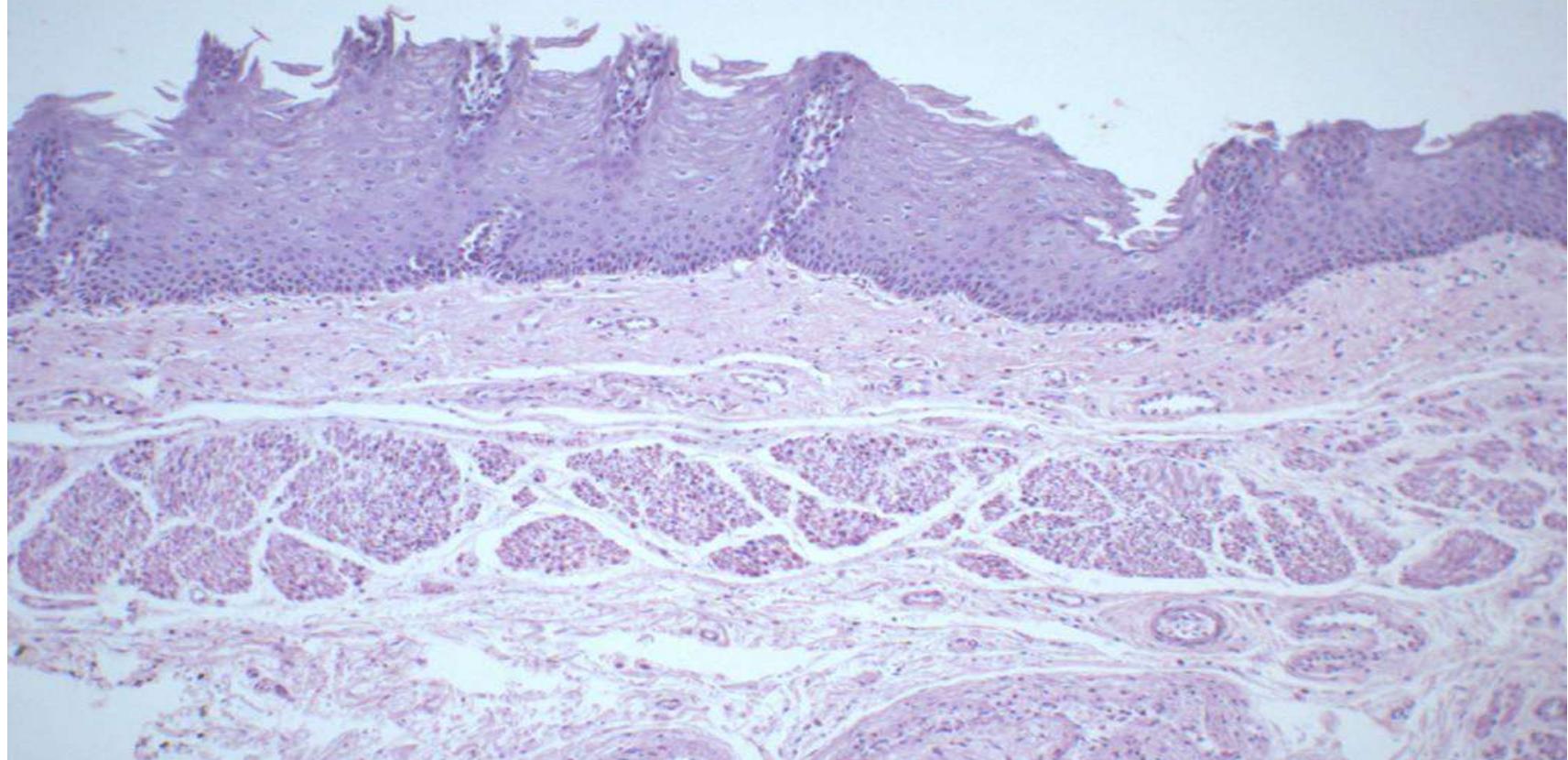


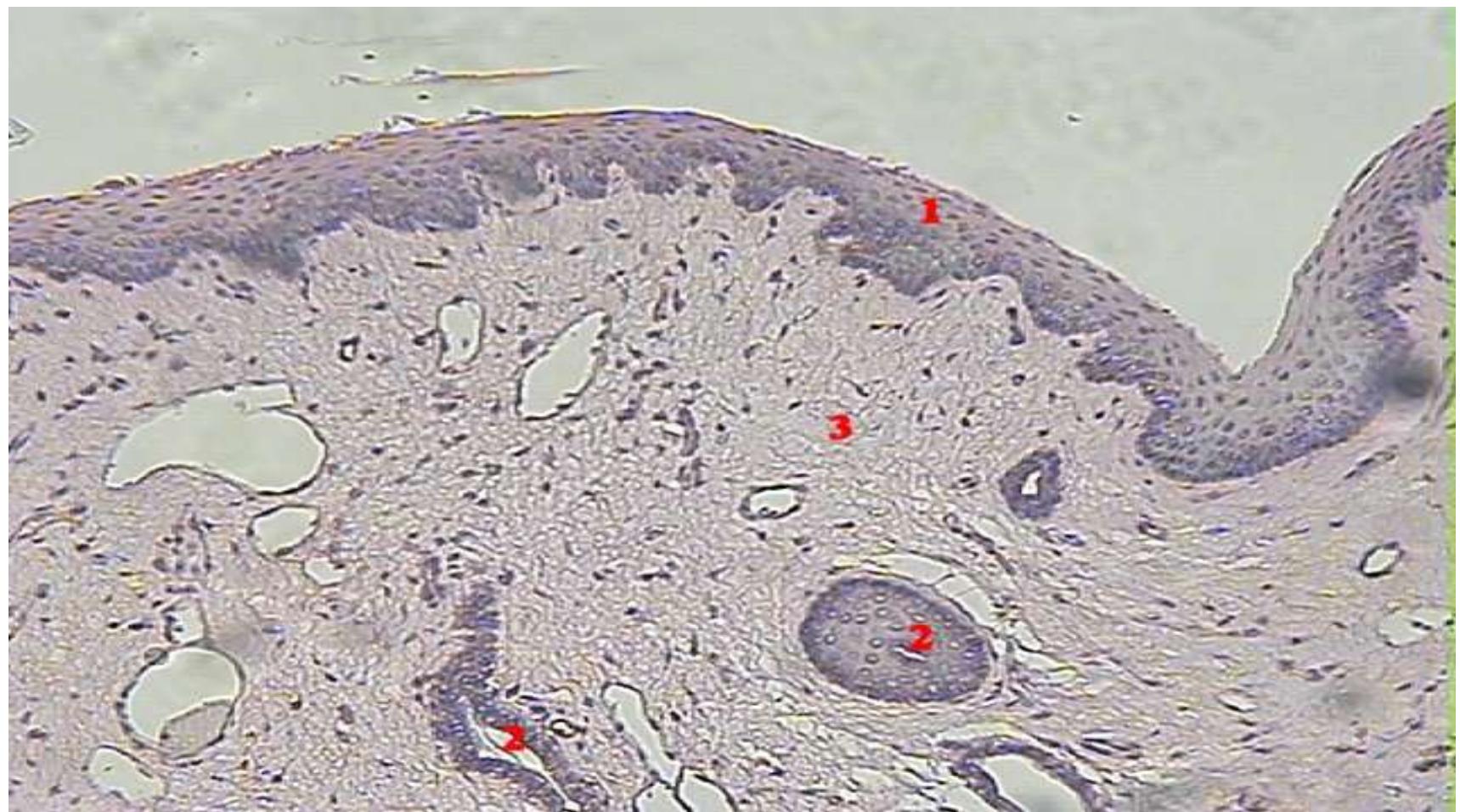


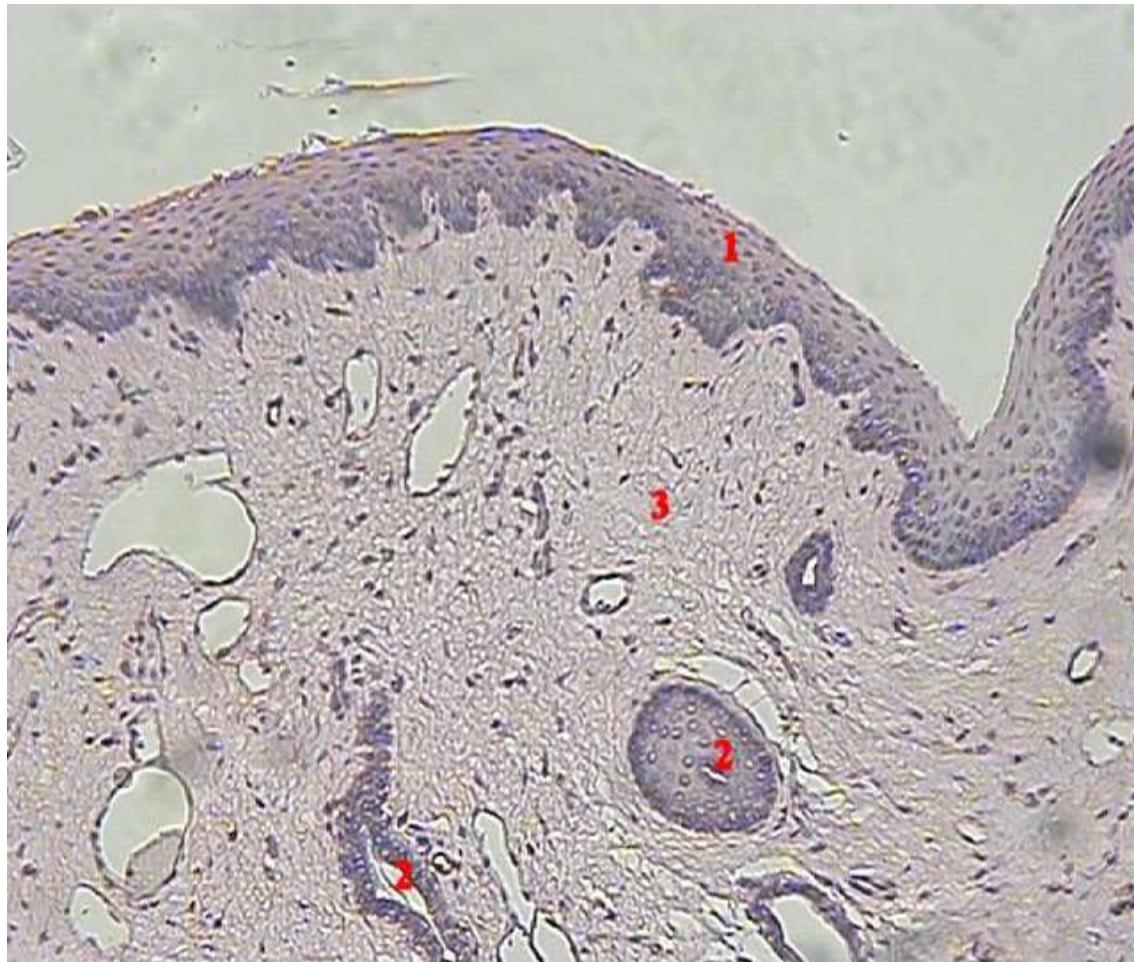
Lower esophageal sphincter



ESOPHAGUS

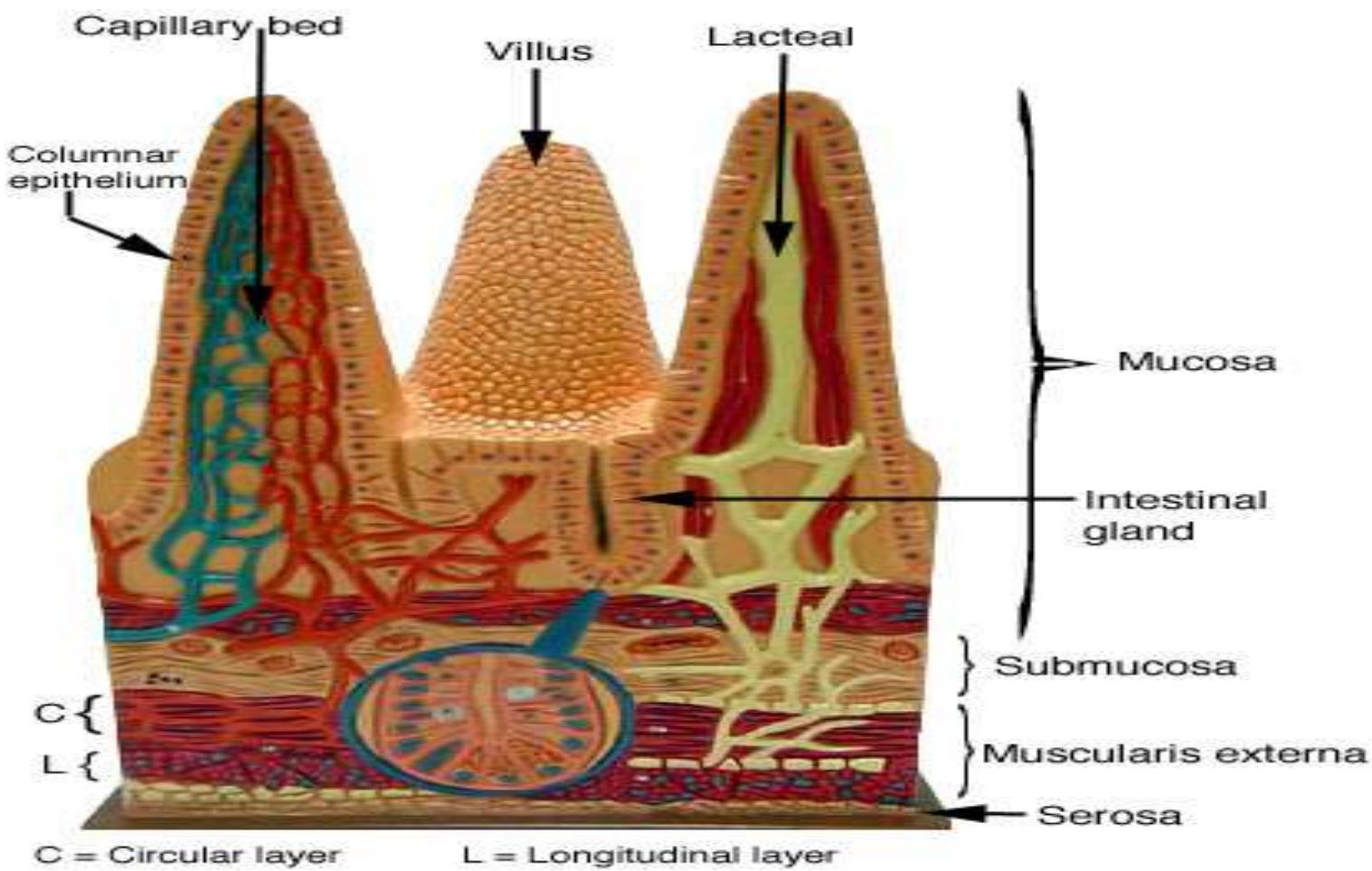






1. Stratified squamous epithelium
2. Mucous glands
3. Lamina propria





Intraperitoneal vs. Retroperitoneal

- | | |
|---|---|
| <ul style="list-style-type: none">• Stomach• Part 1 of duodenum• Jejunum, Ileum• Cecum, Appendix• Transverse colon• Sigmoid colon• Liver, Gallbladder• Tail of pancreas• Spleen | <ul style="list-style-type: none">• Parts 2,3,4 duodenum• Ascending, Descending colon• Rectum• Head, neck, body of pancreas• Kidneys, ureters• Suprarenal gland• Abdominal Aorta• Inferior vena cava |
|---|---|

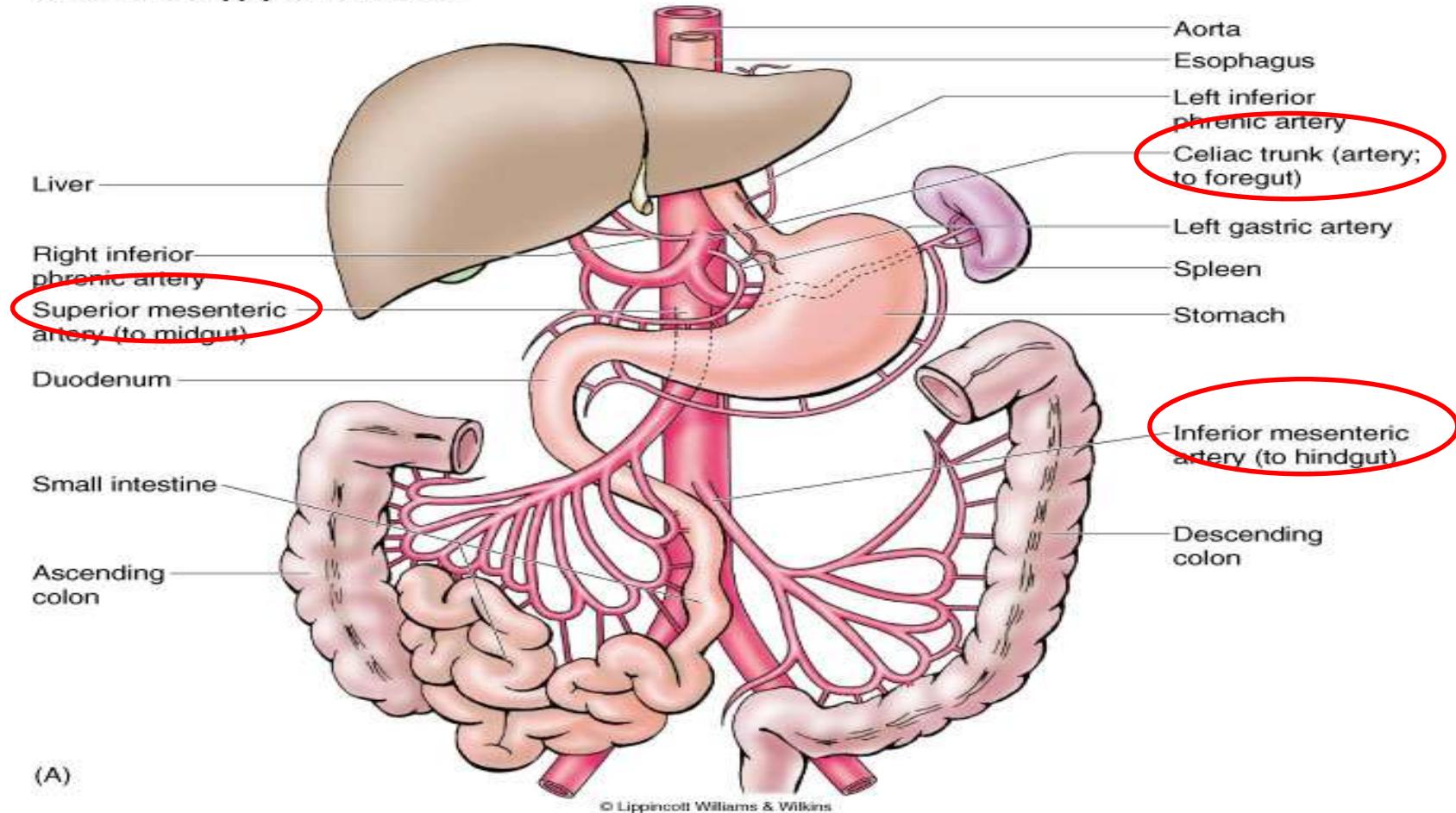
*****Rule of Thumb:**

If it has a mesentery or mesogastrium component => Intraperitoneal

Abdominal quadrants

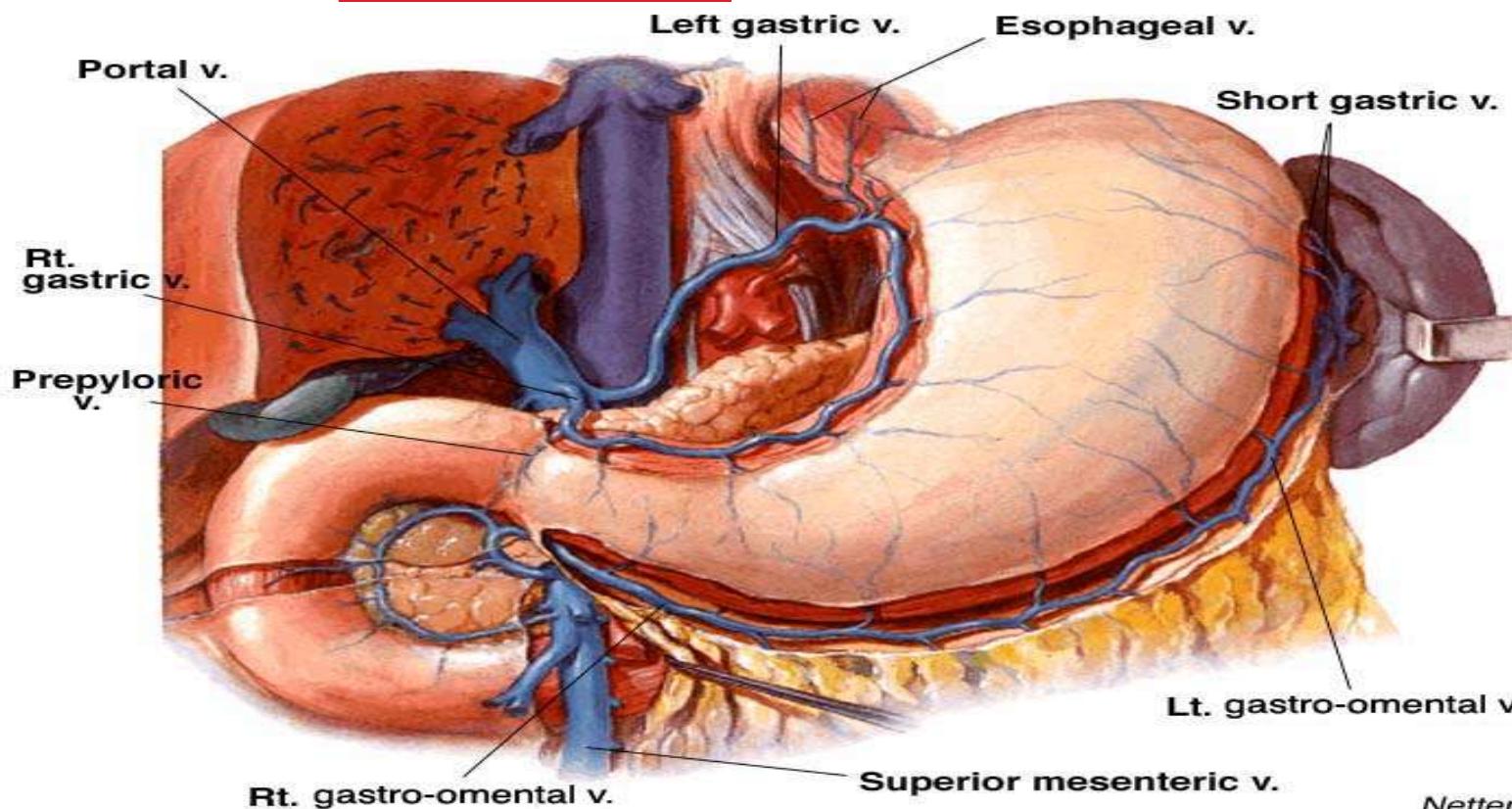
Right upper quadrant	Left upper quadrant
Liver right lobe Gallbladder, stomach, pylorus, duodenum, Pancreas head, R suprarenal gland, R kidney, R colic flexure, Ascending colon superior part, Transverse colon R half.	Liver left lobe Spleen, stomach, jejunum, prox ileum, pancreas body and tail, left kidney, L suprarenal, left colic flexure, Transverse colon left part, descending colon superior part.
Right lower quadrant	Left lower quadrant
Cecum, Appendix, Ileum, Asc. Colon, R ovary, R uterine tube, R ureter, R spermatic cord, Uterus, Urinary bladder (full)	Sigmoid colon, Desc. Colon, L ovary, L uterine tube, L ureter, L spermatic cord, Uterus enlarge, Urinary bladder (full).

2.28. Arterial supply of the GI tract.



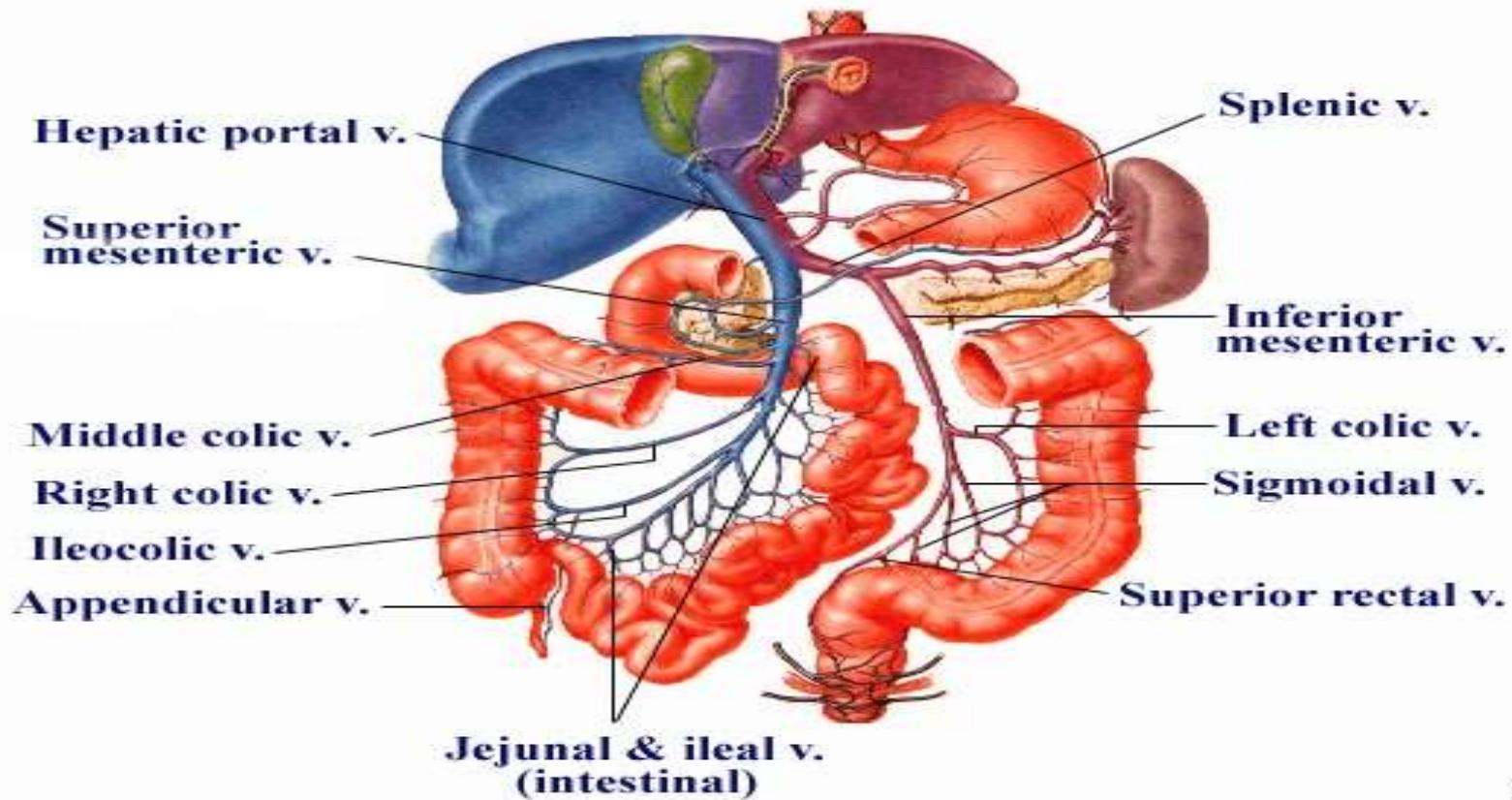
(A)

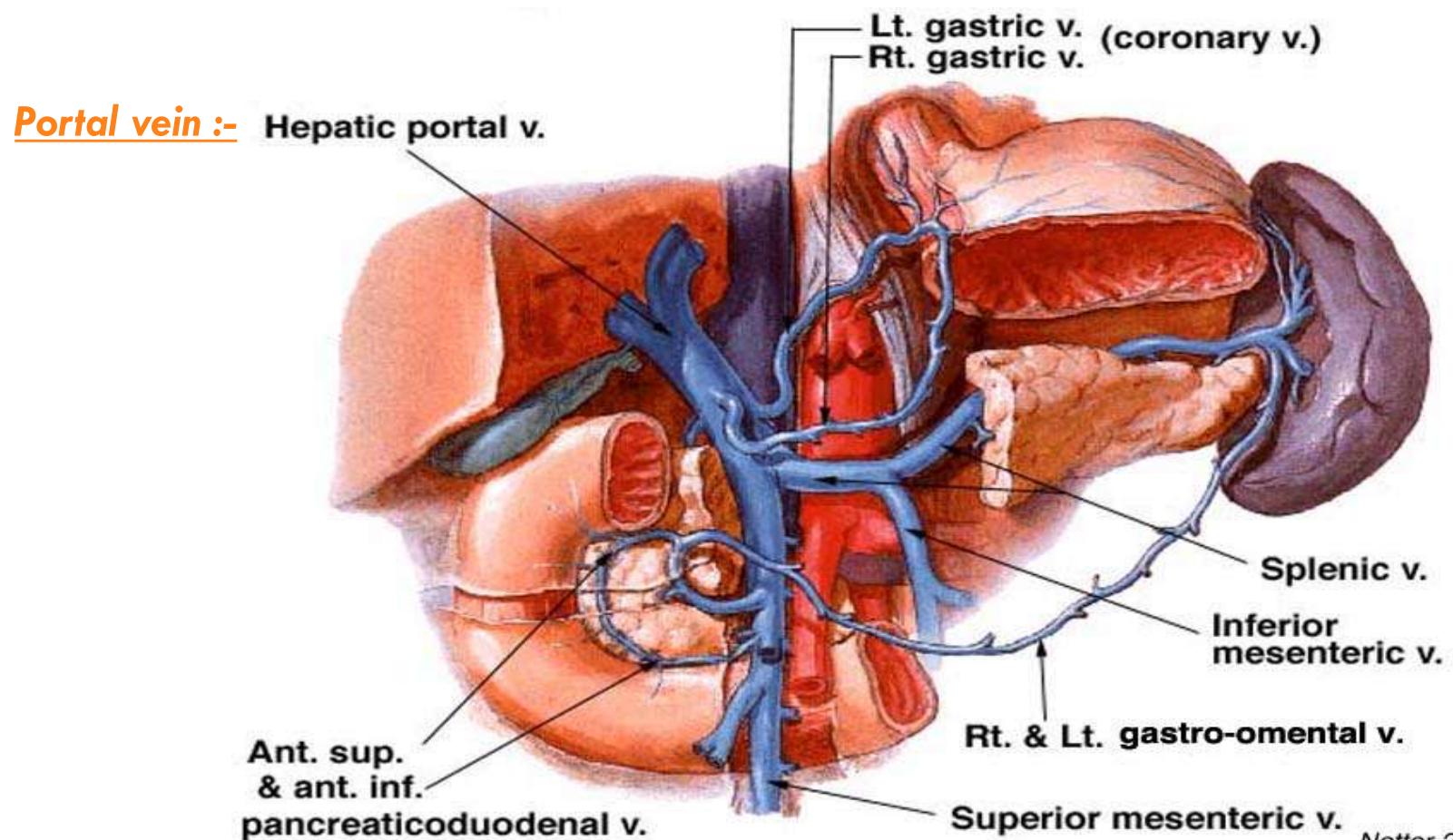
Veins of the stomach:



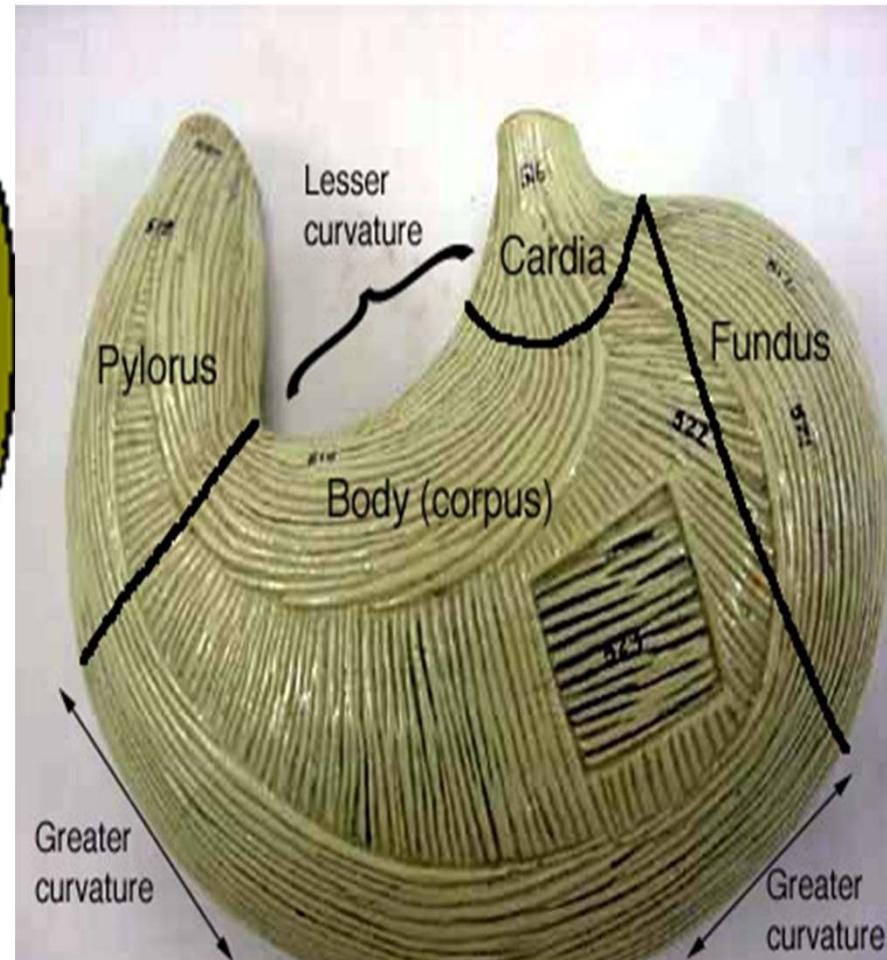
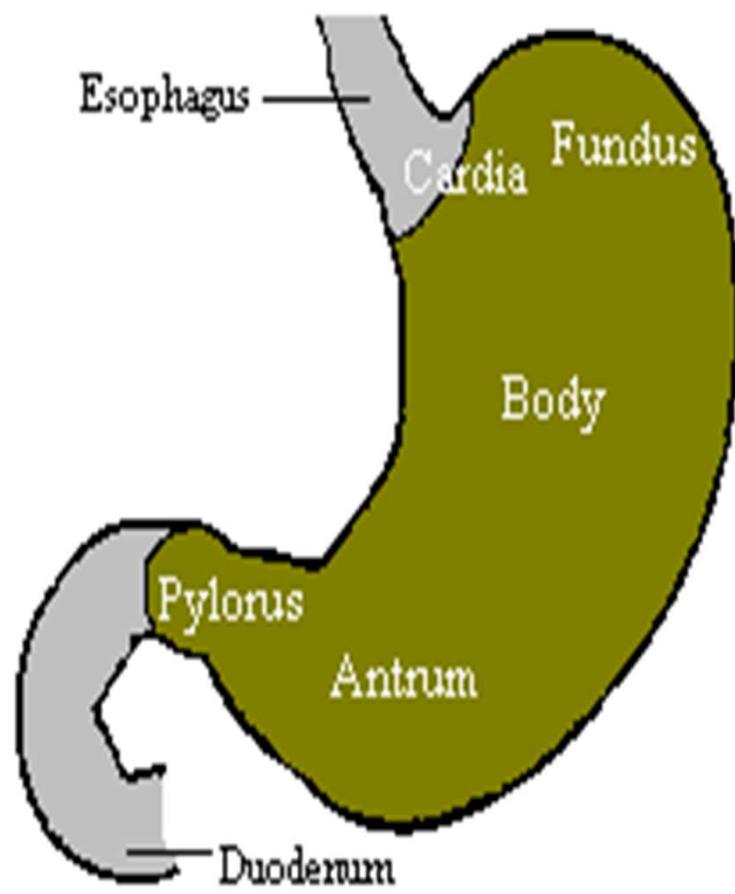
Netter 290A

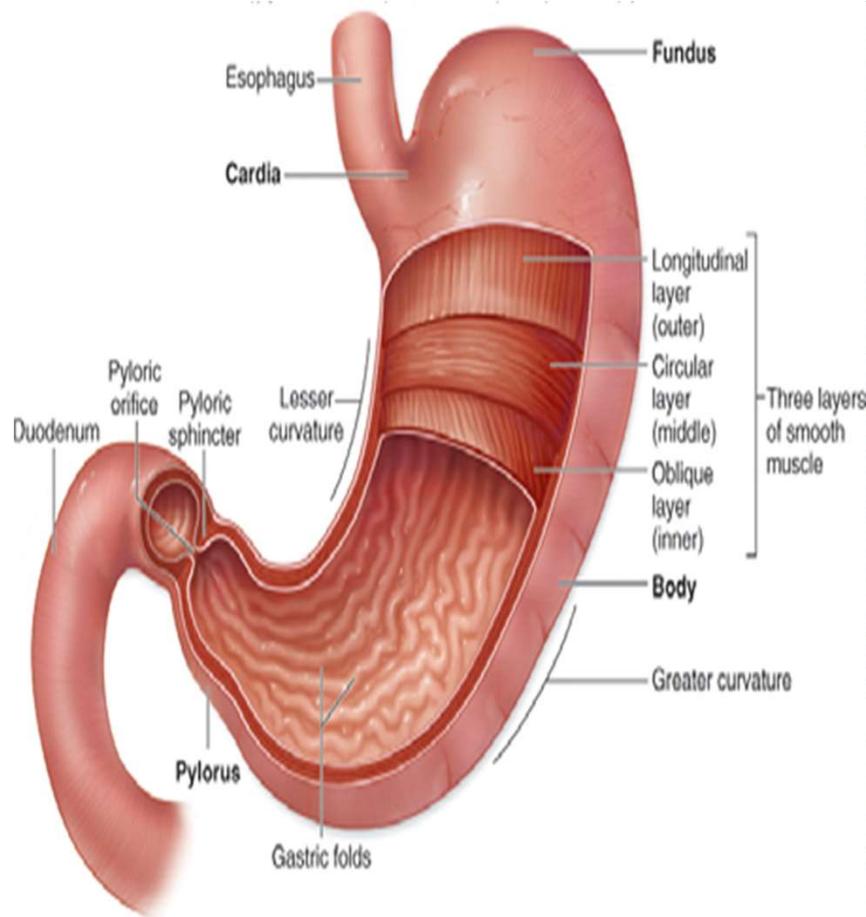
Veins of small and large intestines



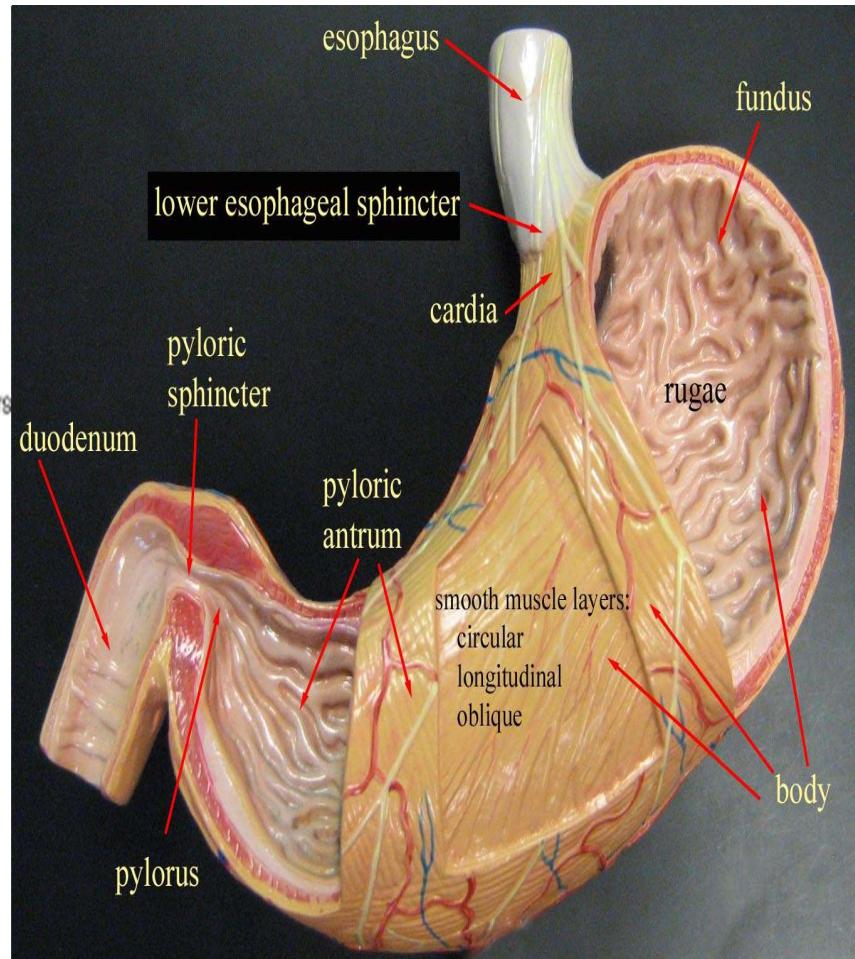


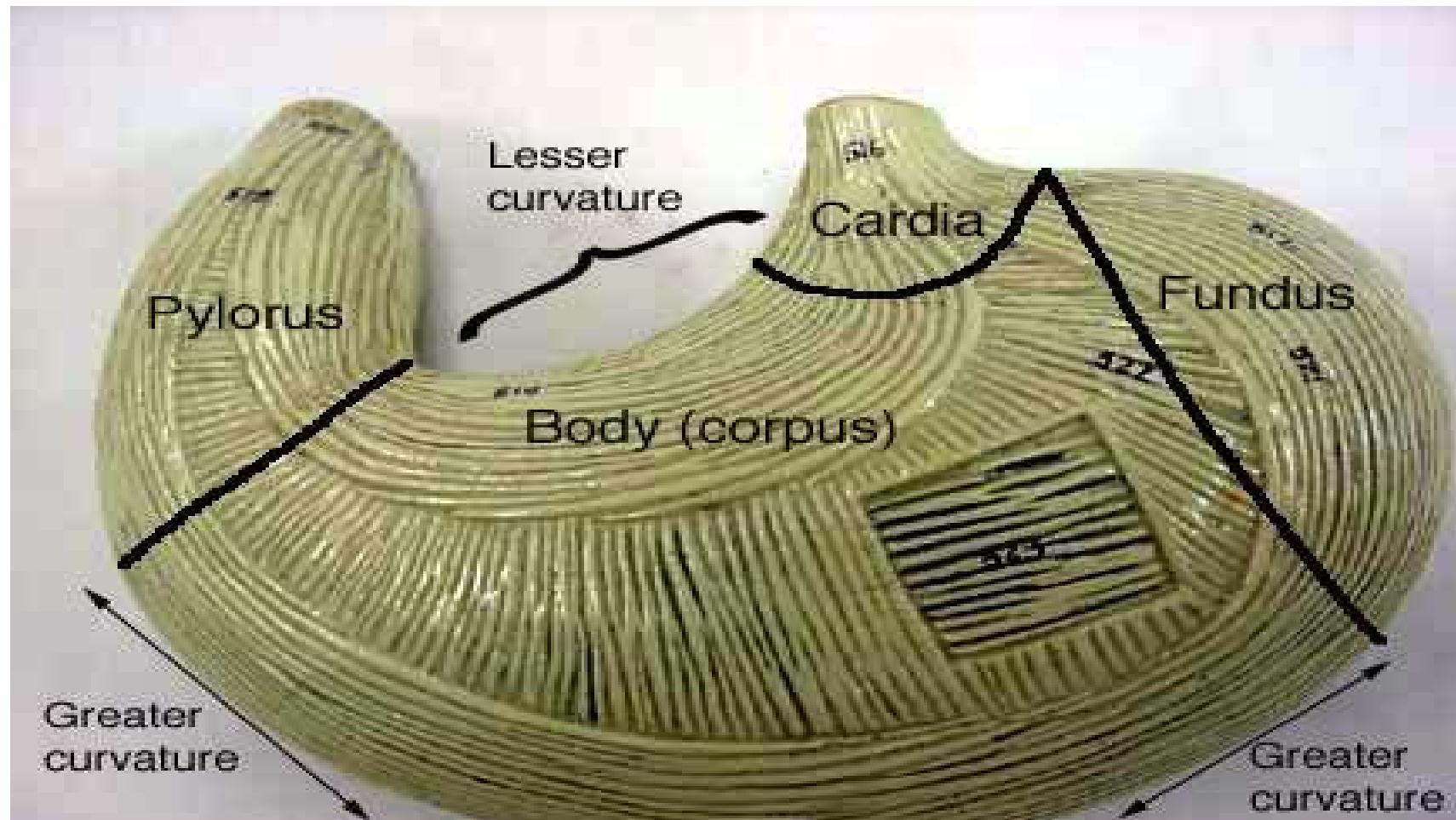
Netter 290B

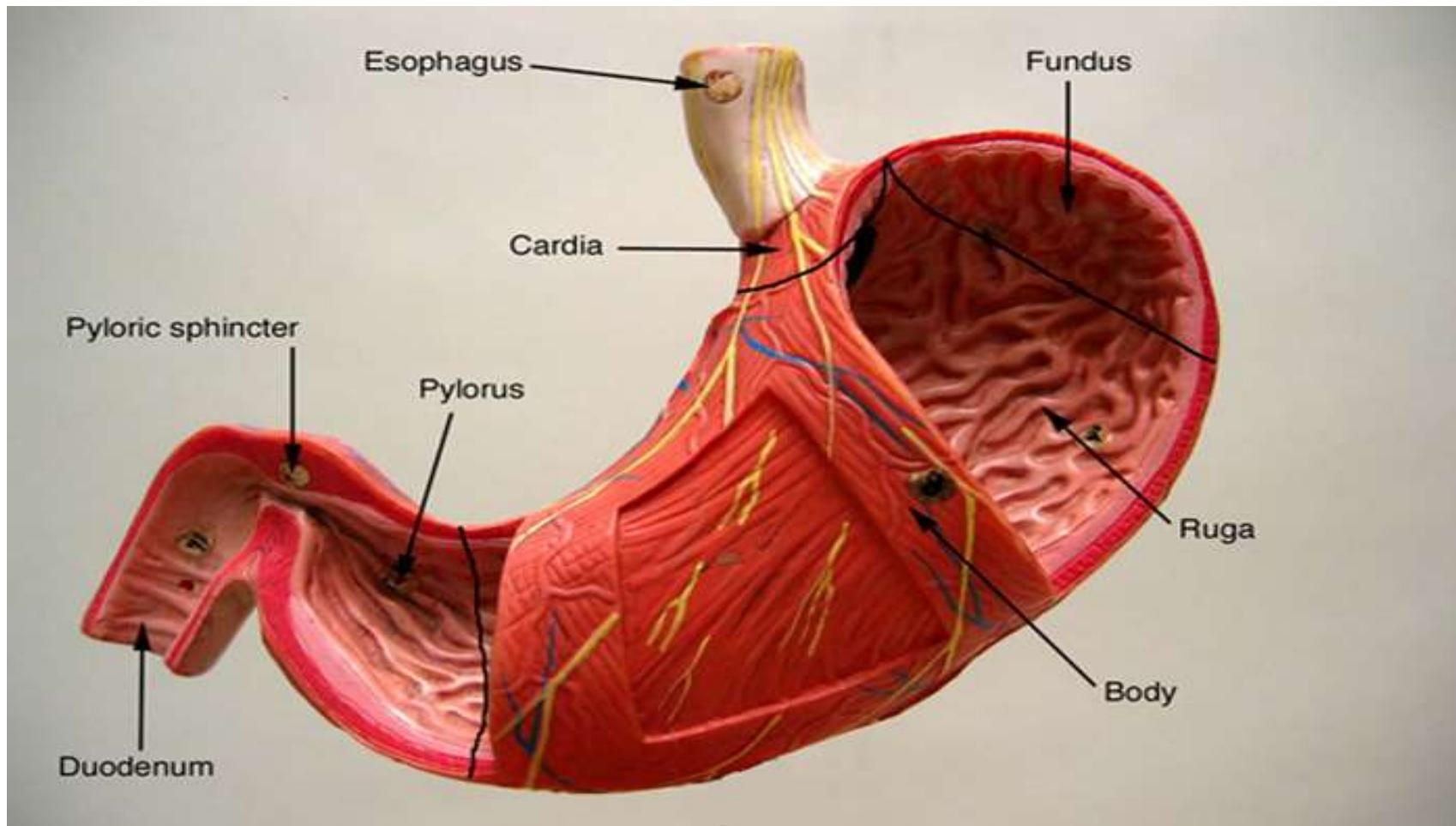


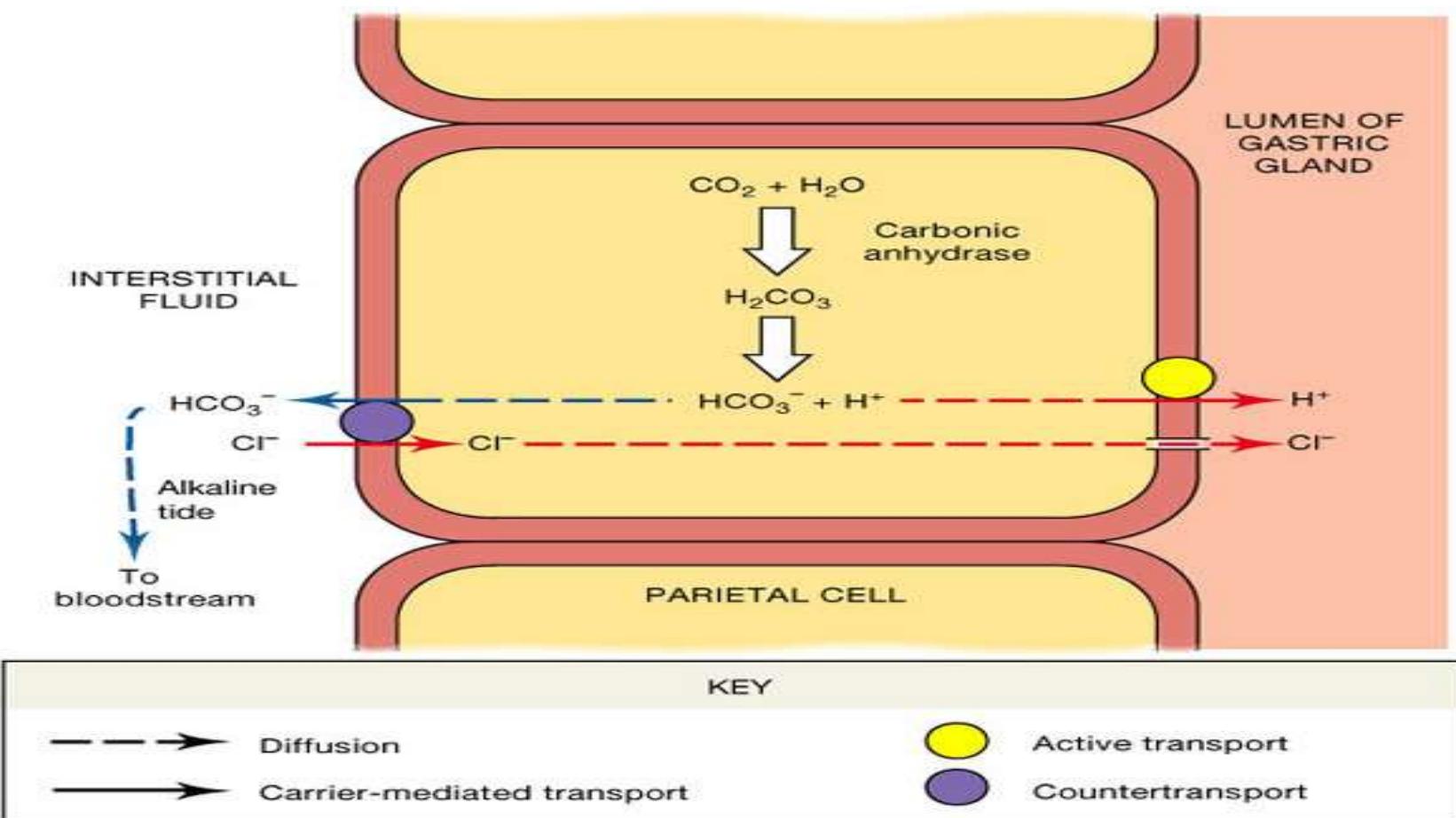


(a)



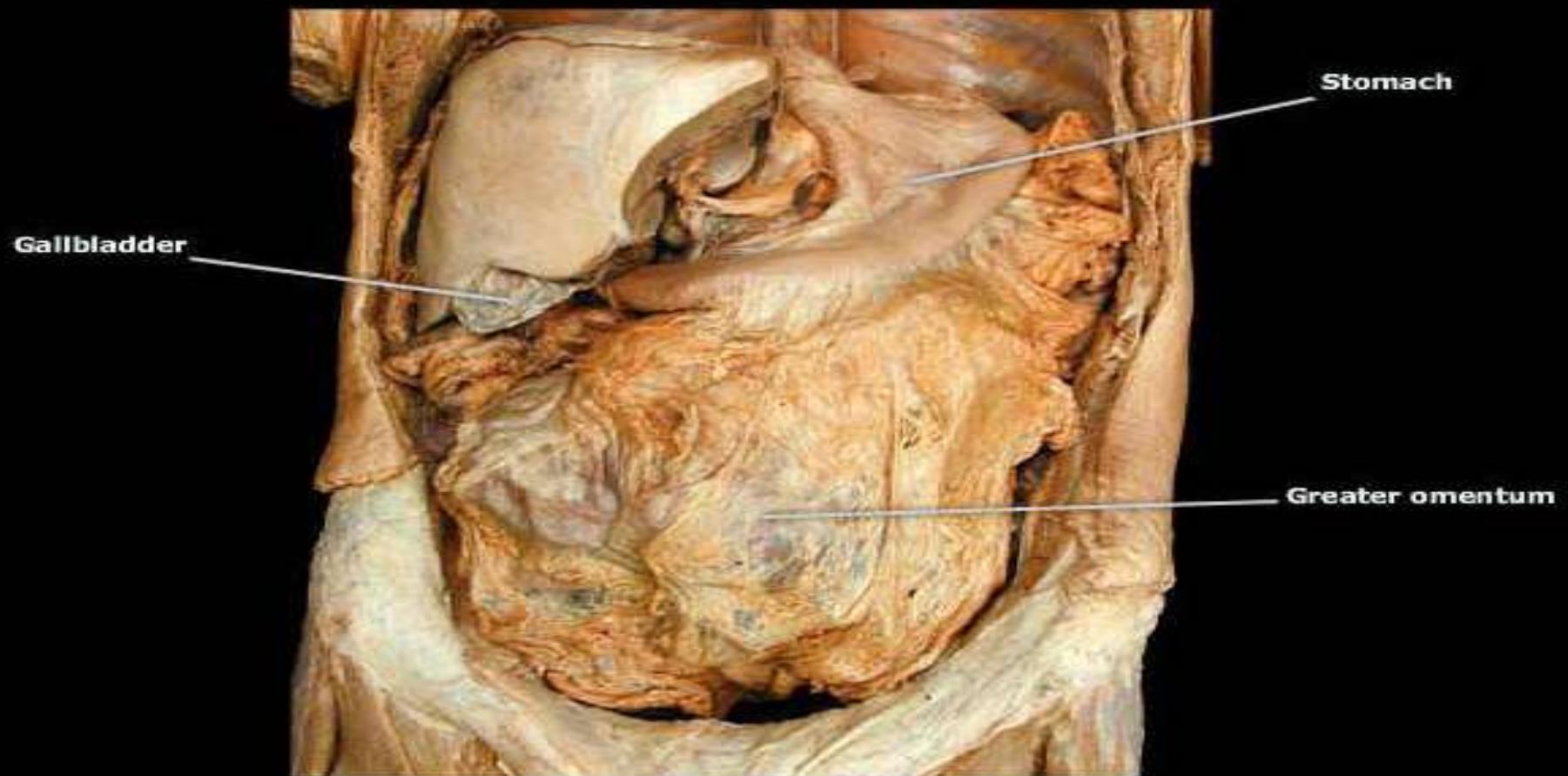


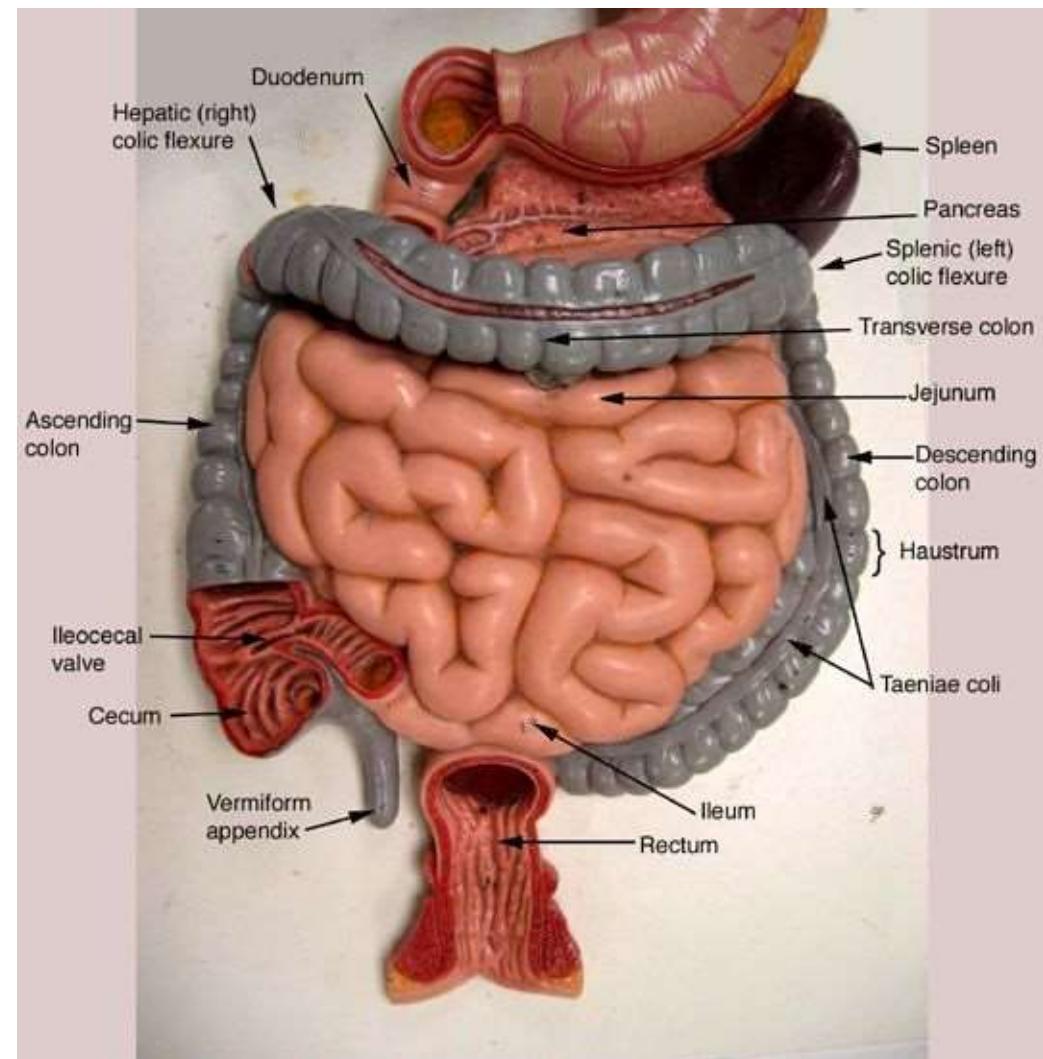
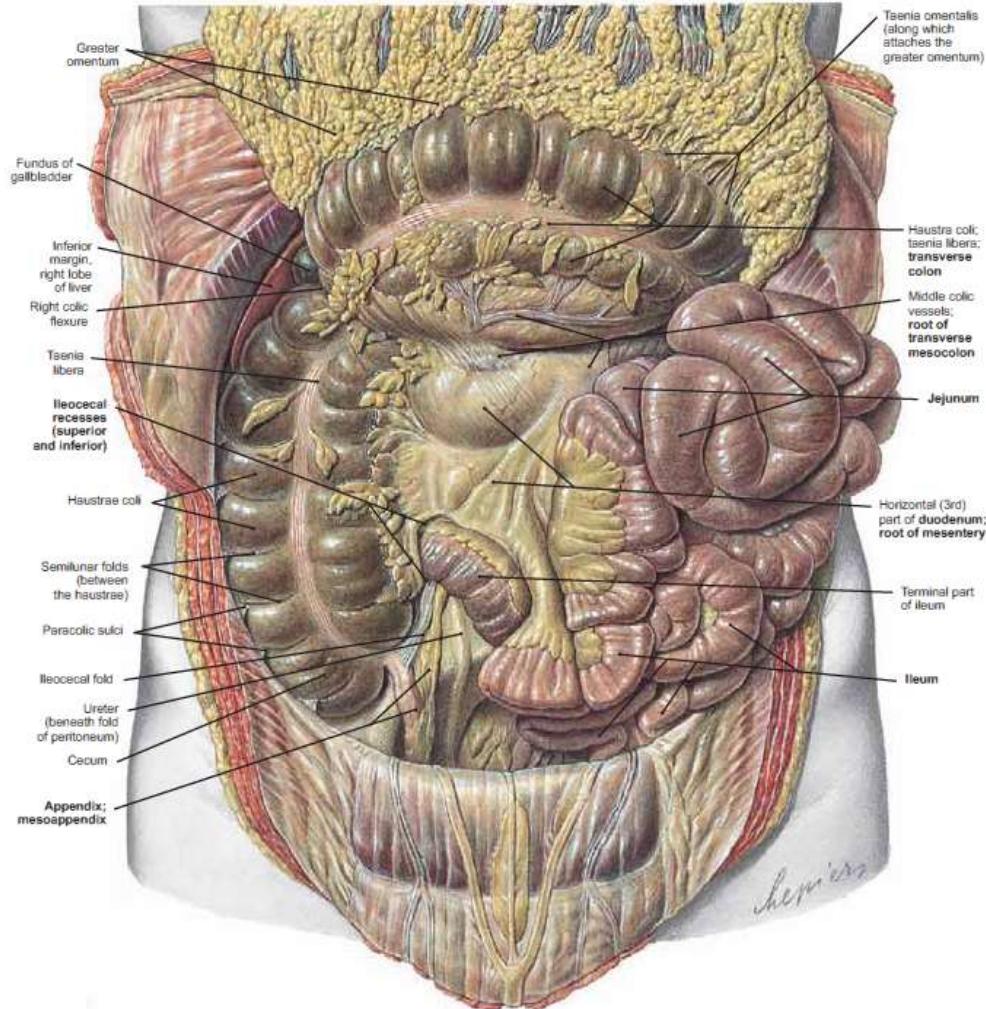


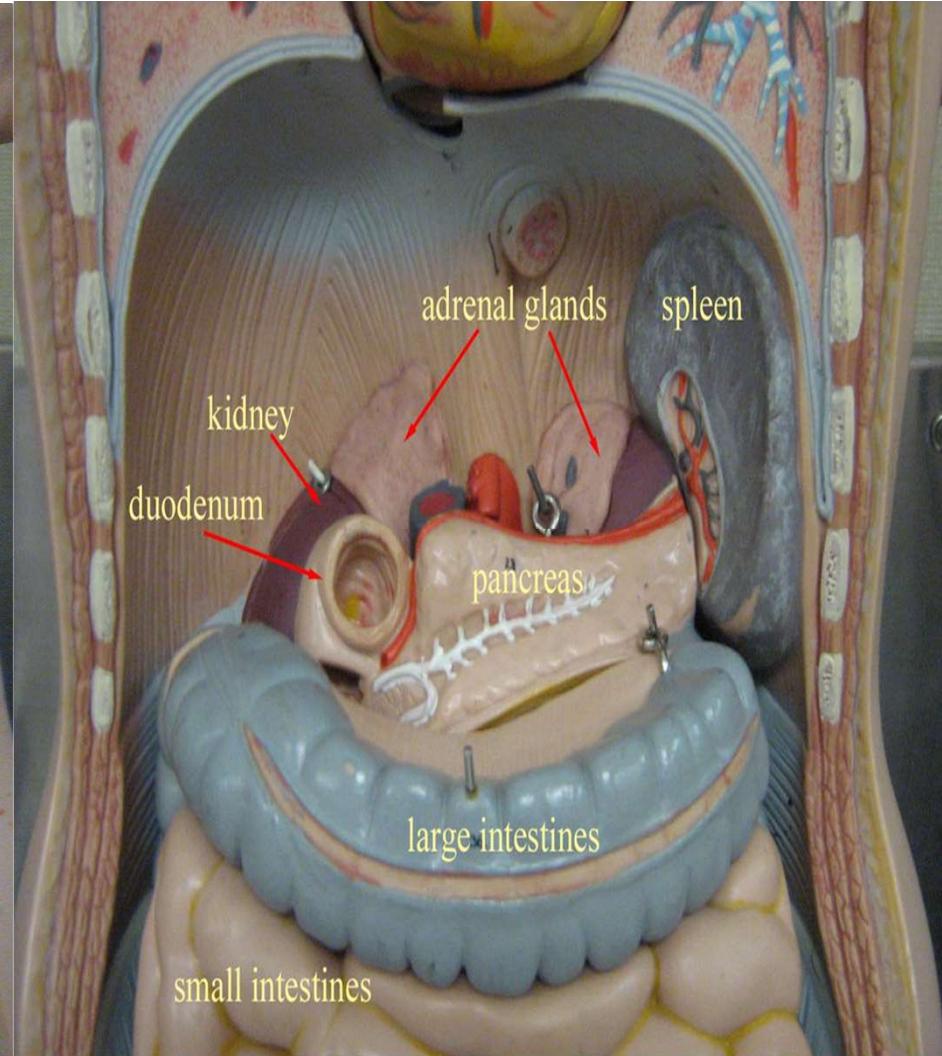
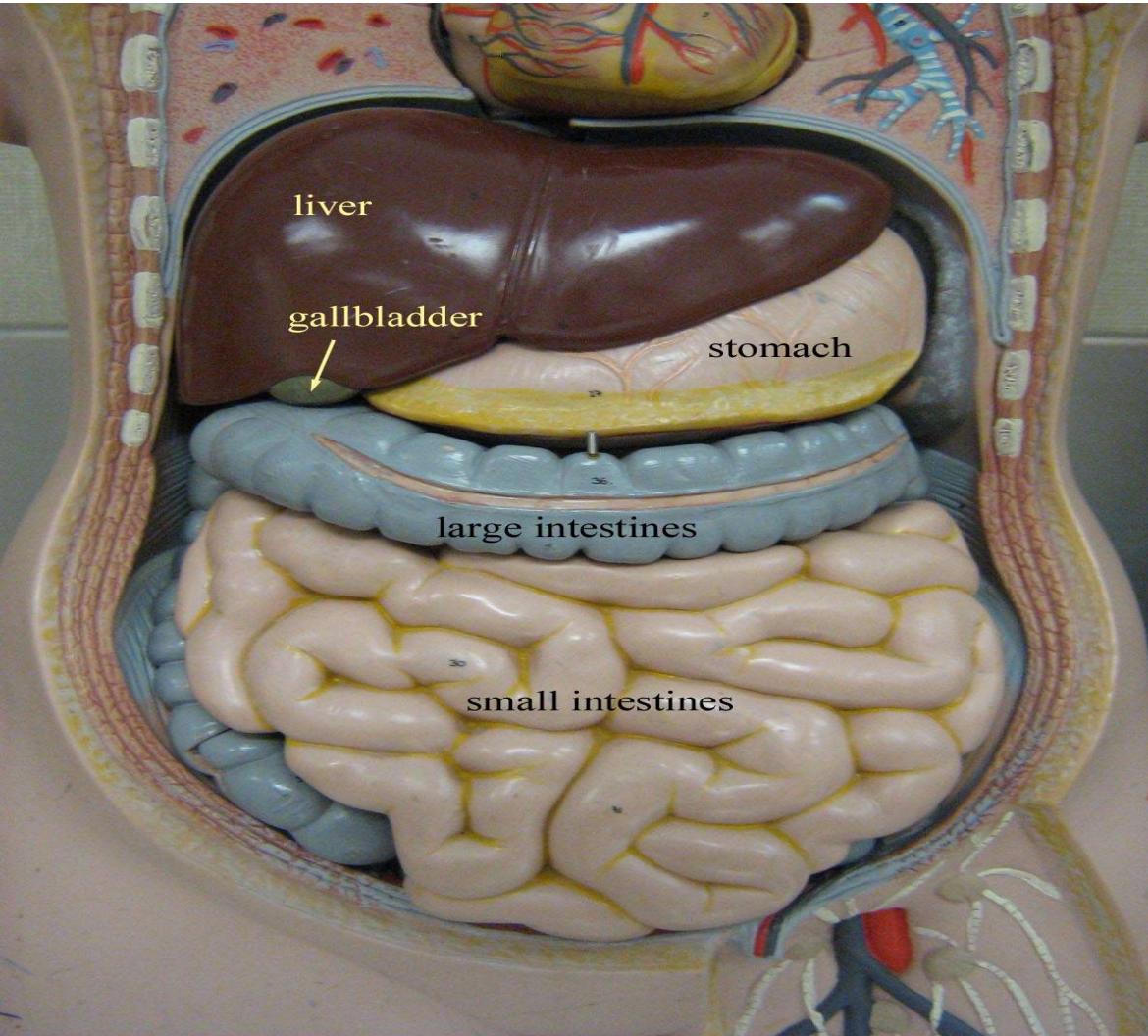


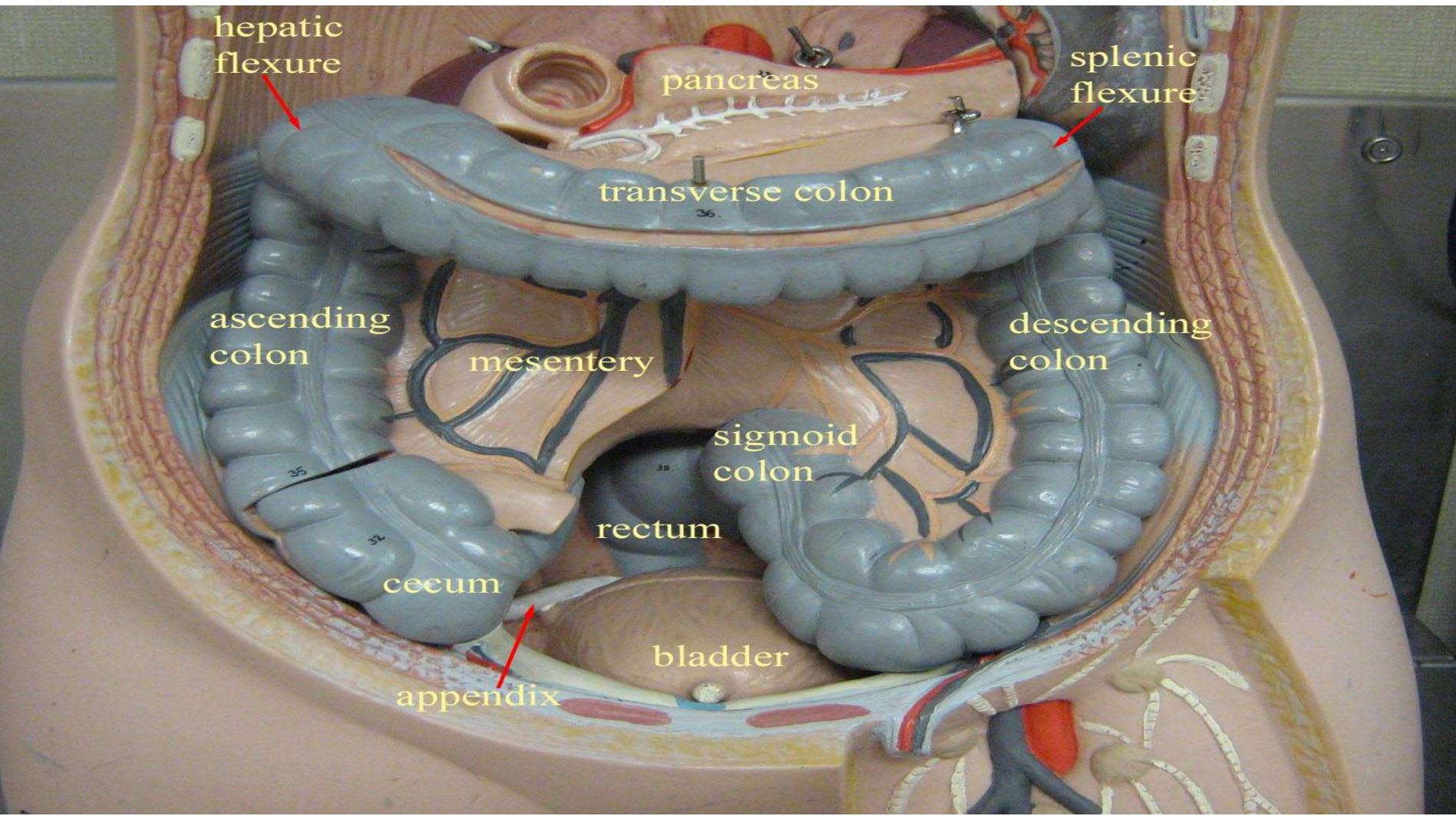
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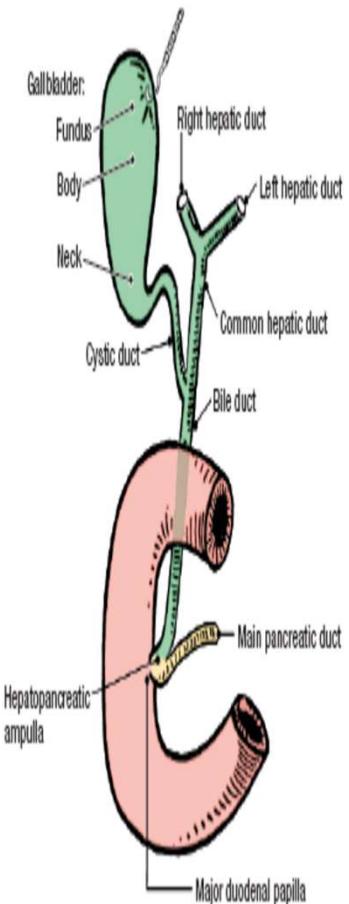
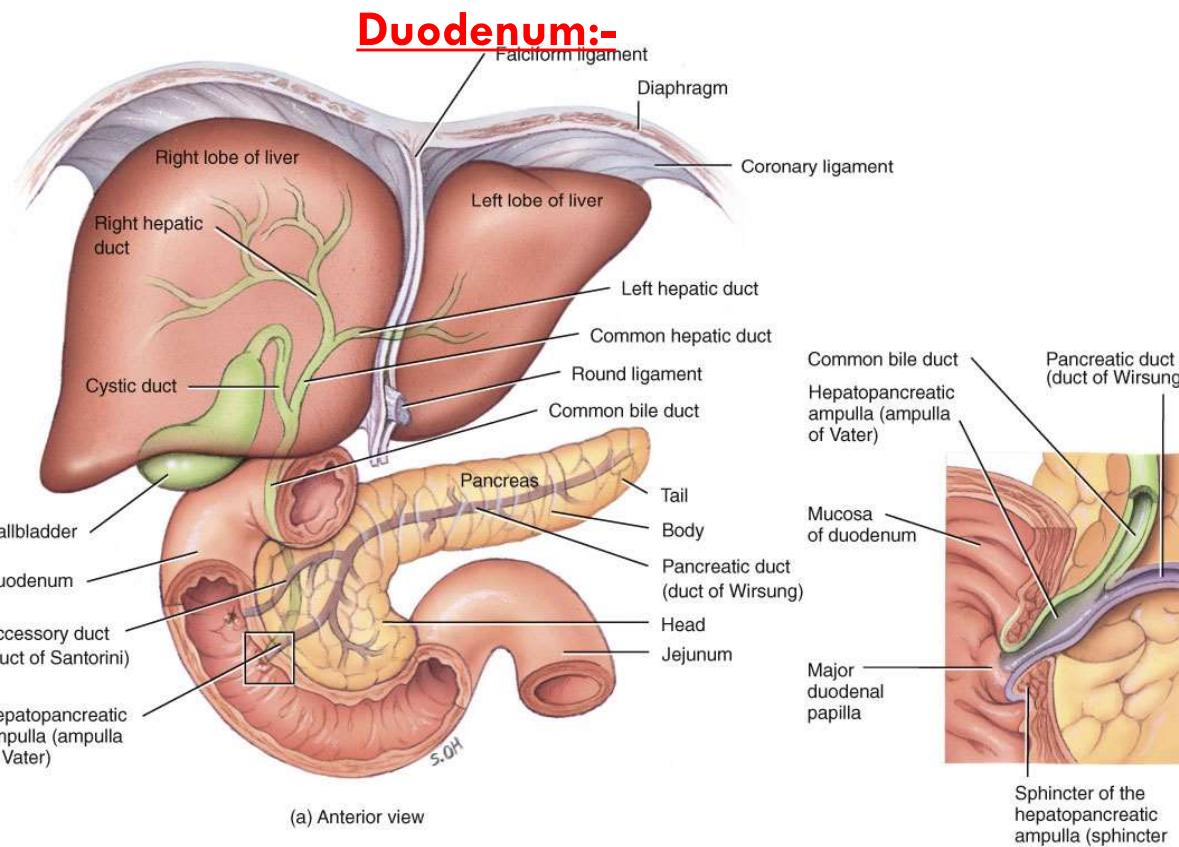
Stomach and greater omentum



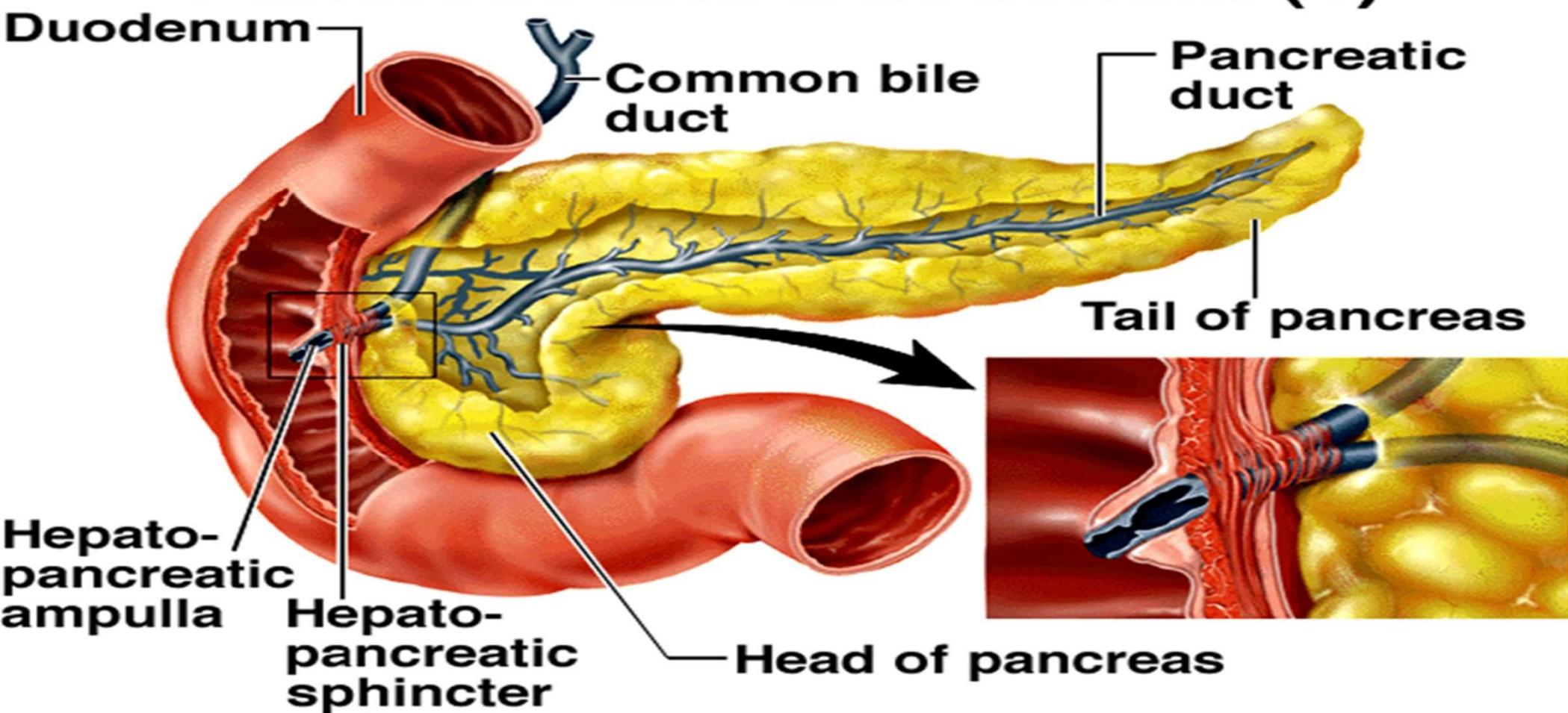


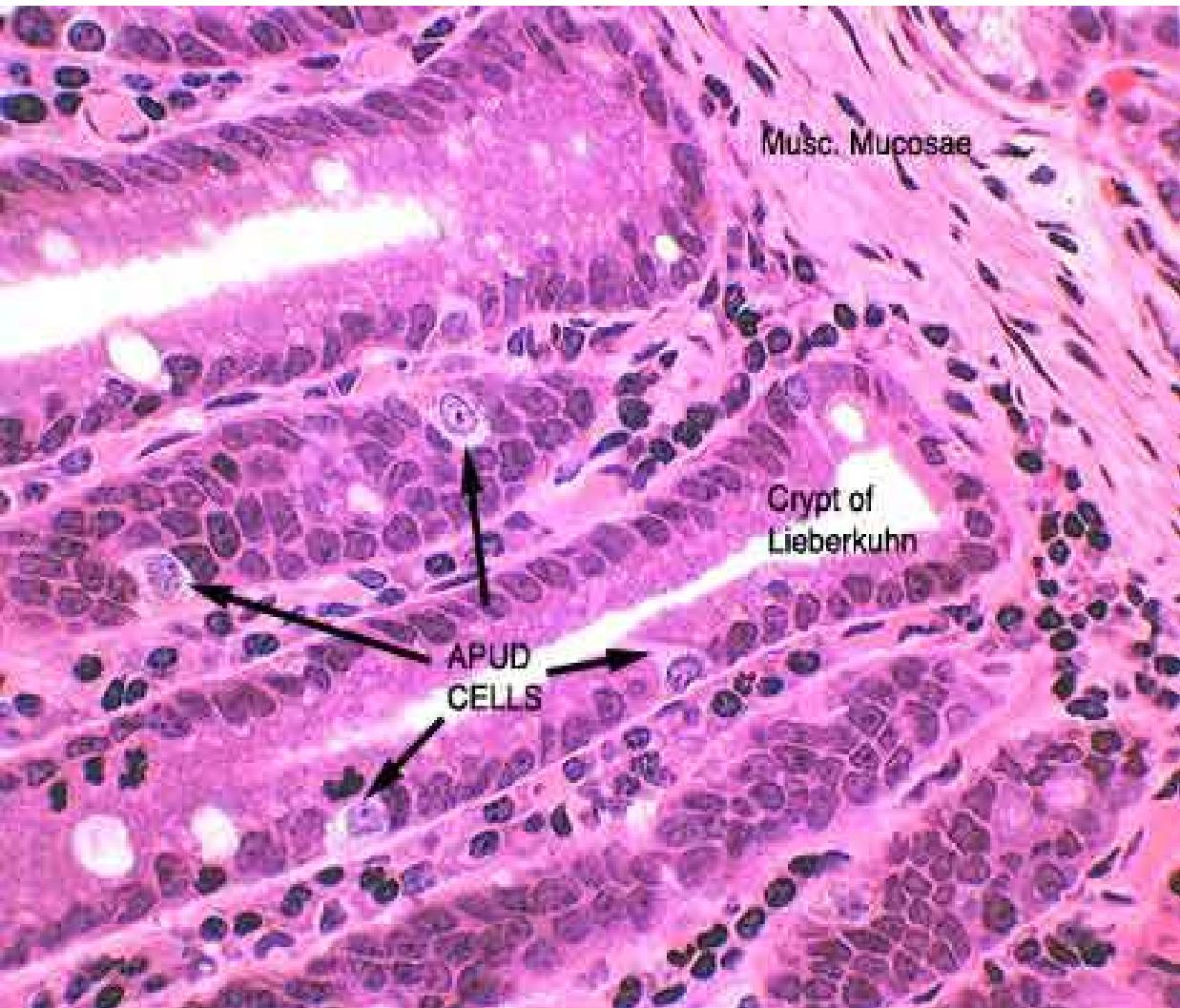






Pancreas and Duodenum (1)





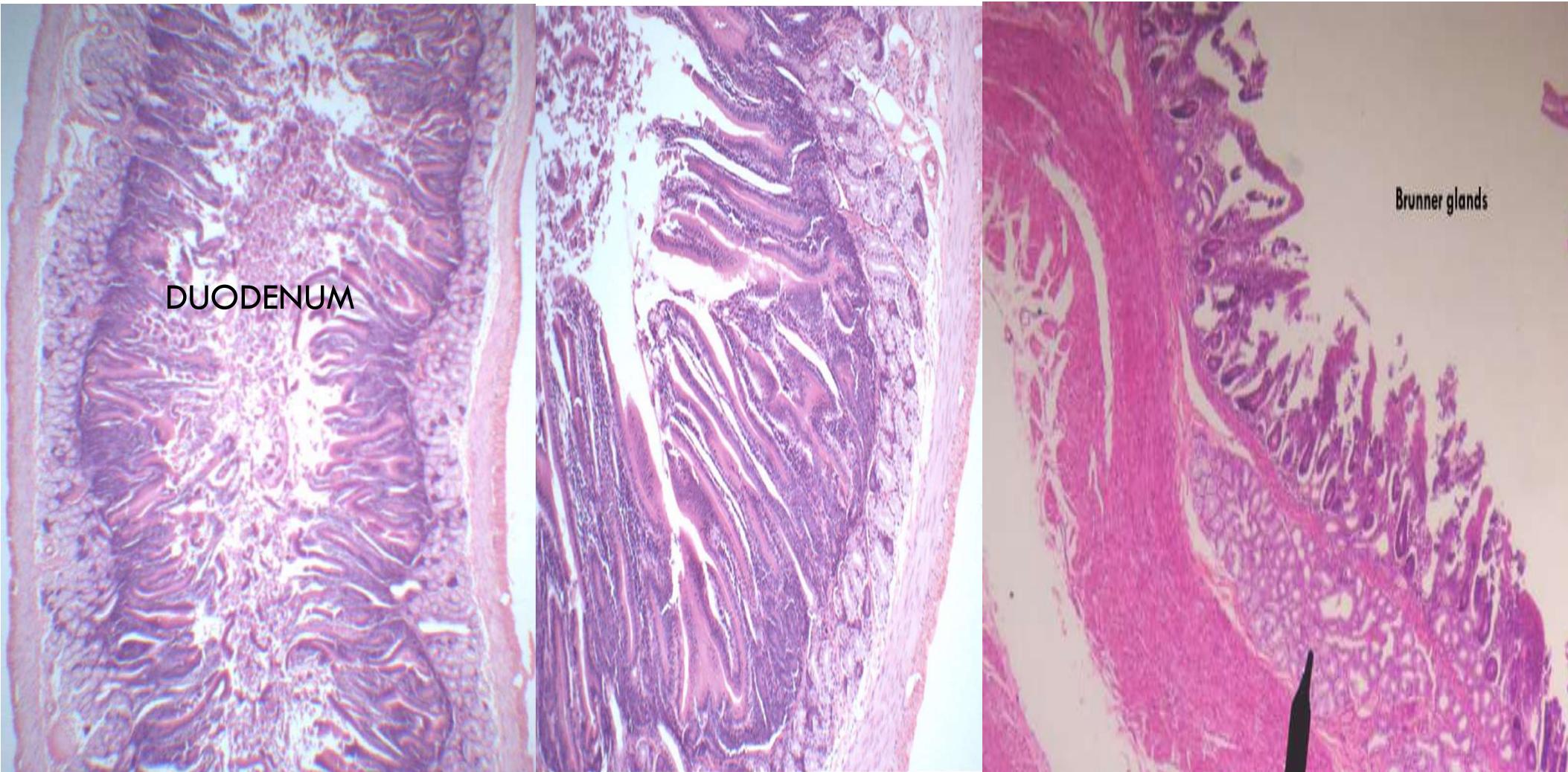
Helpful Hint

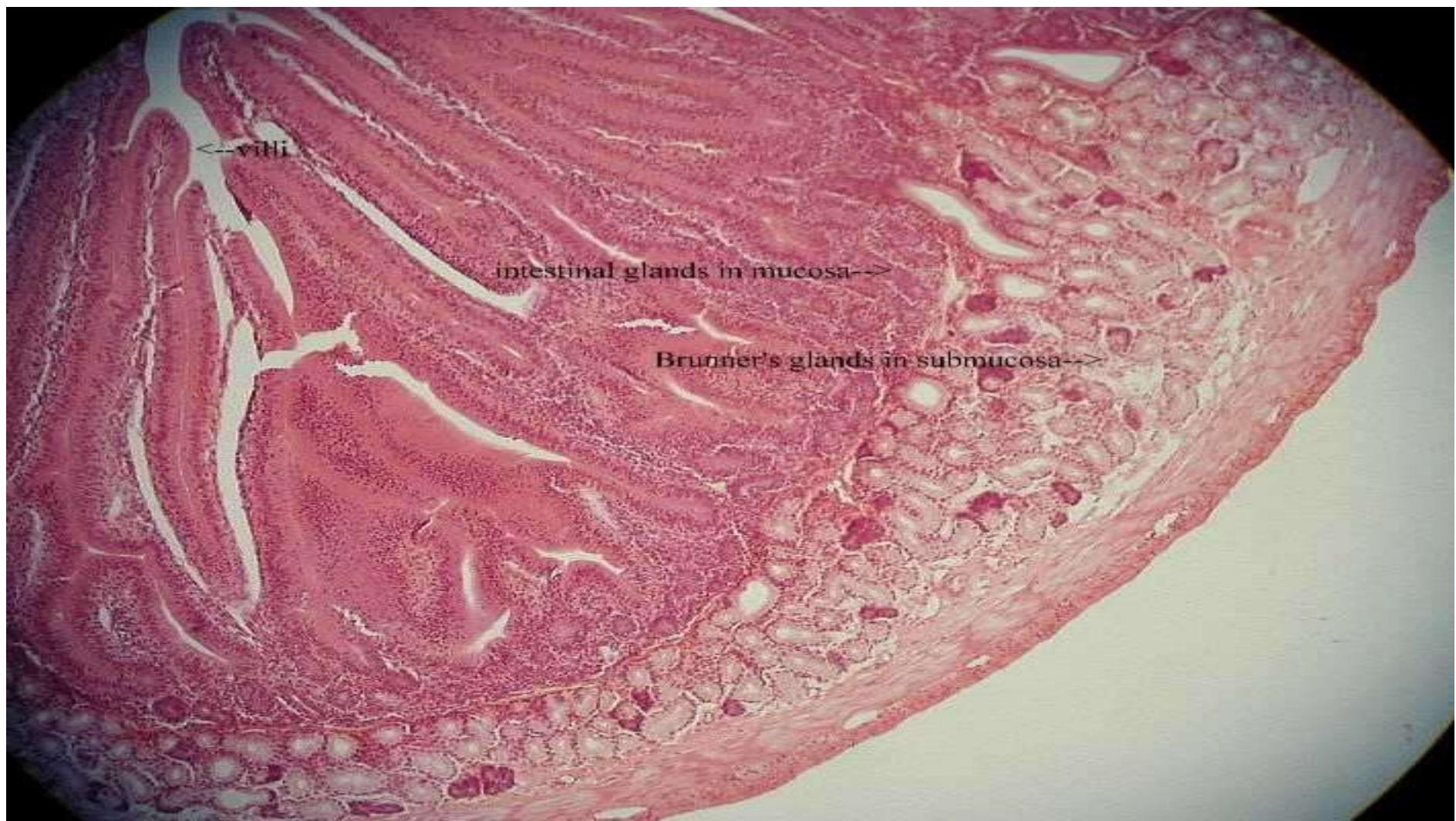
There are specific features to look for when attempting to identify a particular portion of the small intestine:

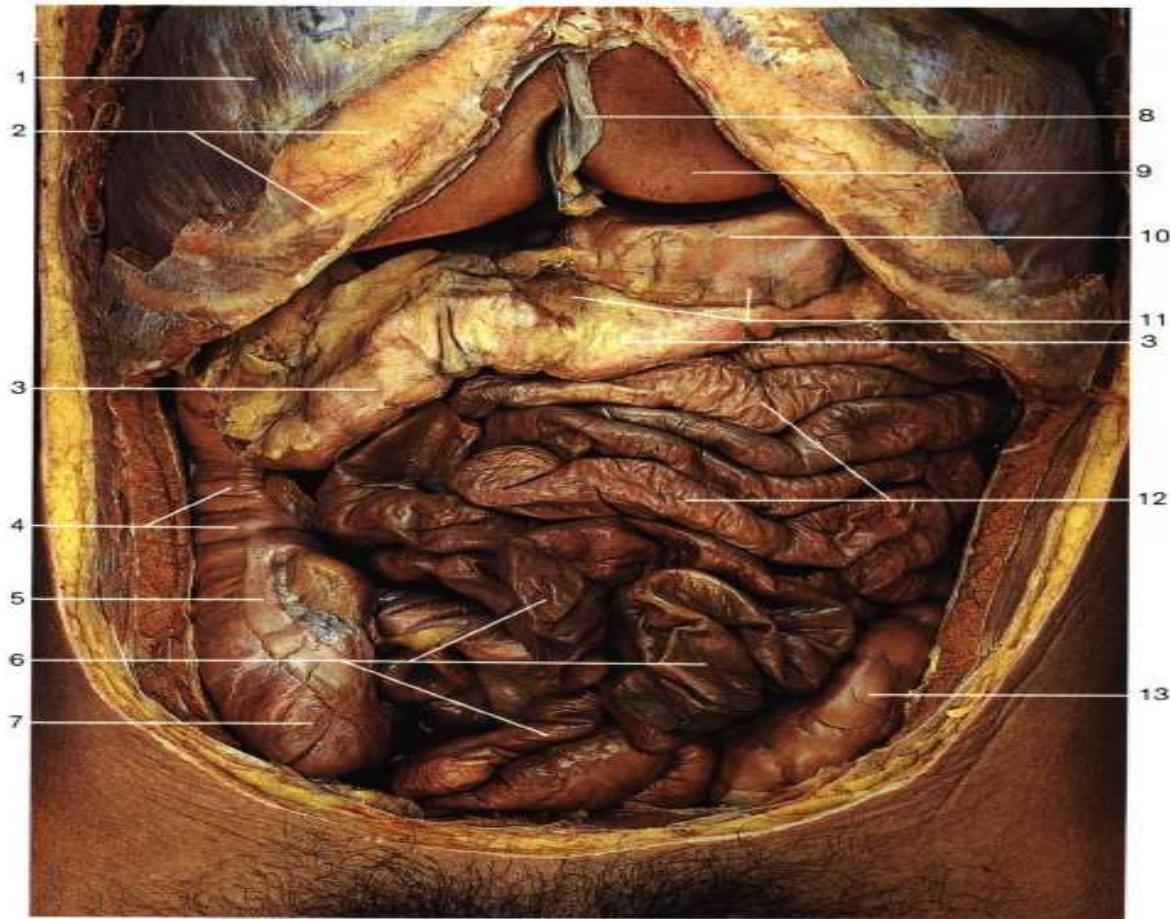
Duodenum - Brunner's glands in submucosa, some Goblet Cells

Jejunum - large plicae with many villi, more Goblet Cells

Ileum - aggregates of Peyer's patches, even more Goblet Cells





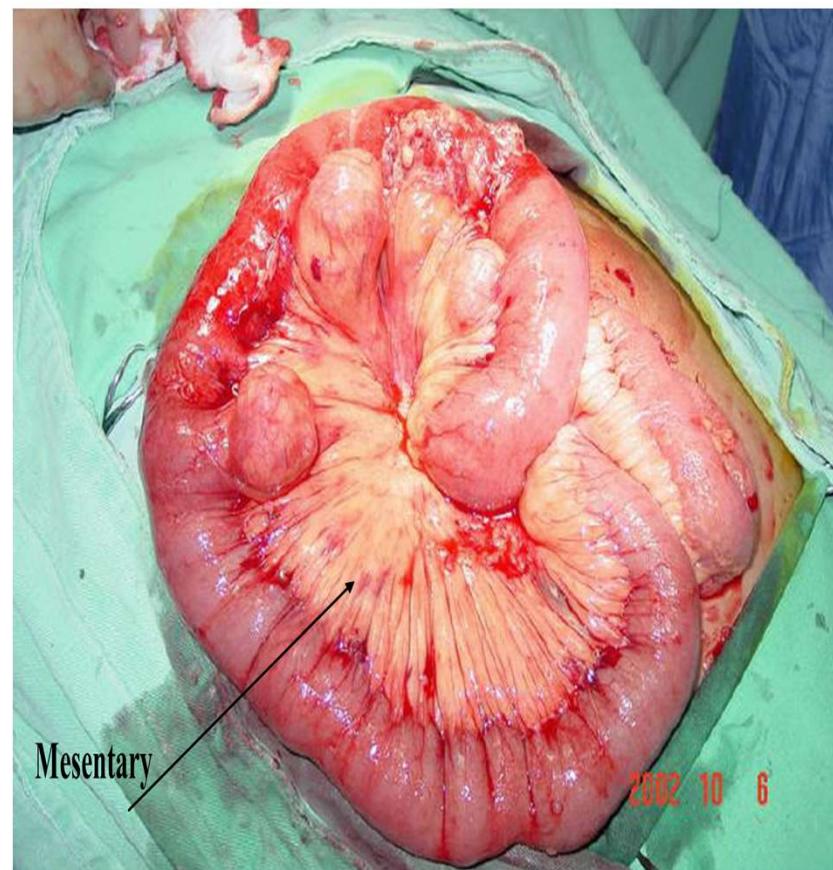
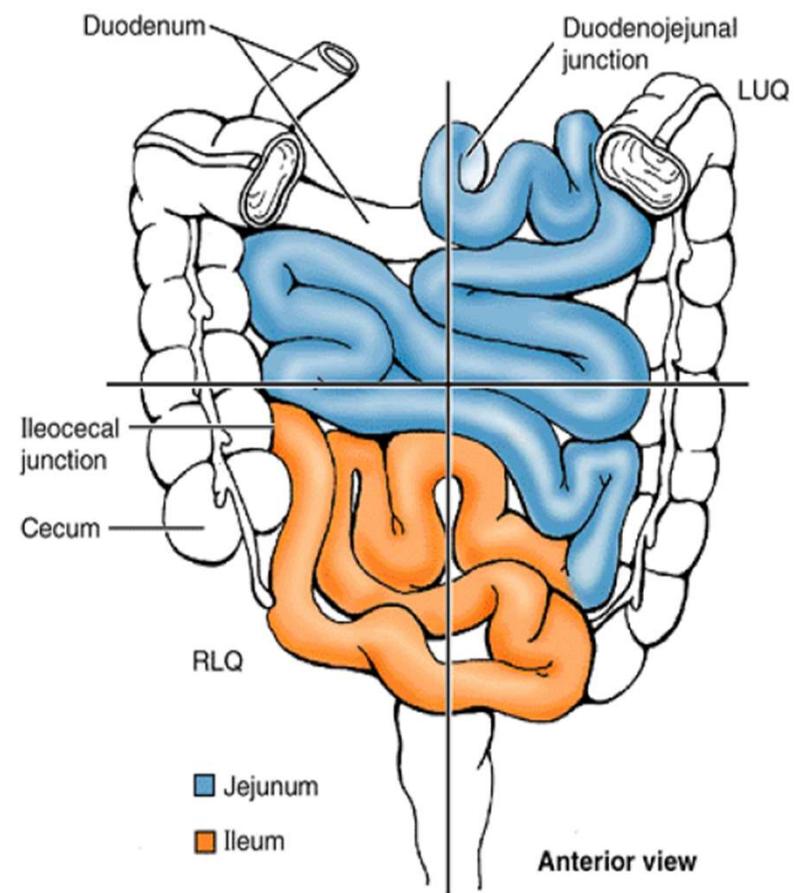


Abdominal organs in situ. The greater omentum has been removed.

- 1 Diaphragm
- 2 Costal margin
- 3 Transverse colon
- 4 Ascending colon with haustra
- 5 Free taenia of cecum
- 6 Ileum
- 7 Cecum
- 8 Falciform ligament of liver
- 9 Liver
- 10 Stomach
- 11 Gastrocolic ligament
- 12 Jejunum
- 13 Sigmoid colon
- 14 Vermiform appendix
- 15 Terminal ileum
- 16 Mesoappendix
- 17 Mesentery

Distinguishing Characteristics of Jejunum and Ileum in Living Persons

Characteristic	Jejunum	Ileum
Color	Deeper red	Paler pink
Caliber	2â€“4 cm	2â€“3 cm
Wall	Thick and heavy	Thin and light
Vascularity	Greater	Less
Vasa recta	Long	Short
Arcades	A few large loops	Many short loops
Fat in mesentery	Less	More
Circular folds (<i>L. plicae circulares</i>)	Large, tall, and closely packed	Low and sparse; absent in distal part
Lymphoid nodules (Peyer patches)	Few	Many





Circular folds
(*plicae circulares*)

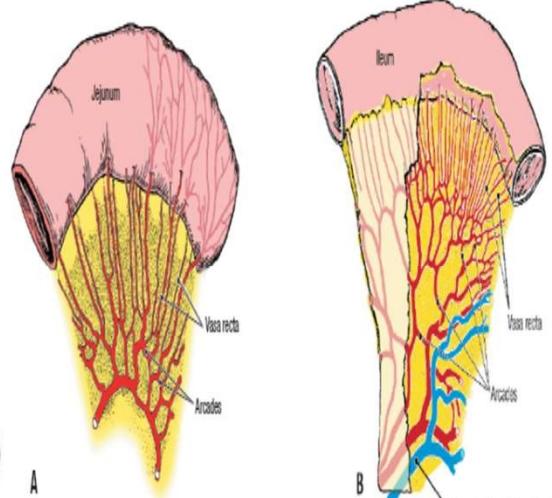
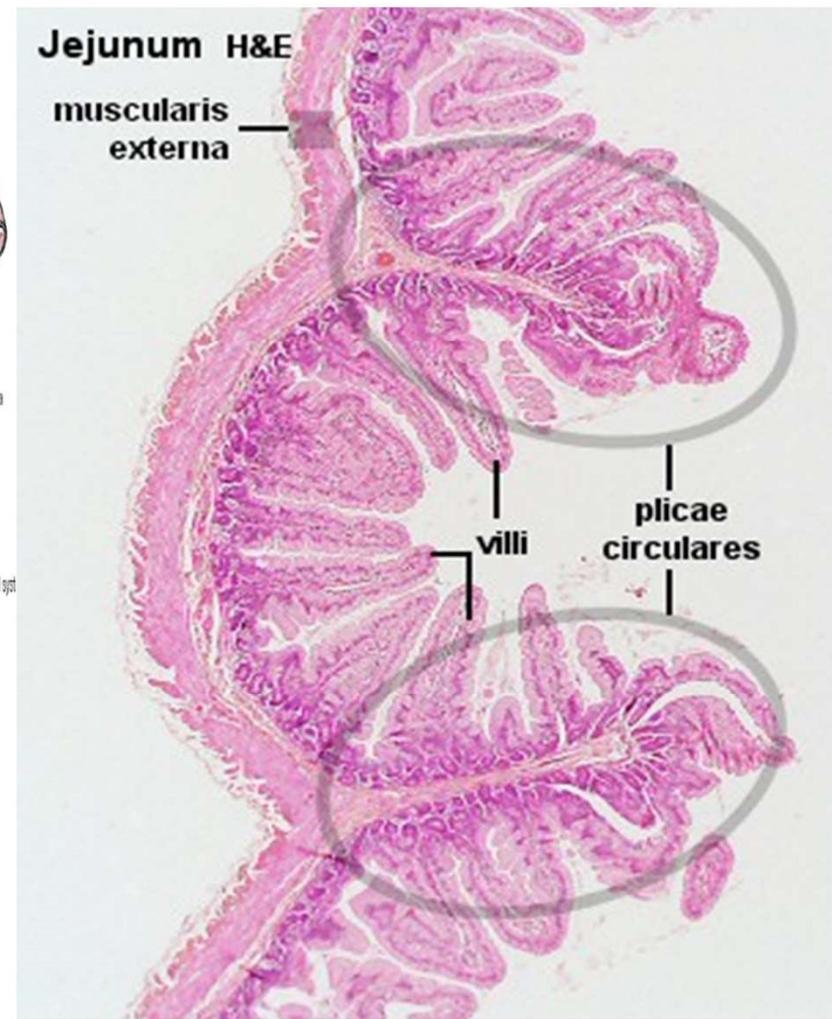
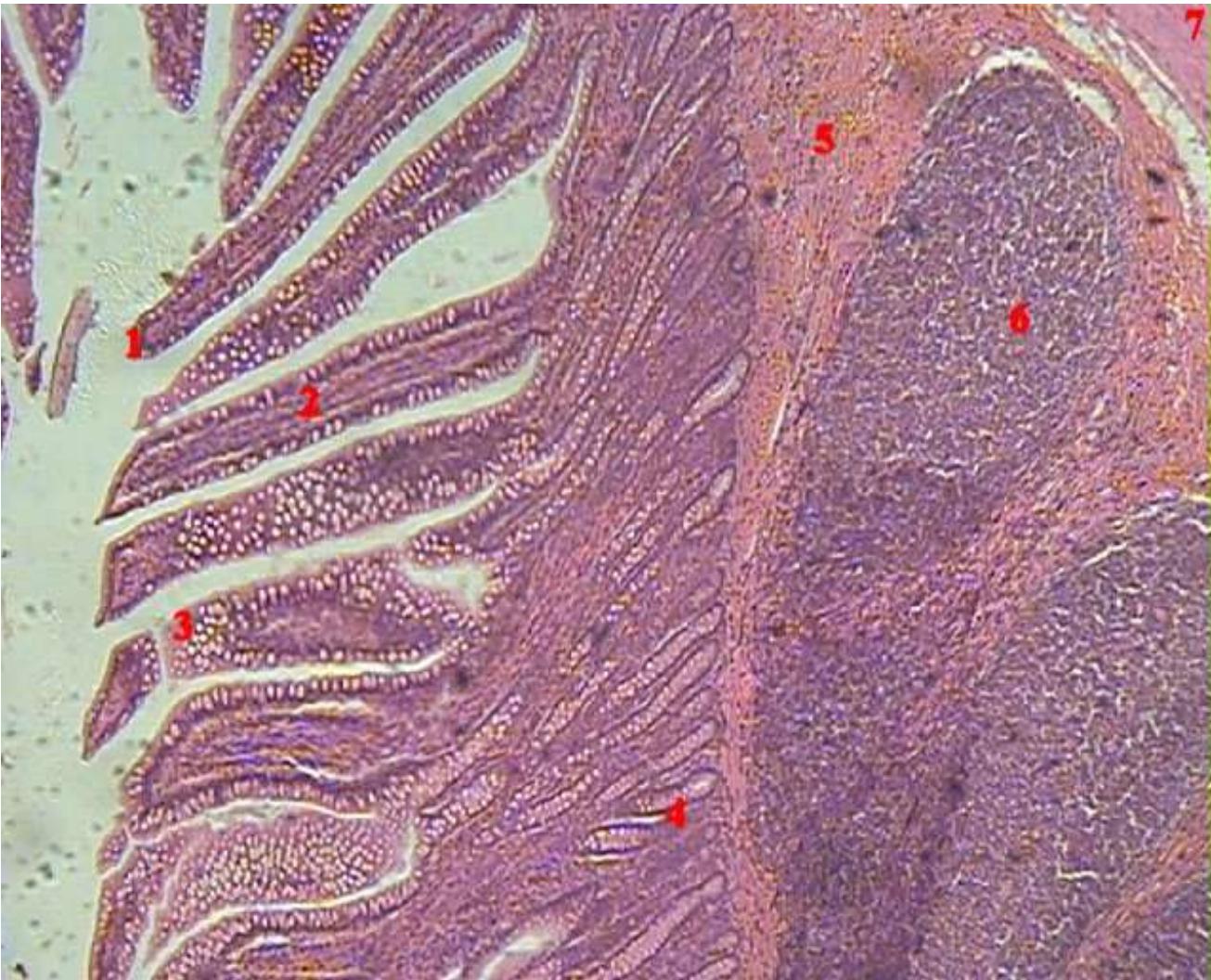


Figure 4.36. Comparison of intestinal arteries. A. Arteries of the jejunum. B. Arteries of the ileum.

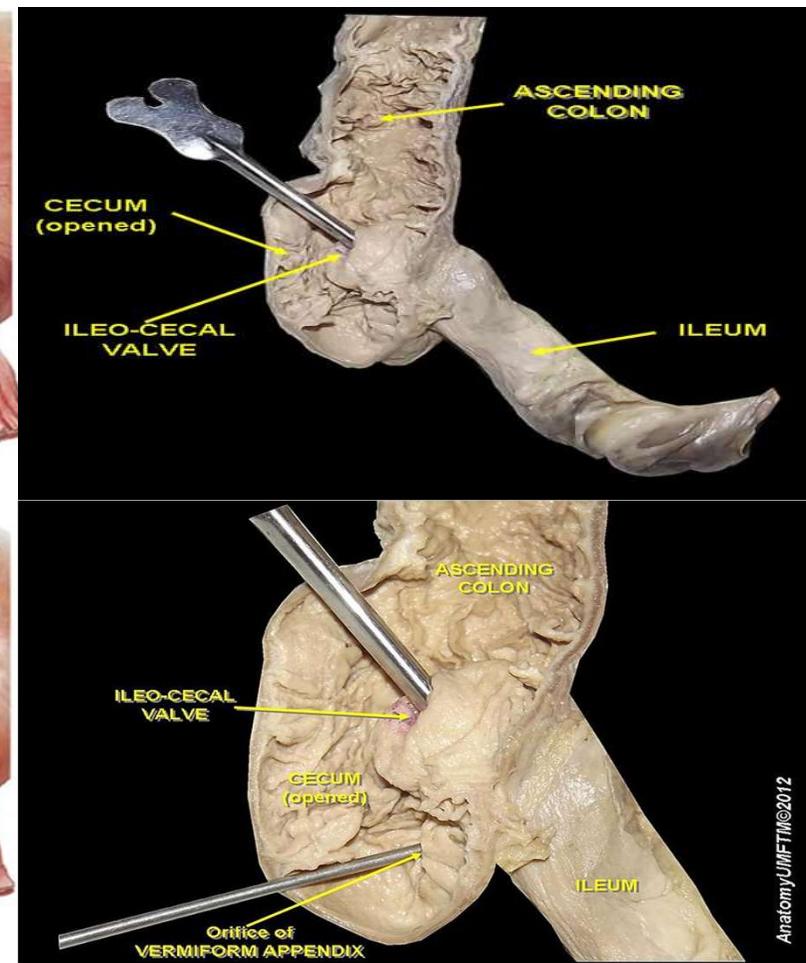
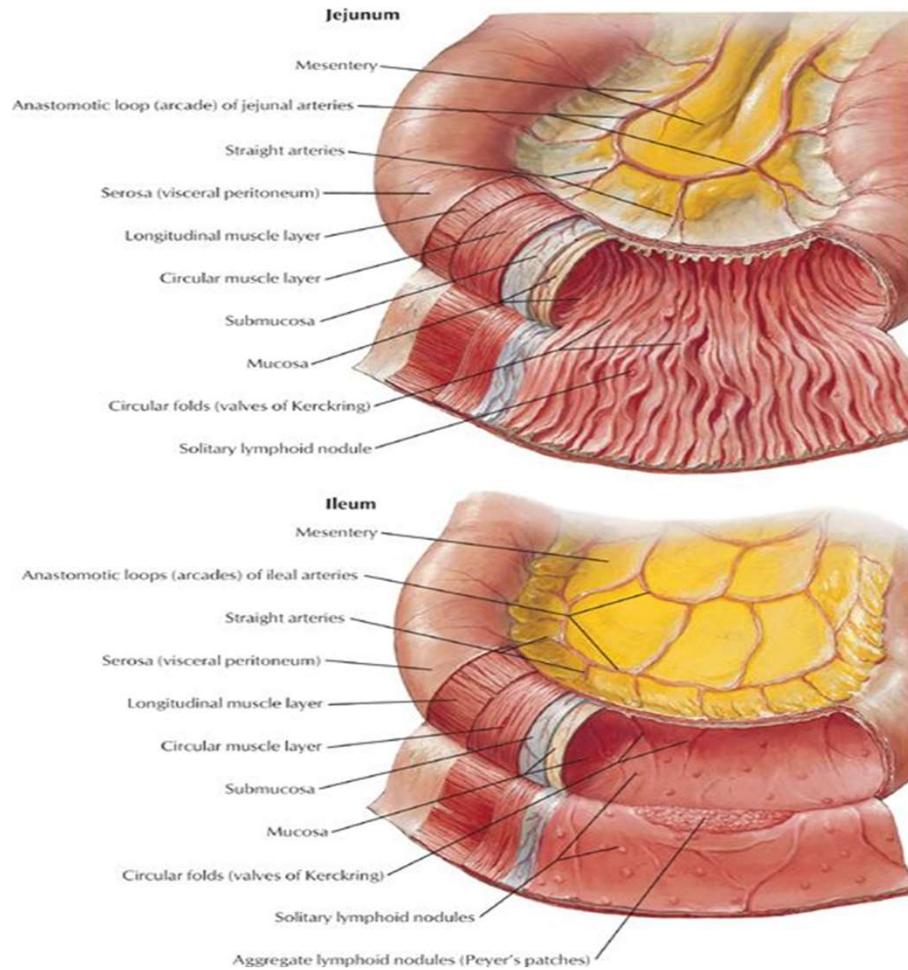
(b) Internal anatomy of the jejunum





ILEUM

1. Villus
2. Lamina propria of a villus
3. Cluster of goblet cells
4. Intestinal gland
5. Submucosa
6. Peyer's patch



ILEUM

Stained with haematoxylin and eosin.

- 1 - tunica mucosa
- 2 - tunica submucosa
- 3 - tunica muscularis propria
- 4 - tunica serosa
- 5 - villi
- 6 - epithelium of the mucosa
(covers villi)
- 7 - connective tissue of the lamina propria of the mucosa
- 8 - glands (crypts) in the lamina propria of the mucosa





mucosa

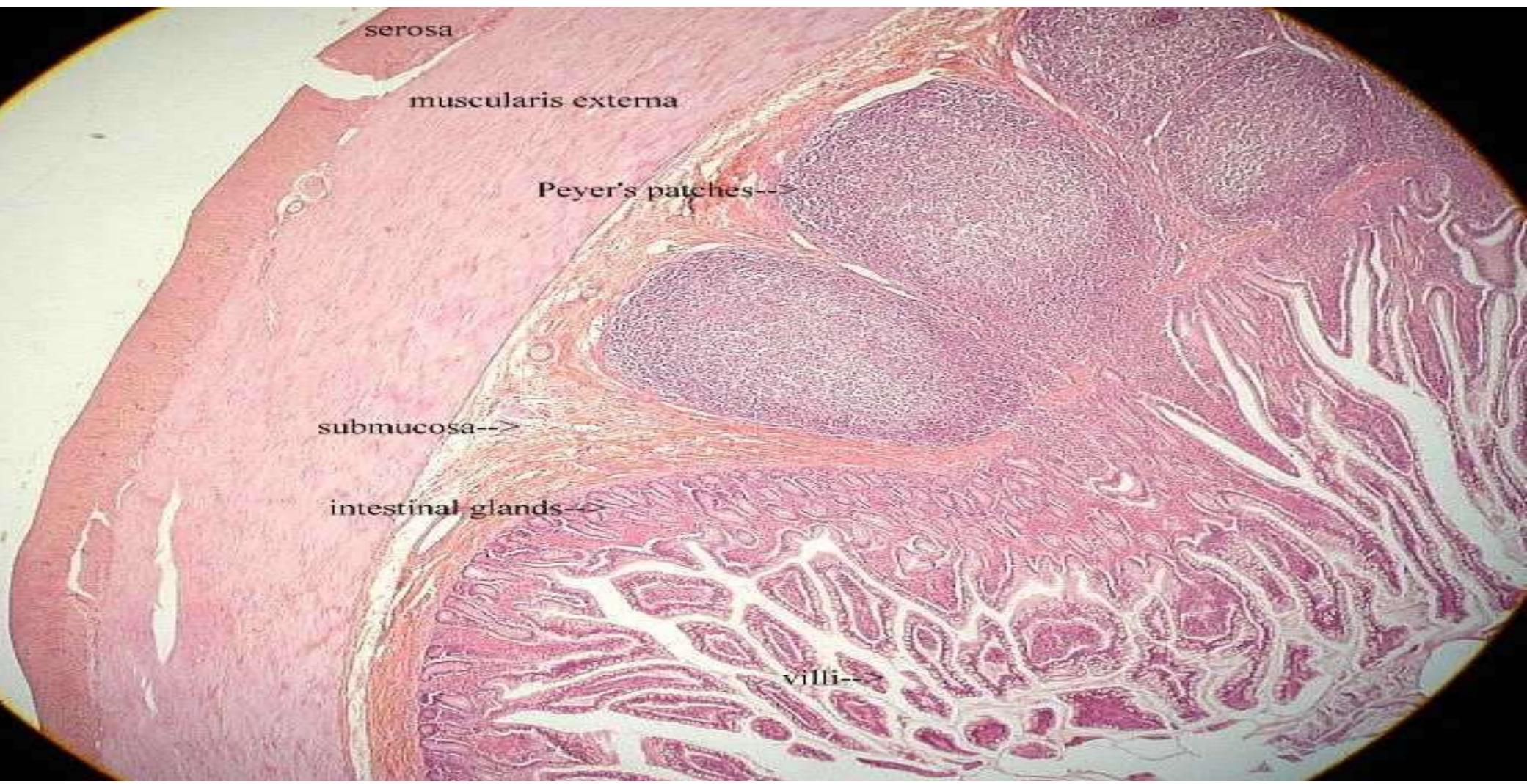
submucosa

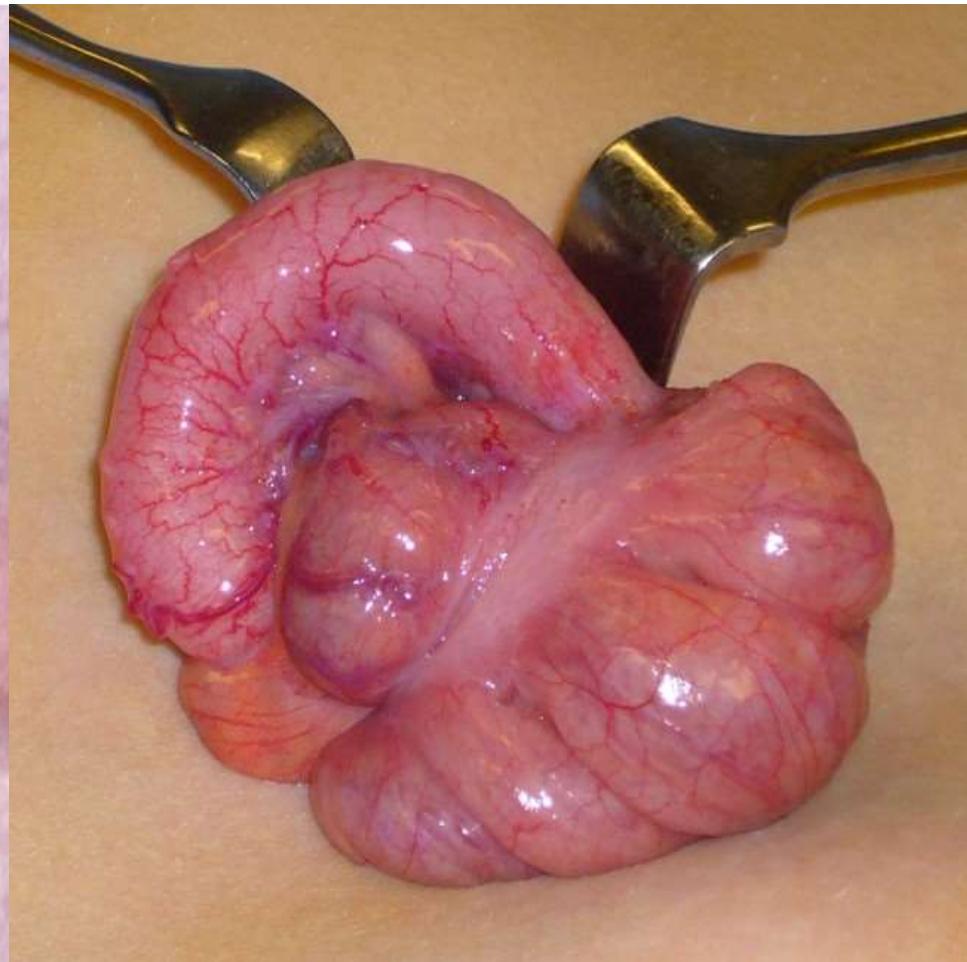
Peyer's patches (lymphatic tissue in
submucosa)

intestinal glands

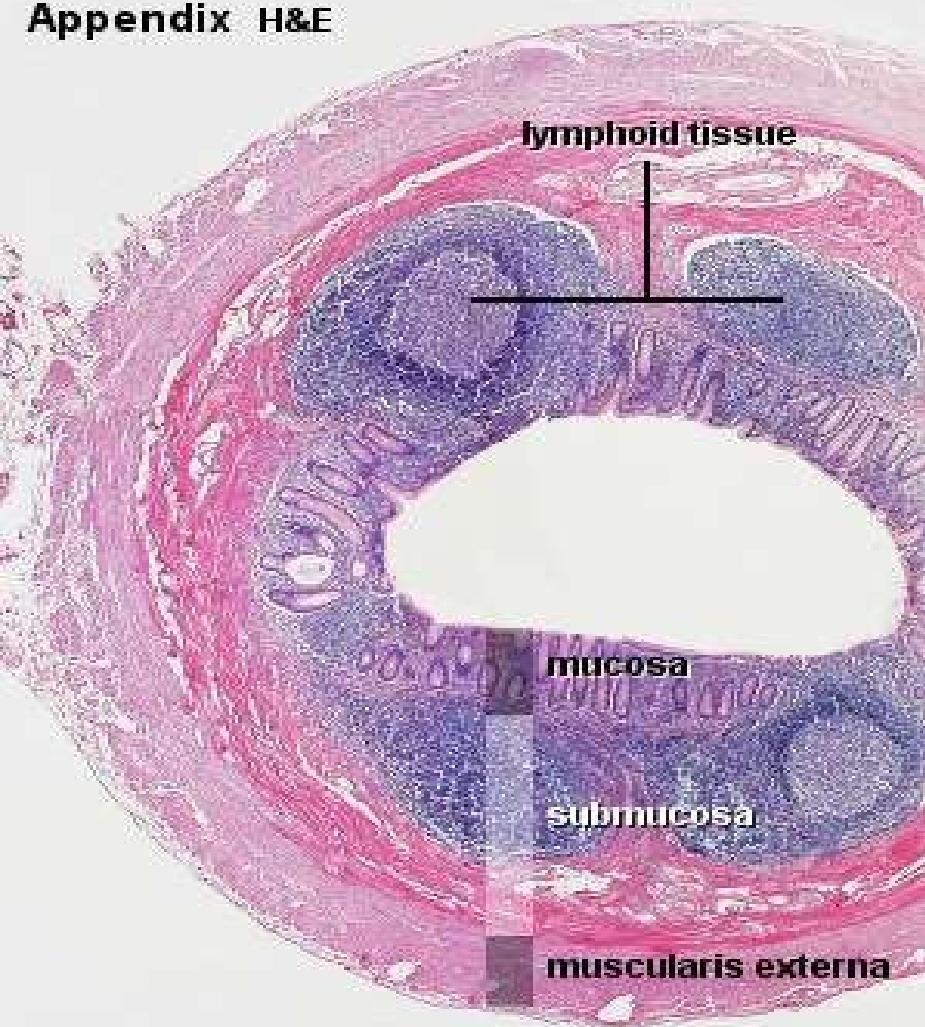
muscularis externa

serosa

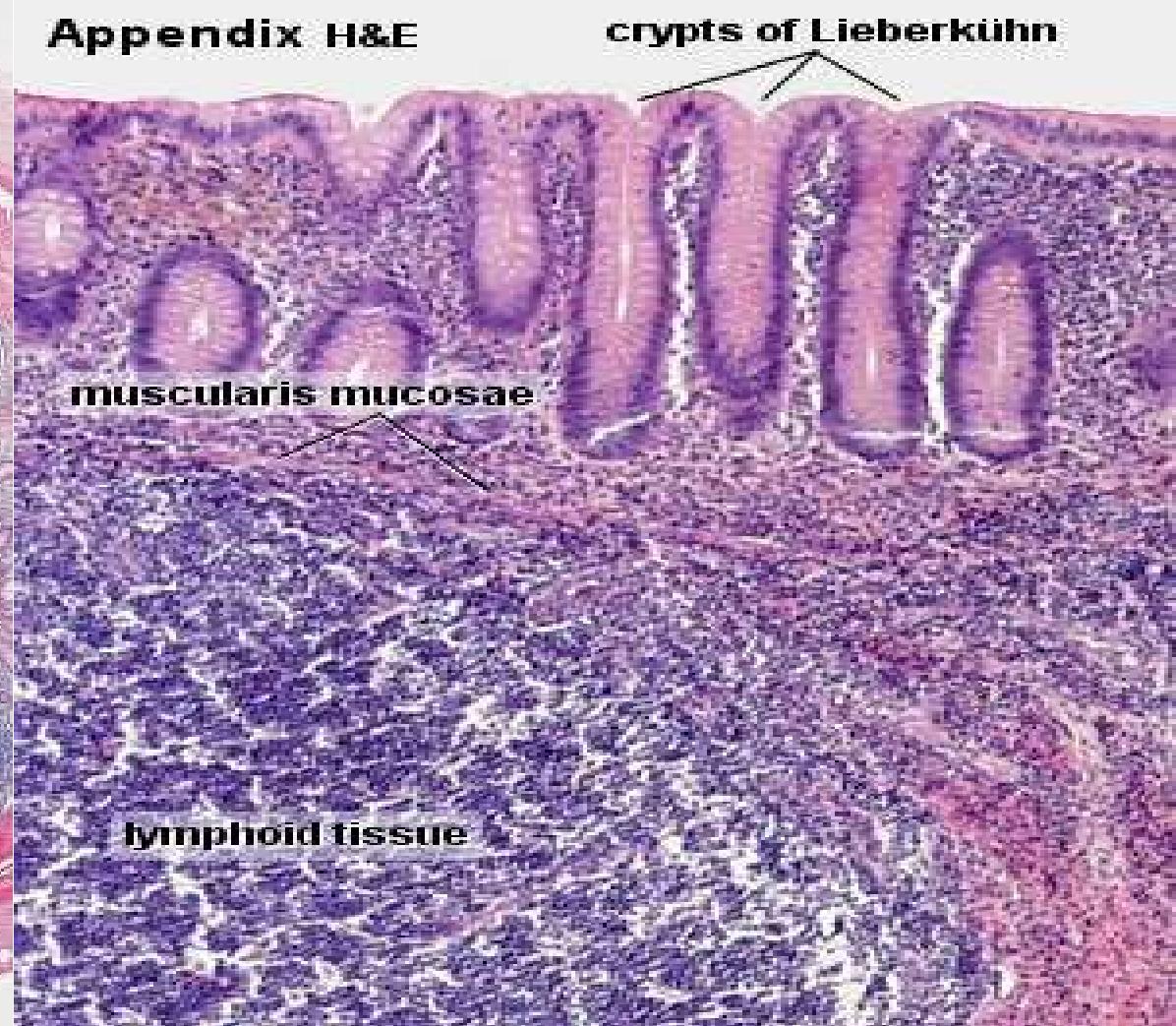




Appendix H&E



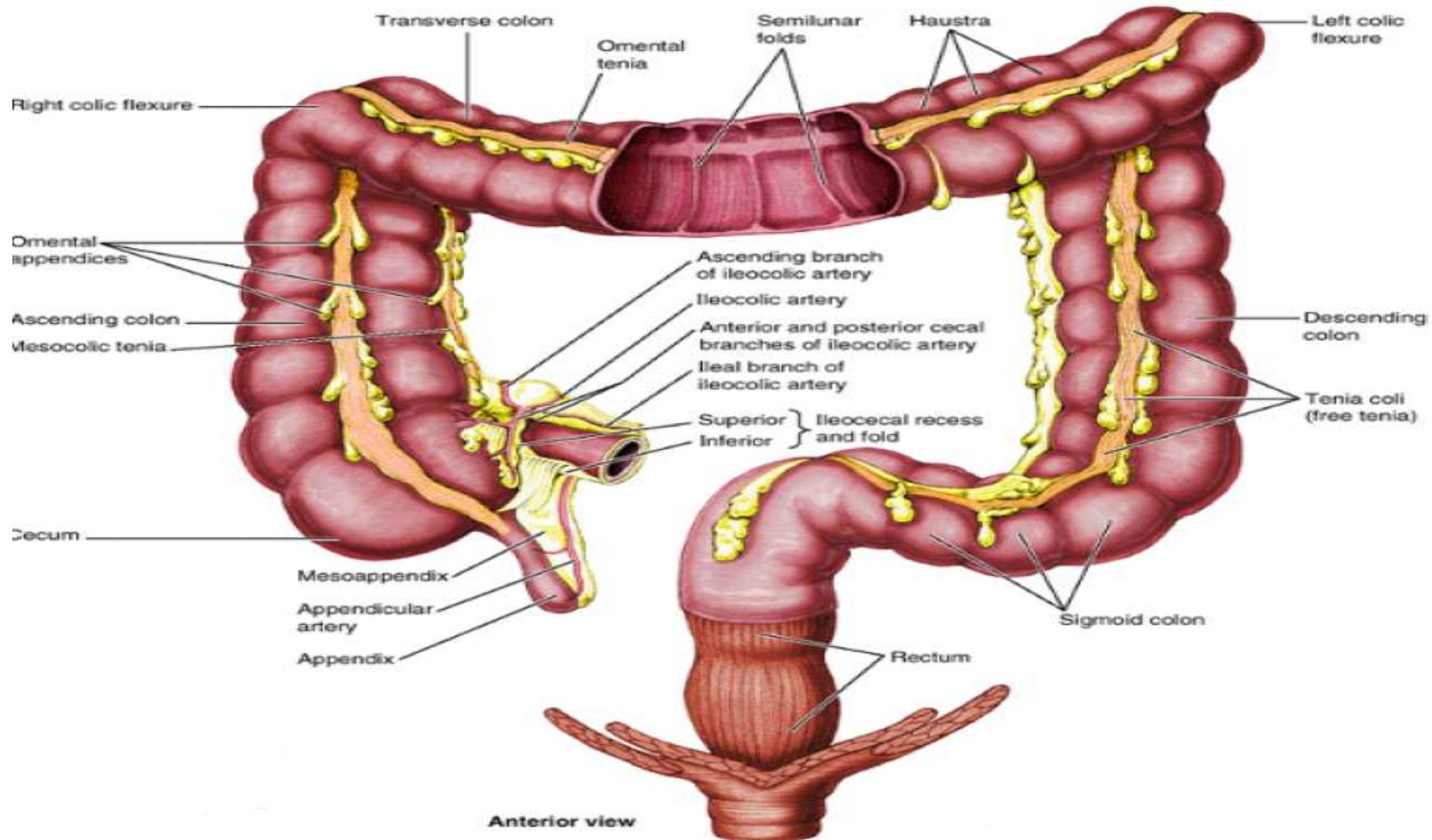
Appendix H&E

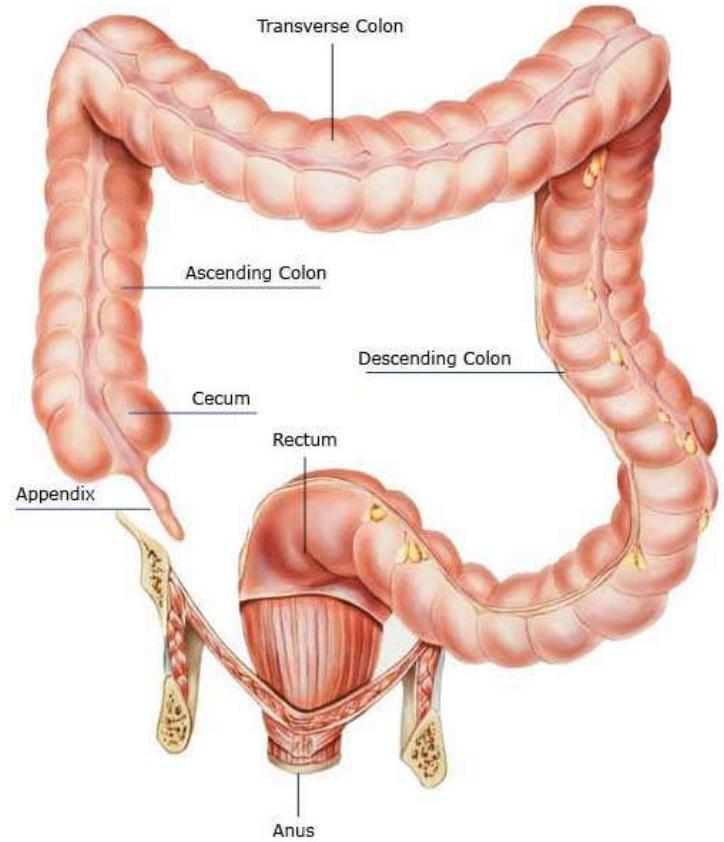


- **EXTERNAL MORPHOLOGY:**

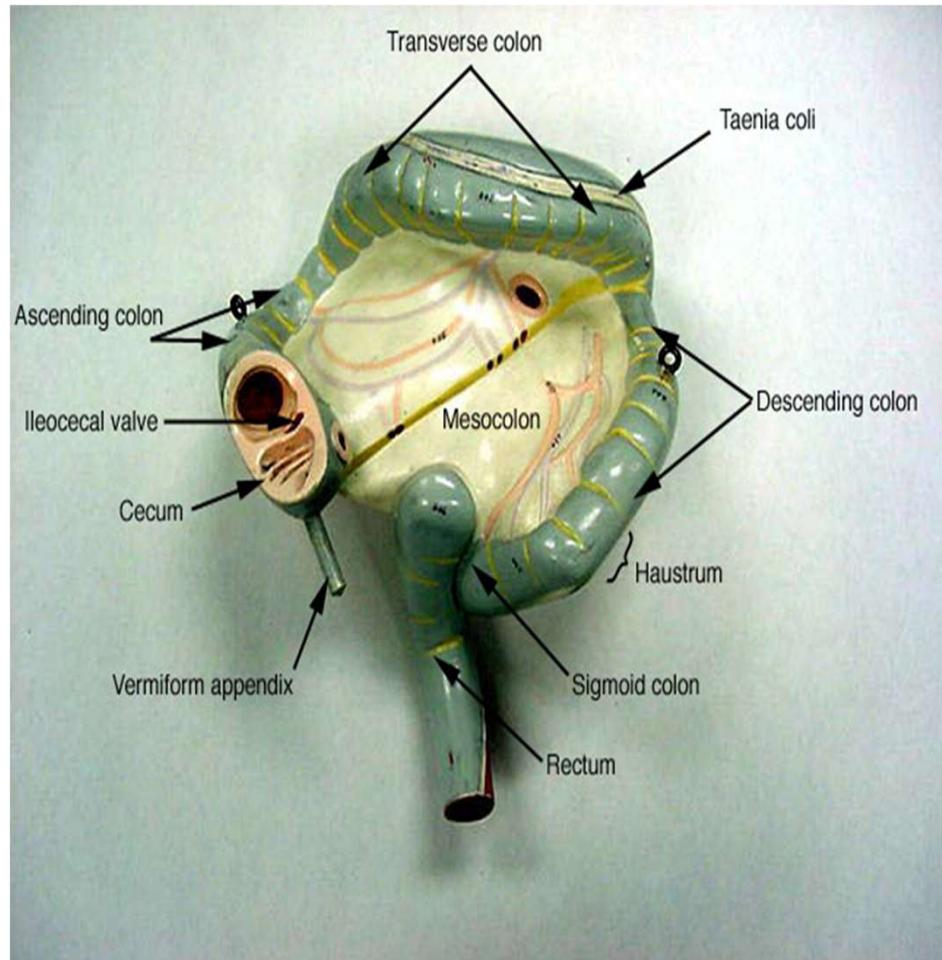
- • Order of Sections:
- o **Cecum / Ileocecal Junction:** Intraperitoneal, for the most part.
- **Vermiform Appendix:** Can be intraperitoneal or retro. The appendix extends down over the pelvic brim.
- o **Ascending Colon:** Retroperitoneal.
- o **Transverse colon:** Intraperitoneal, covered by transverse mesocolon. Hence it is mobile.
- o **Descending Colon:** Retroperitoneal
- o **Sigmoid Colon:** Intraperitoneal, covered by sigmoid mesocolon. Hence it is mobile.
- • **Tenia Coli:** Three longitudinal muscles that run the length of the large intestine.
- o **Rectosigmoid Junction:** A complete expansion of the longitudinal muscles at the end of the colon, where it can have a muscular force.
- • **Sulci:** Periodic indentations in the large intestine, on the external surface.

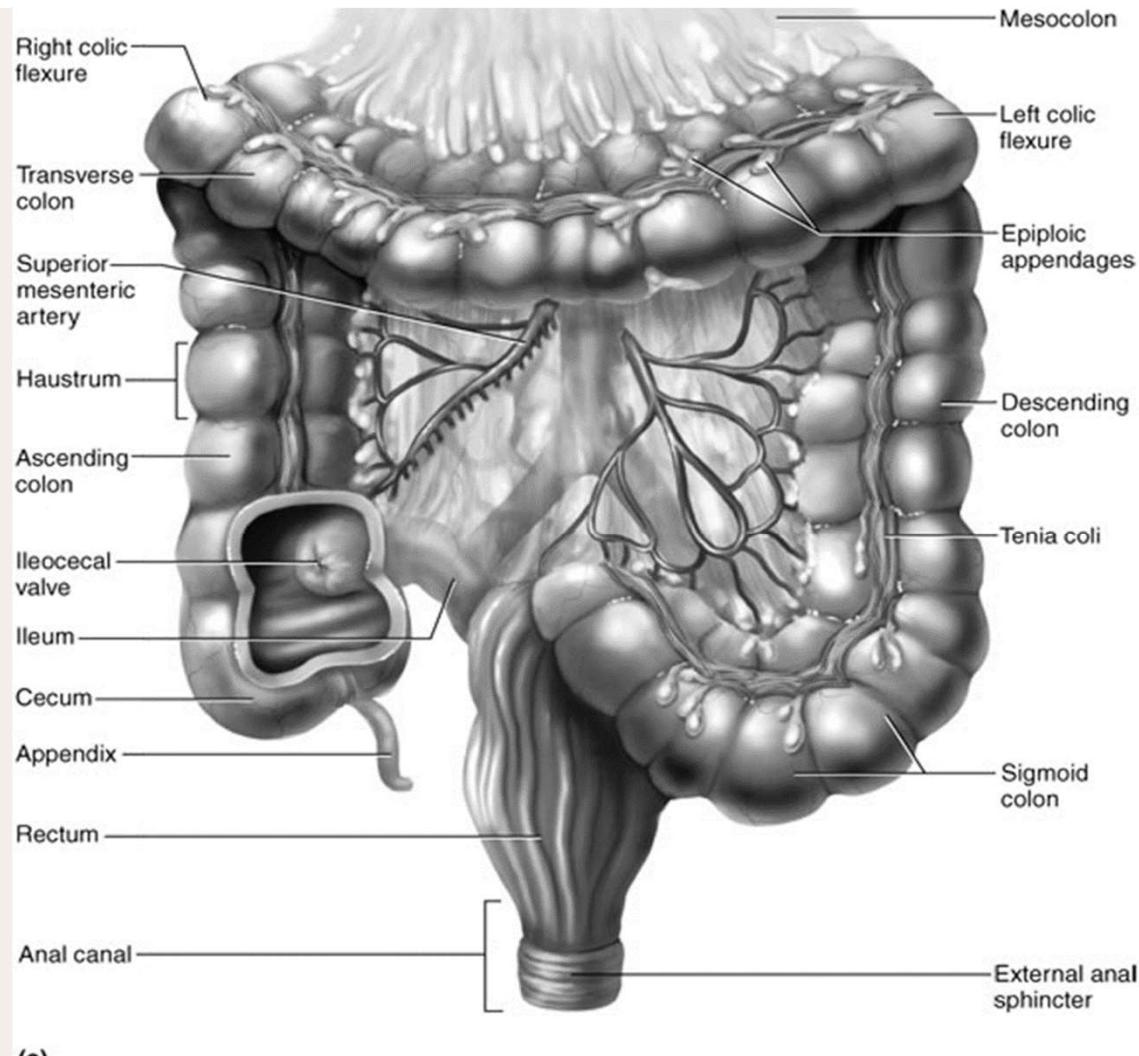
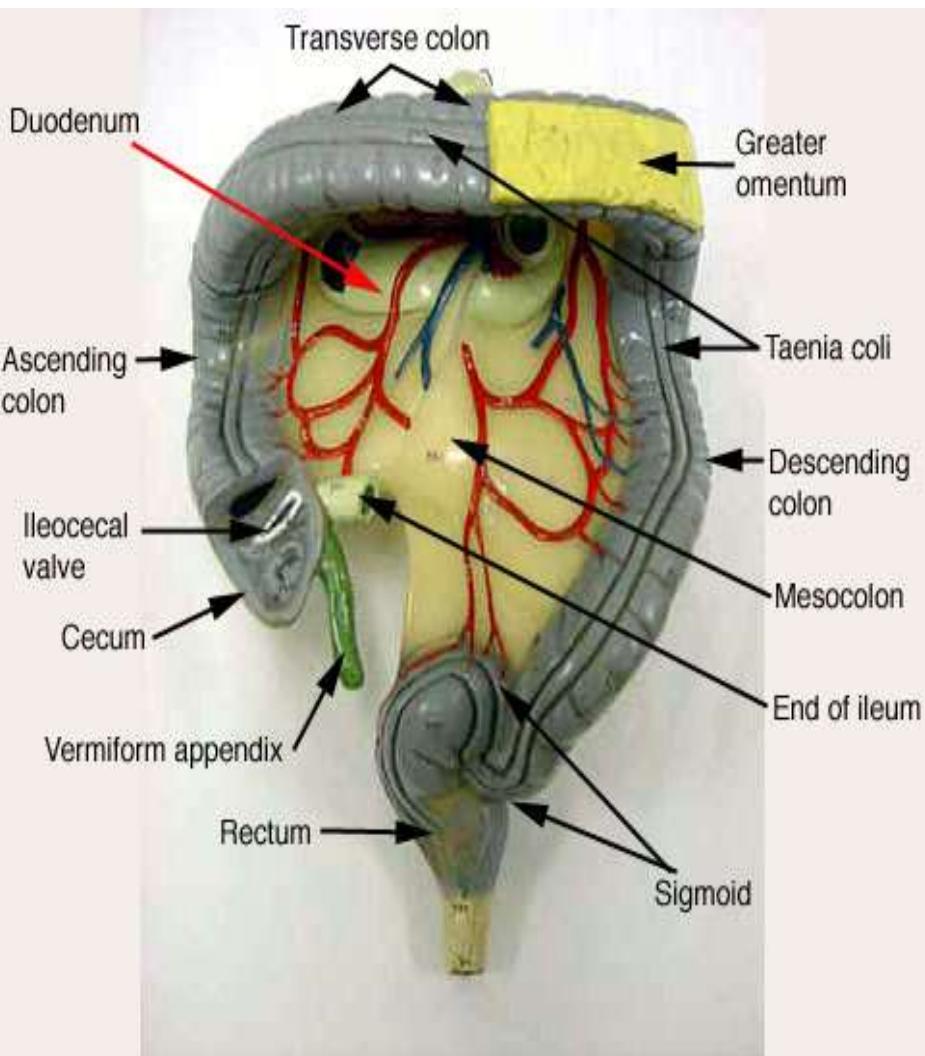
COLON



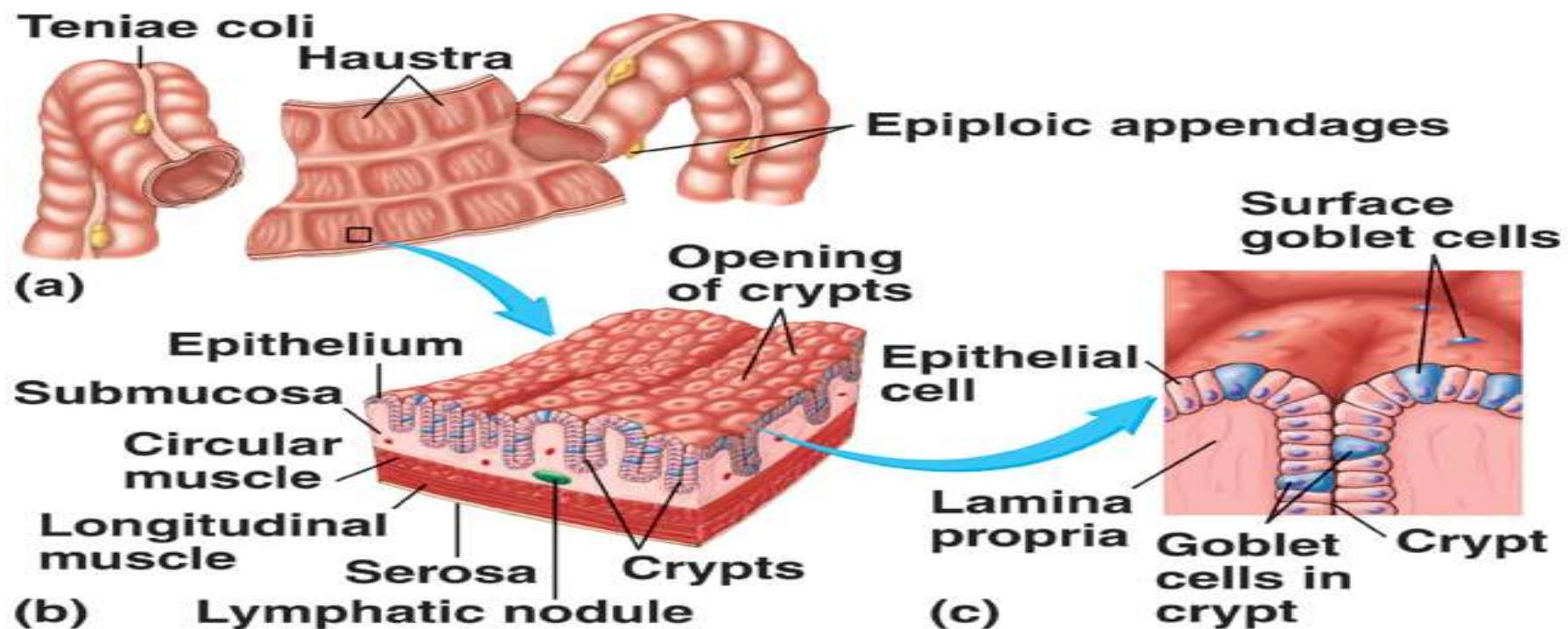


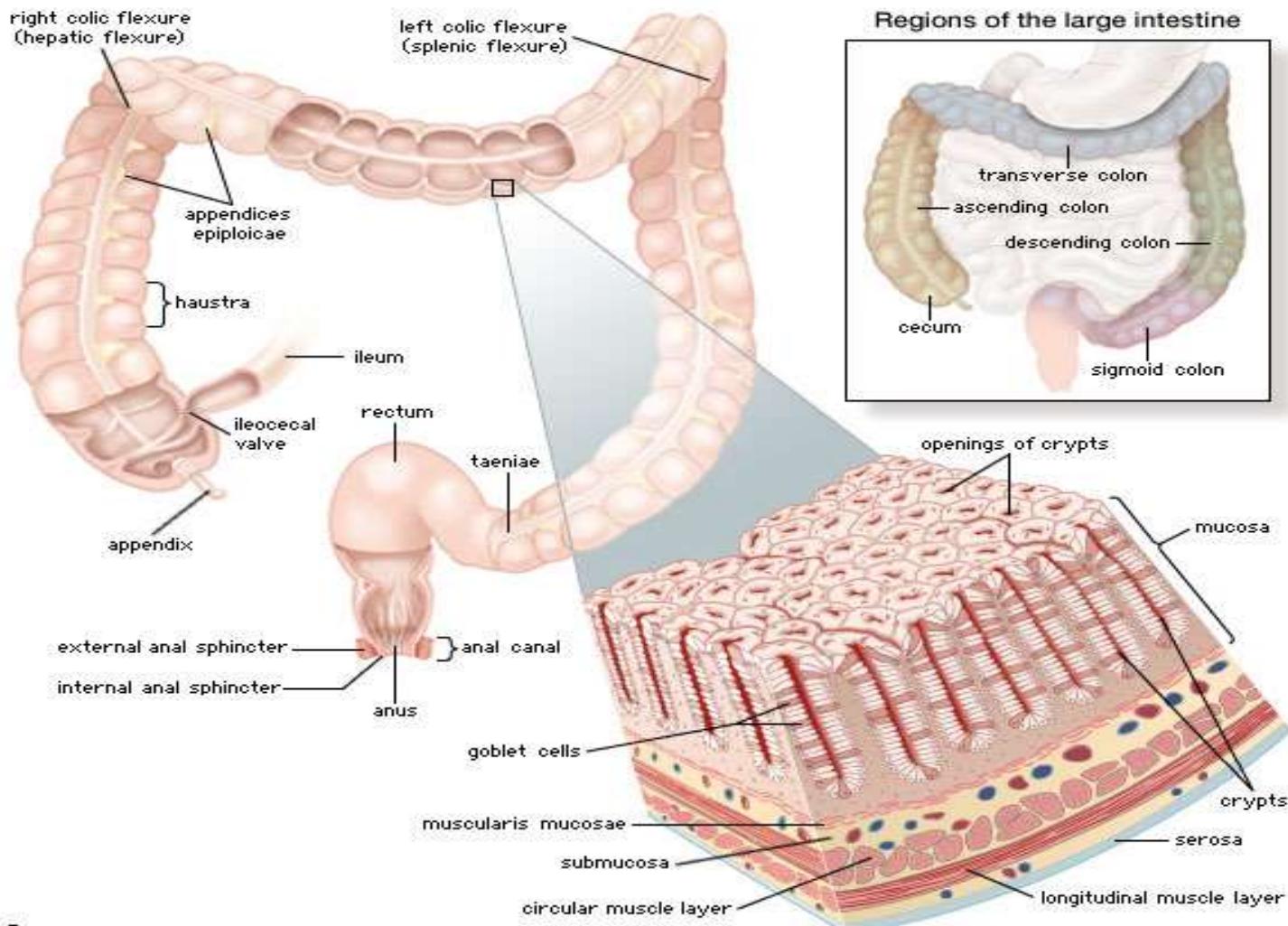
Large Intestine



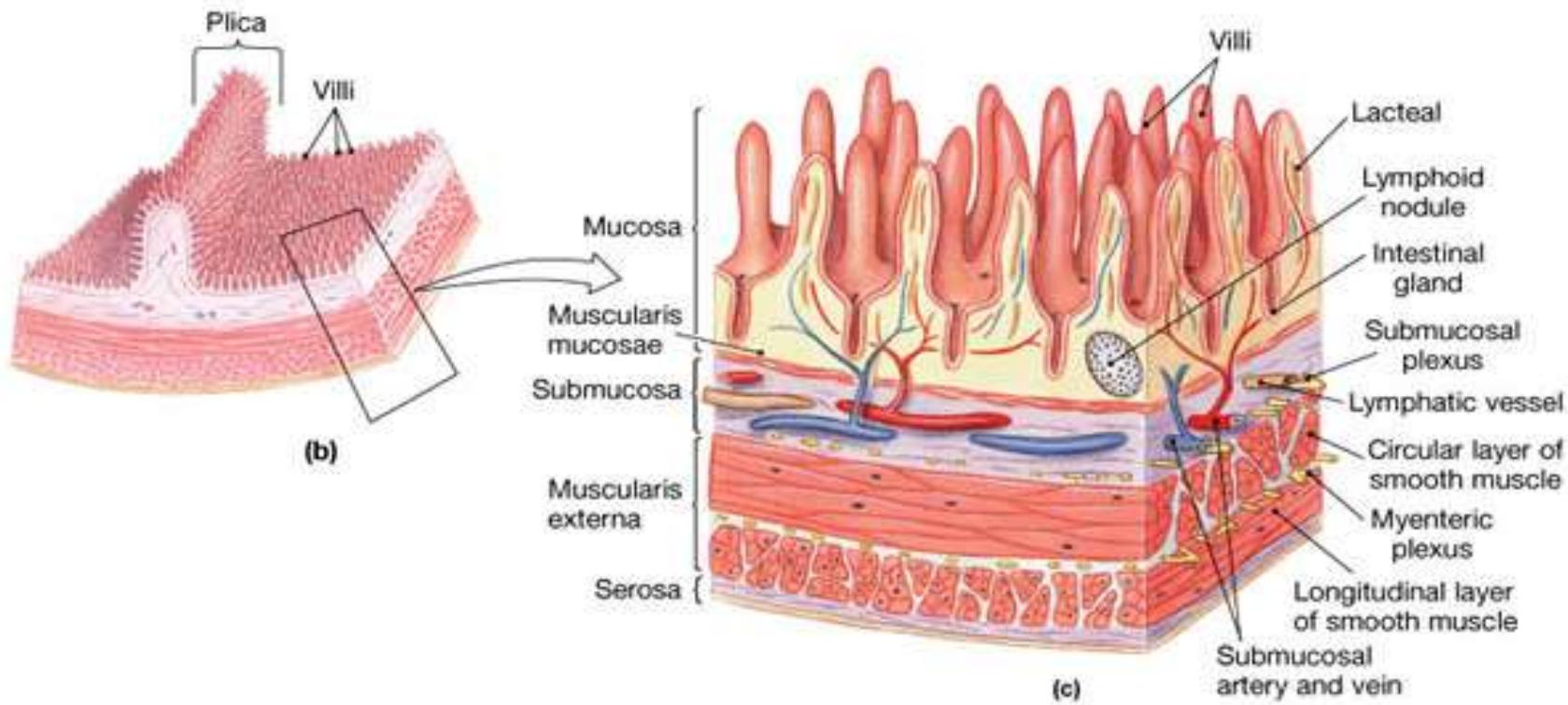


- Teniae coli:** three thickened bands of longitudinal muscle fibers.
- Haustra:** sacculations or pouches of the colon between the teniae.
- Omental appendices:** small, fatty appendices (projections) of colon.
- Caliber:** the internal diameter is much larger.





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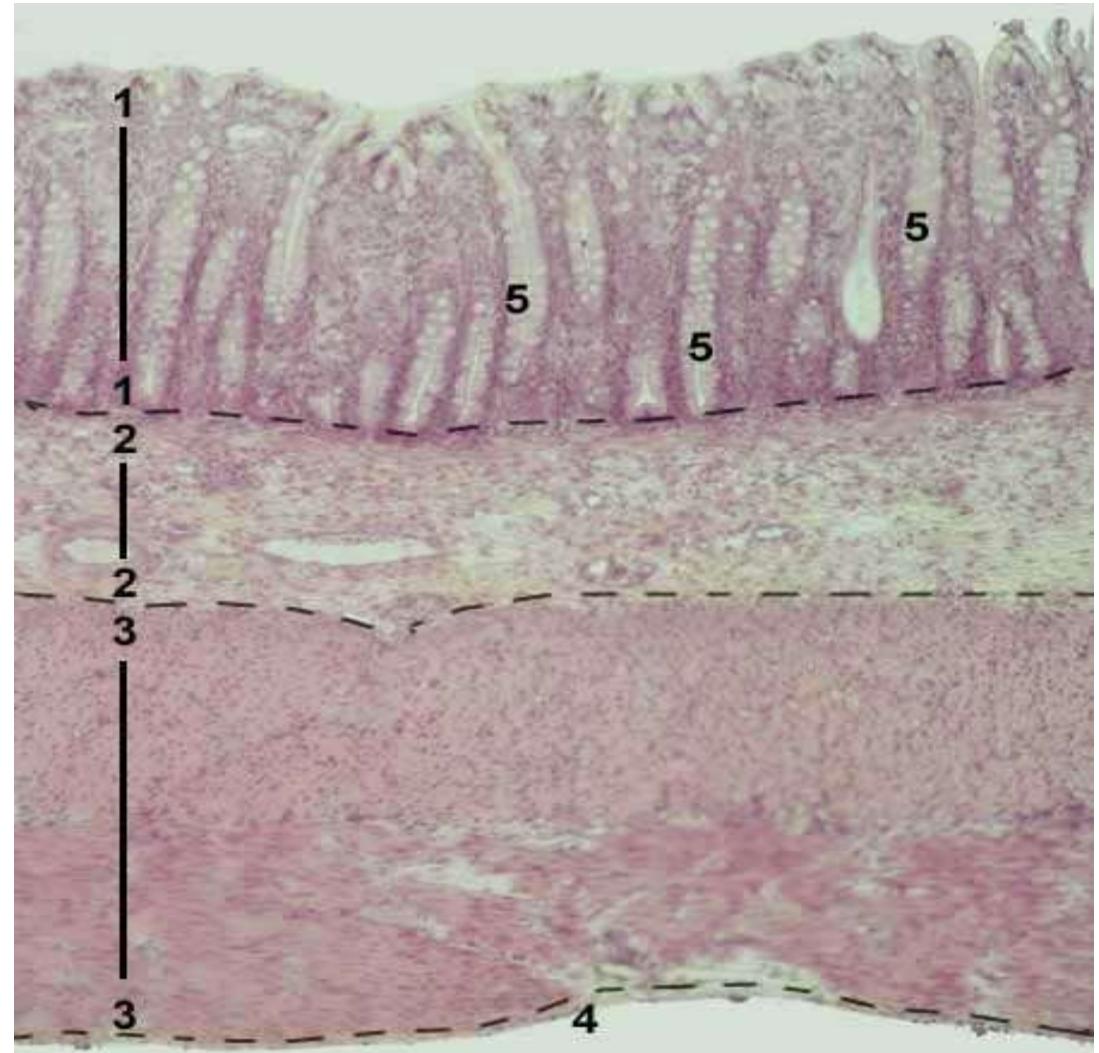


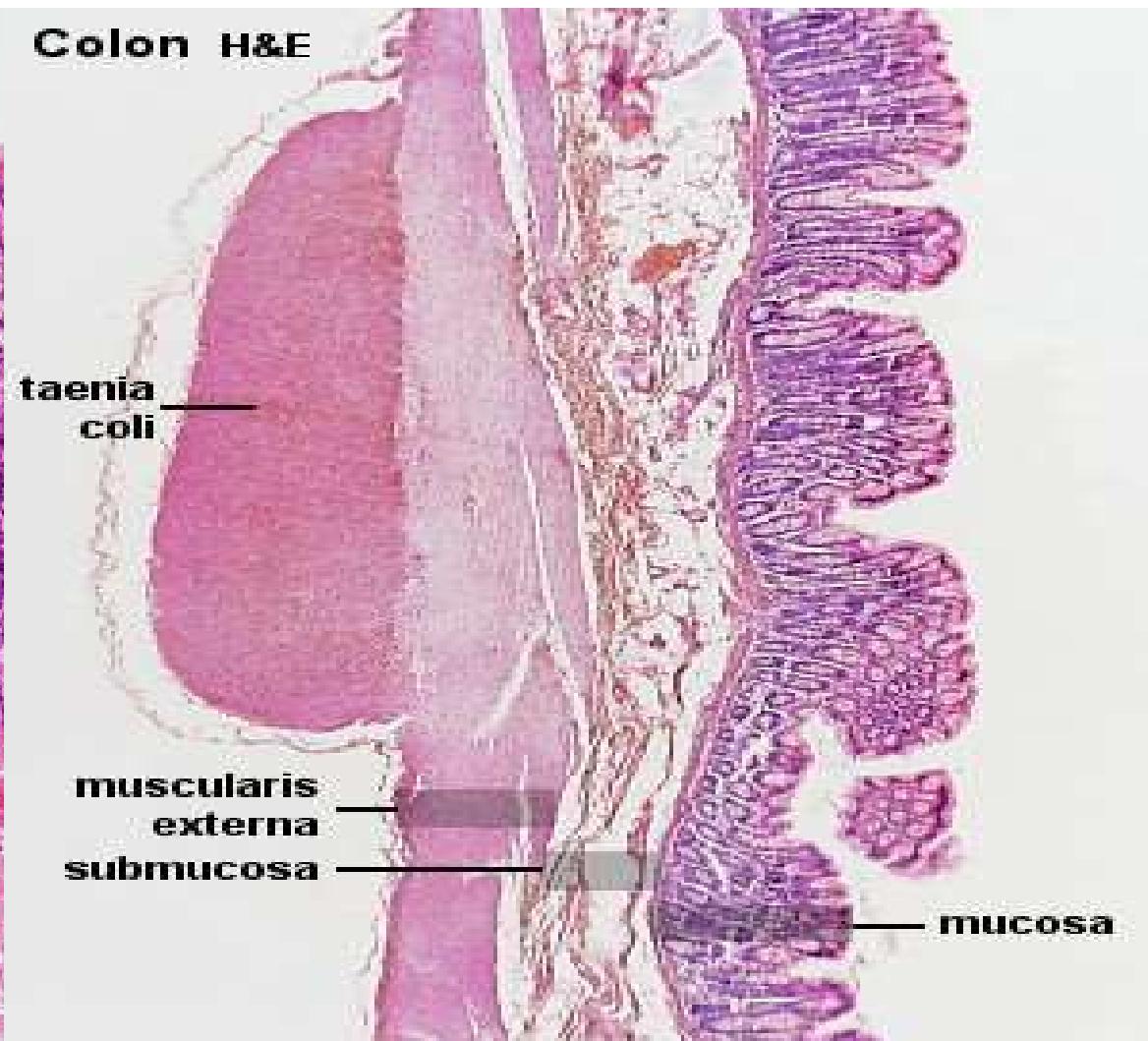
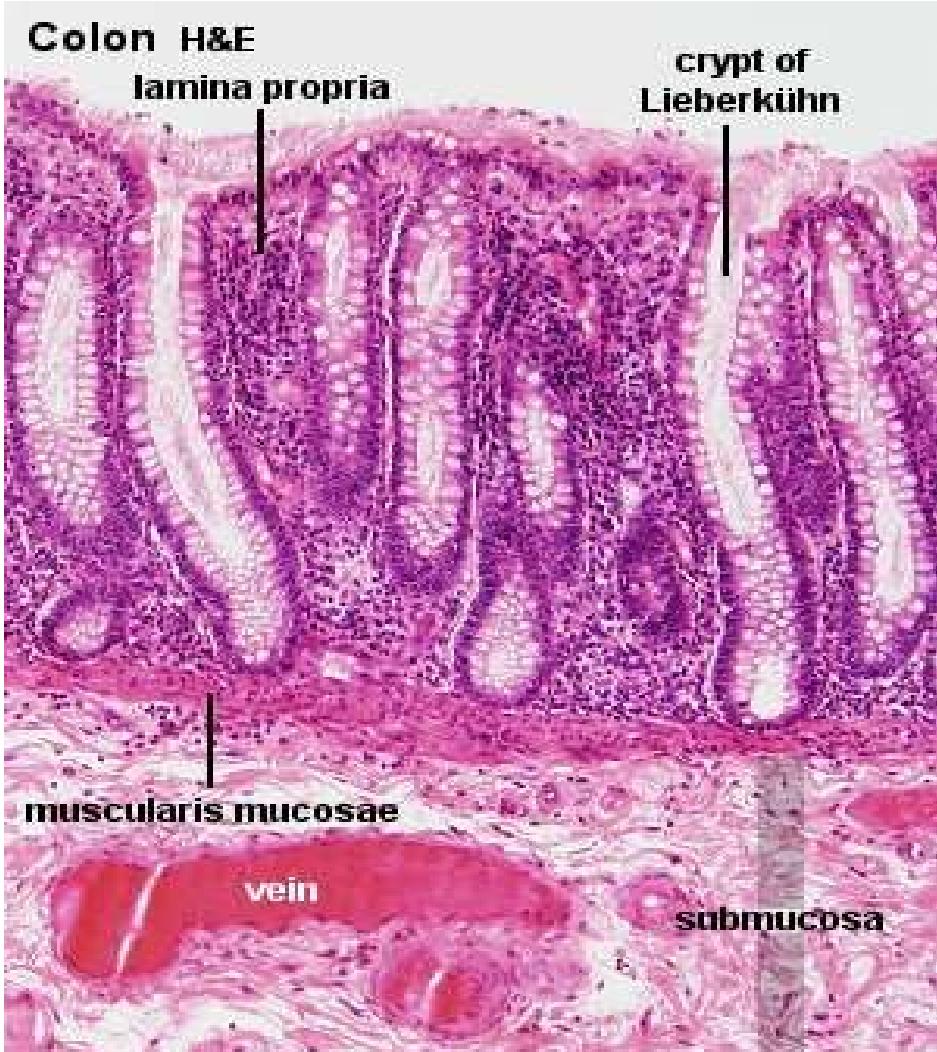
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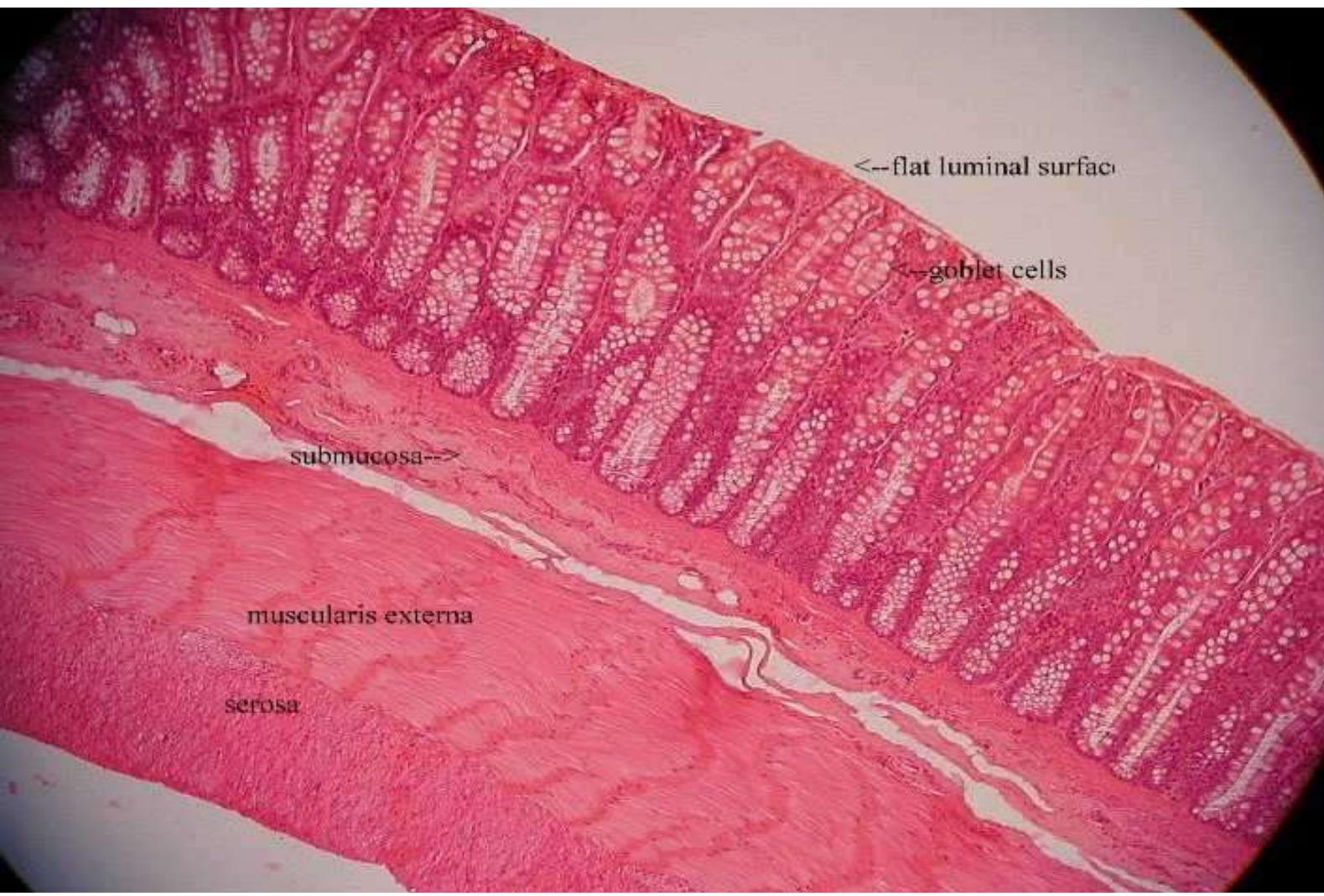
COLON

*Stained with haematoxylin
and eosin*

- 1 - tunica mucosa
- 2 - tunica submucosa
- 3 - tunica muscularis propria
- 4 - tunica serosa
- 5 - glands (crypts) in the
lamina
propria of the mucosa







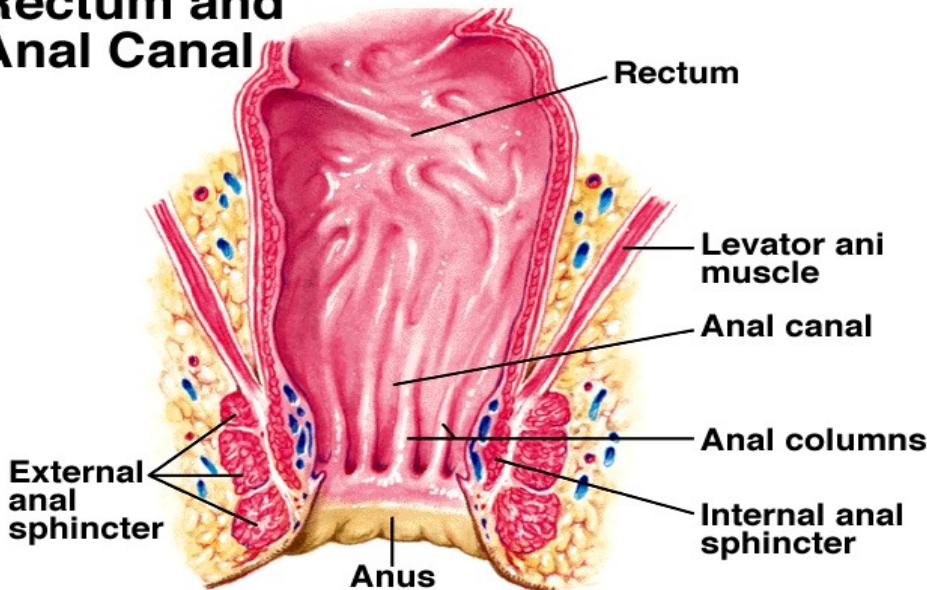
mucosa (flat luminal surface)
goblet cells
submucosa
lymph nodes (if present)
muscularis externa
serosa

Anal Canal:

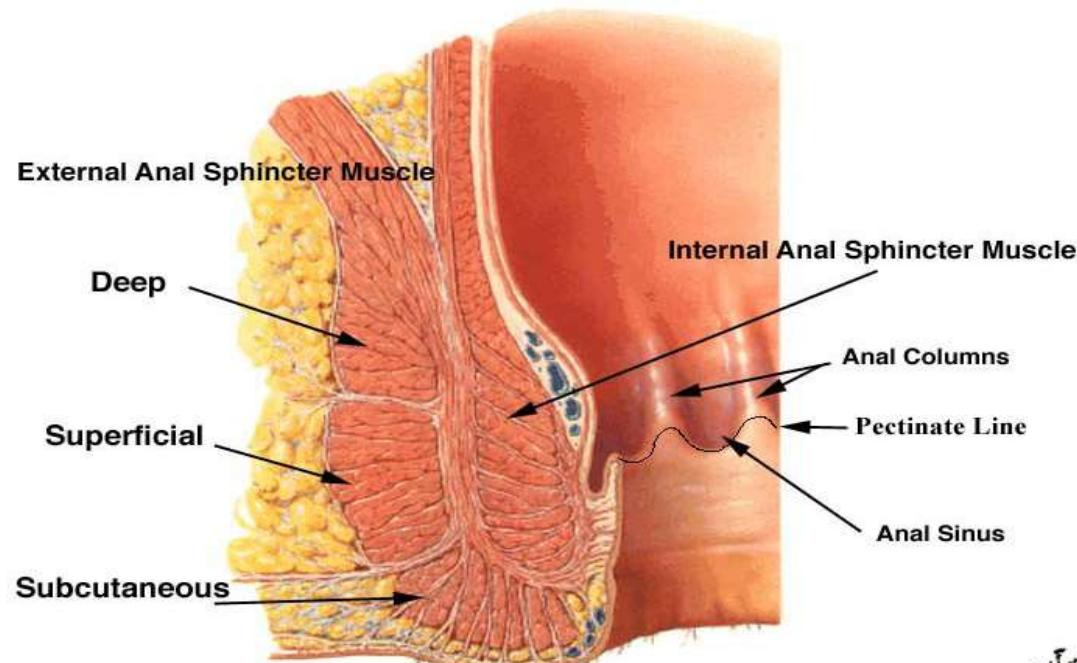
- (1) Opens to exterior via anus.
- (2) Has 2 anal sphincters:
 - Internal Anal Sphincter (smooth m.) = involuntary
 - External Anal Sphincter (skeletal m.)= voluntary

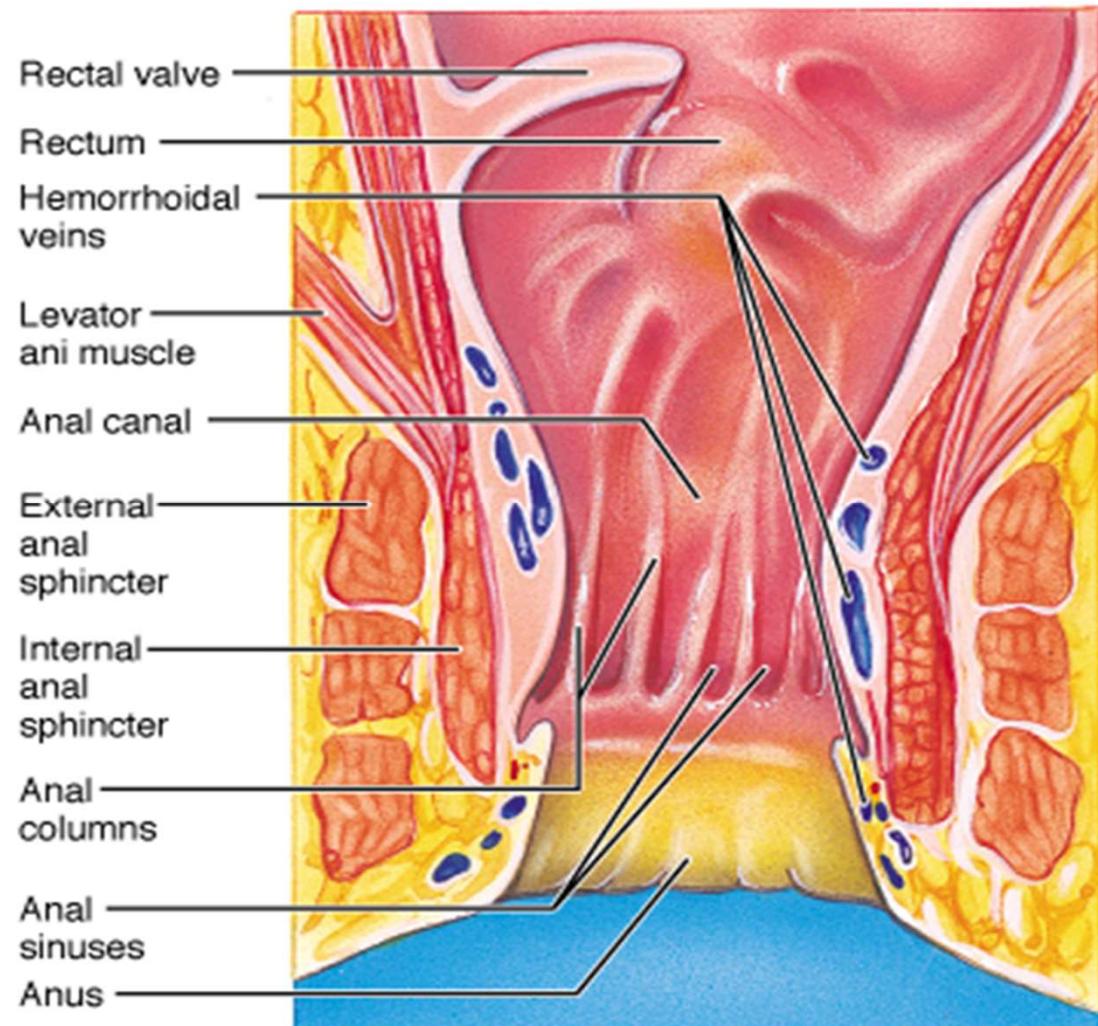
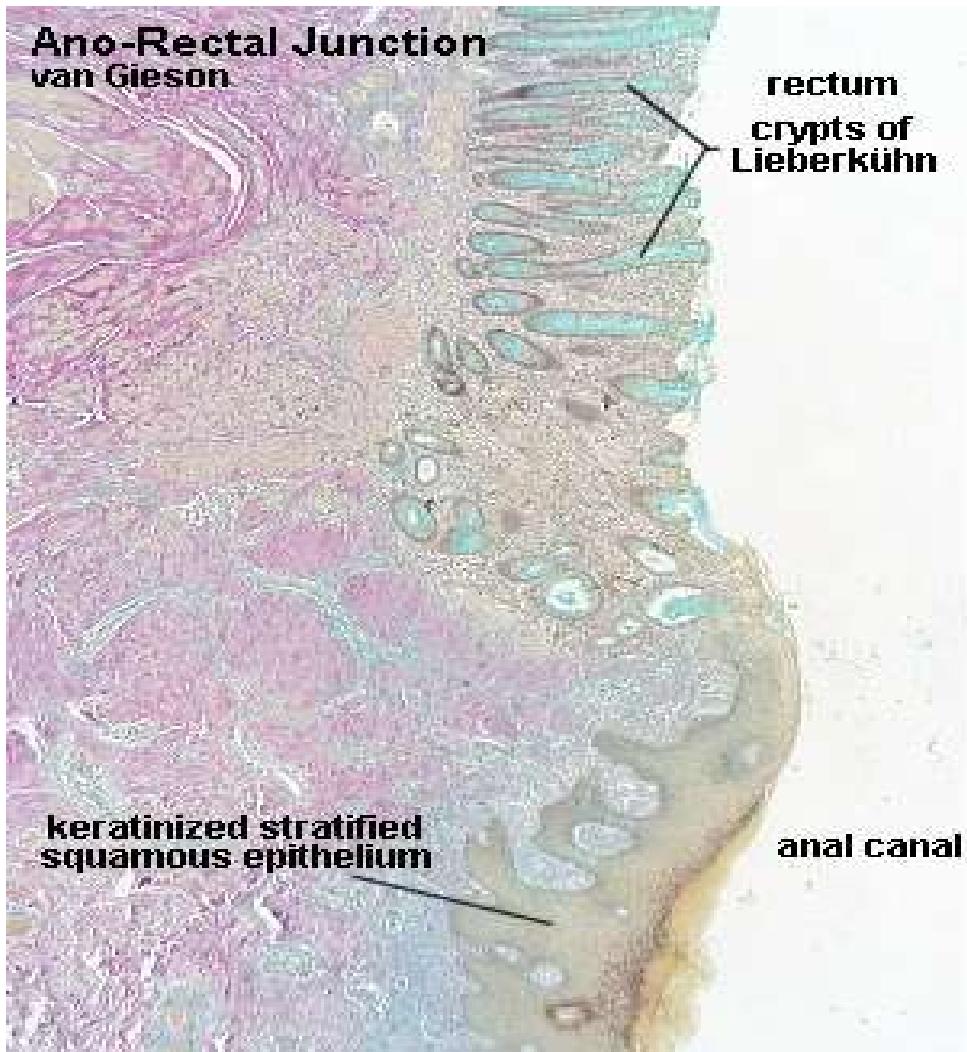
Shier/Butler/Lewis, *Hole's Human Anatomy and Physiology*, 8th edition, Copyright © 1999, The McGraw-Hill Companies, Inc. All rights reserved.

Rectum and Anal Canal

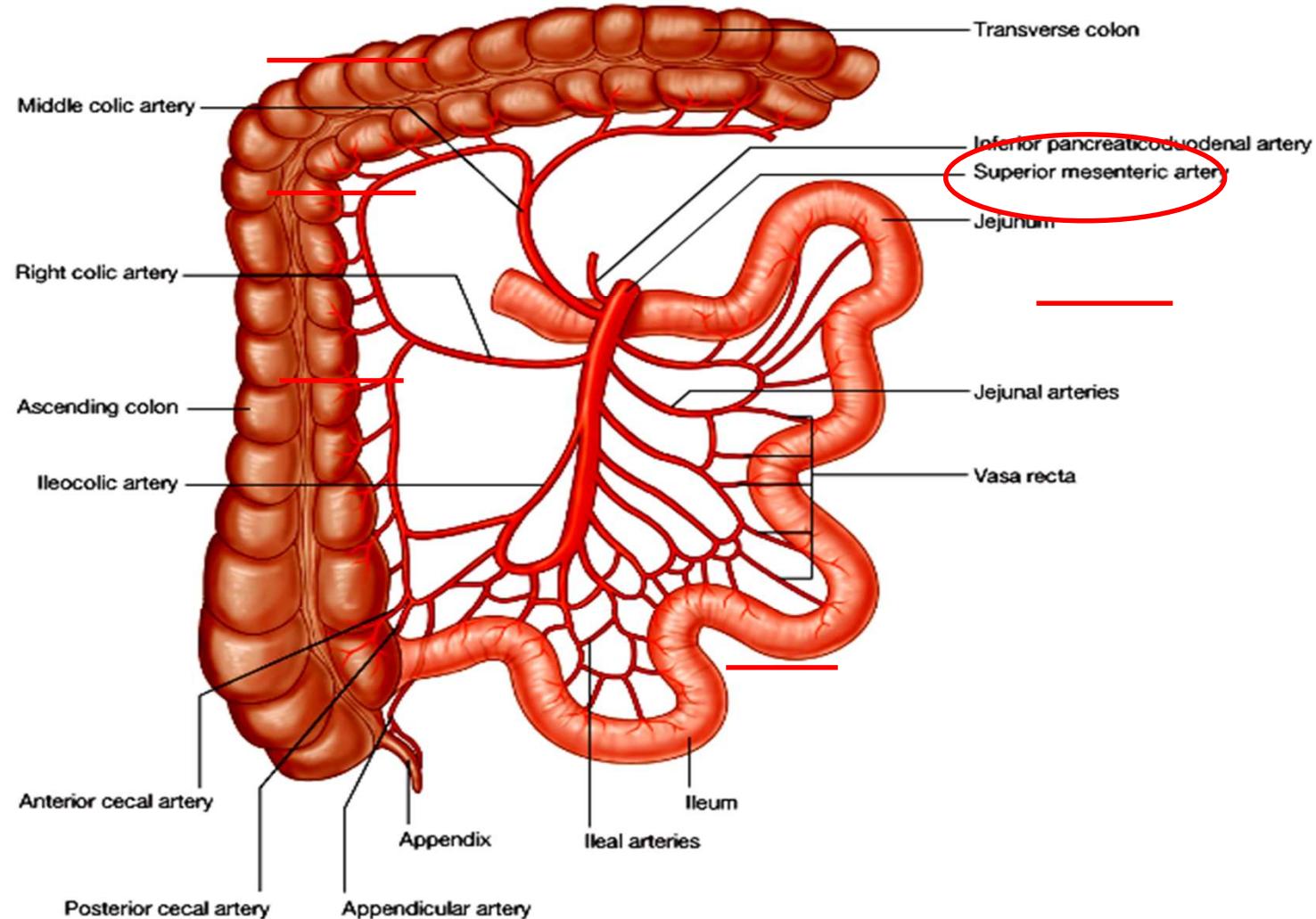


64

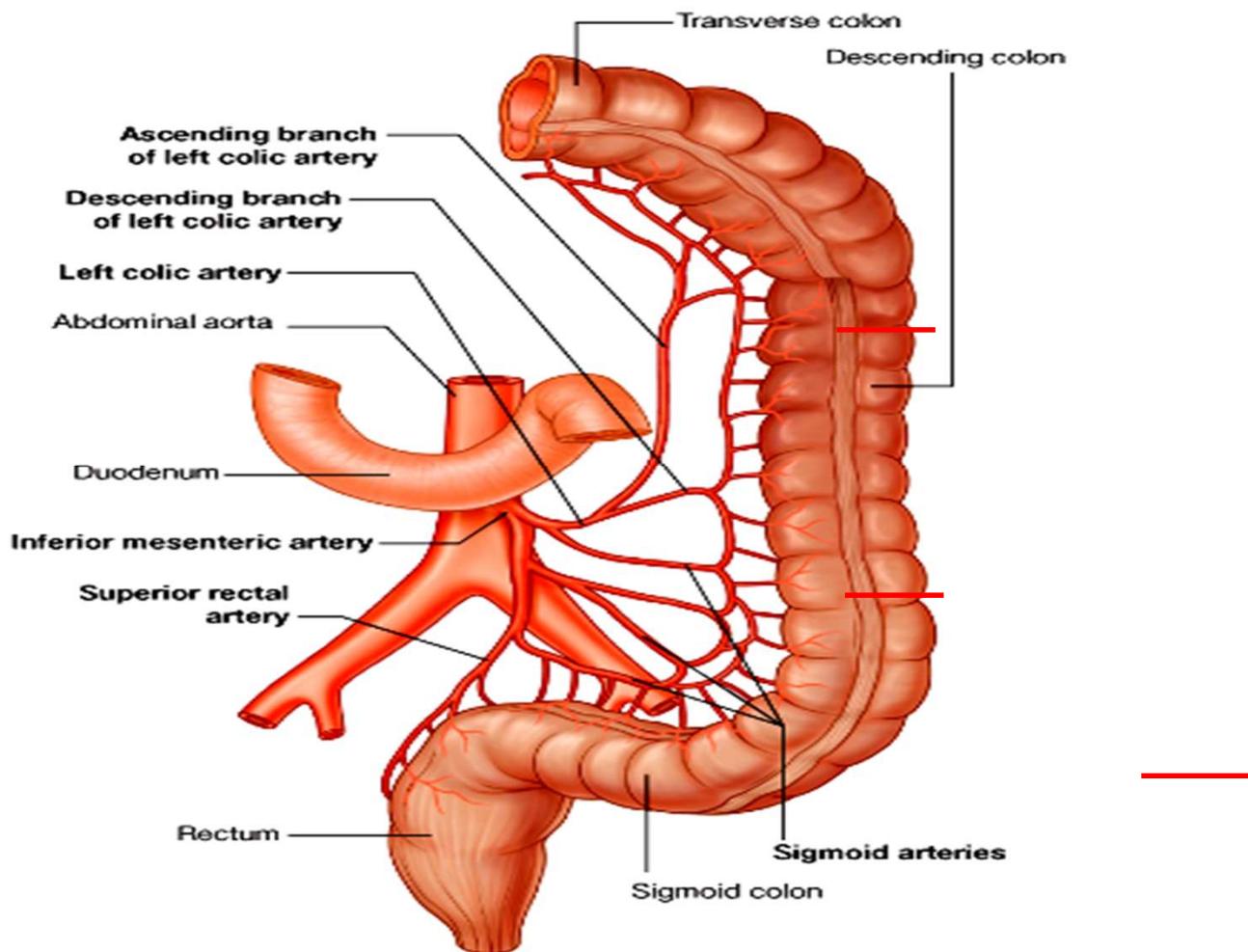




Superior mesenteric A.



Inferior mesentric A.



Differences Large & small intestines

- Teniae coli
- Haustra
- Omental appendices / Appendices epiploica
- Semicircular folds
- Large diameter
- No teniae coli
- No Haustra
- No Omental appendices / Appendices epiploica
- Circular folds
- Small diameter

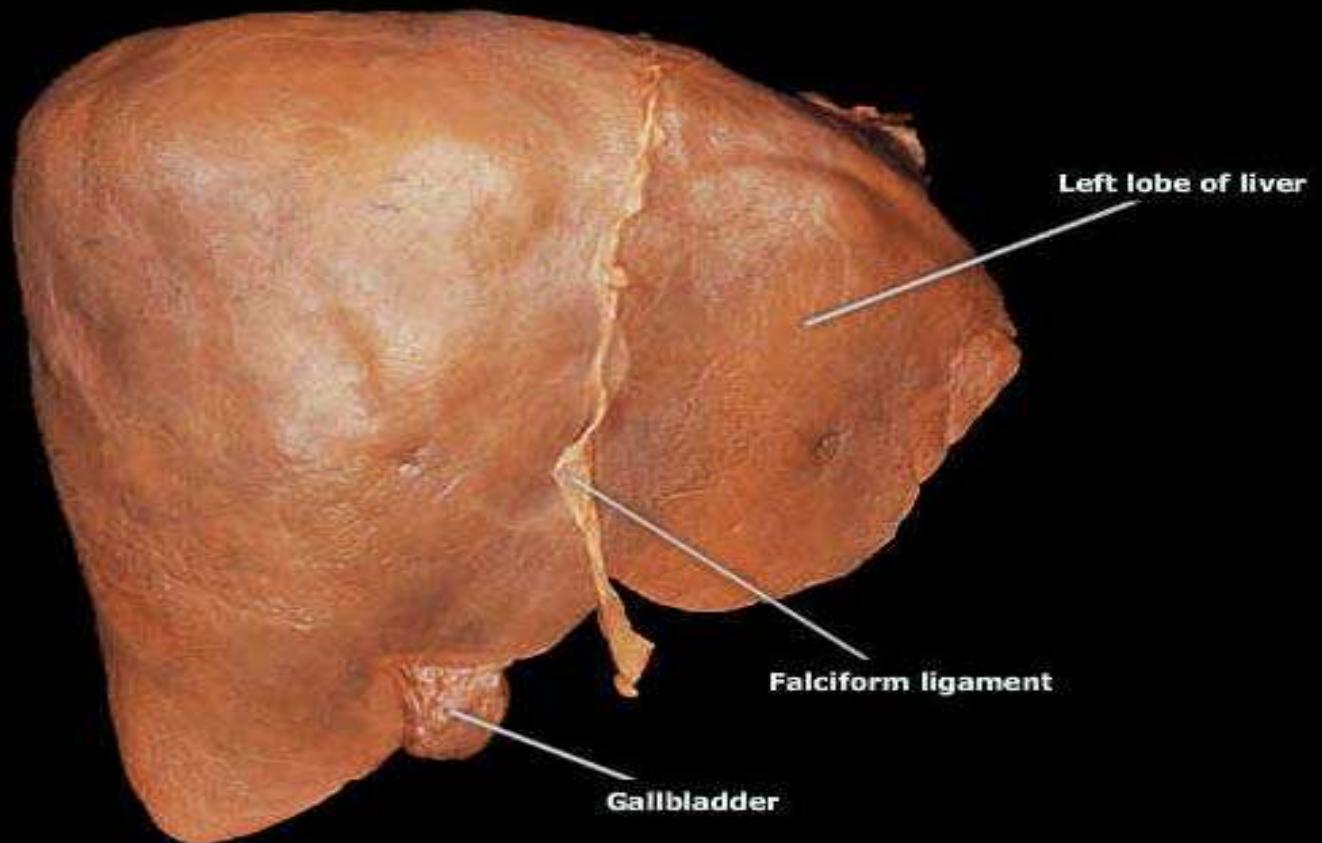
Largest organ in the body

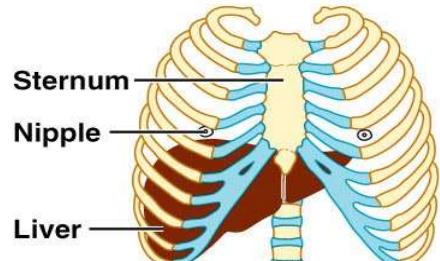
Three basic functions

- Metabolic
- Secretory
- Vascular

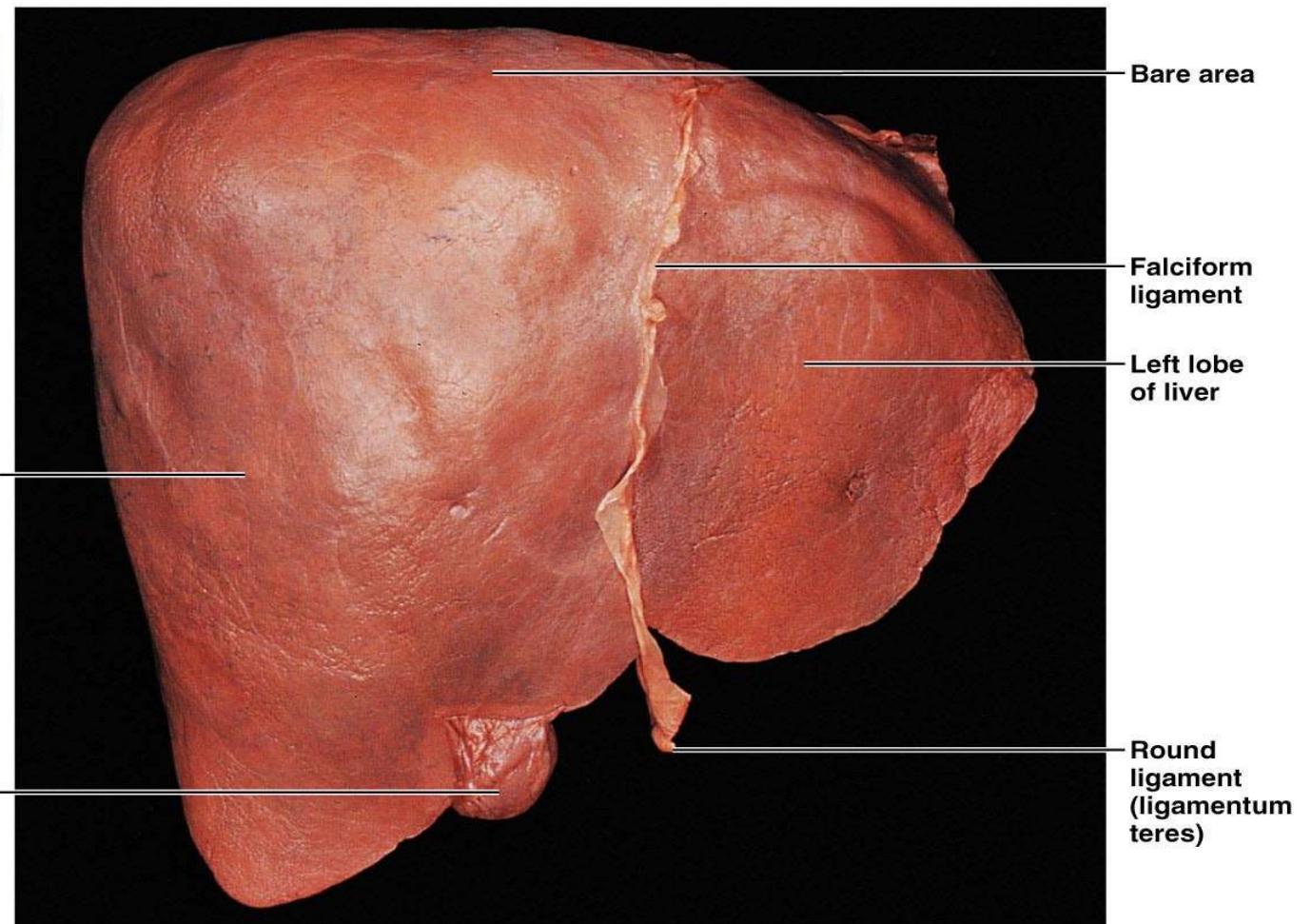
Major function

- Excretion of waste products from bloodstream by excretion into bile

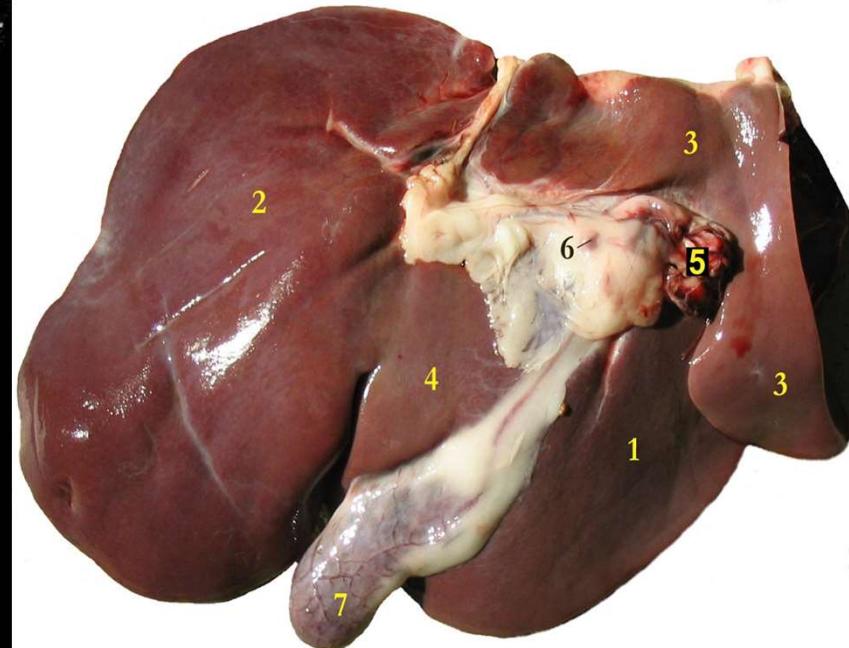
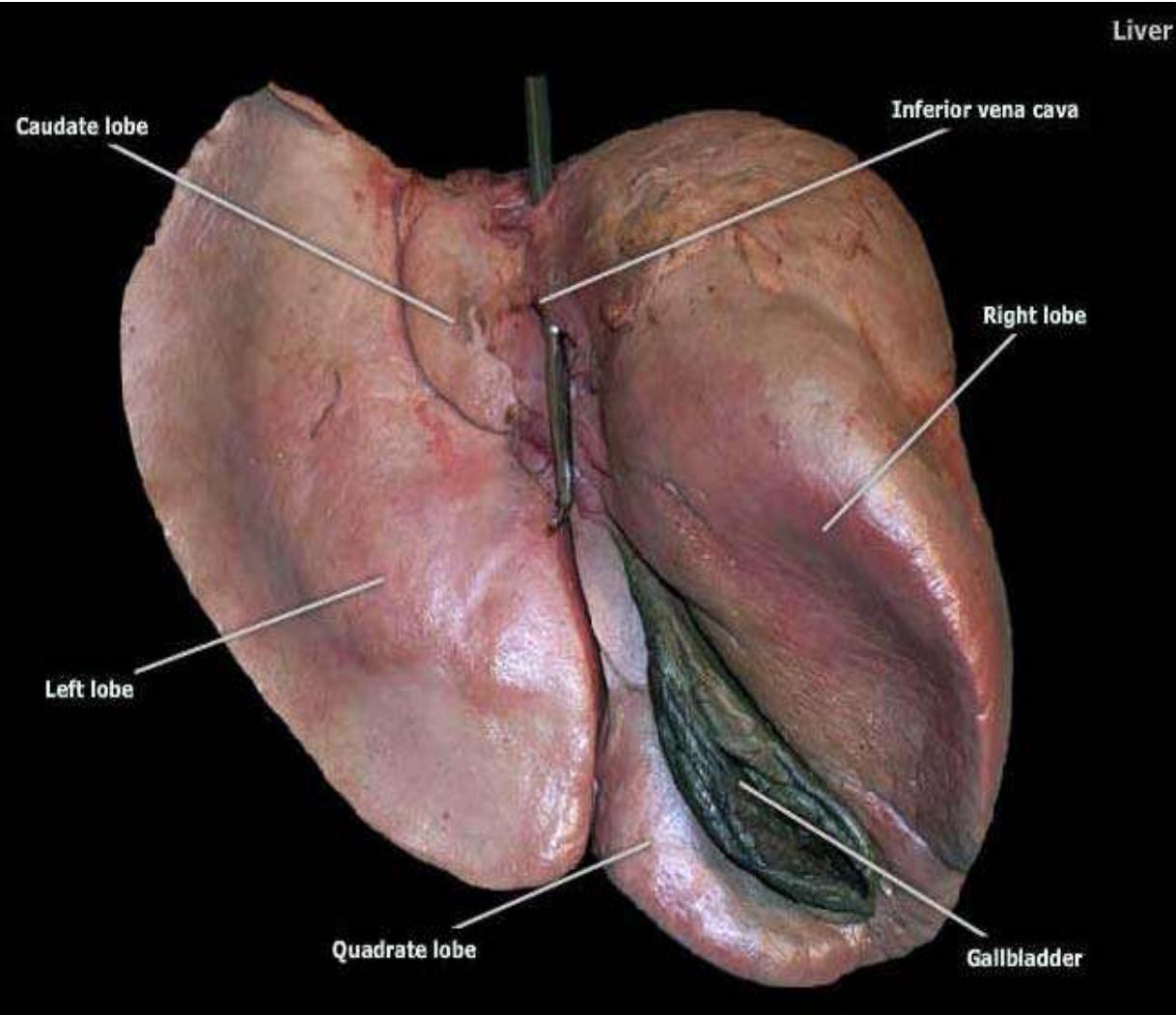




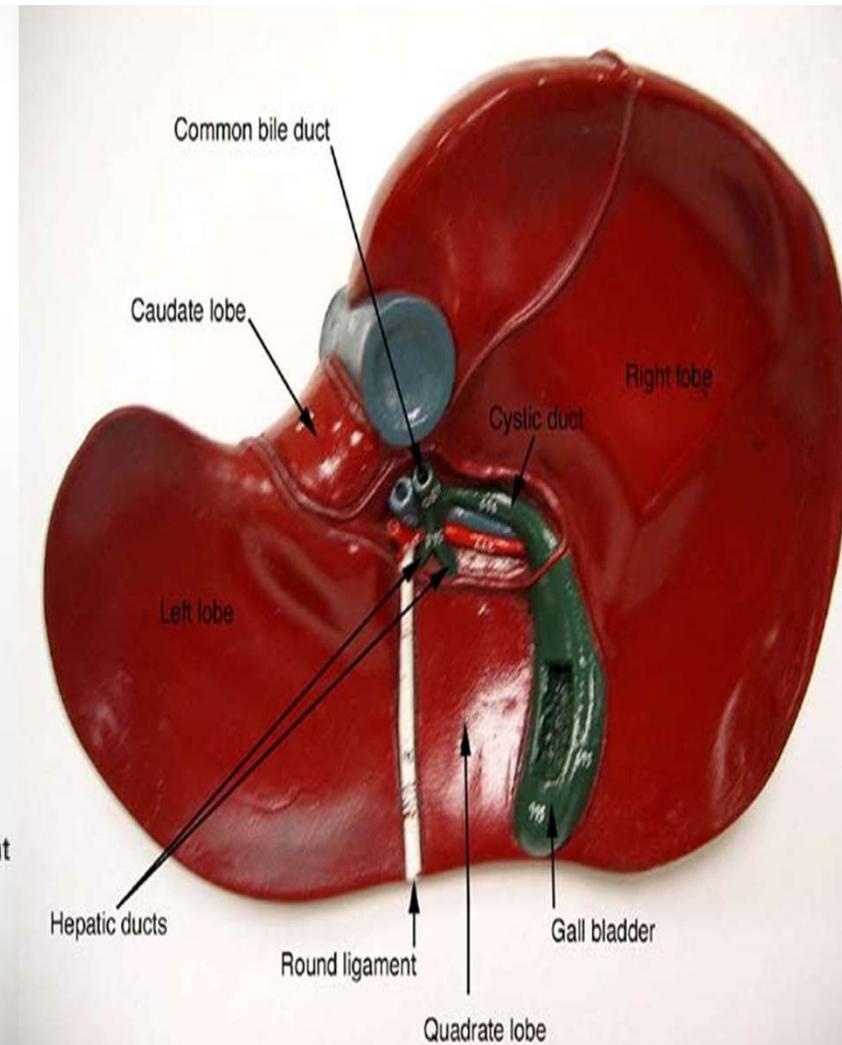
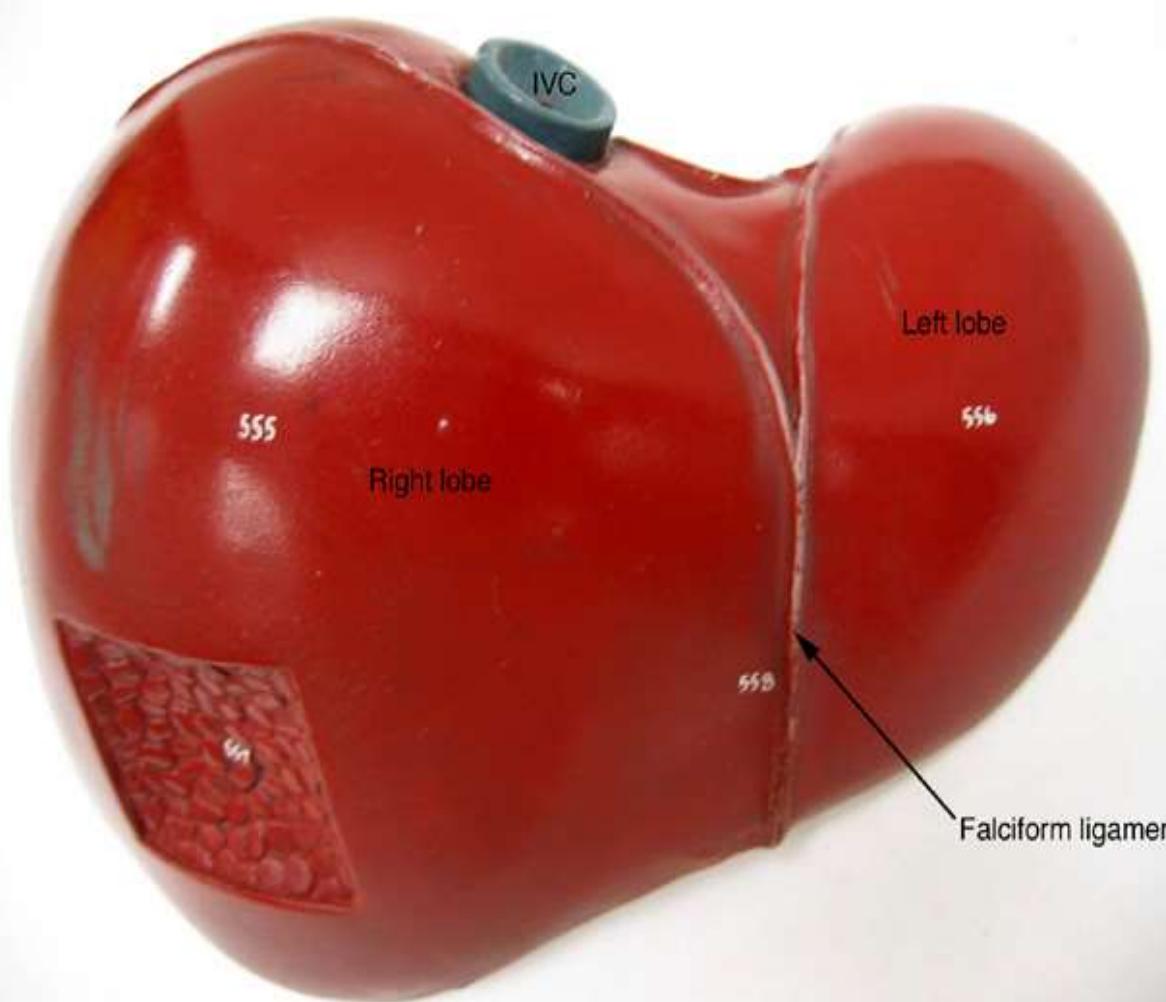
(c)

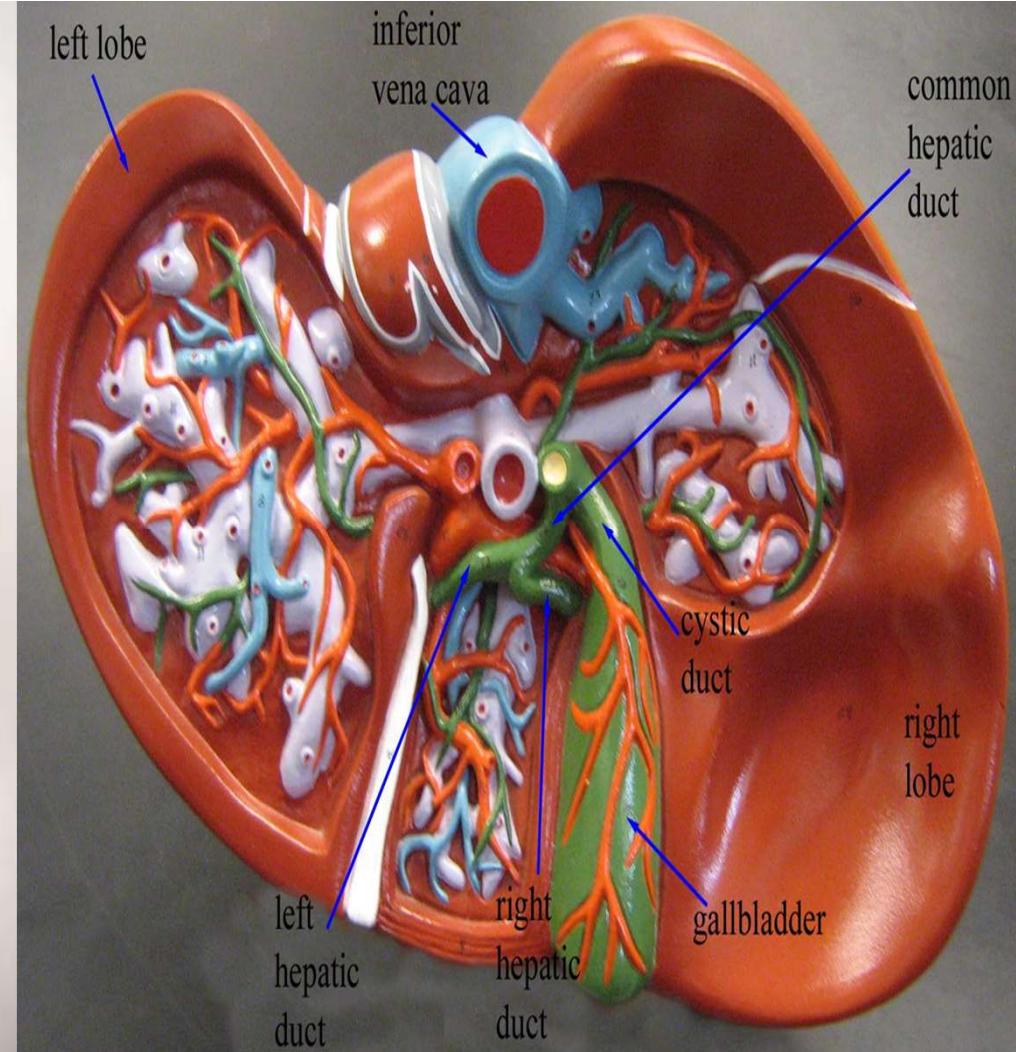
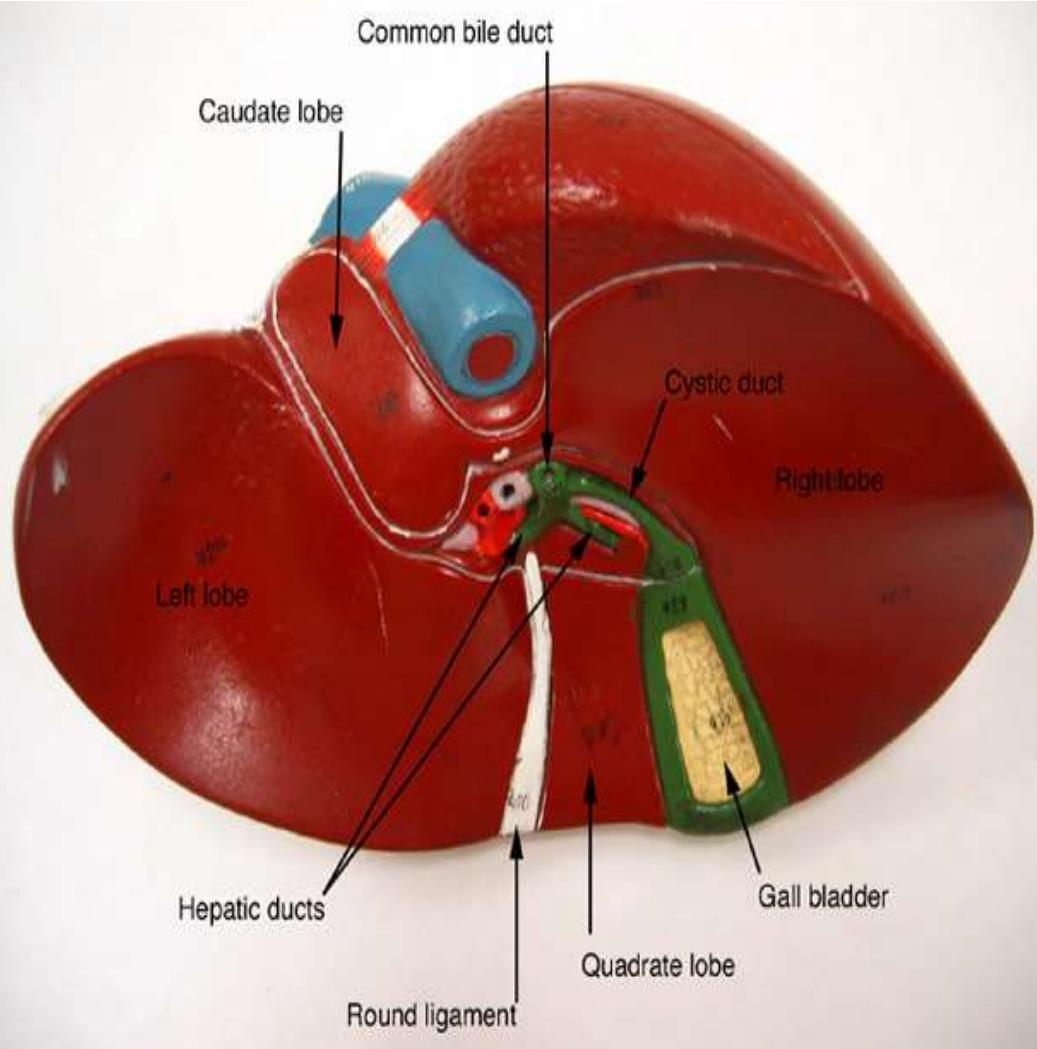


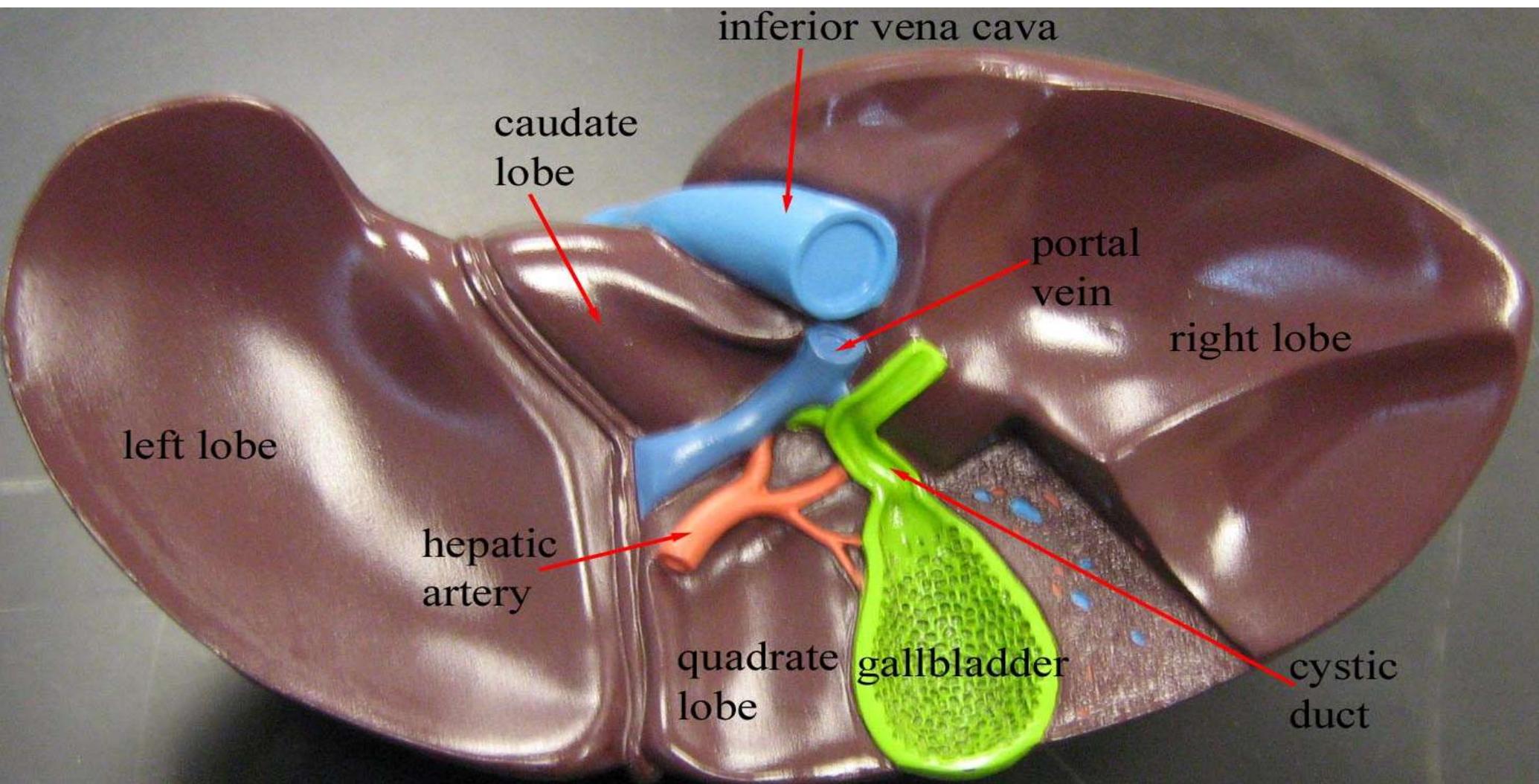
(a)



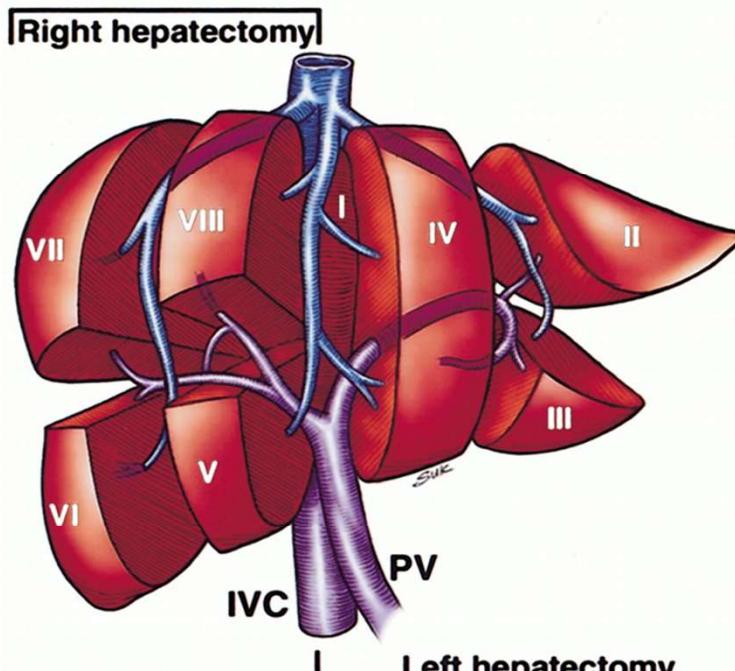
Liver of a sheep, visceral aspect
1 left lobe, 2 right lobe, 3 caudate lobe, 4 quadrate lobe, 5 hepatic artery and portal vein, 6 hepatic lymph nodes, 7 gall bladder



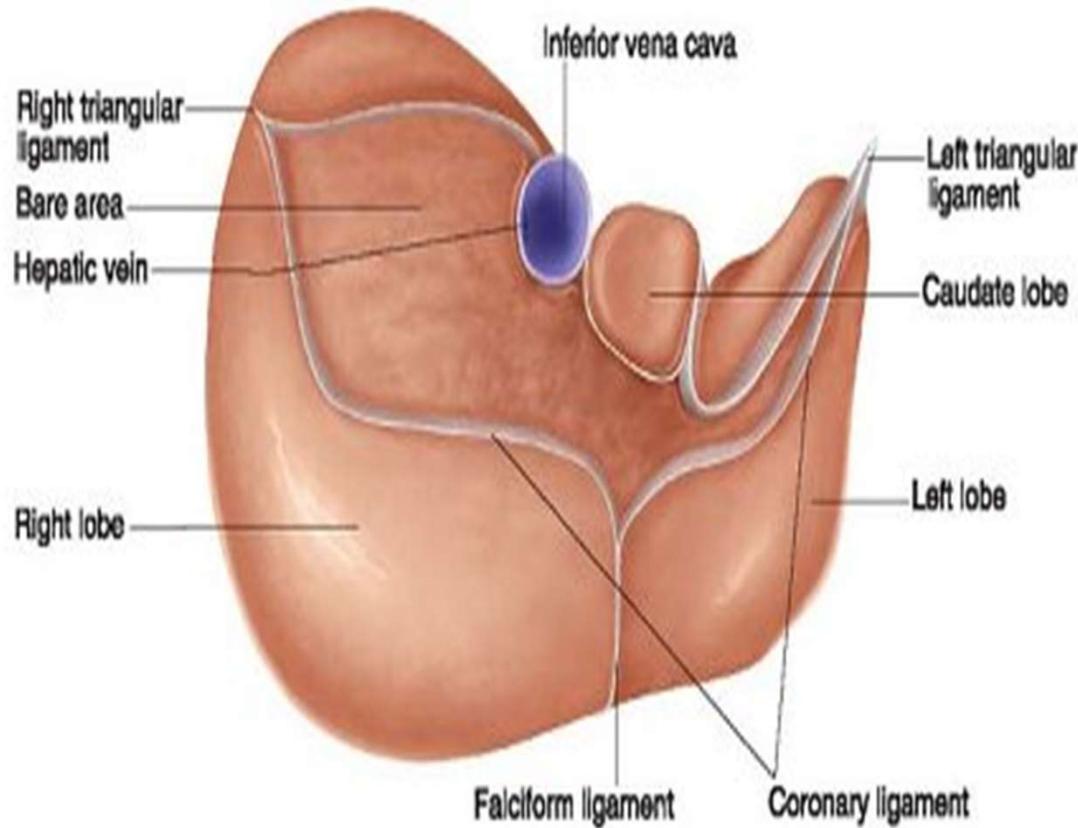


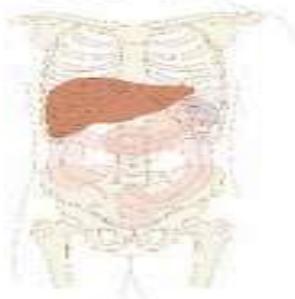
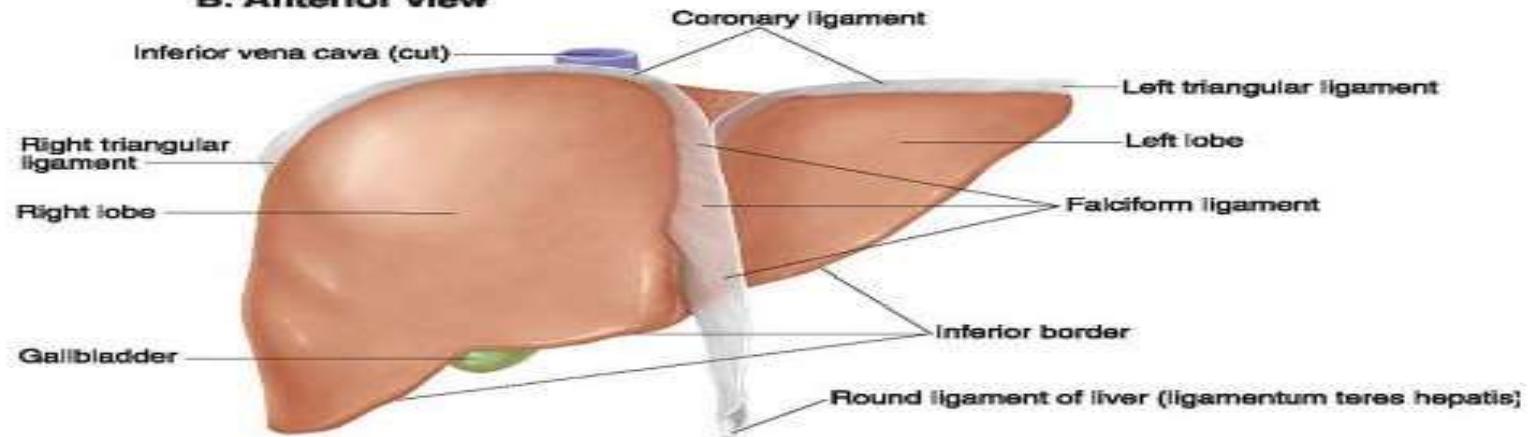
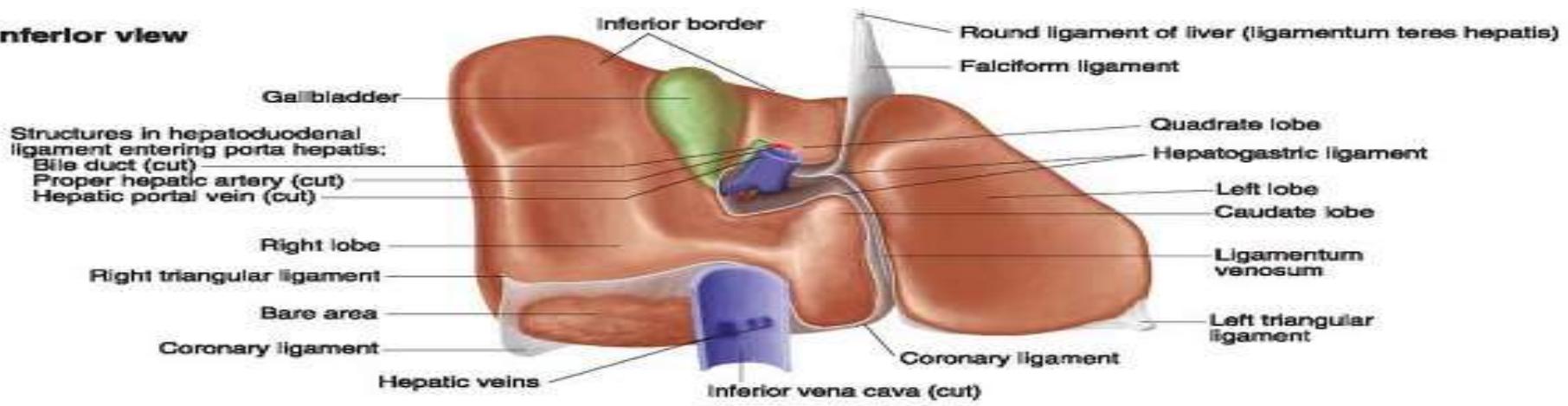


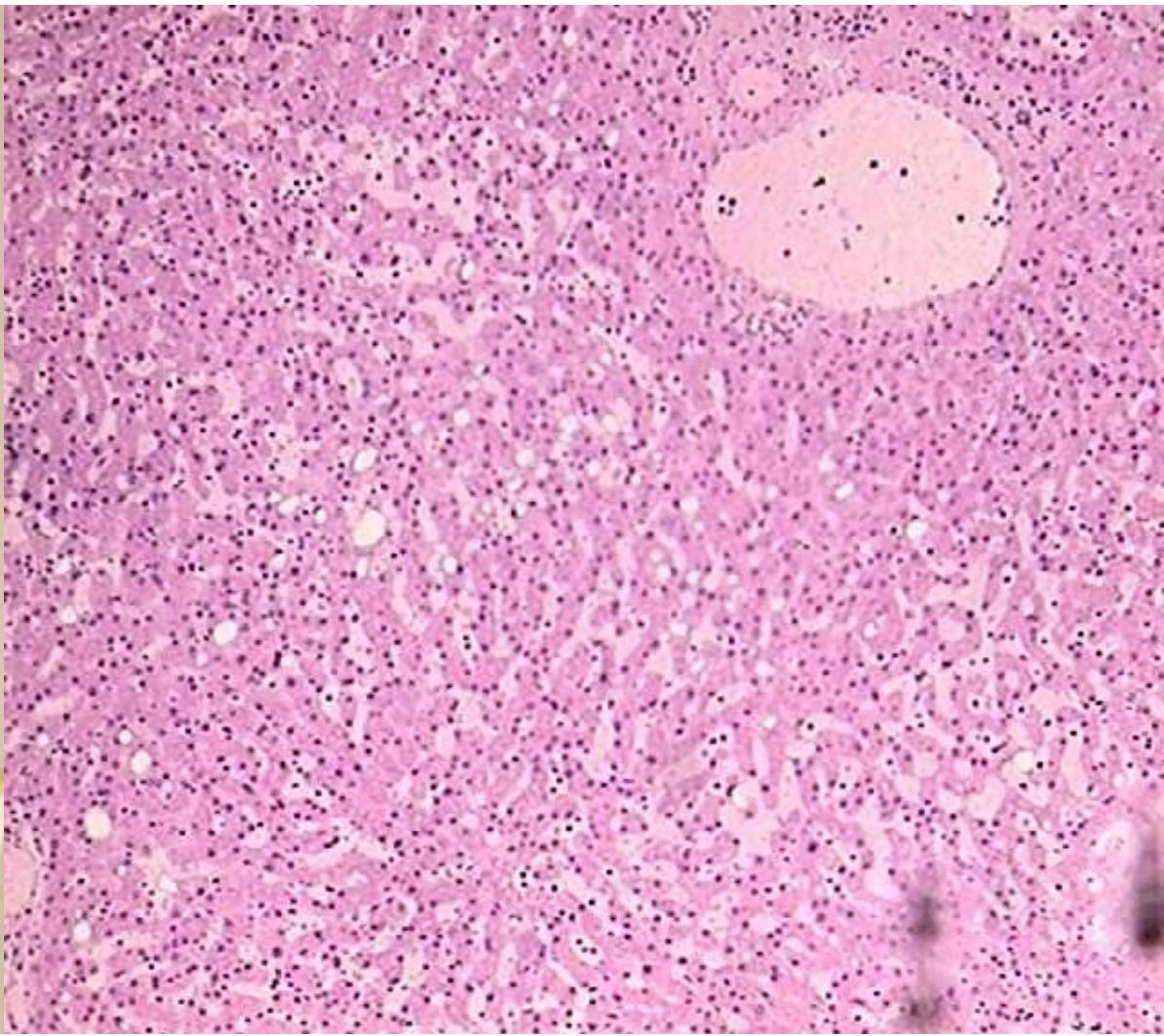
Extended right hepatectomy
Right trisegmentectomy

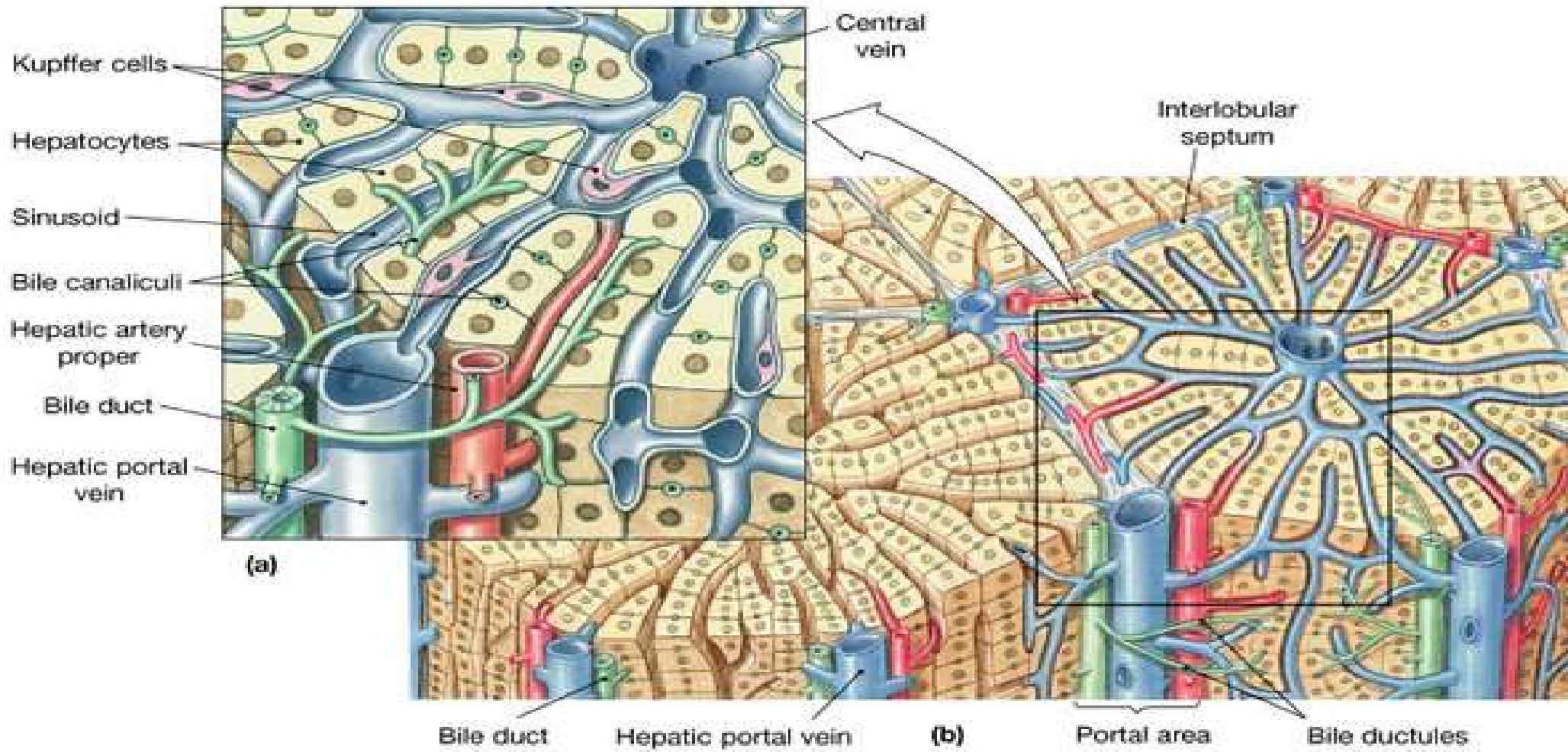


D. Superior view

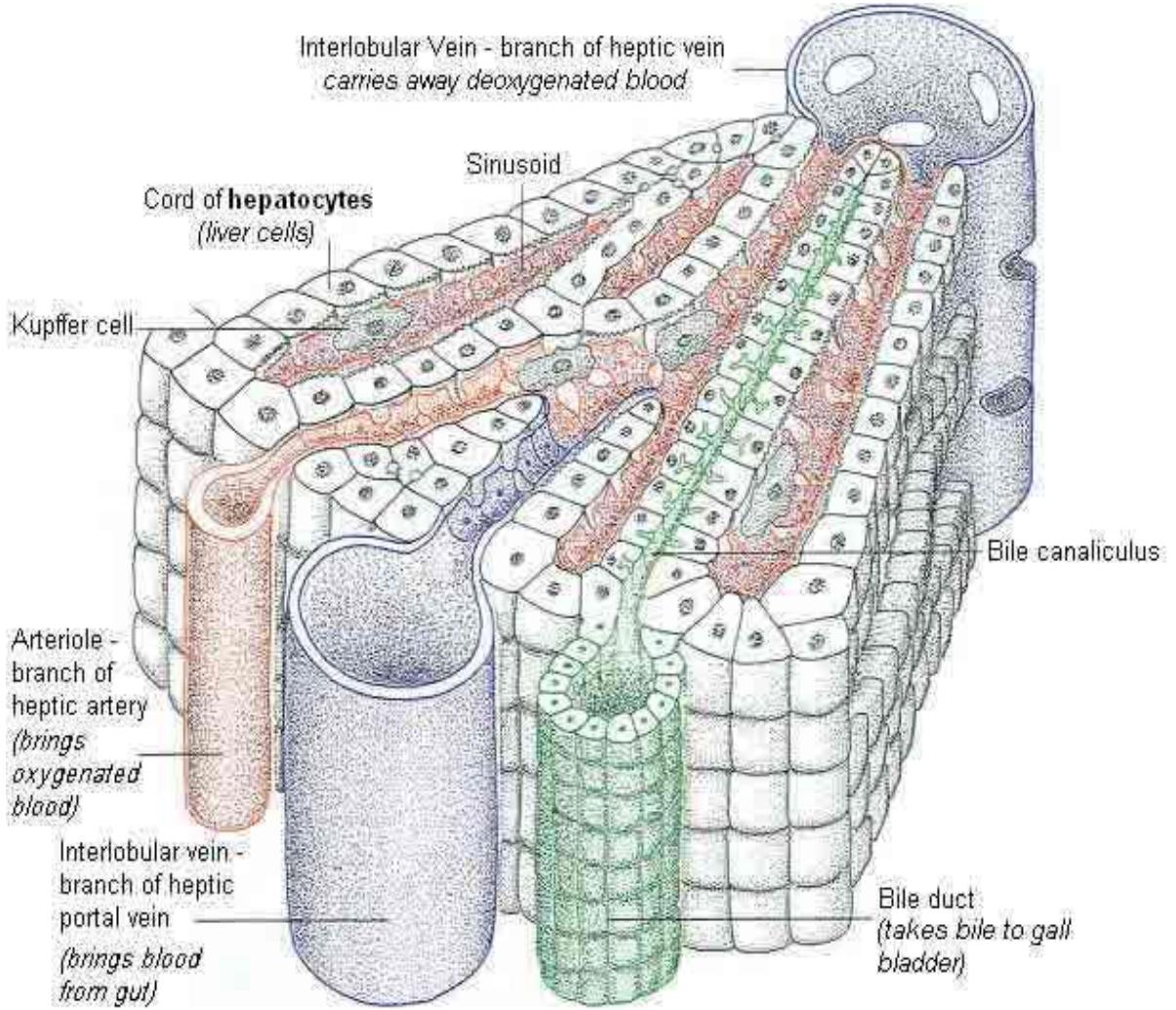
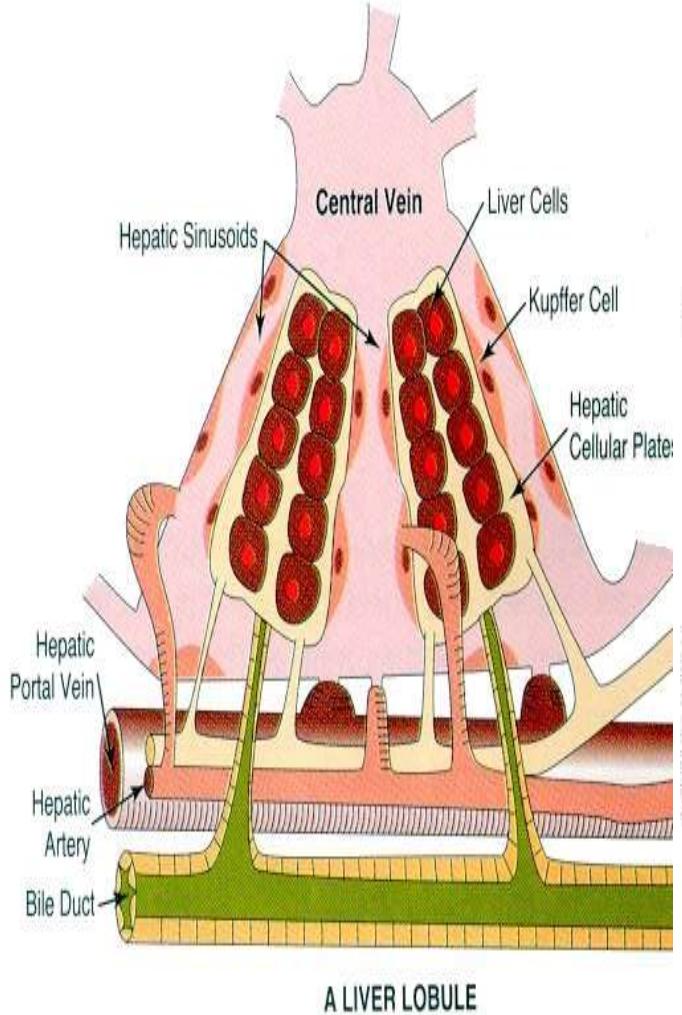


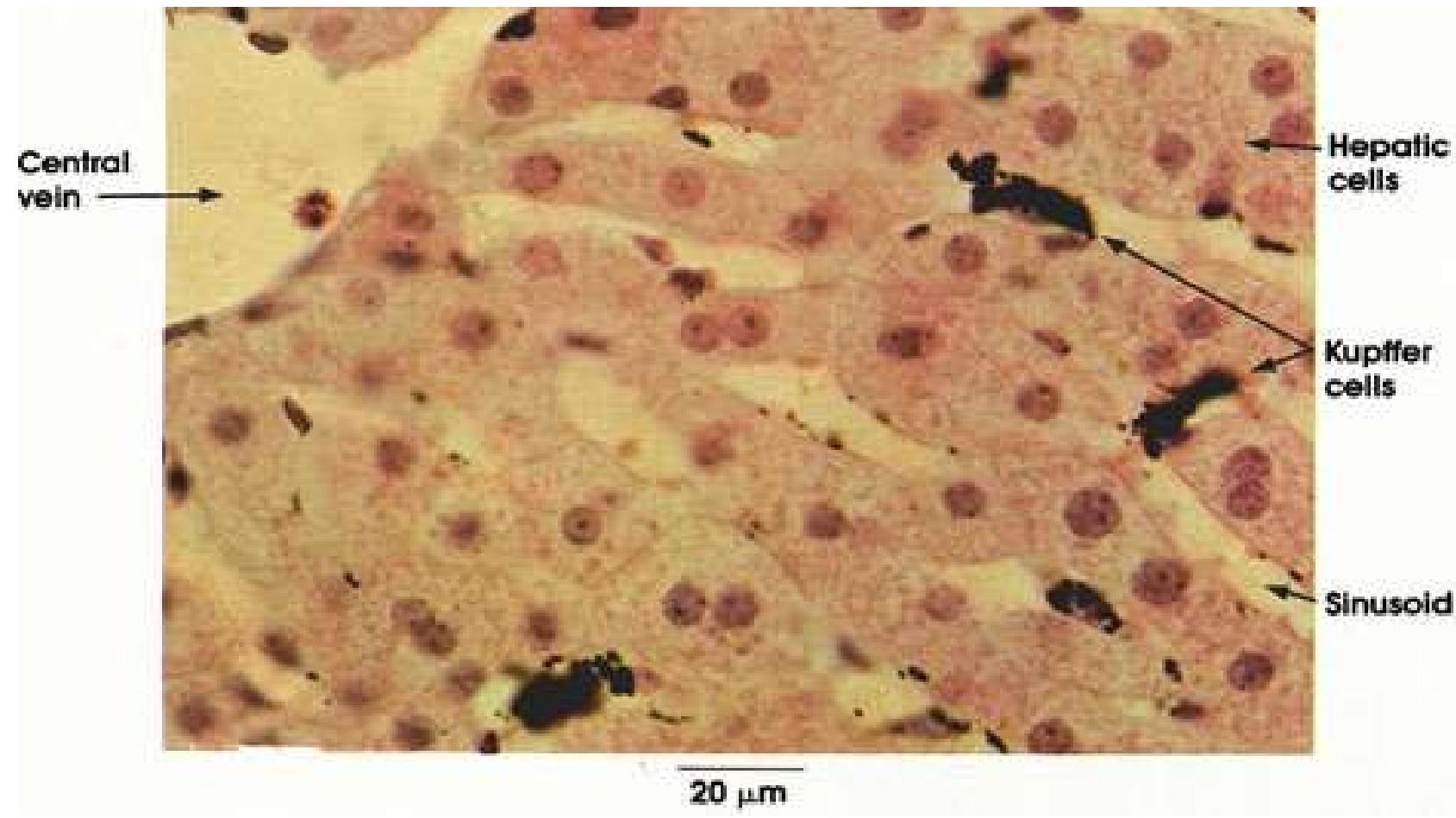
A. Orientation**B. Anterior view****C. Inferior view**

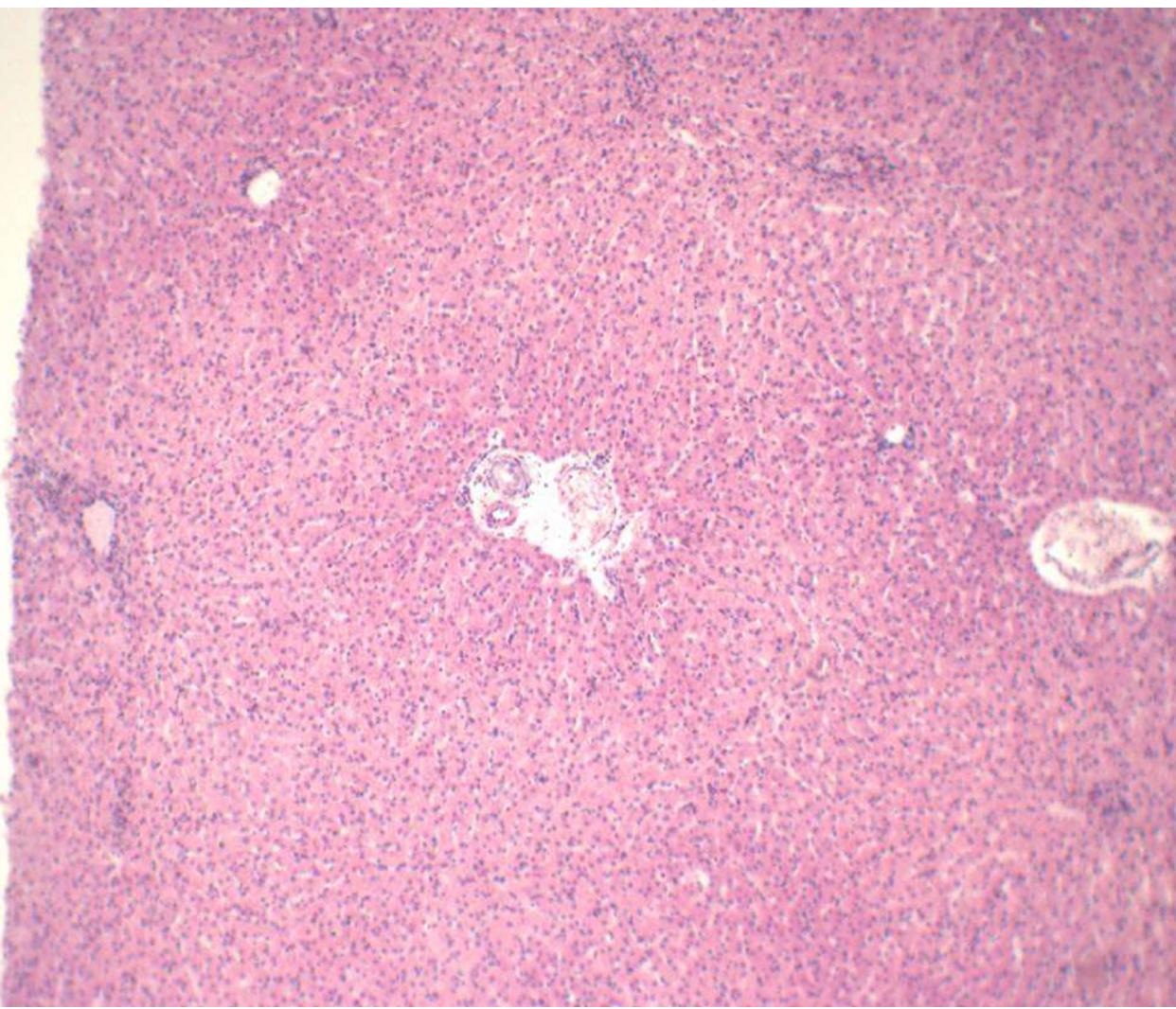


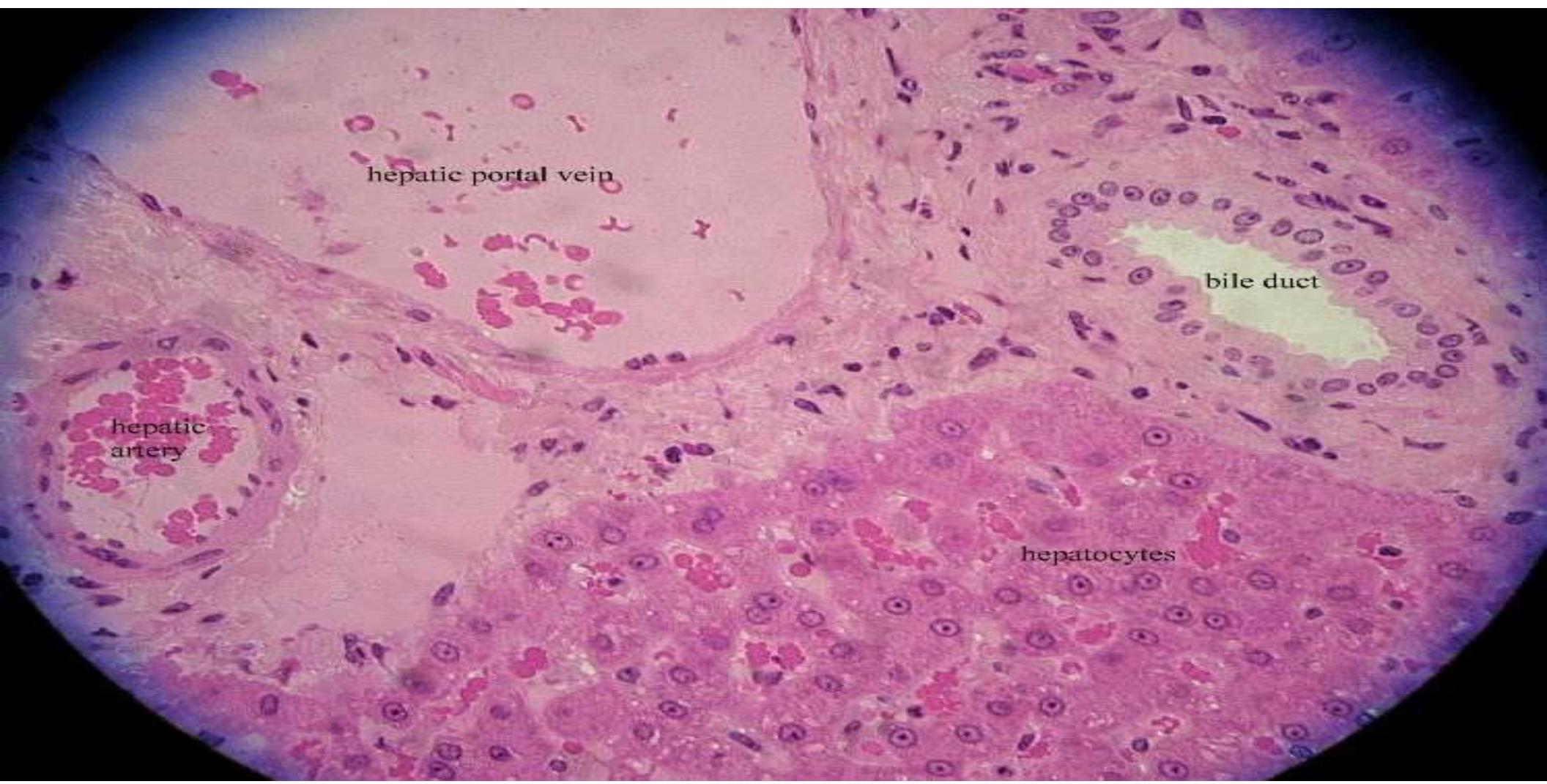


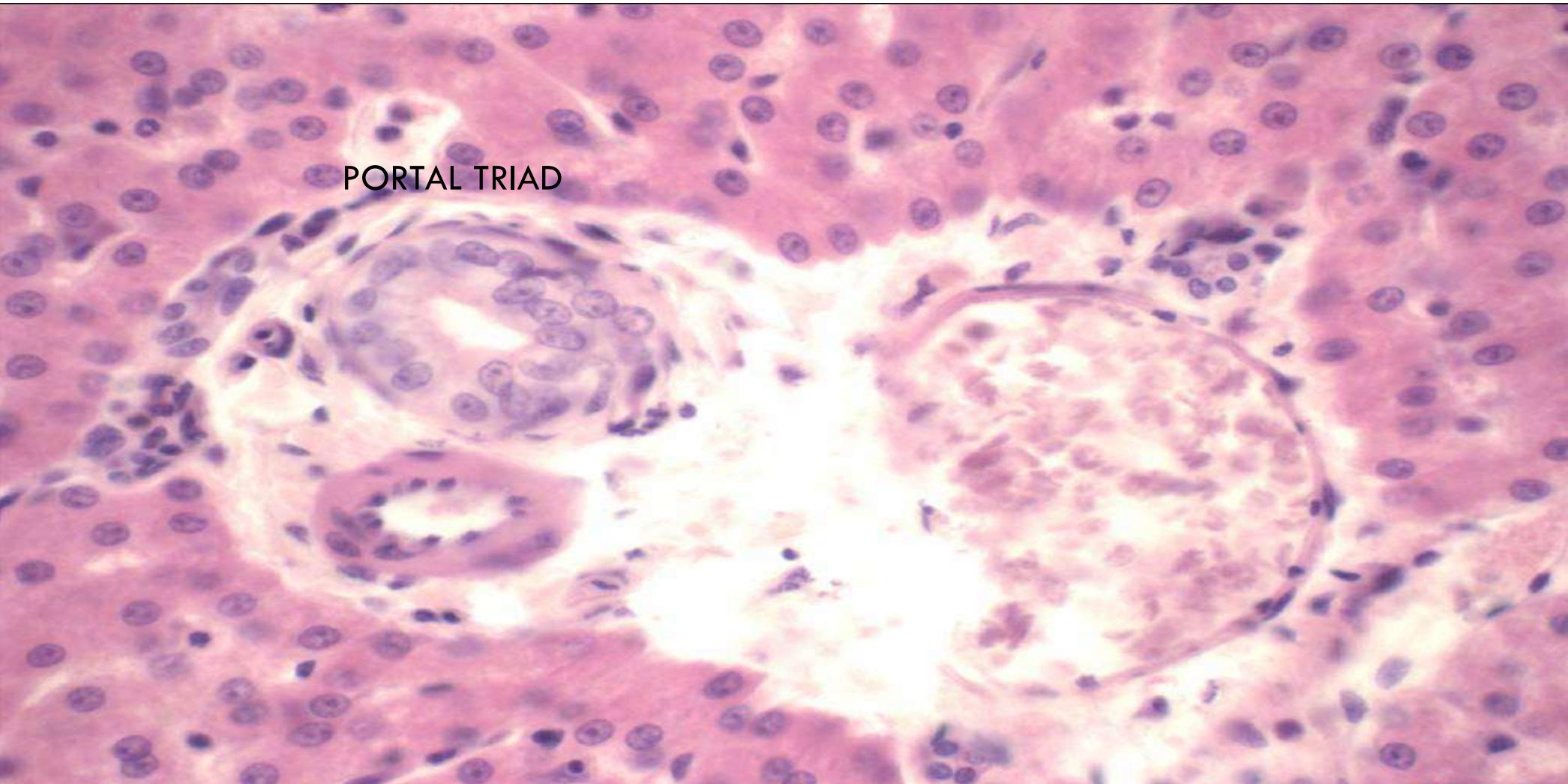
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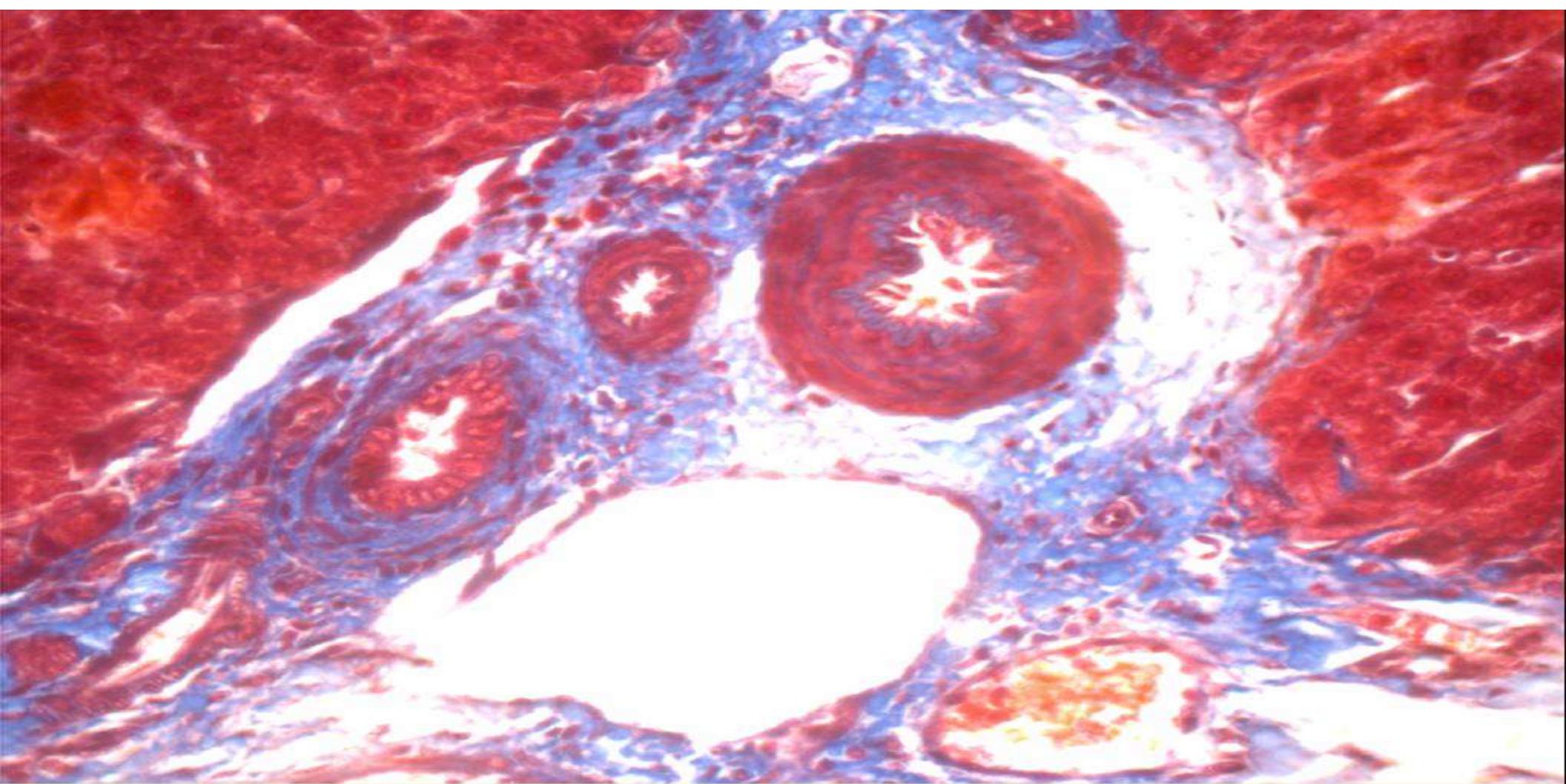


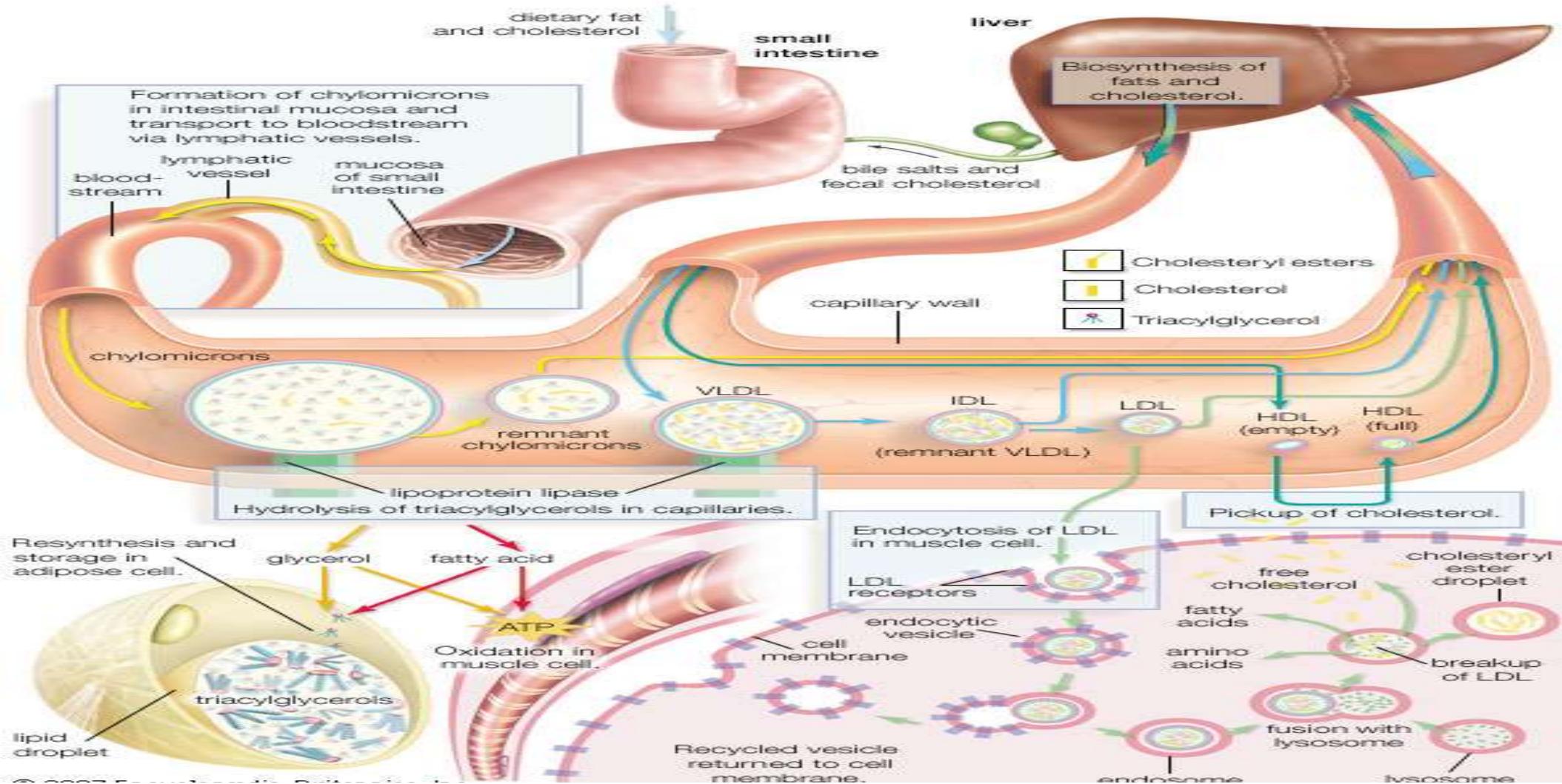


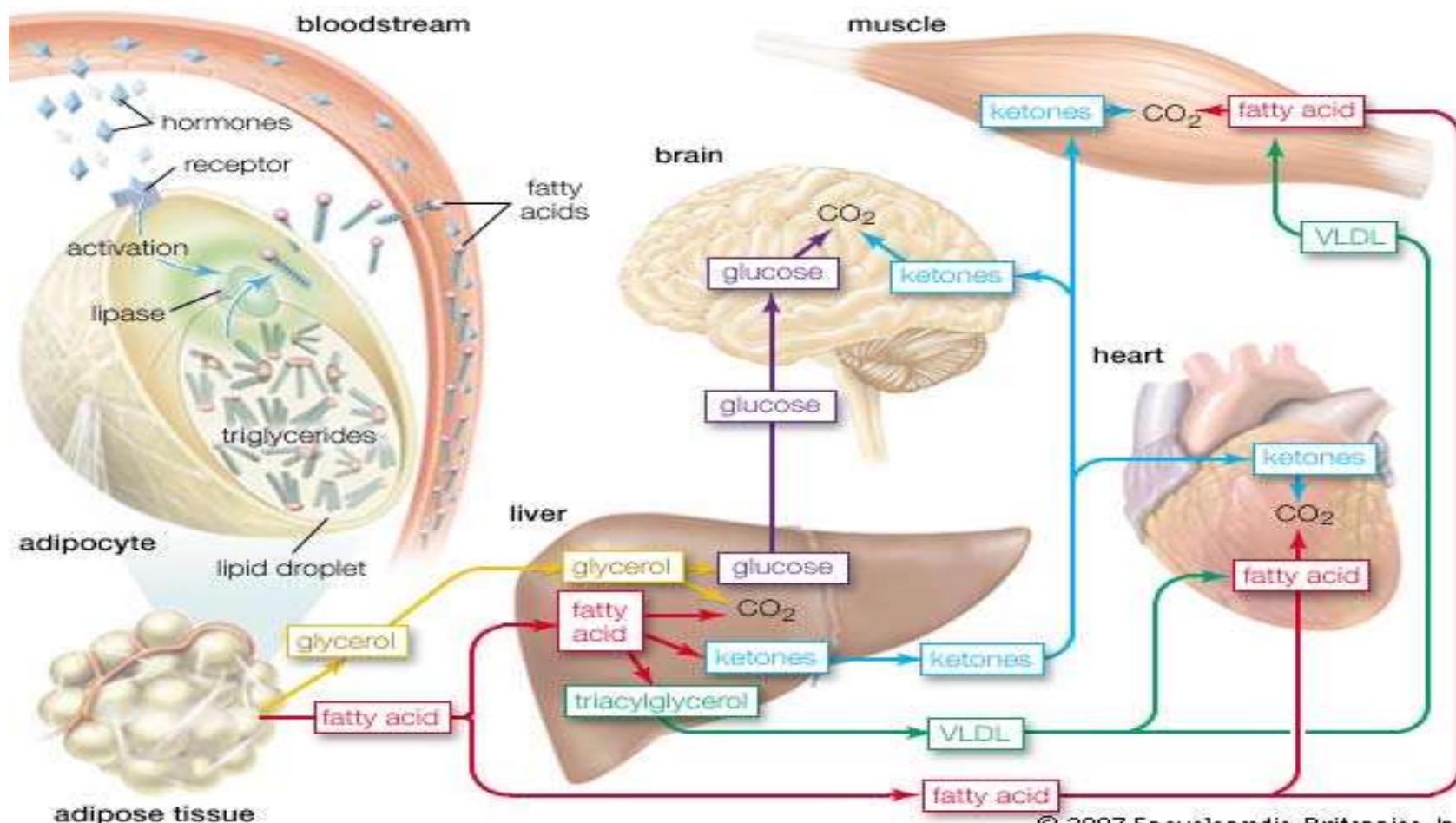


PORTAL TRIAD

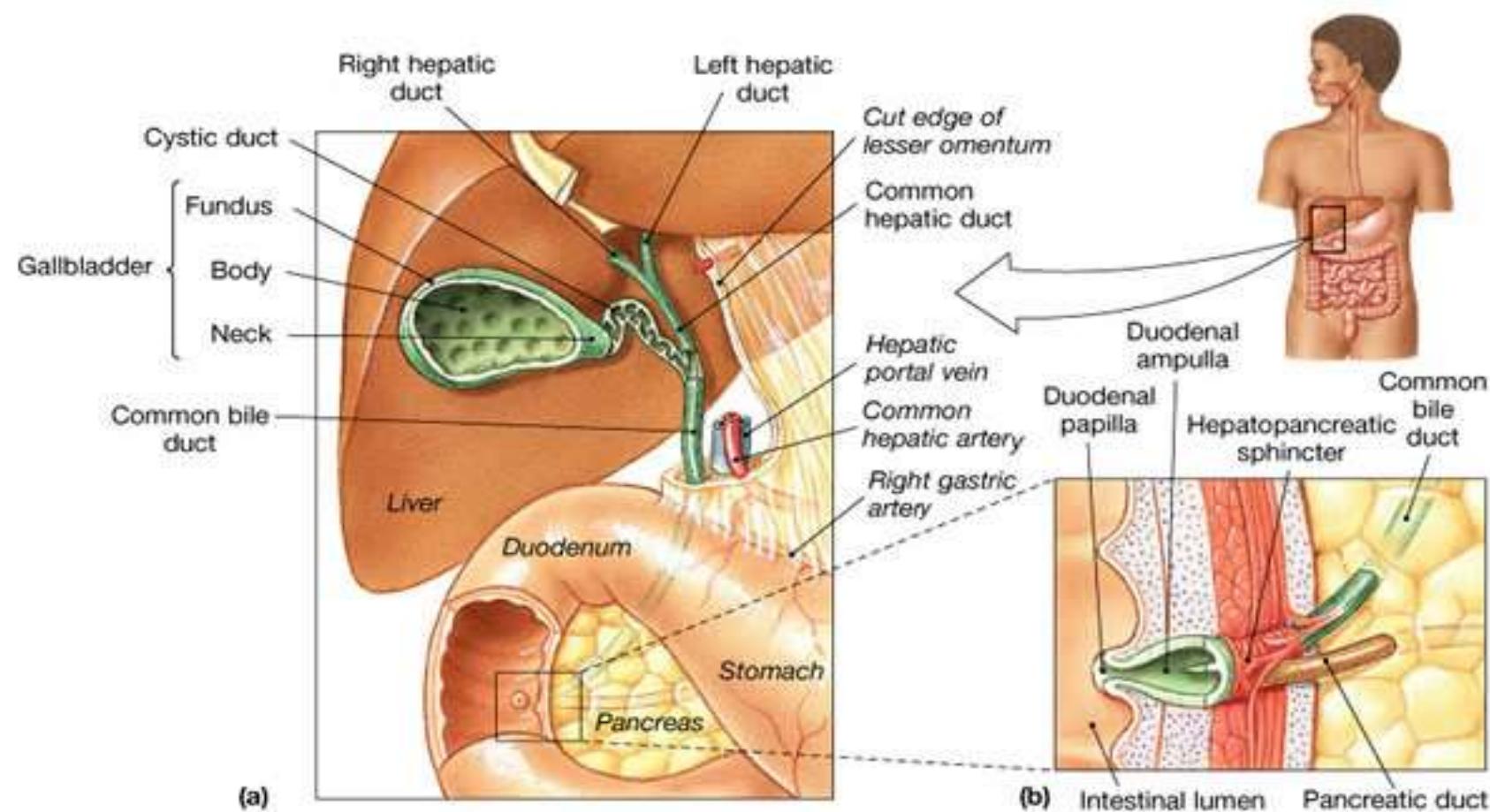
This image shows a cross-section of liver tissue under a microscope. A prominent feature is a 'PORTAL TRIAD' located in the center-left. It consists of three distinct components: a central bile duct, surrounded by a layer of connective tissue (fibroblasts), and a small cluster of immune cells (lymphocytes). The surrounding tissue is composed of hepatocytes, which appear as small, rounded cells with dark purple nuclei. The overall color palette is dominated by shades of pink and purple from the stains used in the histology section.



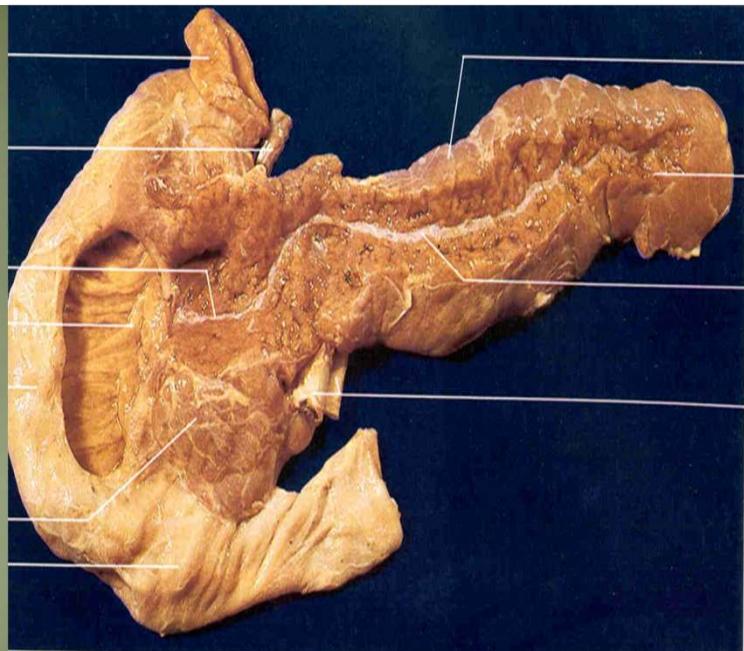
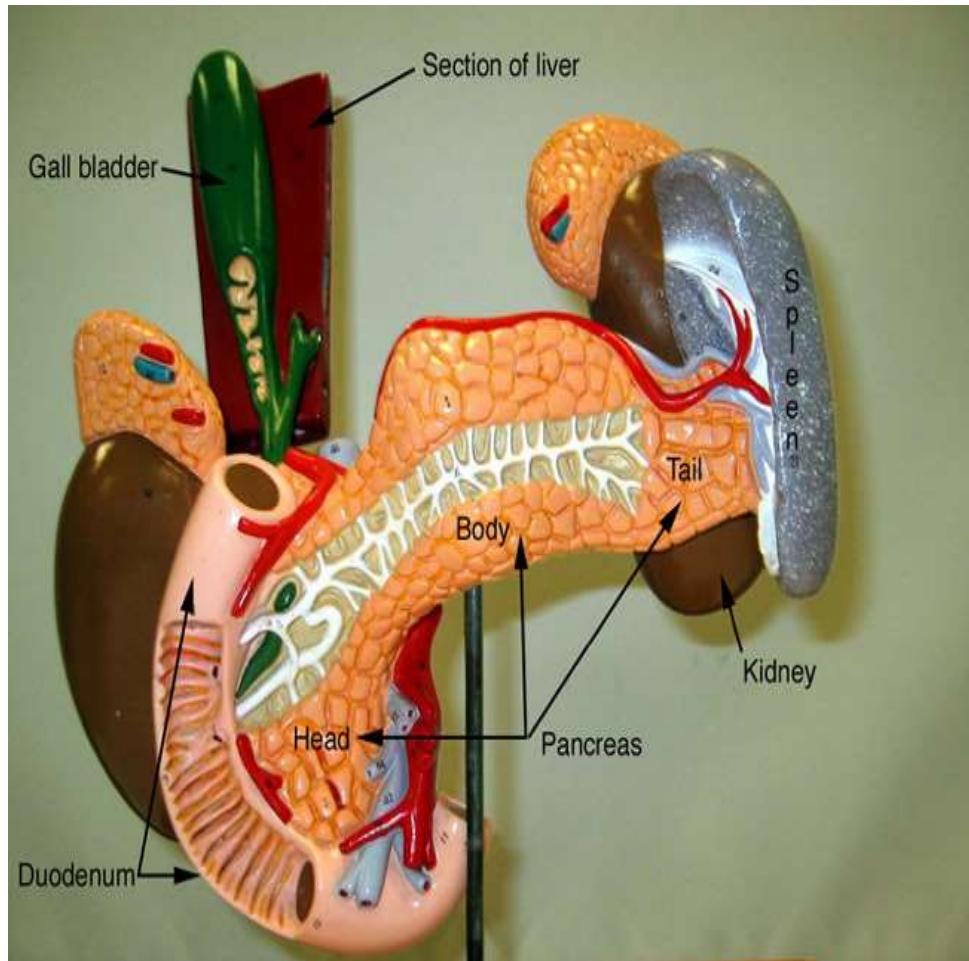


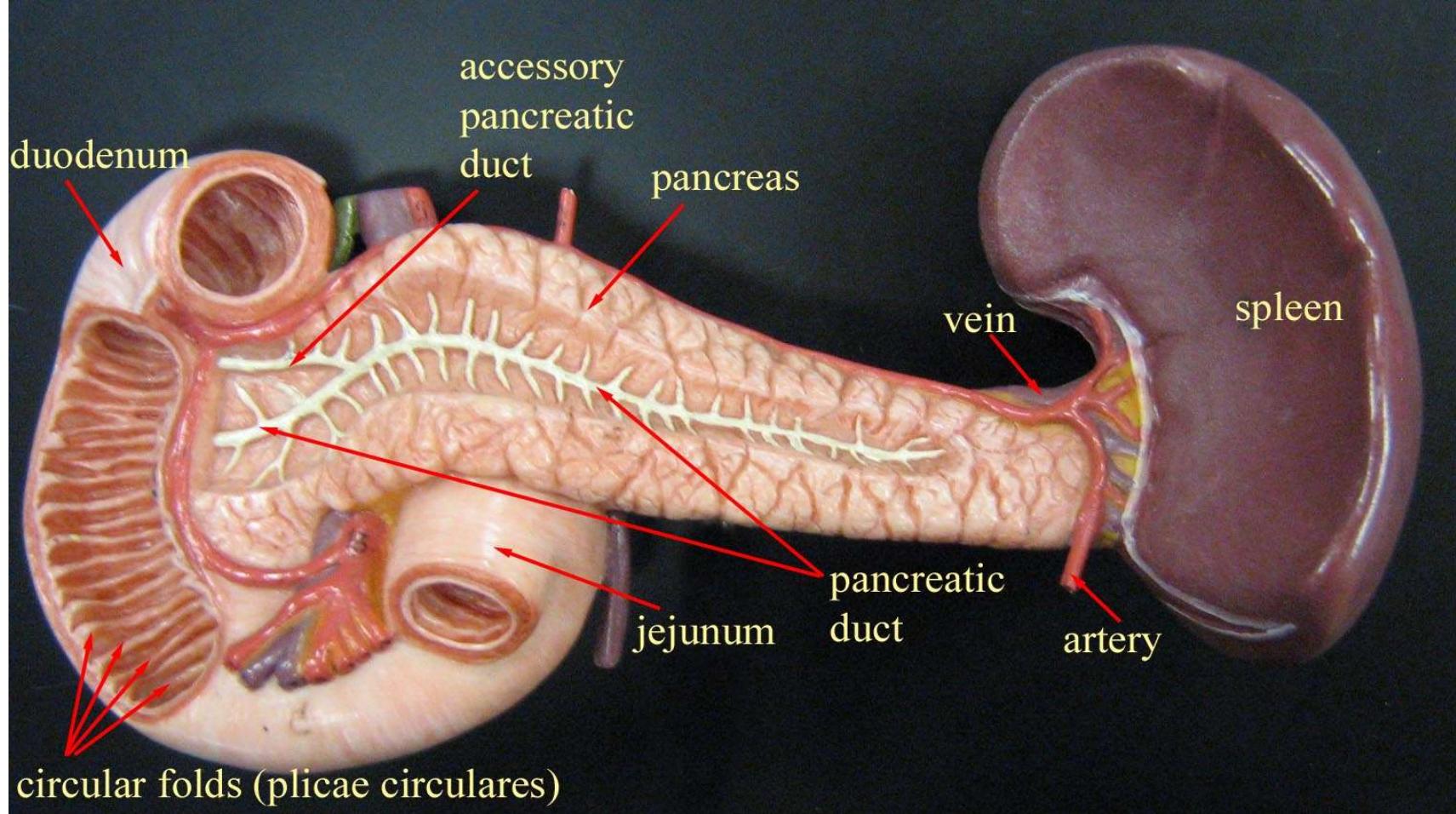


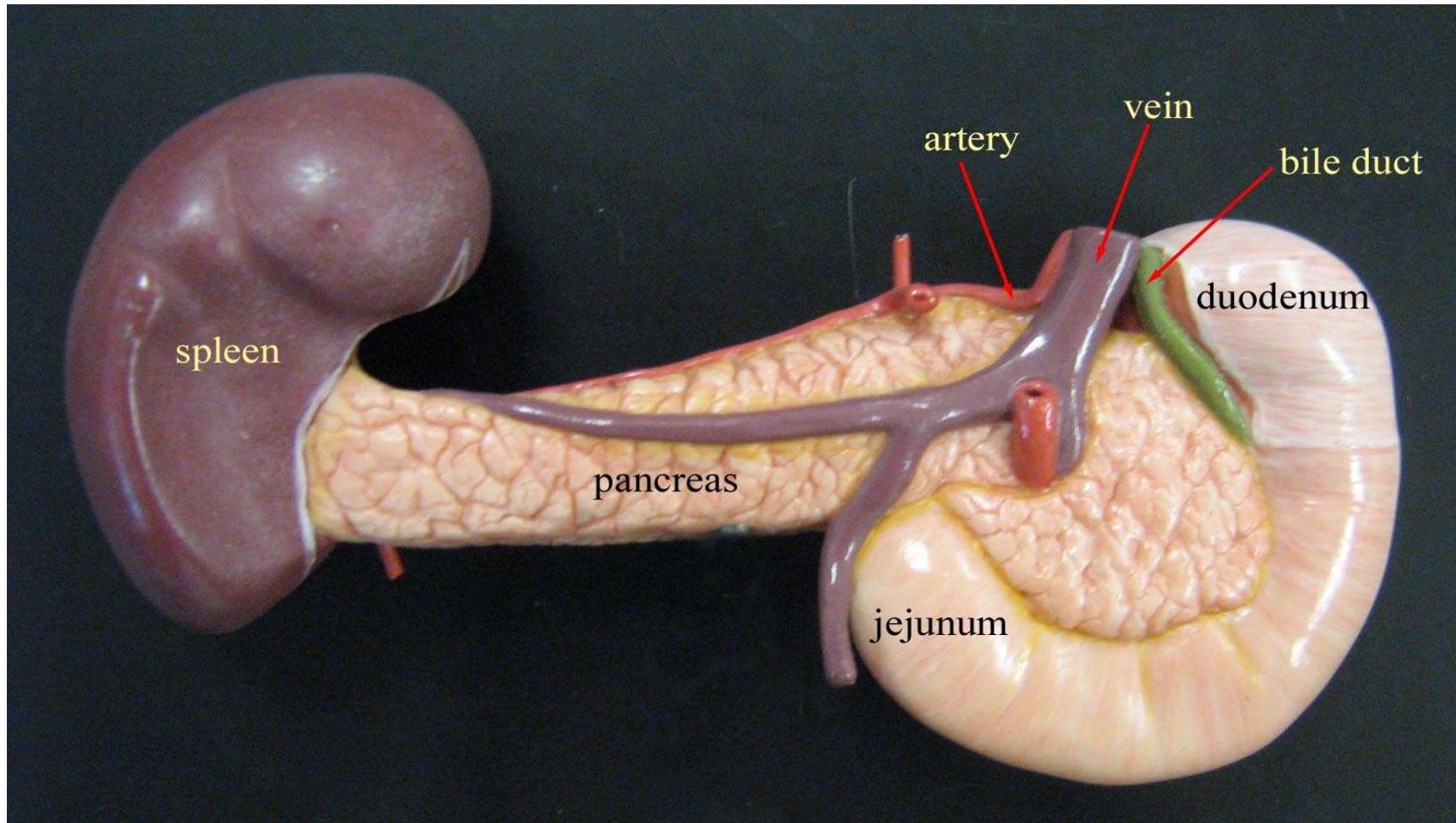
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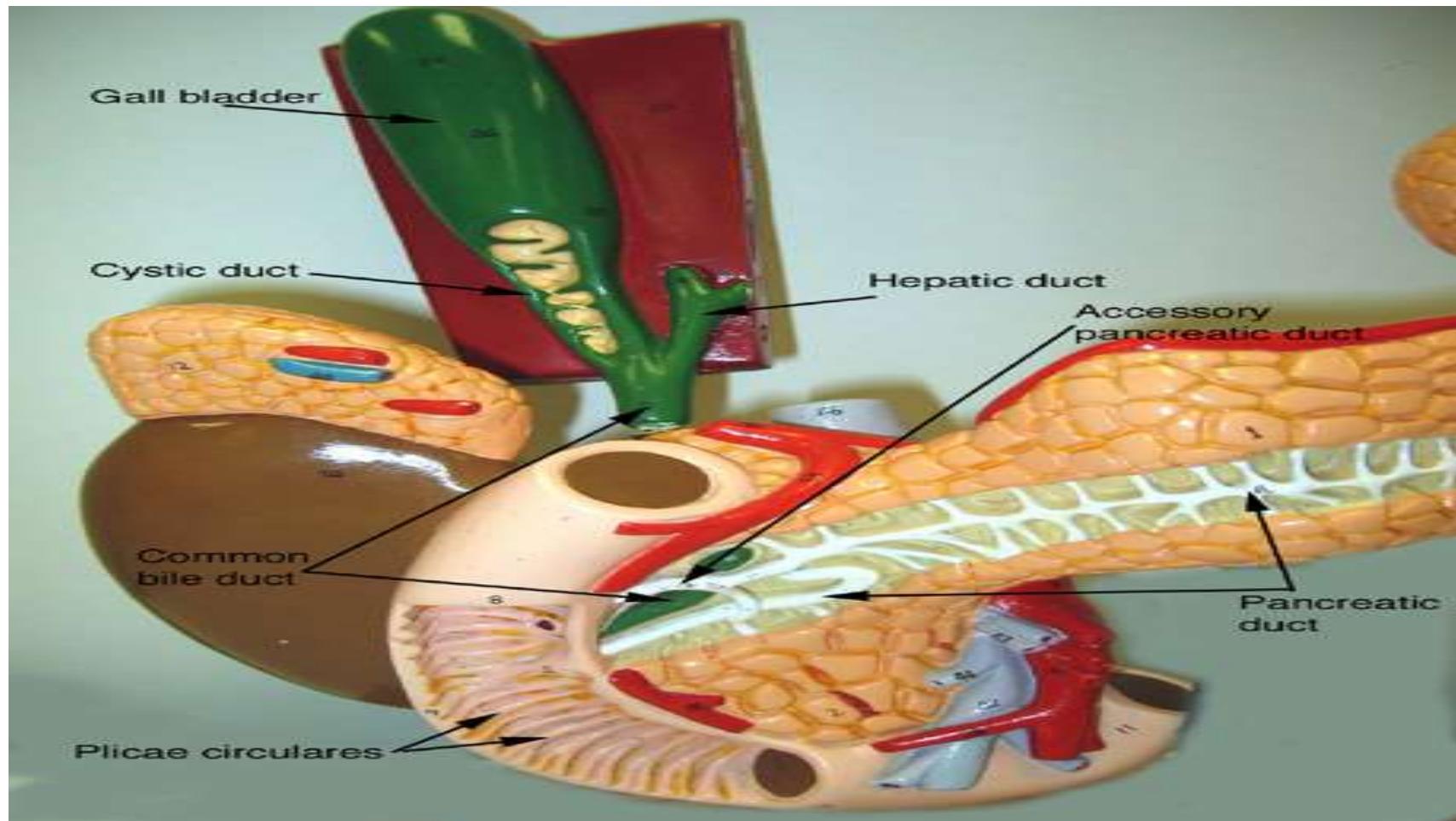


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PANCREAS

*Stained with
haematoxylin and eosin*
1 - acinus
2 - islet of Langerhans
3 - intralobular duct
4 - interlobular
connective tissue septa

