

MÁJ, HASNYÁLMIRIGY ÉS A LÉP ANATÓMIÁJA

HEINZLMANN ANDREA

**ÁLLATORVOSTUDOMÁNYI EGYETEM,
ANATÓMIAI ÉS SZÖVETANI TANSZÉK**

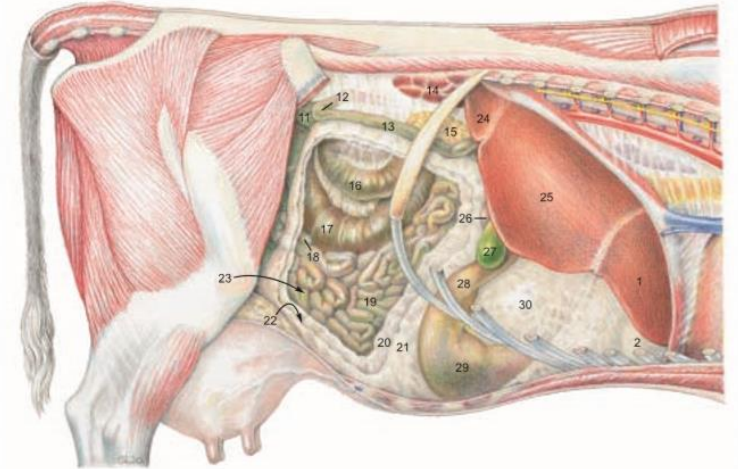
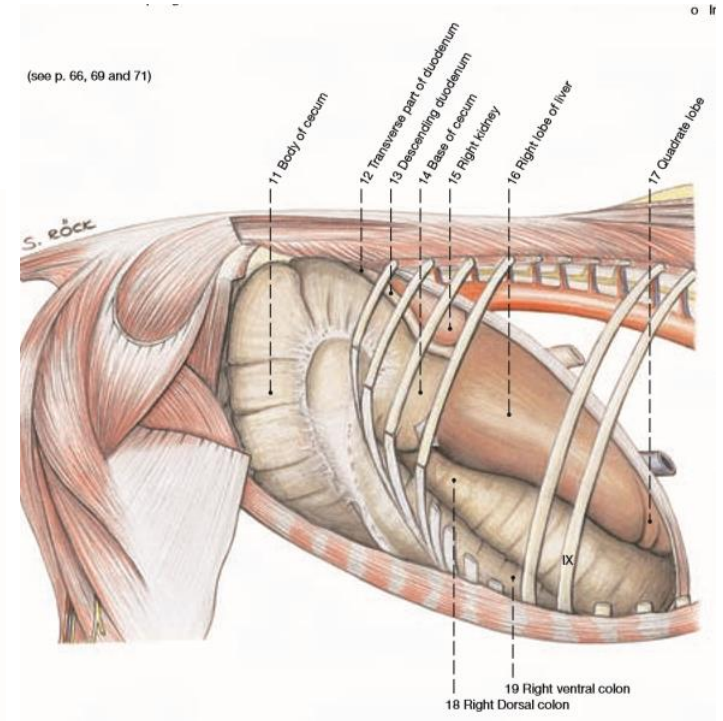
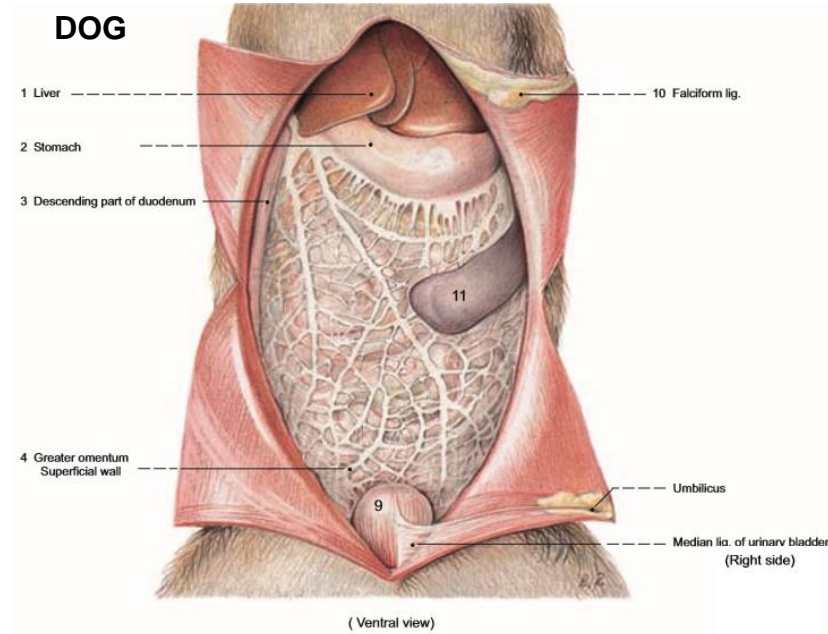
2019 ÁPRILIS 11.

MÁJ (HEPAR)

- a szervezet legnagyobb mirigye
- intraperitoneális

FELADATA:

1. szerepet játszik anyagcsere-folyamatokban
2. glikogén tárolás
3. méregtelenítés (detoxikáció)
4. epetermelés - epesavtartalmának köszönhetően - a zsíremésztésben van szerepe



(See pp. 17, 63, 65, 67)

Legend:

16 Prox. loop of ascending colon
17 Cecum
18 Ileum
19 Jejunum

Greater omentum:
20 Deep wall
21 Supr. wall
22 Caudal recess

23 Supraomental recess
24 Caudate process of liver
25 Right lobe of liver
26 Cranial part of duodenum

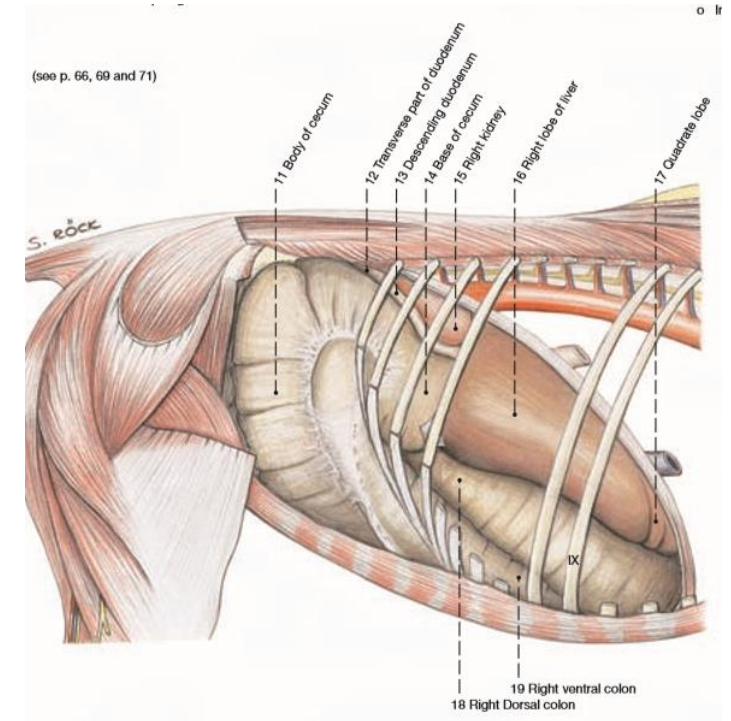
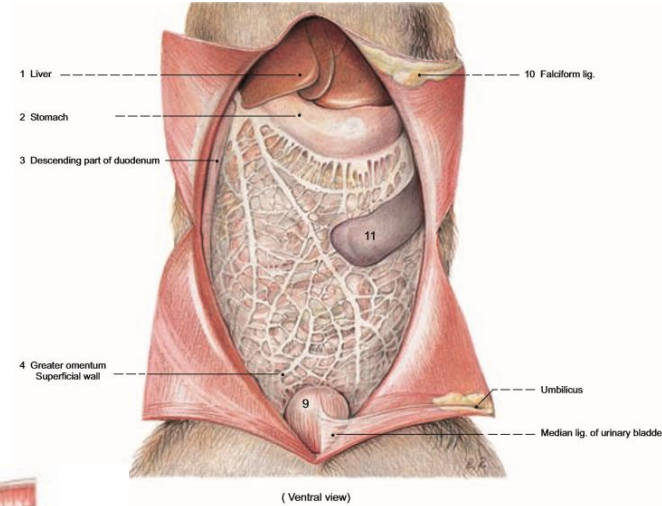
27 Gall bladder
28 Pyloric part of abomasum
29 Body of abomasum
30 Omasum covered by lesser omentum

MÁJ (HEPAR)

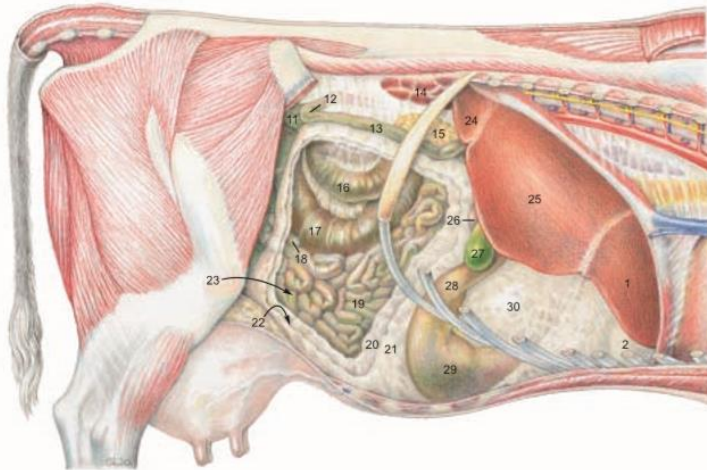
TÖMEGE:

- lóban 5 kg (2,5–7), öregebb állatokban 2,5–3 kg, az élőtömeg 1,2–1,5%-a
- szarvasmarhában 3–10 kg (1,9%)
- juhban 500–1260 g (1,45%)
- sertésben 1–2,5 kg (1,9%)
- kutyában 127–1350 g (1,33–5,95%)
- macskában 68,5 g (2,46%)

DOG



(Right side)



(See pp. 17, 63, 65, 67)

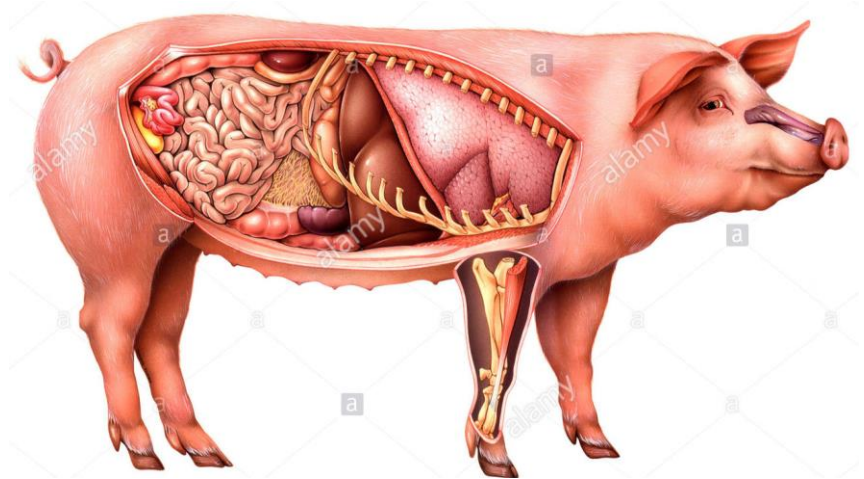
Legend:

16 Prox. loop of ascending colon
17 Cecum
18 Ileum
19 Jejunum

Greater omentum:
20 Deep wall
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24 Caudate process of liver
25 Right lobe of liver
26 Cranial part of duodenum

27 Gall bladder
28 Pyloric part of abomasum
29 Body of abomasum
30 Omasum covered by lesser omentum



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SZÍNE:

függ:

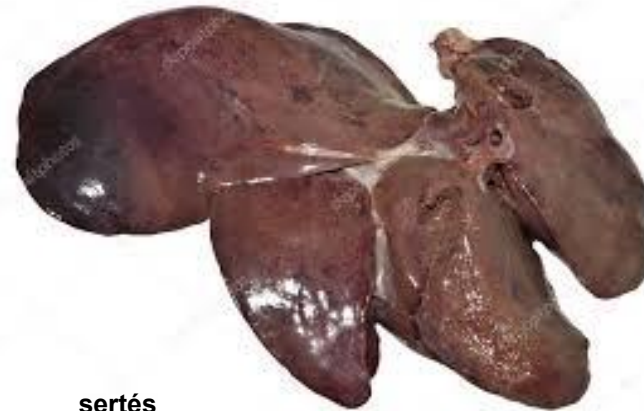
- életkortól
- a tápláltság állapotától
- vértartalmától
- ❖ lóban kávébarna
- ❖ szarvasmarhában vörösbarna
- ❖ juhban, sertésben és húsevőkben sötétbarna



ló



szarvasmarha

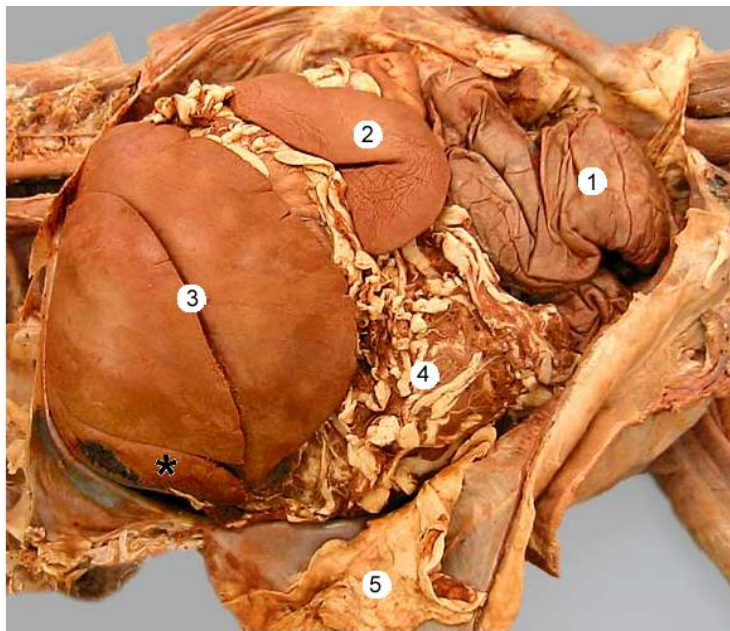


sertés

MÁJ (HEPAR)

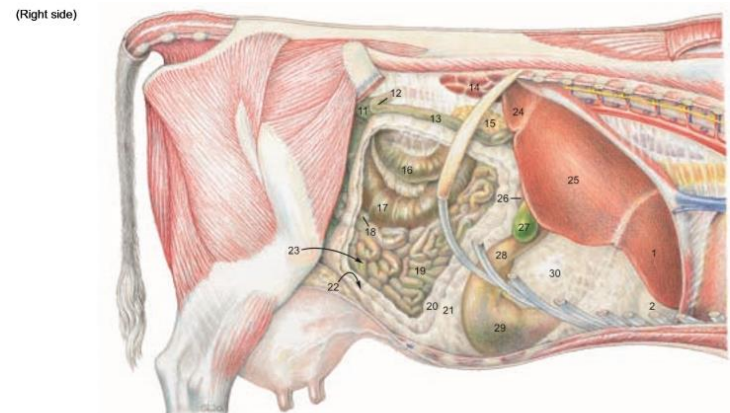
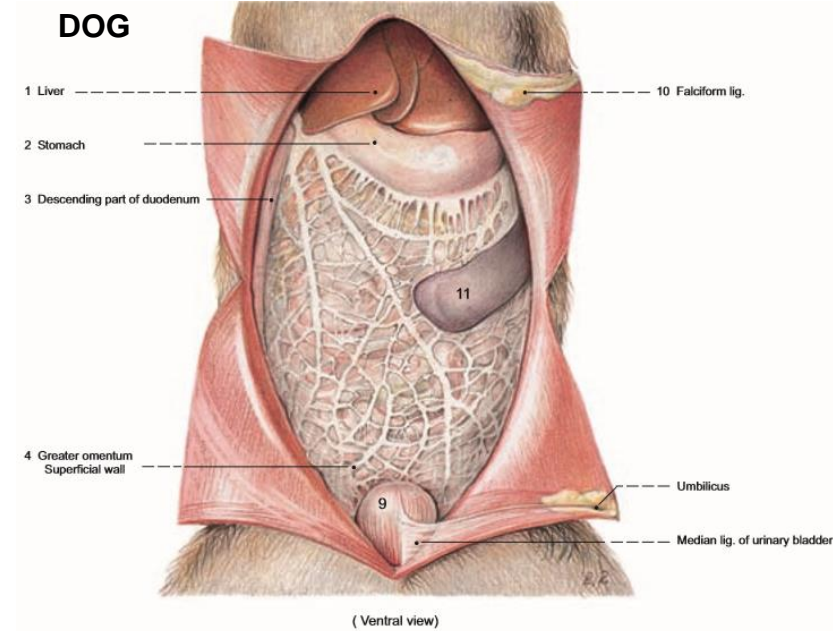
ELHELYEZKEDÉS:

- hasüreg felső részében
- diaphragma alatt
- nagyobb része jobbra



The left side of the abdominal wall is reflected in a female dog with a pregnant uterus (1). The **spleen** (2) and **liver** (3) are visible, but most other viscera are hidden by the **greater omentum** (4). Identify the **fat-filled falciform ligament** (5), which runs between the umbilicus and the liver. When intact, the ligament passes to the left of the quadrate lobe of the liver (asterisk).

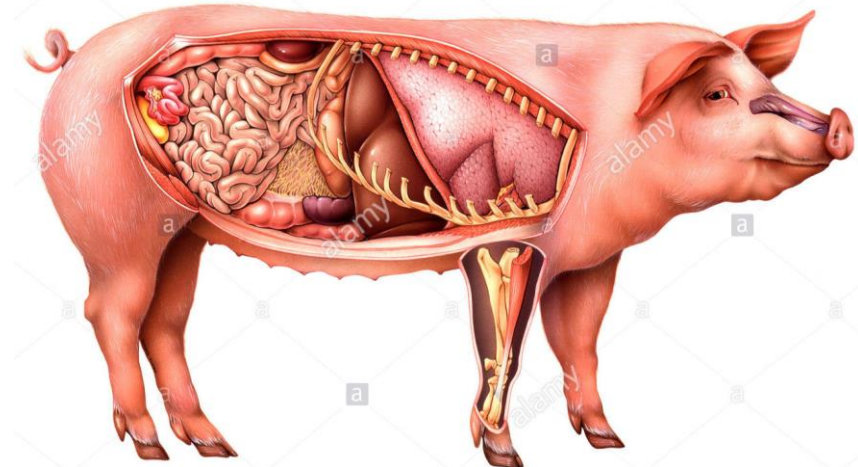
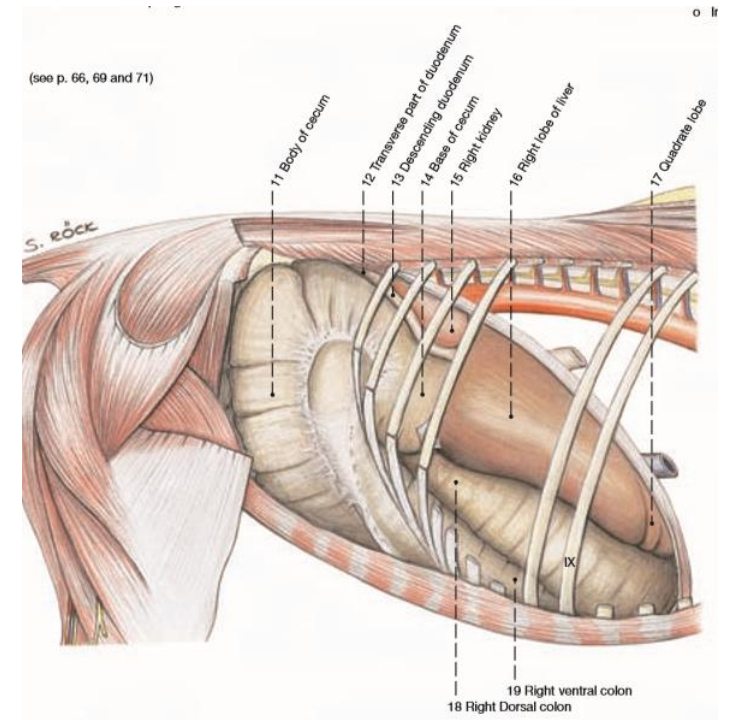
<http://vanat.cvm.umn.edu/carnLabs/Lab16/lmg16-1.html>



Legend:

- | | | | |
|----------------------------------|------------------|-----------------------------|-------------------------------------|
| 16 Prox. loop of ascending colon | Greater omentum: | 23 Supraomental recess | 27 Gall bladder |
| 17 Cecum | 20 Deep wall | 24 Caudate process of liver | 28 Pyloric part of abomasum |
| 18 Ileum | 21 Supf. wall | 25 Right lobe of liver | 29 Body of abomasum |
| 19 Jejunum | 22 Caudal recess | 26 Cranial part of duodenum | 30 Omasum covered by lesser omentum |

(See pp. 17, 63, 65, 67)



http://18.hyt.capecoral-bootsvermietung.de/pork_liver_diagram.php

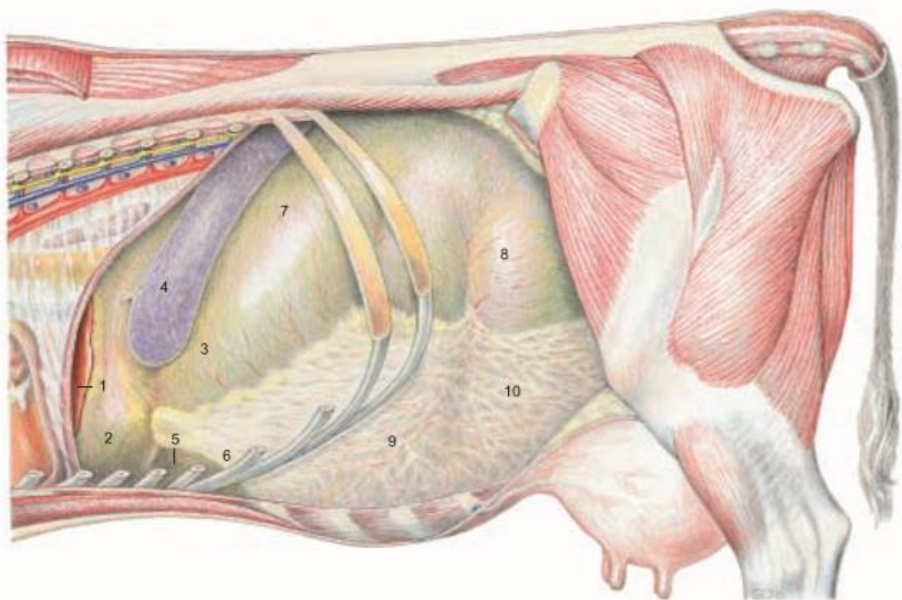
MÁJ (HEPAR)

ELHELYEZKEDÉS:

KÉRŐDZŐKBEN:

- a rumen fejlődése során a májat a hasüreg jobb oldalára tolja

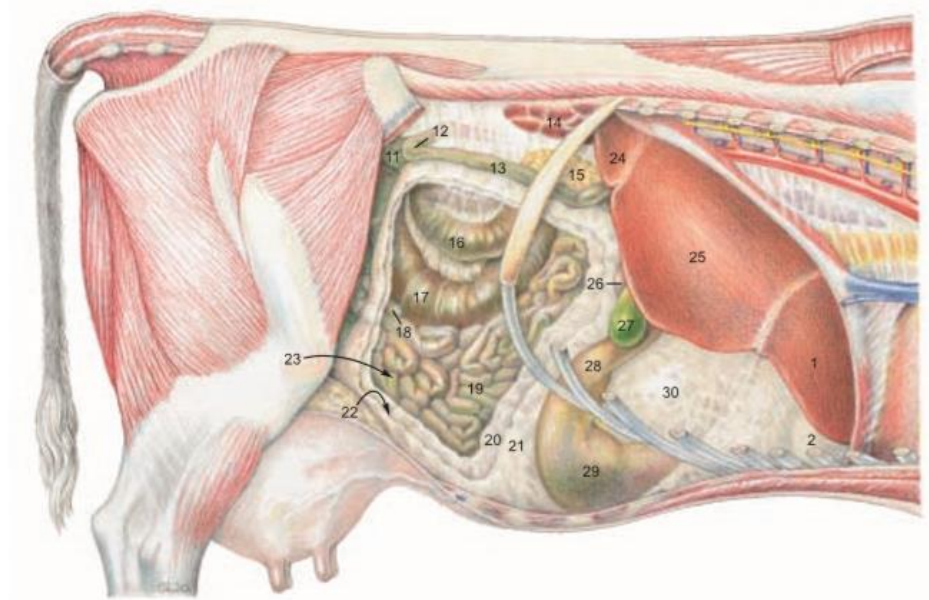
(Left side)



Legend:

- | | | | |
|----------------------|---|---|-------------------------------------|
| 1 Left lobe of liver | 5 Fundus of abomasum | 8 Caudodorsal blind sac of rumen | 11 Sigmoid part of descending colon |
| 2 Reticulum | 6 Recess of ventral sac of rumen covered by omentum | 9 Ventral sac of rumen covered by omentum | 12 Caudal flexure of duodenum |
| 3 Atrium of rumen | 7 Dorsal sac of rumen | 10 Caudoventral blind sac of rumen covered by omentum | 13 Descending duodenum |
| 4 Spleen | | | 14 Right kidney |
| | | | 15 Right lobe of pancreas |

(Right side)



Legend:

- | | | | |
|----------------------------------|------------------|-----------------------------|-------------------------------------|
| 16 Prox. loop of ascending colon | Greater omentum: | 23 Supra-omental recess | 27 Gall bladder |
| 17 Cecum | 20 Deep wall | 24 Caudate process of liver | 28 Pyloric part of abomasum |
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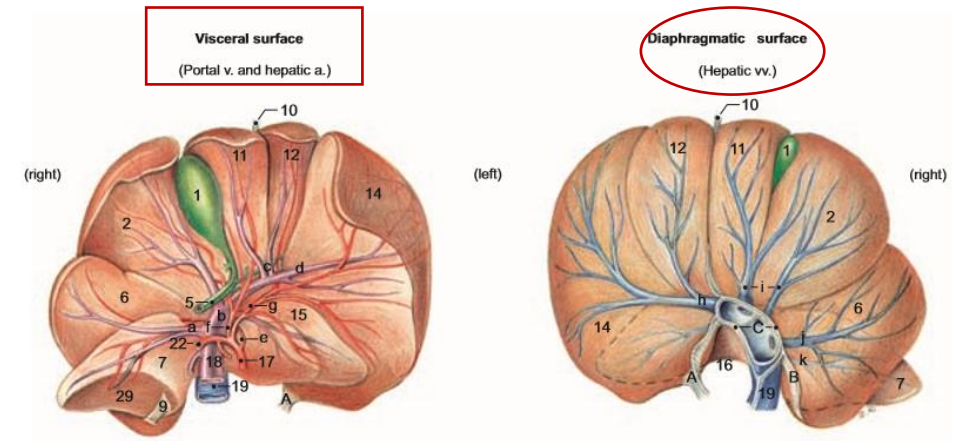
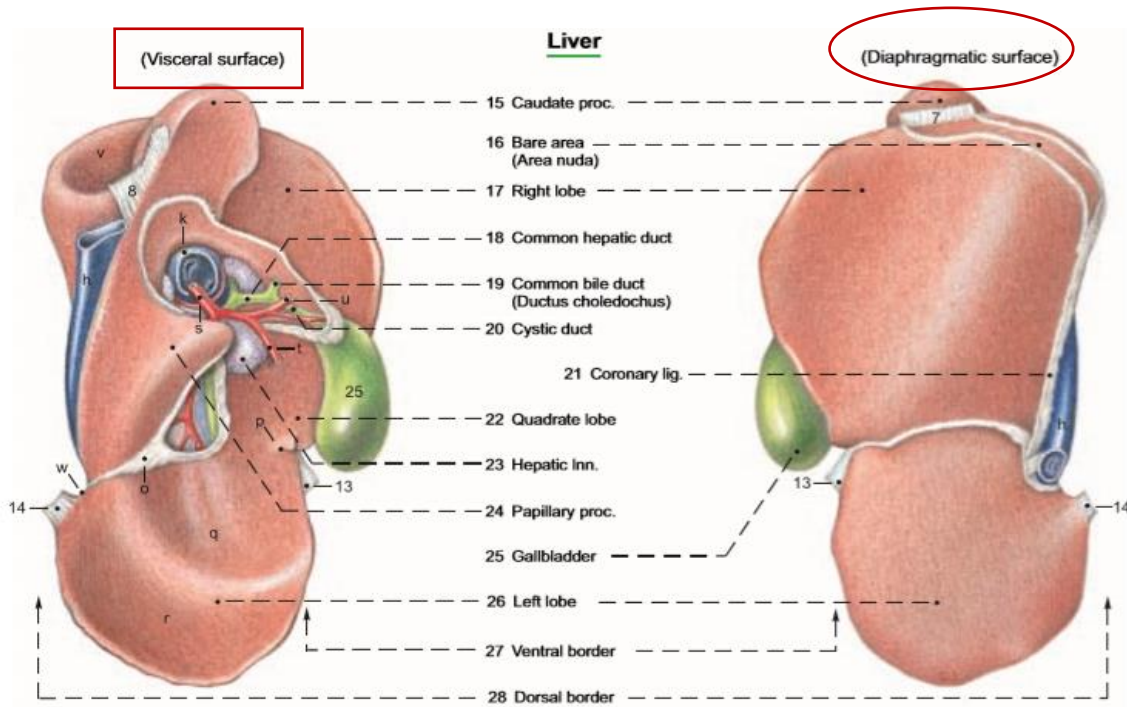
(See pp. 17, 63, 65, 67)

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FELSZÍNEI:

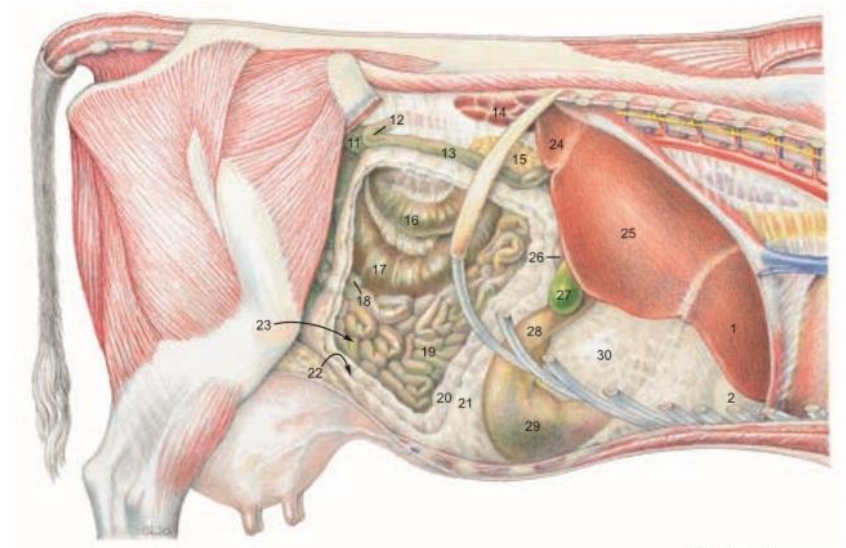
1. FACIES DIAPHRAGMATICA

2. FACIES VISCERALIS



- Legend :**
- A Left triangular lig.
 - B Right triangular lig.
 - C Coronary lig. of liver
 - a Right br.
 - b Left br.
 - c Umbilical part
 - d Transverse part
 - e Hepatic a.:
 - f Right lat. br.
 - g Left br.
 - h Hepatic vv.:
 - i Left hepatic v.
 - j Middle hepatic v.
 - k Right hepatic v.
 - l Right acc. hepatic v.

(Right side)



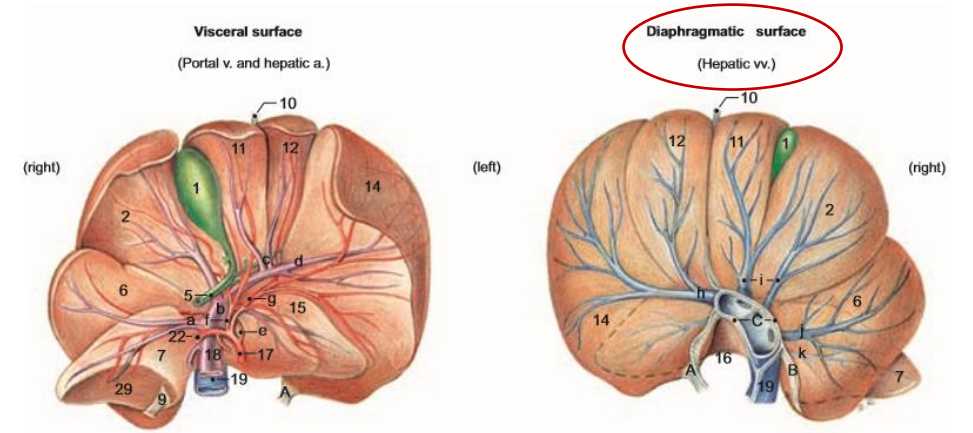
(See pp. 17, 63, 65, 67)

- Legend:**
- 16 Prox. loop of ascending colon
 - 17 Cecum
 - 18 Ileum
 - 19 Jejunum
 - Greater omentum:
 - 20 Deep wall
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 - 23 Supraomental recess
 - 24 Caudate process of liver
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 - 26 Cranial part of duodenum
 - 27 Gall bladder
 - 28 Pyloric part of abomasum
 - 29 Body of abomasum
 - 30 Omasum covered by lesser omentum

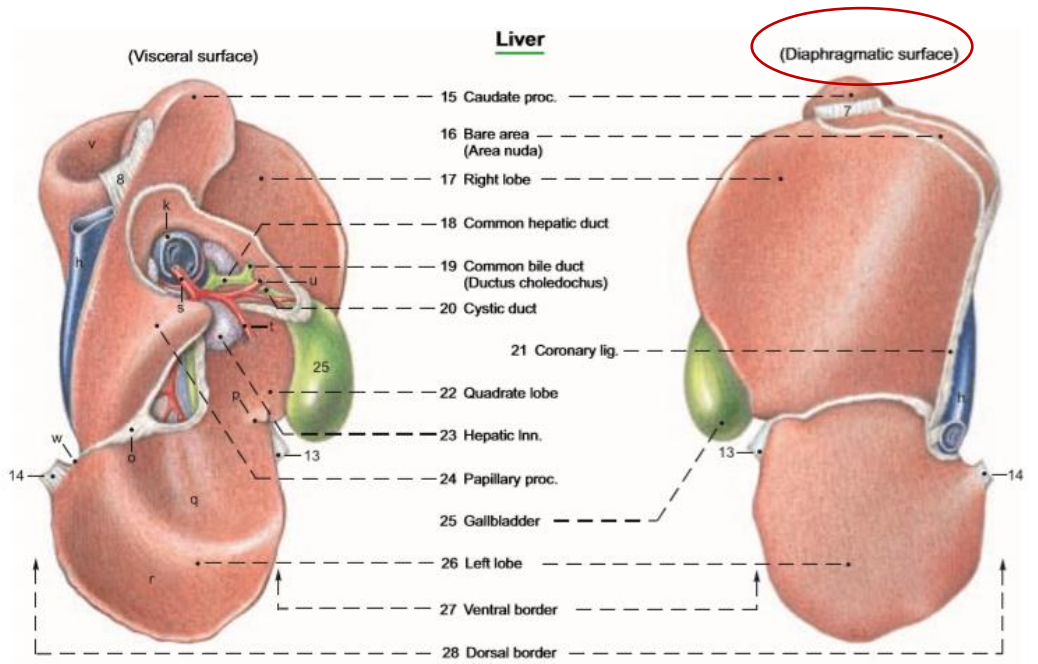
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FACIES DIAPHRAGMATICA:

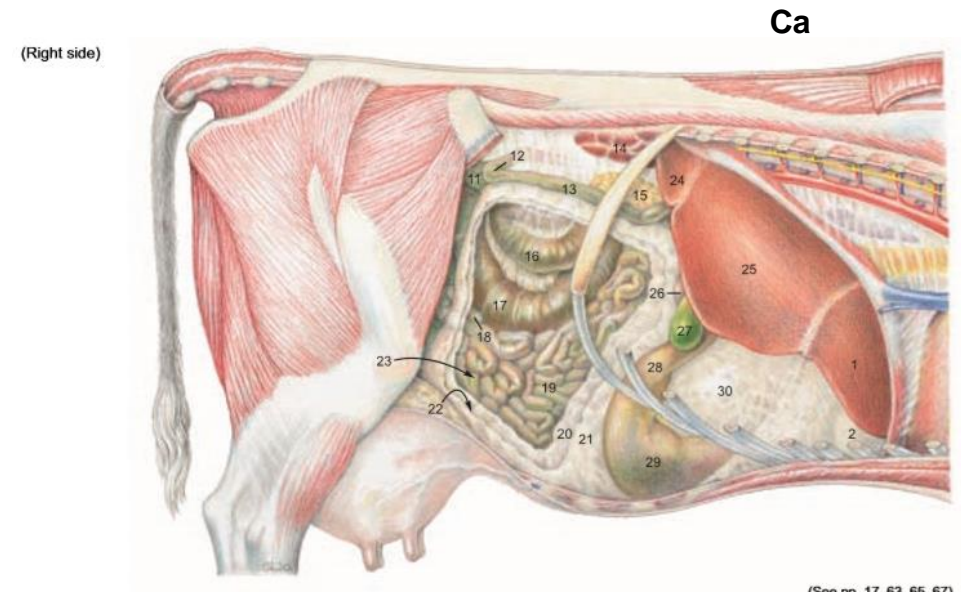
- convex
- diaphragma felé eső része



- Legend :**
- | | | | | | | | |
|---|------------------------|--------------|-----------------|-------------|----------------|--------------|-----------------------|
| A | Left triangular lig. | Portal vein: | | Hepatic a.: | | Hepatic vv.: | |
| B | Right triangular lig. | a | Right br. | e | Right lat. br. | h | Left hepatic v. |
| C | Coronary lig. of liver | b | Left br. | f | Right med. br. | i | Middle hepatic v. |
| | | c | Umbilical part | g | Left br. | j | Right hepatic v. |
| | | d | Transverse part | | | k | Right acc. hepatic v. |



Bo



- Legend:**
- | | | | | | | | |
|----|-------------------------------|------------------|---------------|----|--------------------------|----|----------------------------------|
| 16 | Prox. loop of ascending colon | Greater omentum: | | 23 | Supraomental recess | 27 | Gall bladder |
| 17 | Cecum | 20 | Deep wall | 24 | Caudate process of liver | 28 | Pyloric part of abomasum |
| 18 | Ileum | 21 | Supf. wall | 25 | Right lobe of liver | 29 | Body of abomasum |
| 19 | Jejunum | 22 | Caudal recess | 26 | Cranial part of duodenum | 30 | Omasum covered by lesser omentum |

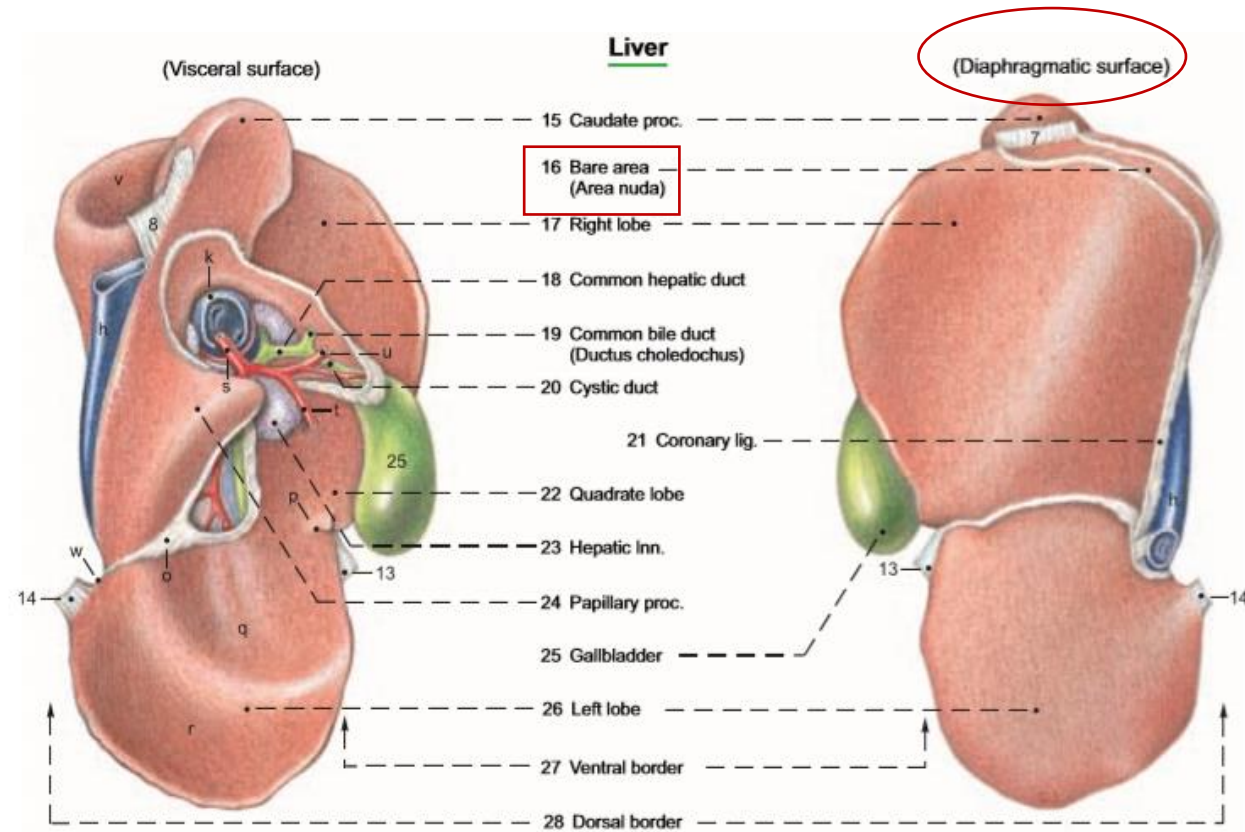
(See pp. 17, 63, 65, 67)

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FACIES DIAPHRAGMATICA:

AREA NUDA:

- jobb lebenyen
- peritoneum mentes terület



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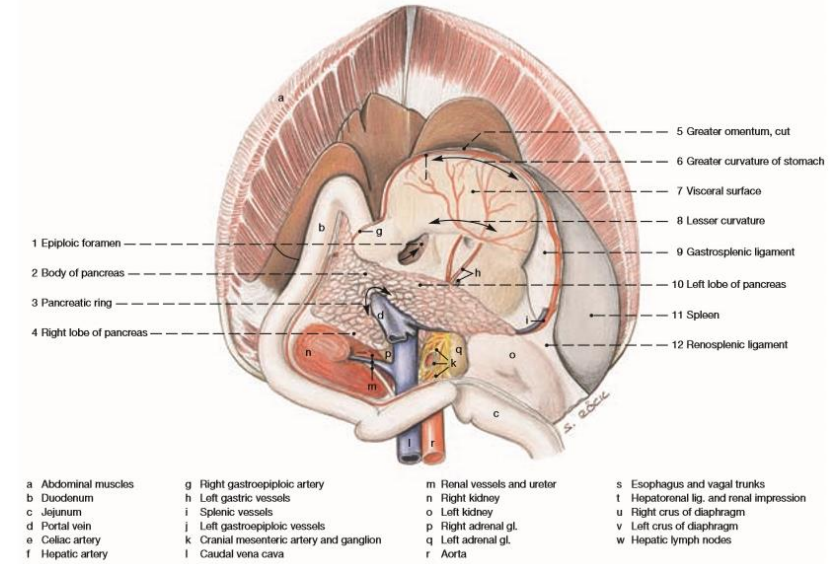
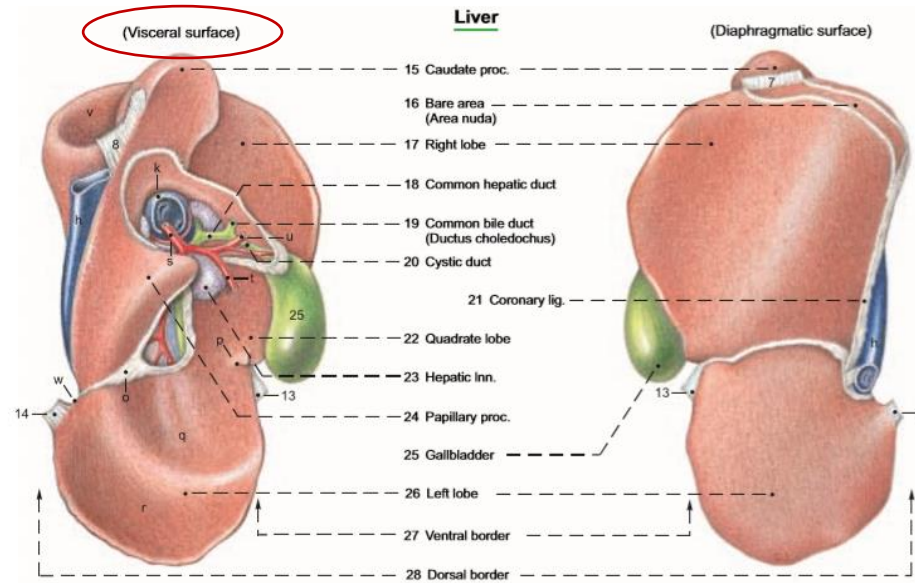
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FACIES VISCERALIS:

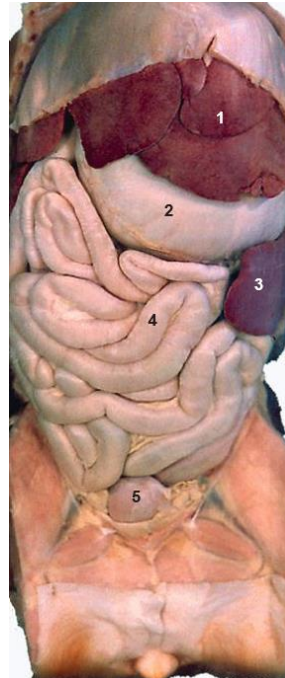
- caudál felé tekint

szomszédos szervekkel áll kapcsolatban:

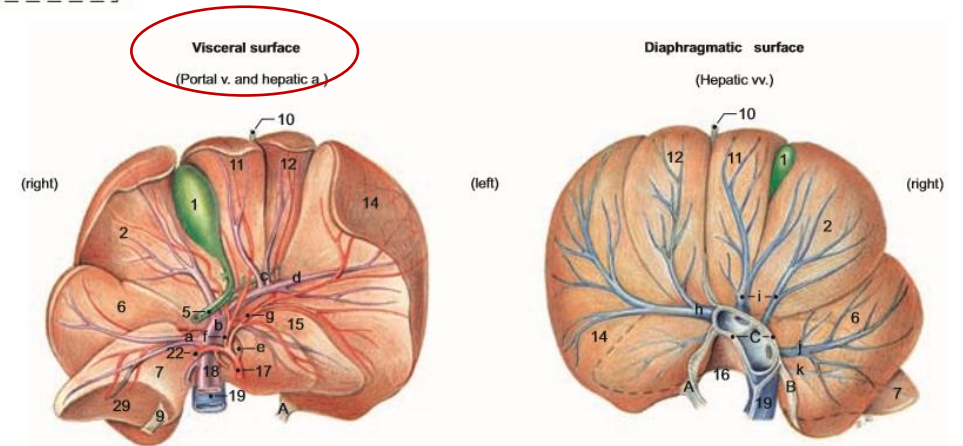
- a) gyomor
- b) duodenum
- c) jejunum
- d) colon
- e) jobb vese



Bo



- 1. Liver
- 2. Stomach
- 3. Spleen
- 4. Small intestine
- 5. Bladder



Legend :

A Left triangular lig.
B Right triangular lig.
C Coronary lig. of liver

Portal vein:
a Right br.
b Left br.
c Umbilical part
d Transverse part

Hepatic a. :
e Right lat. br.
f Right med. br.
g Left br.

Hepatic vv. :
h Left hepatic v.
i Middle hepatic v.
j Right hepatic v.
k Right acc. hepatic v.

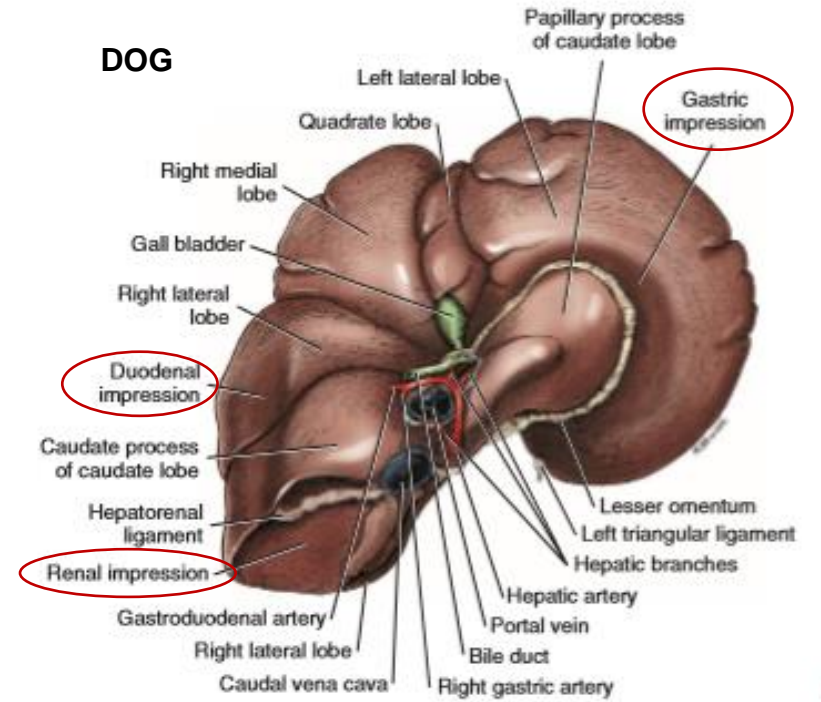
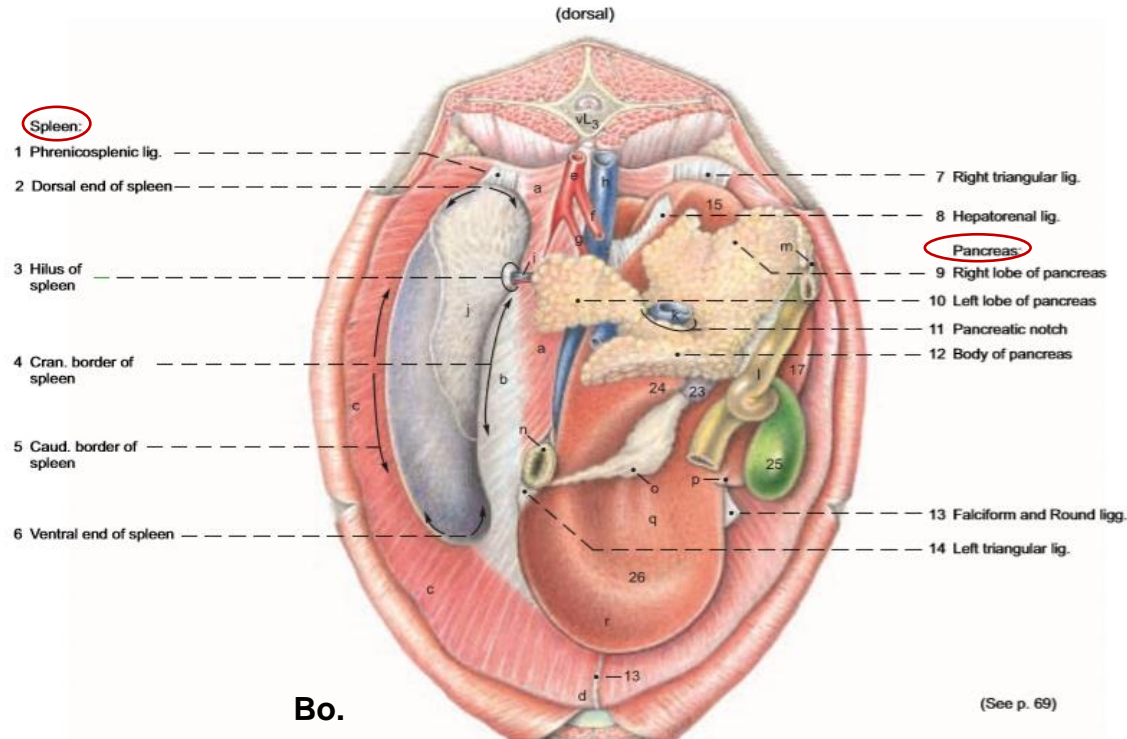
Ca

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FACIES VISCERALIS:

BENYOMATOK (IMPRESSIO) szomszédos szervek által:

1. impressio esophagea – margo dorsálison
2. impressio gastrica – bal lebenyen
3. impressio duodenalis – ventrálisan, jobbra a porta hepaticától
4. impressio colica – a facies visceralis jobb. ventrális részén
5. impressio pancreatica



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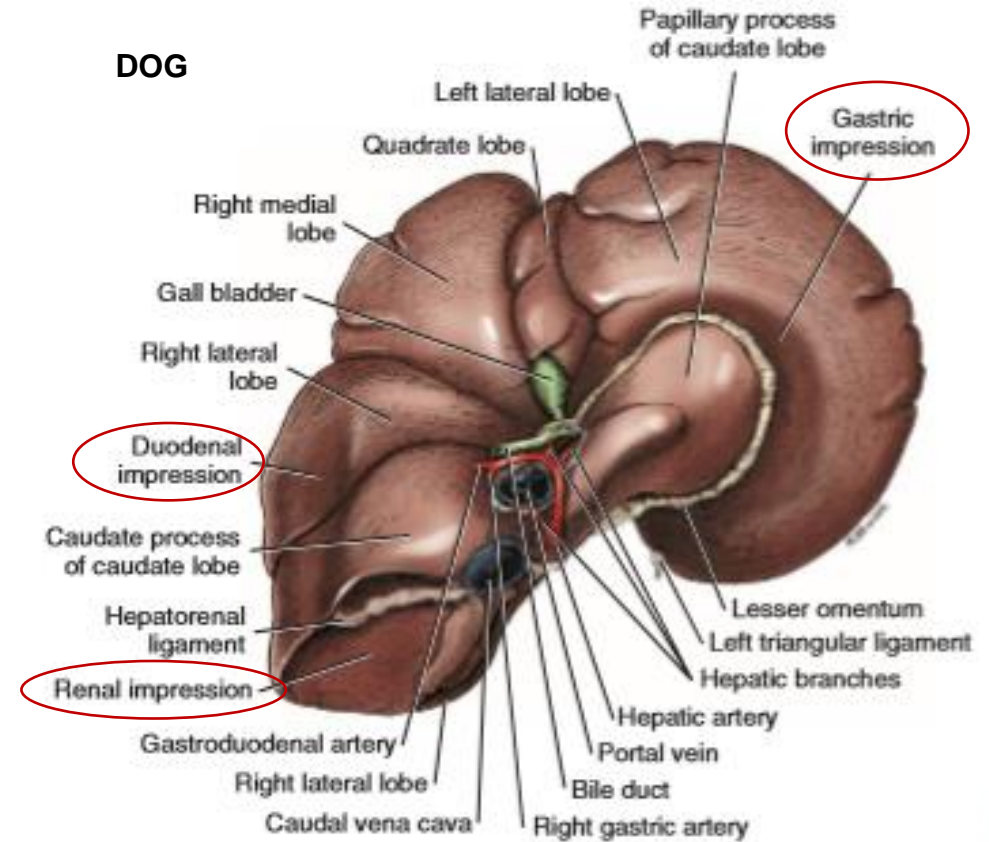
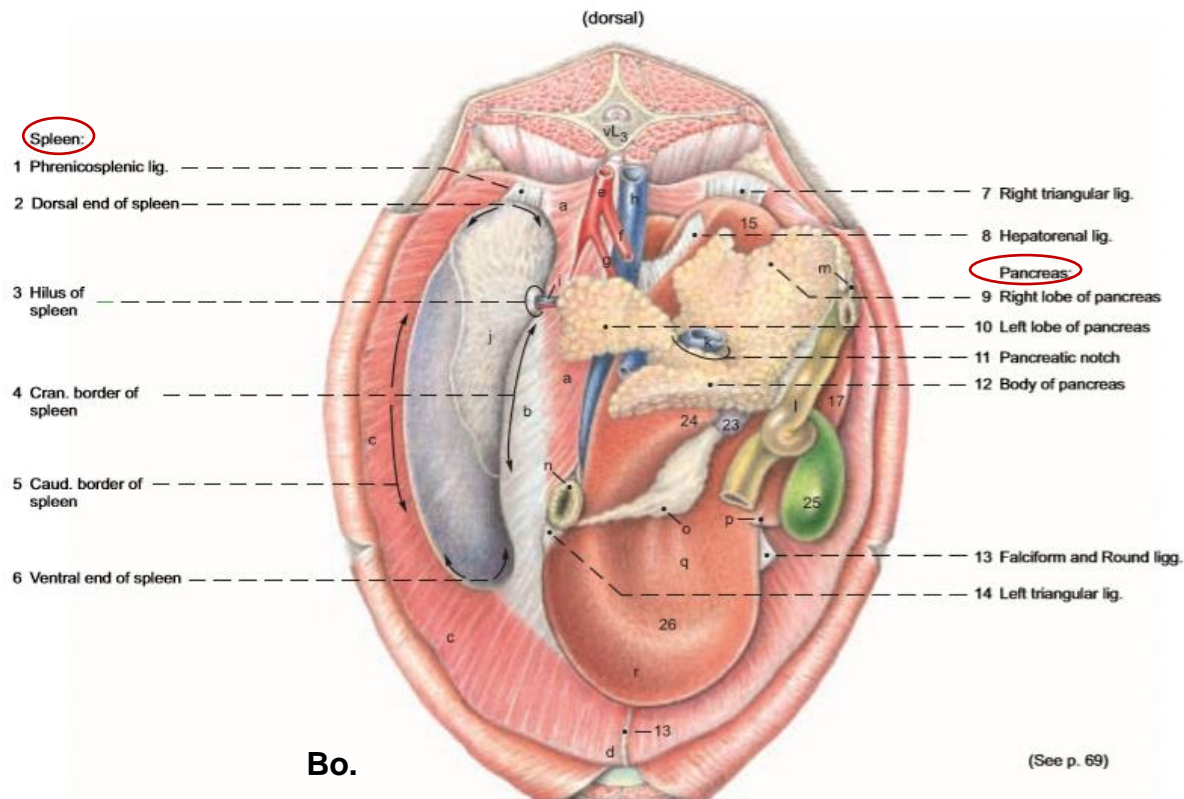
FACIES VISCERALIS:

6. impressio renalis

- Jobb vese fekszik bele, processus caudatuson

7. impressio suprarenalis:

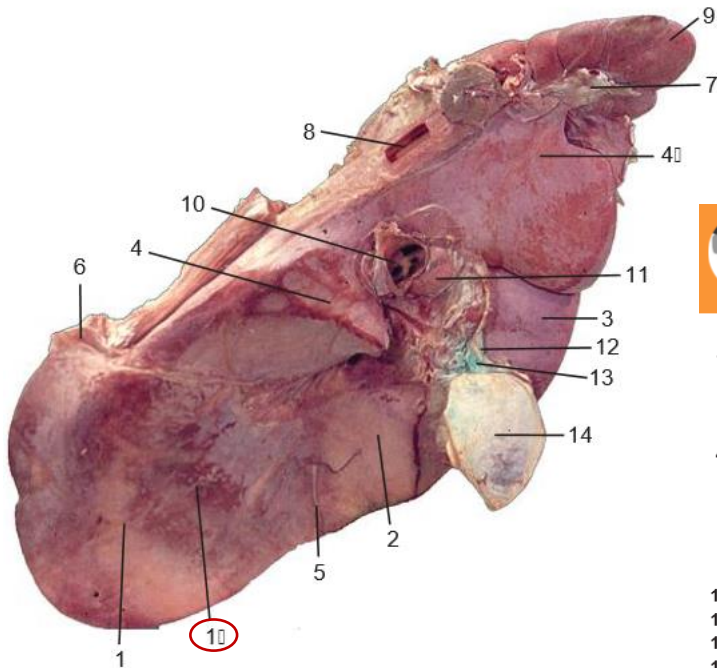
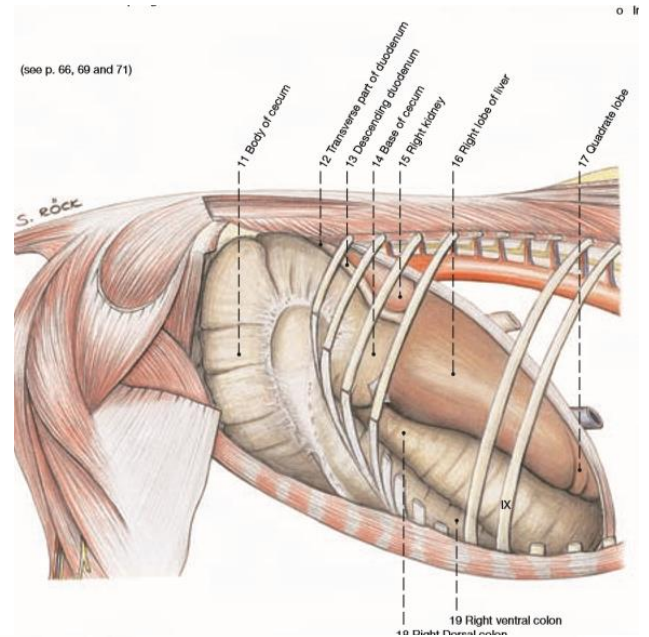
- jobb oldali glandula suprarenalis, lobus caudalison



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FACIES VISCERALIS:

1. impressio reticularis – bal lebenyen – kérődzőben
2. impressio omasica – facies visceralis nagyobb részét foglalja el – kérődzőben
3. impressio cecalis – jobb lebenyen - lóban

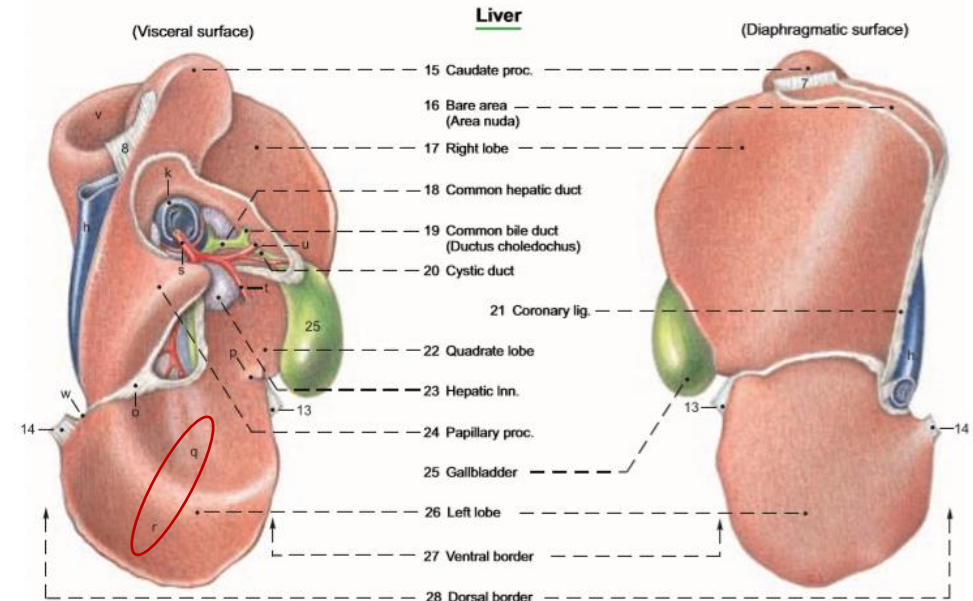


Bovine: Visceral Surface of the Liver

1. Left lobe
- 1'. Omasal impression
2. Quadrate lobe
3. Right lobe
4. Papillary process of the caudate lobe
- 4'. Caudate process of the caudate lobe
5. Round ligament
6. Left triangular ligament
7. Right triangular ligament
8. Caudal vena cava
9. Right kidney
10. Portal vein
11. Hepatic lymph node
12. Bile duct
13. Cystic duct
14. Gallbladder

Legend:

- | | | | | | | | | | | | | | | | | | | |
|---------|-----------------------|-------------|-------------------|---------------------|-----------------------------|-------------|------------|-----------------------------|-------------|------------------|--------------------------|---------------------|------------------------|--------------|--------------------|---------------------|--------------------|------------------------------------|
| e Aorta | f Cran. mesenteric a. | g Celiac a. | h Caud. vena cava | i Splenic a. and v. | j Splenico-ruminal adhesion | k Portal v. | l Duodenum | m Accessory pancreatic duct | n Esophagus | o Lesser omentum | p Fissure for round lig. | q Omasal impression | r Reticular impression | s Hepatic a. | t Right gastric a. | u Gastroduodenal a. | v Renal impression | w Esophageal impression (cut edge) |
|---------|-----------------------|-------------|-------------------|---------------------|-----------------------------|-------------|------------|-----------------------------|-------------|------------------|--------------------------|---------------------|------------------------|--------------|--------------------|---------------------|--------------------|------------------------------------|

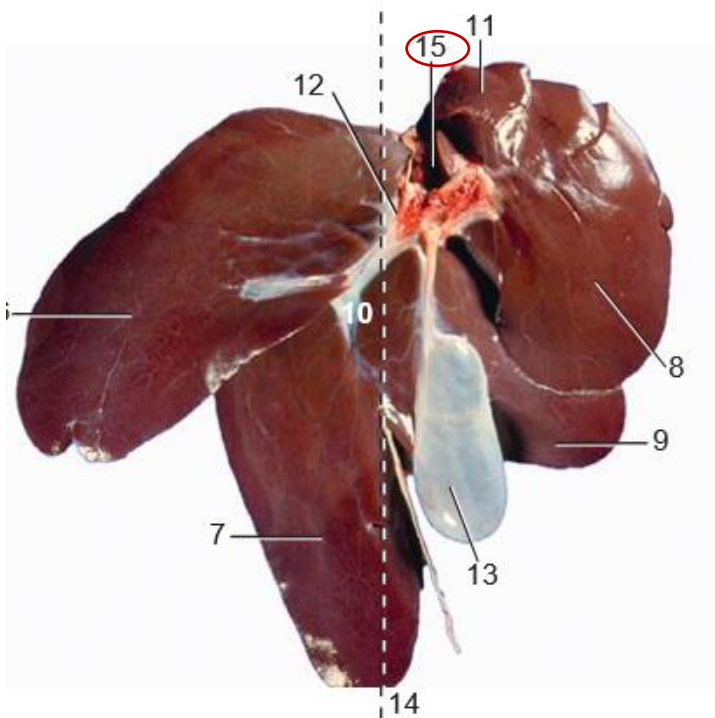


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FACIES VISCERALIS

SULCUS VENAE CAVAE:

- vena cava caudal ist tartalmazza



Porcine: Liver (Top) and Visceral Surface of the Liver (Bottom)

1. Central vein
2. Interlobular artery
3. Hepatic lobule
4. Interlobular connective tissue
5. Centrolobular venule
6. Left lateral lobe
7. Left medial lobe
8. Right lateral lobe
9. Right medial lobe
10. Quadrate lobe
11. Caudate process
12. Porta
13. Gallbladder
14. Approximate position of median plane
15. Caudal vena cava

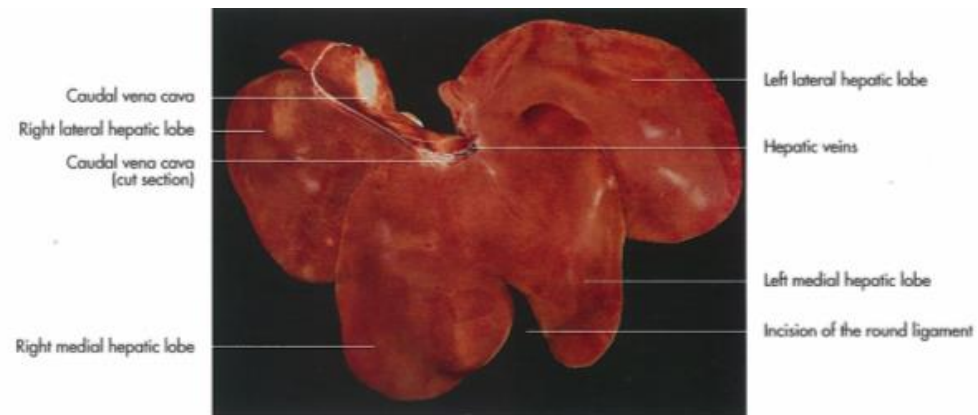


Fig 7-103. Liver of a pig, diaphragmatic surface.

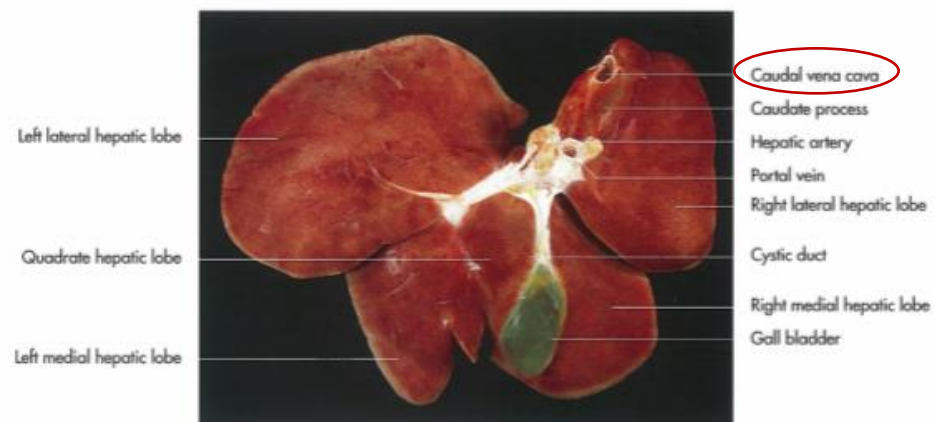


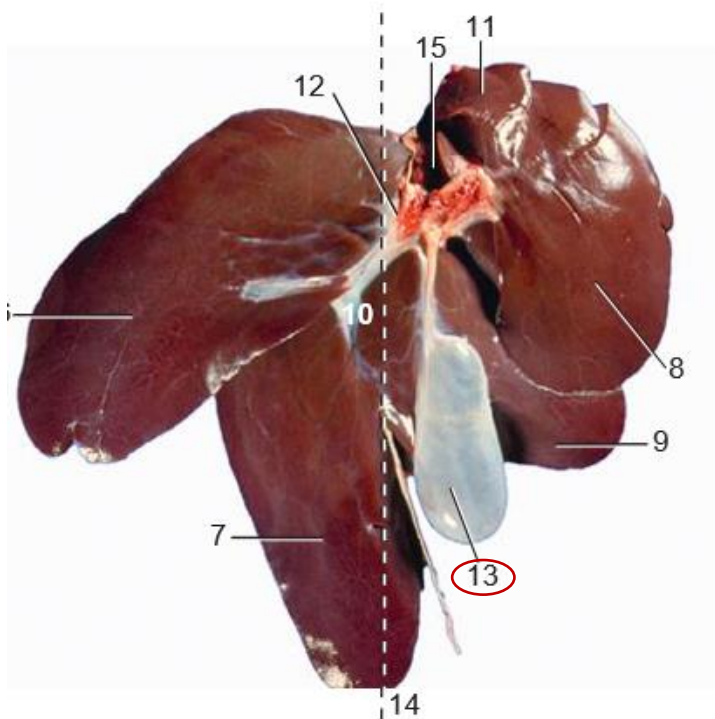
Fig 7-104. Liver of a pig, visceral surface.

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FACIES VISCERALIS

FOSSA VESICAE FELLEA:

- epehólyag fekszik bele



Porcine: Liver (Top) and Visceral Surface of the Liver (Bottom)

1. Central vein
2. Interlobular artery
3. Hepatic lobule
4. Interlobular connective tissue
5. Centrolobular venule
6. Left lateral lobe
7. Left medial lobe
8. Right lateral lobe
9. Right medial lobe
10. Quadrate lobe
11. Caudate process
12. Porta
13. Gallbladder
14. Approximate position of median plane
15. Caudal vena cava

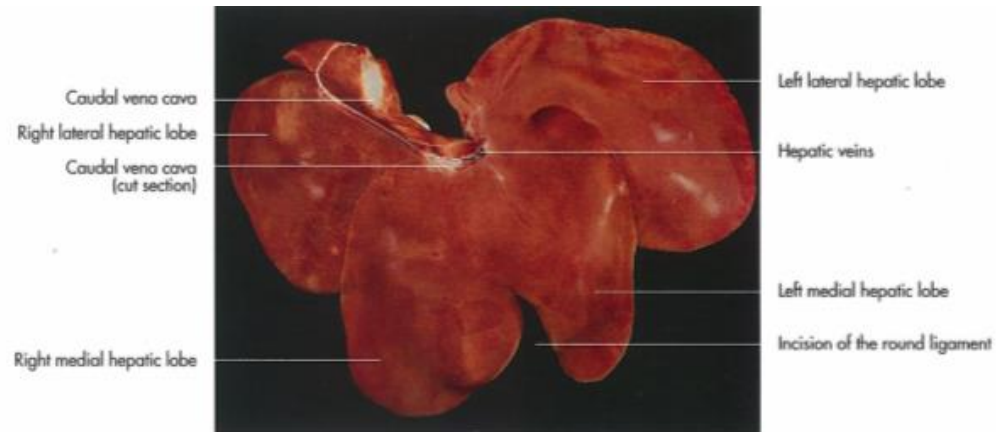


Fig 7-103. Liver of a pig, diaphragmatic surface.



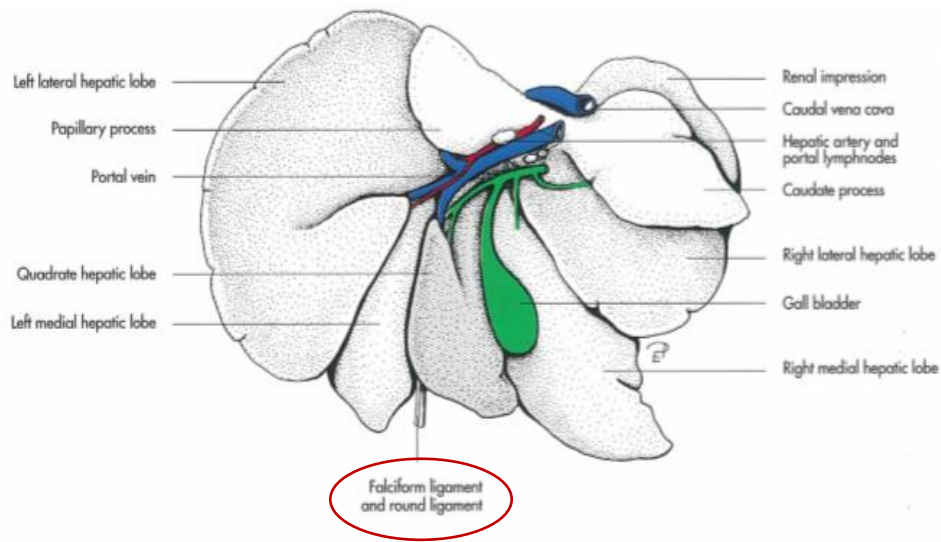
Fig 7-104. Liver of a pig, visceral surface.

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FACIES VISCERALIS

FISSURA LIGAMENTI TEREI:

- **lig. teres hepatis** fekszik bele



ig 7-97. Liver of the dog, schematic, visceral surface.

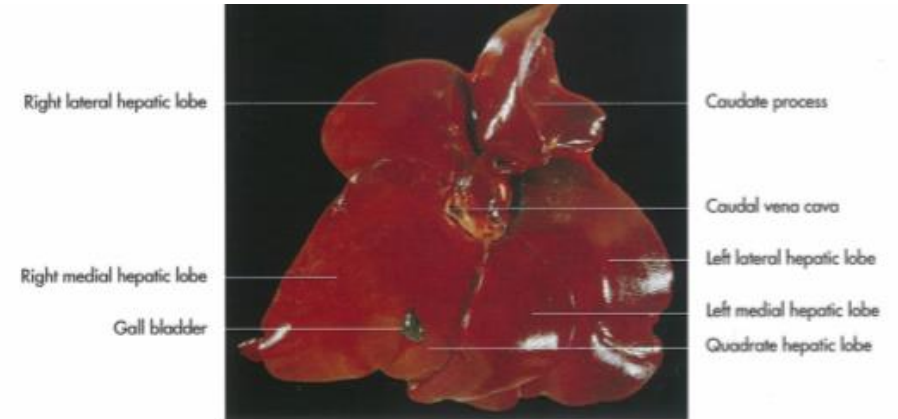


Fig 7-101. Liver of a cat, diaphragmatic surface [König, 1992].

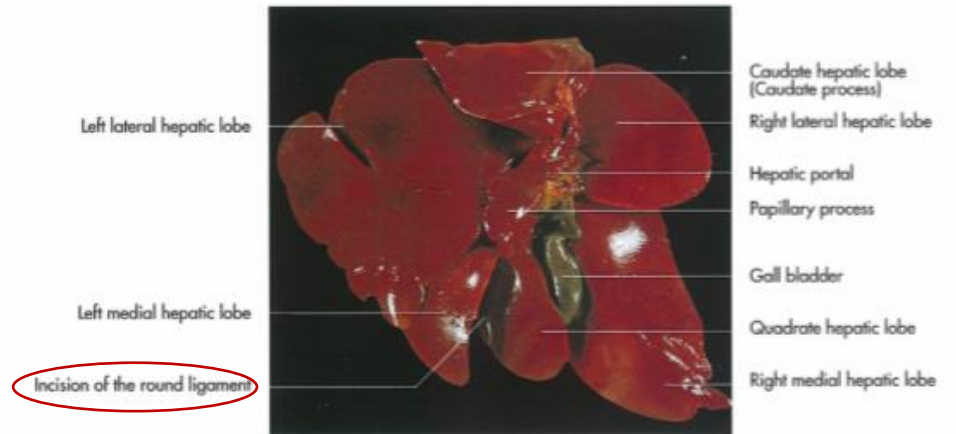


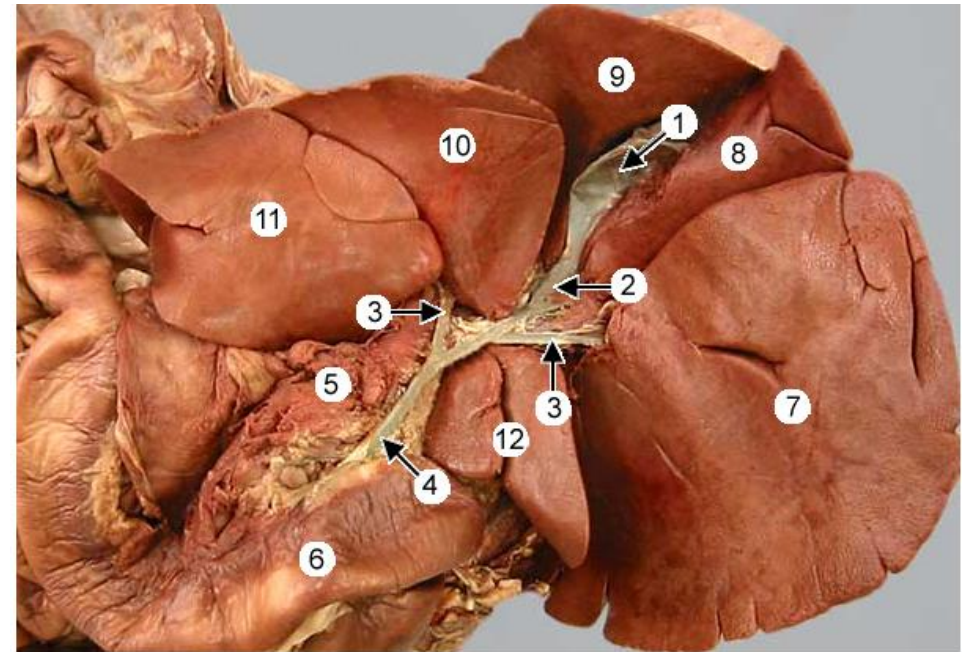
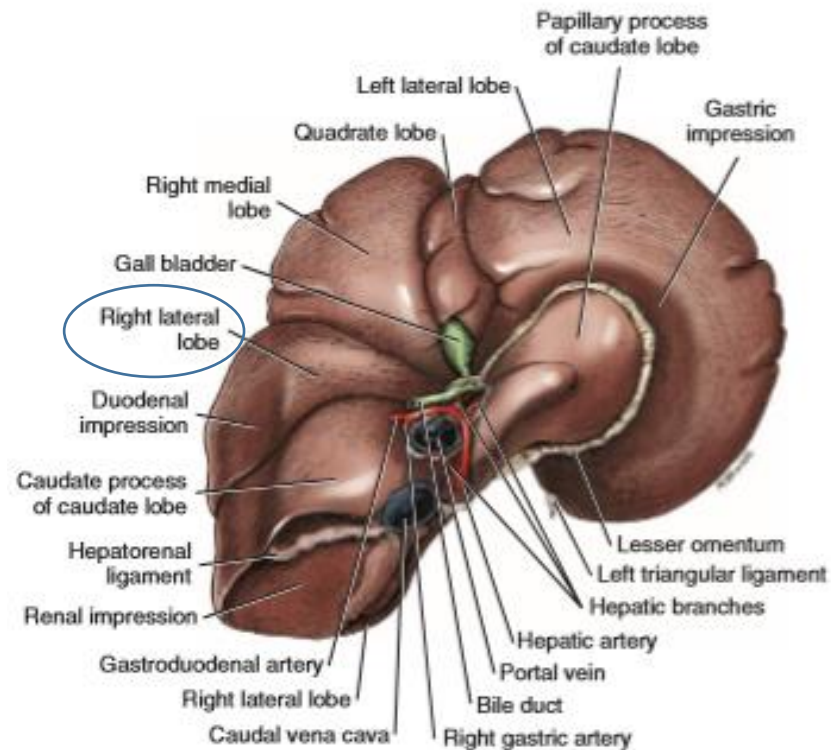
Fig 7-102. Liver of a cat, visceral surface [König, 1992].

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FACIES VISCERALIS

TUBER OMENTALE:

- húsevőben
- jobb lateralis lebenyen lévő kiemelkedés
- bursa omentalis felé néz



Right lateral view of abdominal viscera with the liver reflected cranially and rotated (right toward the top). Observe the **gallbladder** (1), cystic duct (2), hepatic ducts (3), and the **bile duct** (4). The pancreas (5) has been reflected to expose the bile duct which opens into the duodenum (6). Identify **lobes of the liver**: left lateral (7), quadrate (8), right medial (9), right lateral (10), and the caudate (11) and papillary (12) processes of the caudate lobe.

<http://vanat.cvm.umn.edu/carnLabs/Lab16/lmg16-7.html>

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FACIES VISCERALIS

PORTA HEPATIS:

- májkapu

KÉPLETEI:

1. vena portae
2. ductus hepaticus comm.
3. a. hepatica

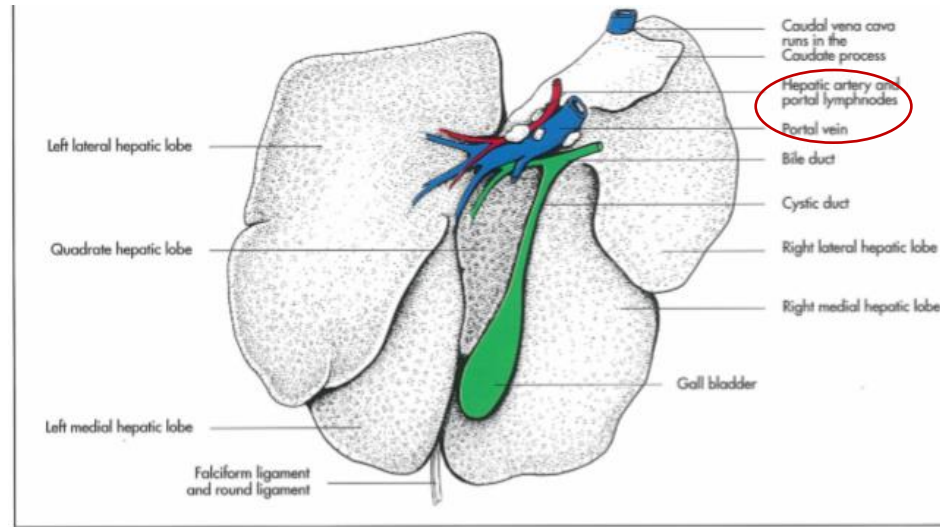
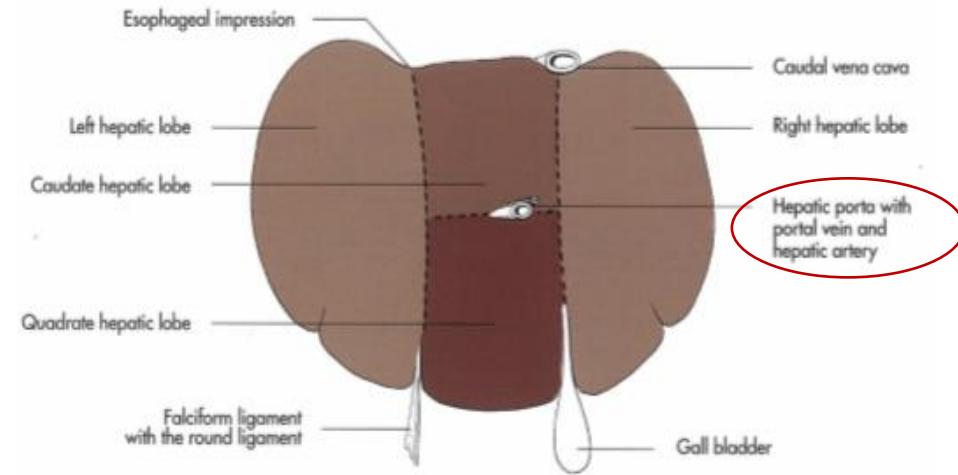


Fig 7-98. Liver of the pig, schematic, visceral surface.



7-104. Liver of a pig, visceral surface.

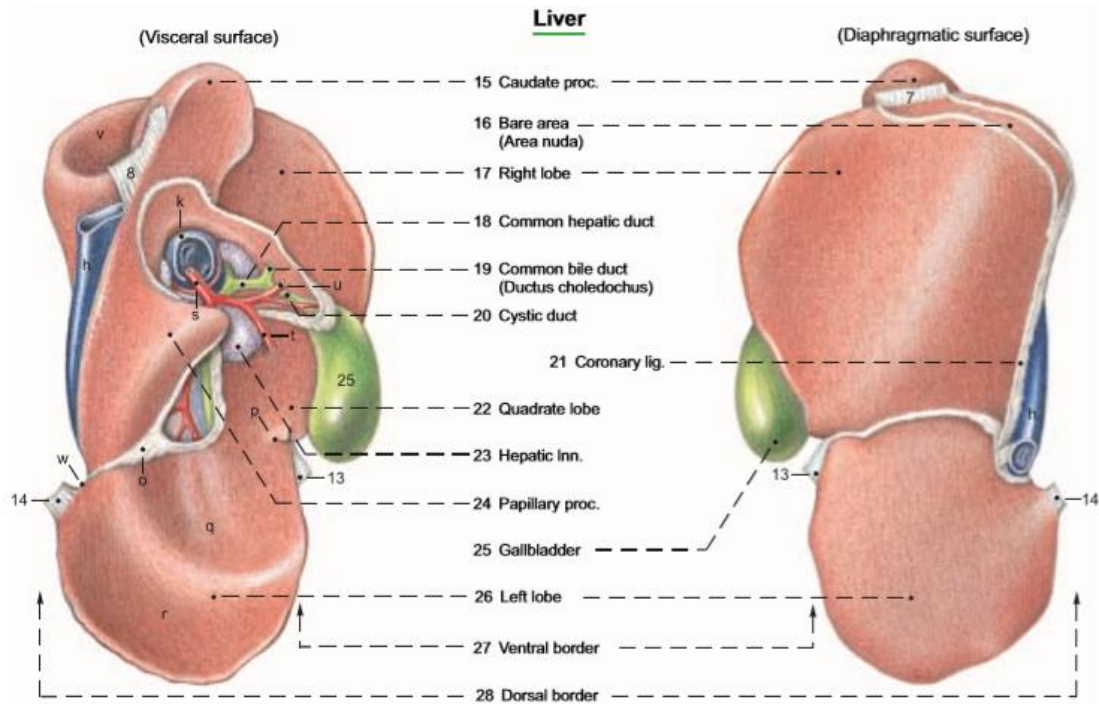
MÁJ (HEPAR)

MARGO OBTUSUS:

- facies diaphragmatica et visceralis dorsális találkozása - topma szél

MARGO ACUTUS:

- facies diaphragmatica et visceralis ventrolaterális találkozása – éles szél



Bo

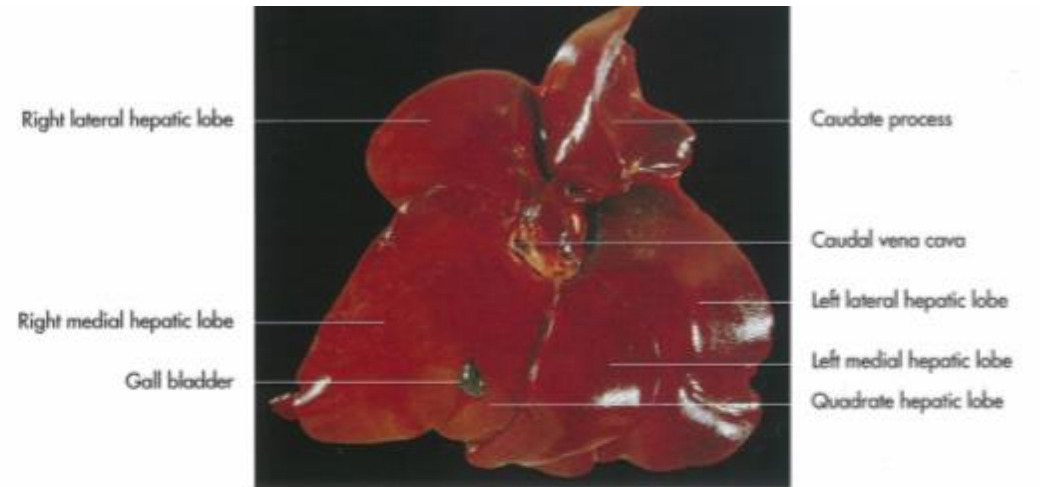


Fig 7-101. Liver of a cat, diaphragmatic surface [König, 1992].



Fig 7-102. Liver of a cat, visceral surface [König, 1992].

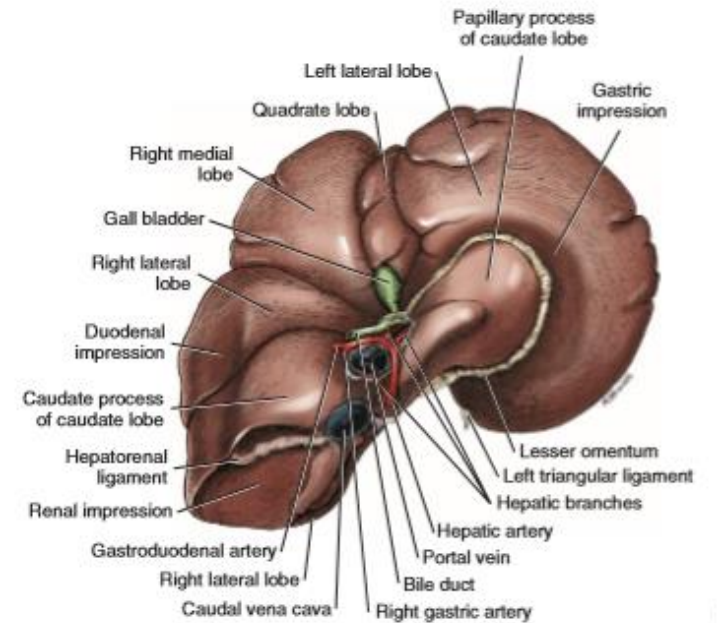
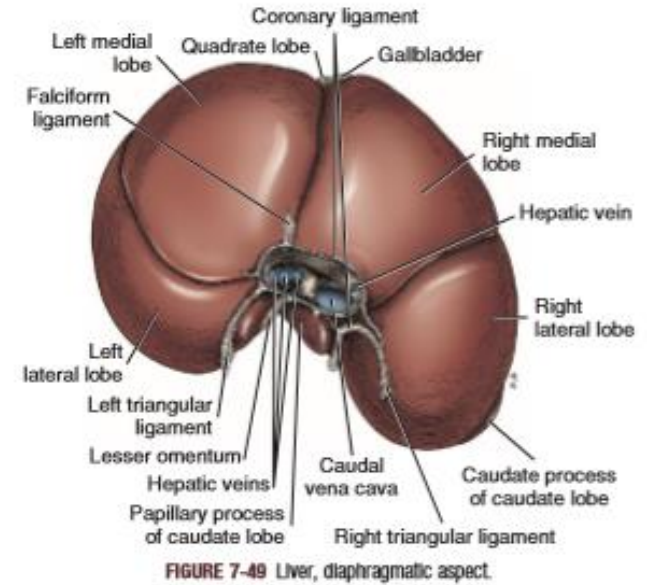
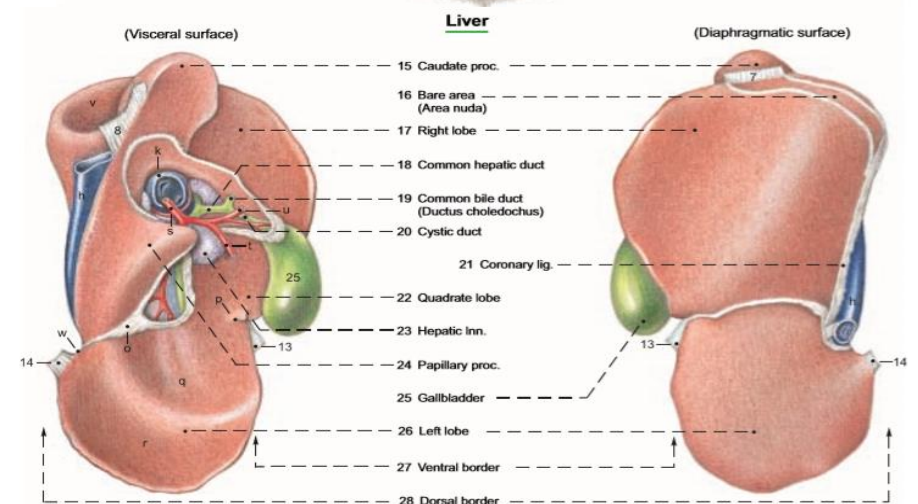
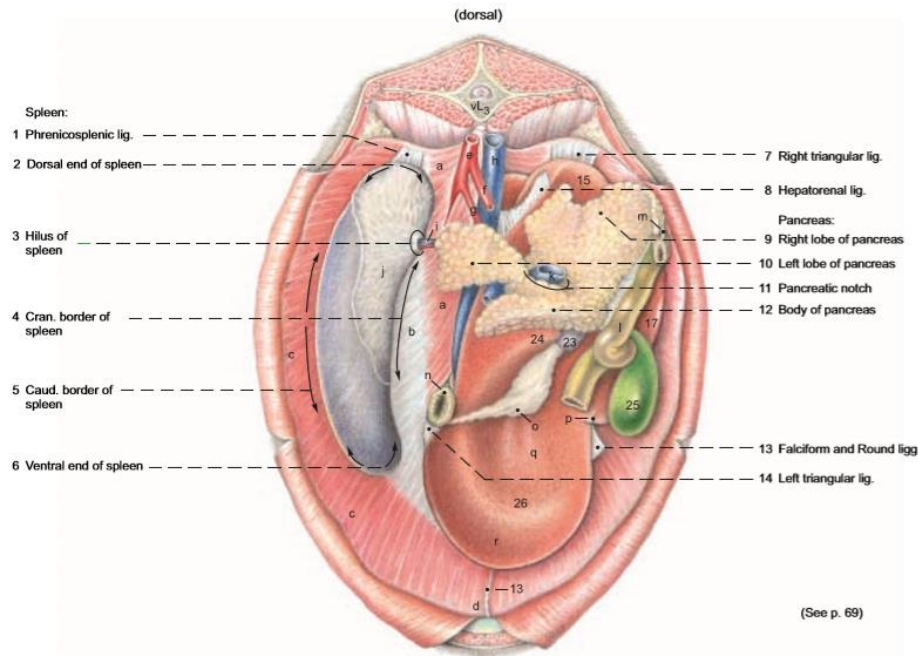
MÁJSZALAGOK

I. OMENTUM MINUS (KISCSEPLESZ)

1. LIGAMENTUM HEPATODUODENALE

2. LIGAMENTUM HEPATOGASTRICUM

II. LIGAMENTUM FALCIFORME HEPATIS



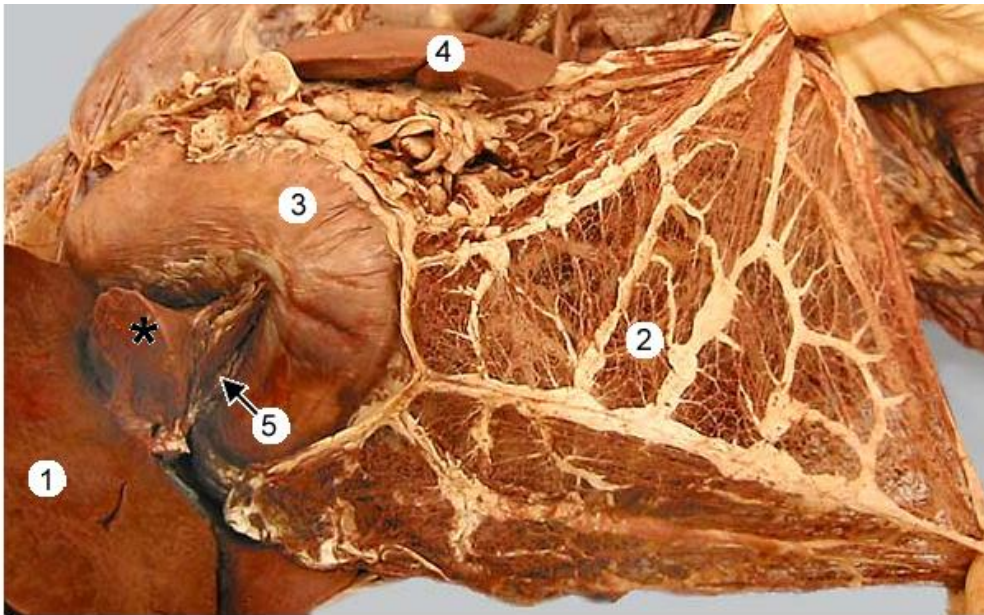
MÁJSZALAGOK

OMENTUM MINUS (KISCSEPLESZ)

- máj zsigeri felszíne és a gyomor kigömbülete között

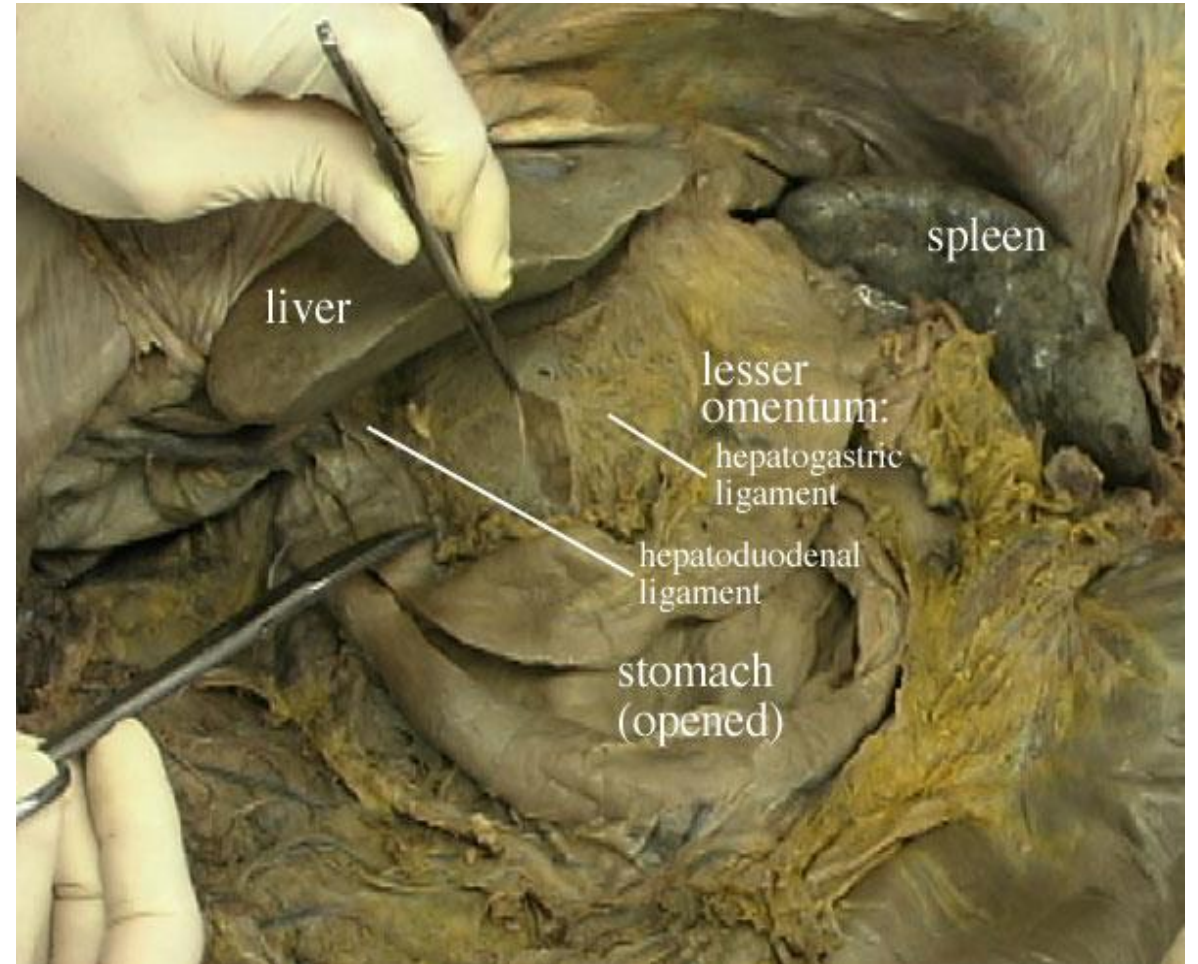
RÉSZEI:

1. LIGAMENTUM HEPATODUODENALE
2. LIGAMENTUM HEPATOGASTRICUM



Craniolateral view of abdominal viscera, the liver (1) is reflected cranially and the **greater omentum** (2) pulled out. The greater omentum attaches to the greater curvature of the **stomach** (3) and to the **spleen** (4). The **lesser omentum** (5) runs from the lesser curvature of the stomach to the liver (covering the papillary process (asterisk) of the liver).

<http://vanat.cvm.umn.edu/carnLabs/Lab16/lmg16-3.html>



MÁJSZALAGOK

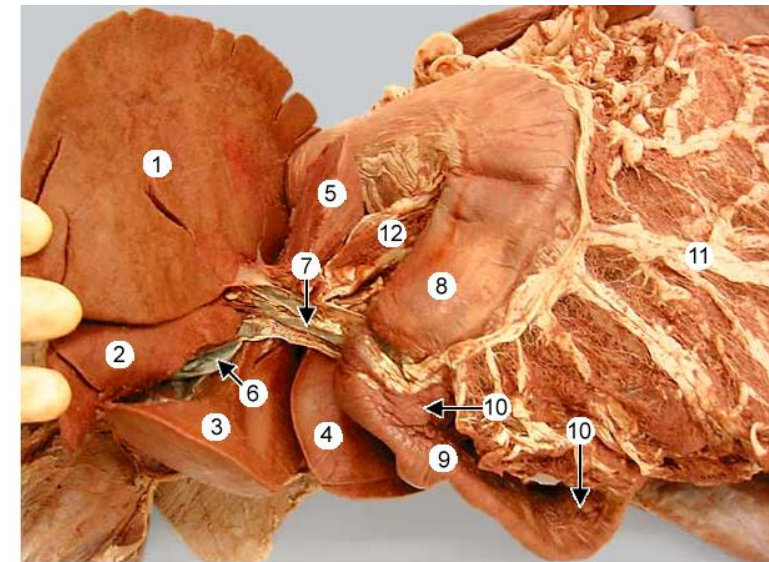
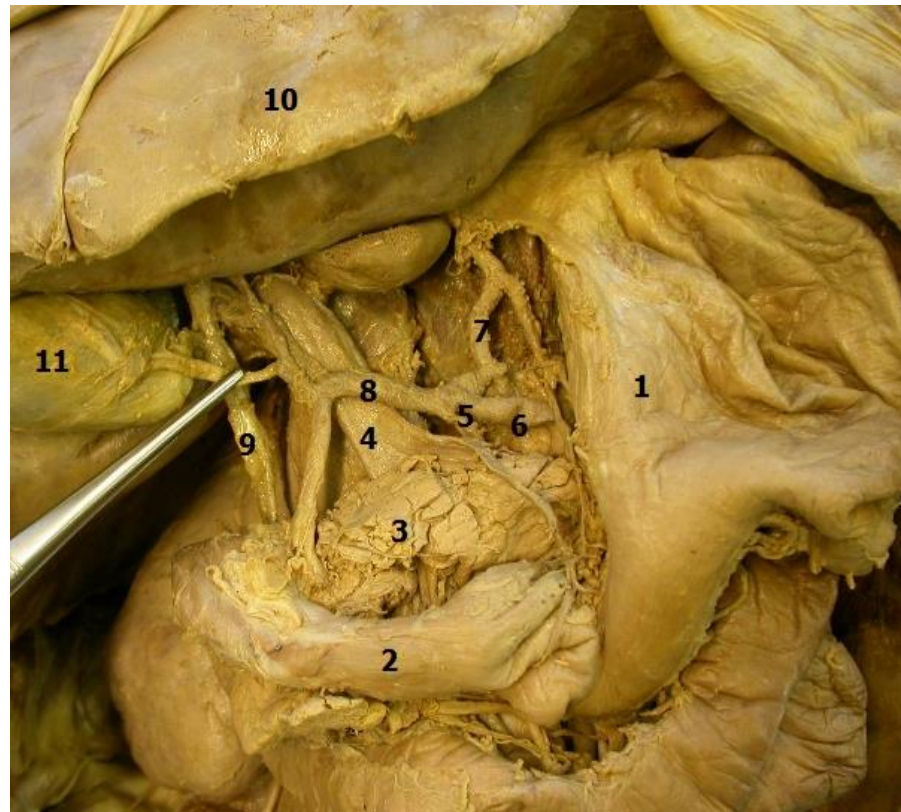
OMENTUM MINUS (KISCSEPLESZ)

1. LIGAMENTUM HEPATODUODENALE

- porta hepatis és a pars cranialis duodeni között

tartalmazza:

1. ductus choledochus
2. vena portae
3. a. hepatica – a. gastrica dext.



Right side view of abdominal viscera with the liver reflected cranially (left side toward the top). In addition to the left lateral (1), quadrate (2), right medial (3), and right lateral (4) lobes of the liver, the papillary (5) process of the caudate lobe of the liver is visible. The gallbladder (6) and cystic duct drain into the bile duct (7). The pyloric region (8) of the stomach opens into the duodenum (9). The pancreas (10) is beside the duodenum. Identify the greater omentum (11) and lesser omentum (12).

<http://vanat.cvm.umn.edu/carnLabs/Lab16/lmg16-6.html>

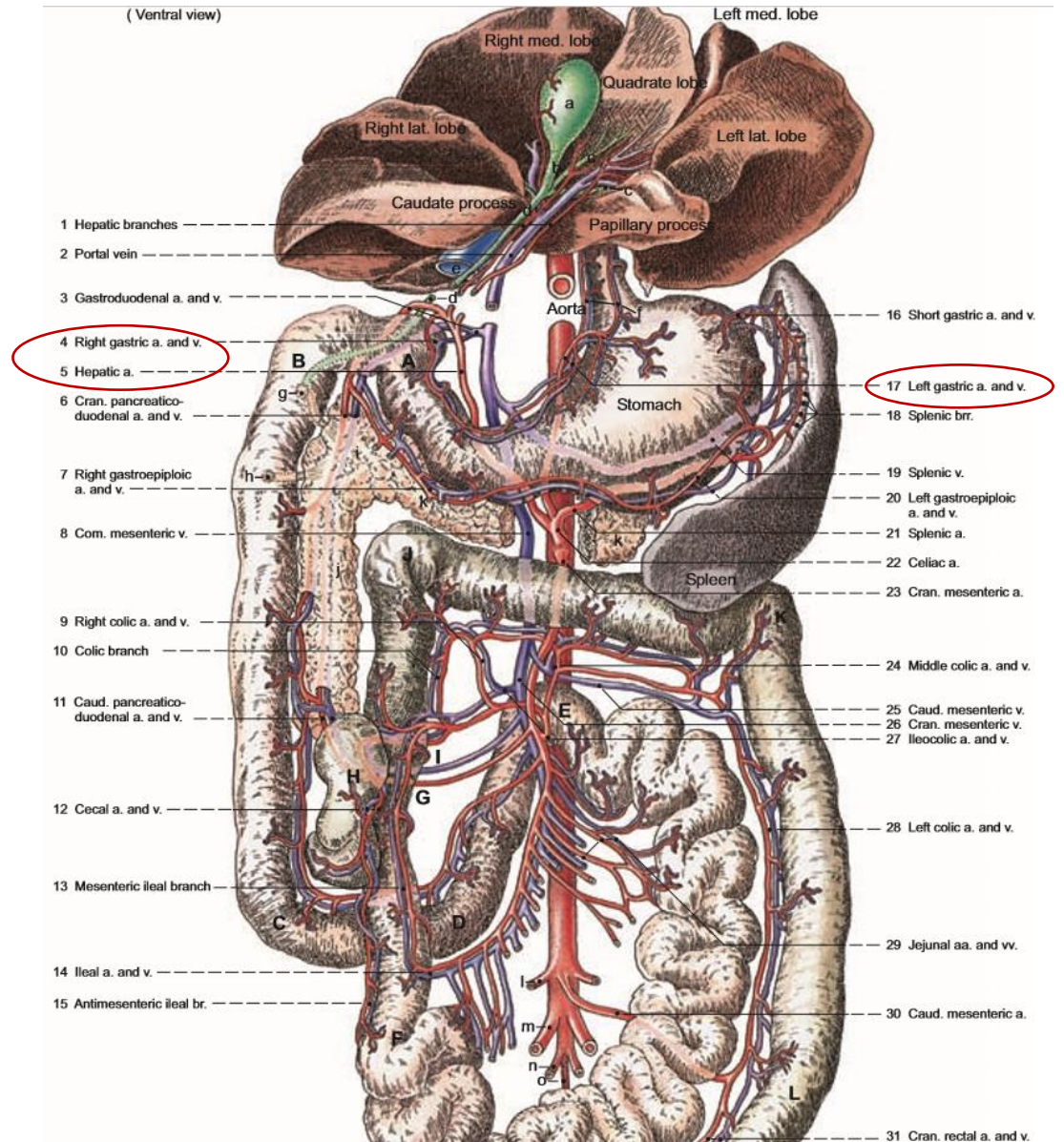
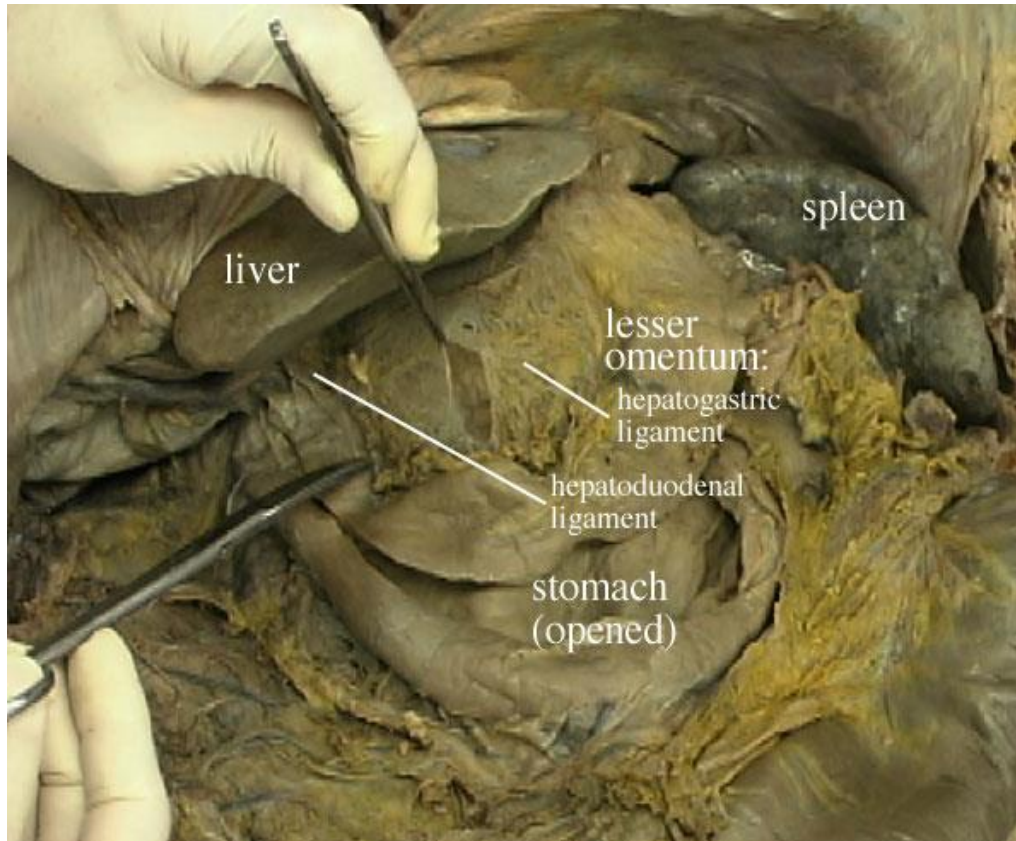
- 1 – Gaster
- 2 – Pars superior duodeni,
- 3 – Pancreas corpus,
- 4 - V. portae
- 5 - Truncus coeliacus
- 6 - A. lienalis
- 7 - A. gastrica sin.
- 8 - A. hepatica comm.
- 9 - Ductus choledochus
- 10 – Hepar
- 11 – Vesica fellea

MÁJSZALAGOK

OMENTUM MINUS (KISCSEPLESZ)

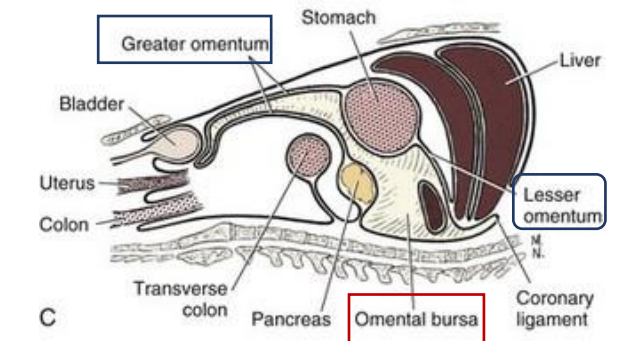
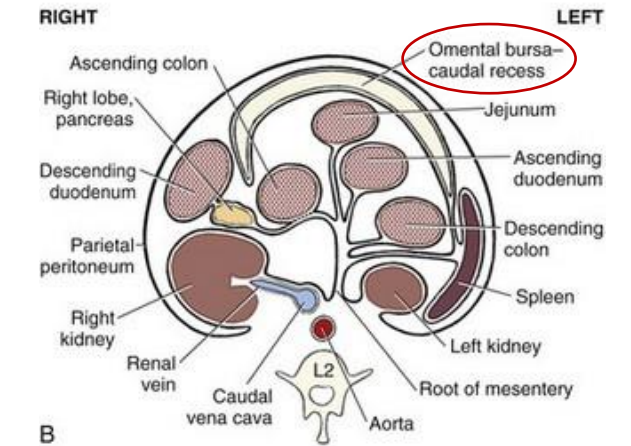
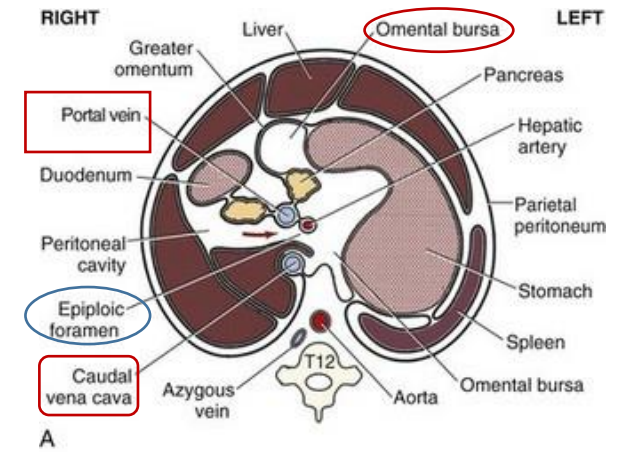
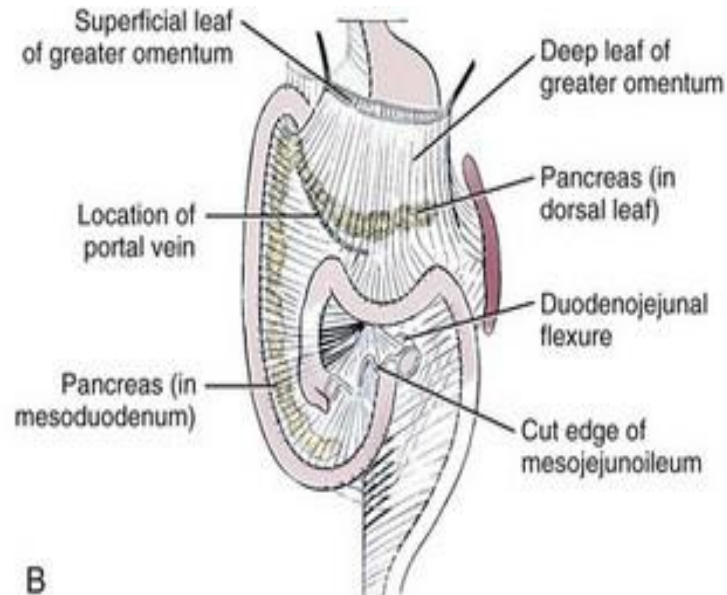
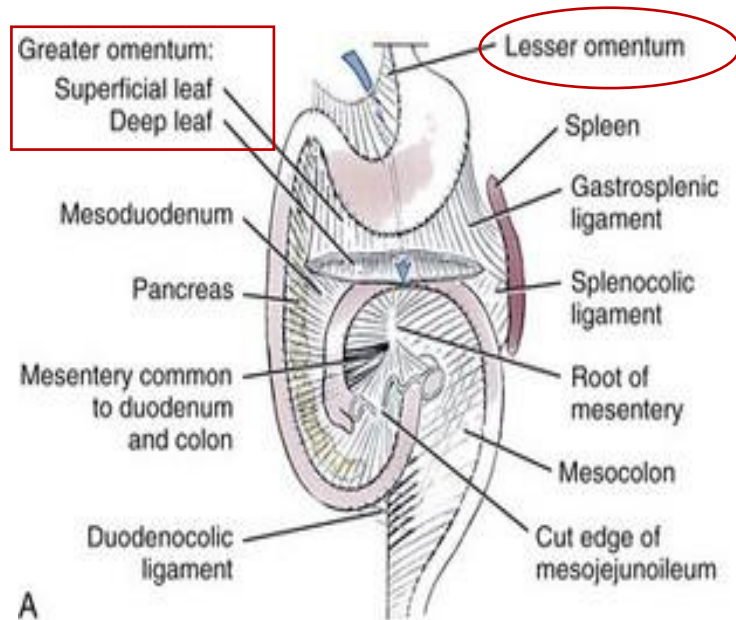
2. LIGAMENTUM HEPATOGASTRICUM

- porta hepatis és a gyomor kiszögelye között
- a. gastrica sin. halad benne



BURSA OMENTALIS (CSEPLESZTÖMLŐ)

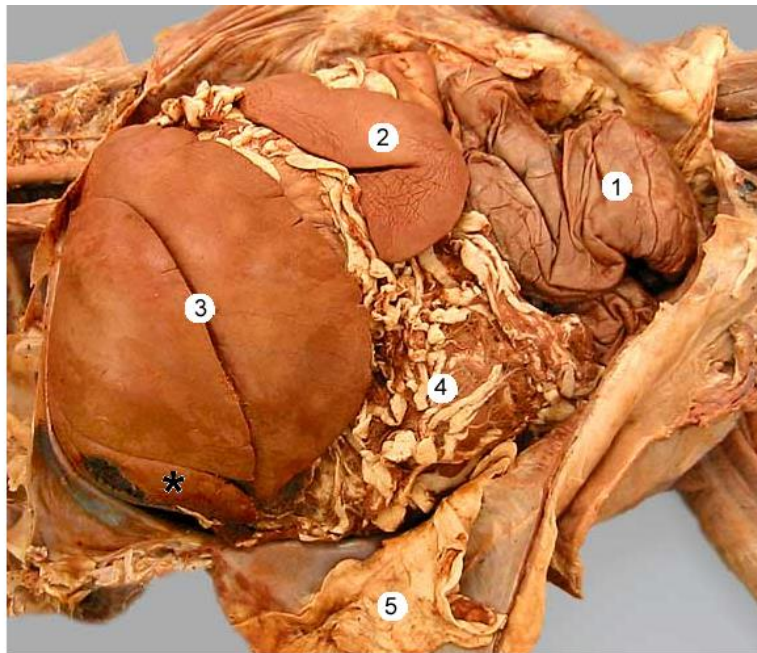
1. Bemenete: foramen omentale seu epiploicum, Winslowi – ventral felől v. cava caudalis
- dorsal felől v. portae határolja
2. Vestibulum bursae omentalis – ventralisan a kiscseplesz határolja
3. Aditus ad recessus caudalem – kiscseplesz felett, recessus caudalis bemenete
4. Recessus caudalis - a nagycseplesz paries superfic. et prof. közötti térség



MÁJSZALAGOK

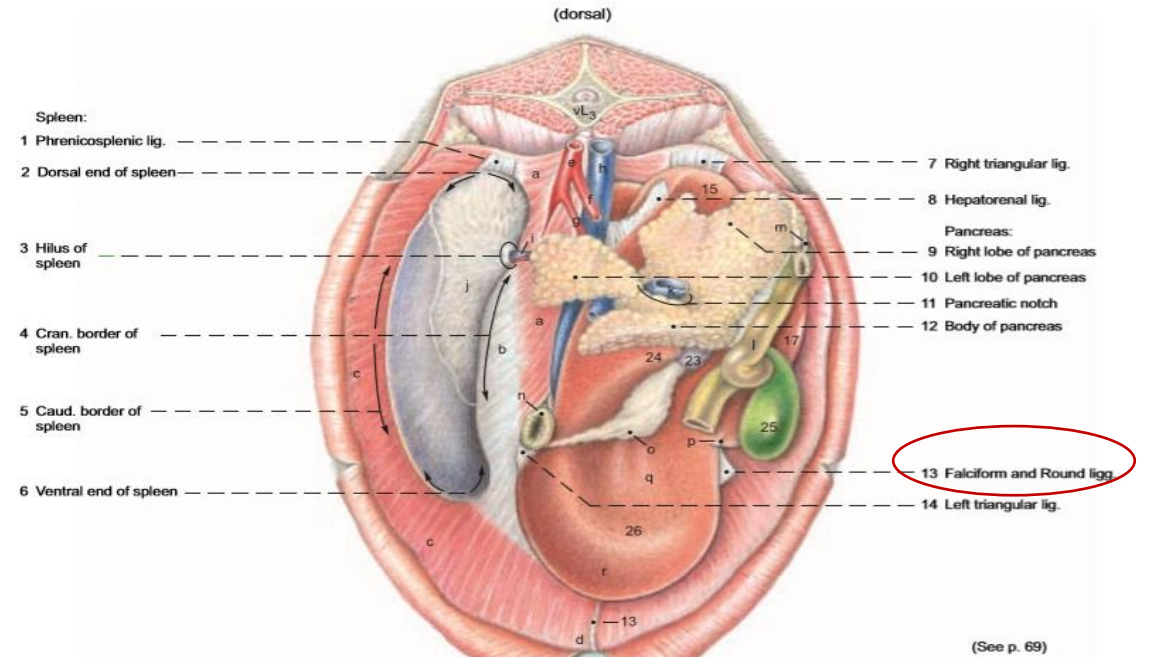
II. LIGAMENTUM FALCIFORME HEPATIS:

- mesogastrium ventrale maradványa
- diaphragma és máj között
- a máj és az elülső hasfal között
- v. umbilicalist tartalmazza embryonális életben
- v. umbilicalis obliterálódik születés után – maradványa a lig. teres hepatis

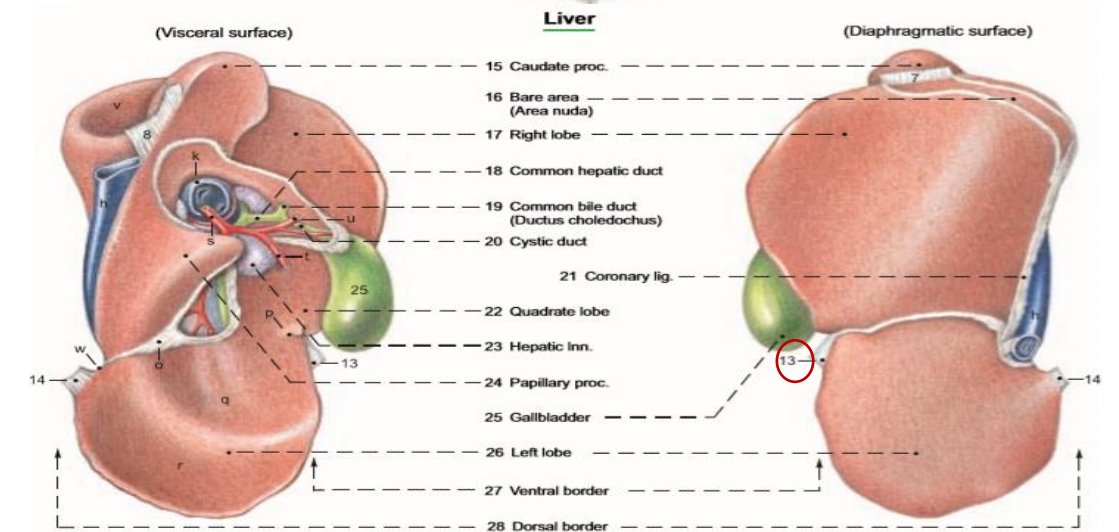


The left side of the abdominal wall is reflected in a female dog with a pregnant uterus (1). The **spleen** (2) and **liver** (3) are visible, but most other viscera are hidden by the **greater omentum** (4). Identify the fat-filled **falciform ligament** (5), which runs between the umbilicus and the liver. When intact, the ligament passes to the left of the quadrate lobe of the liver (asterisk).

<http://vanat.cvm.umn.edu/carnLabs/Lab16/lmg16-1.html>



(See p. 69)



MÁJSZALAGOK

II. LIGAMENTUM TERES HEPATIS:

- elzáródott (obliterált) v. umbilicalis maradványa
- lig. falciforme hepatis folytatása

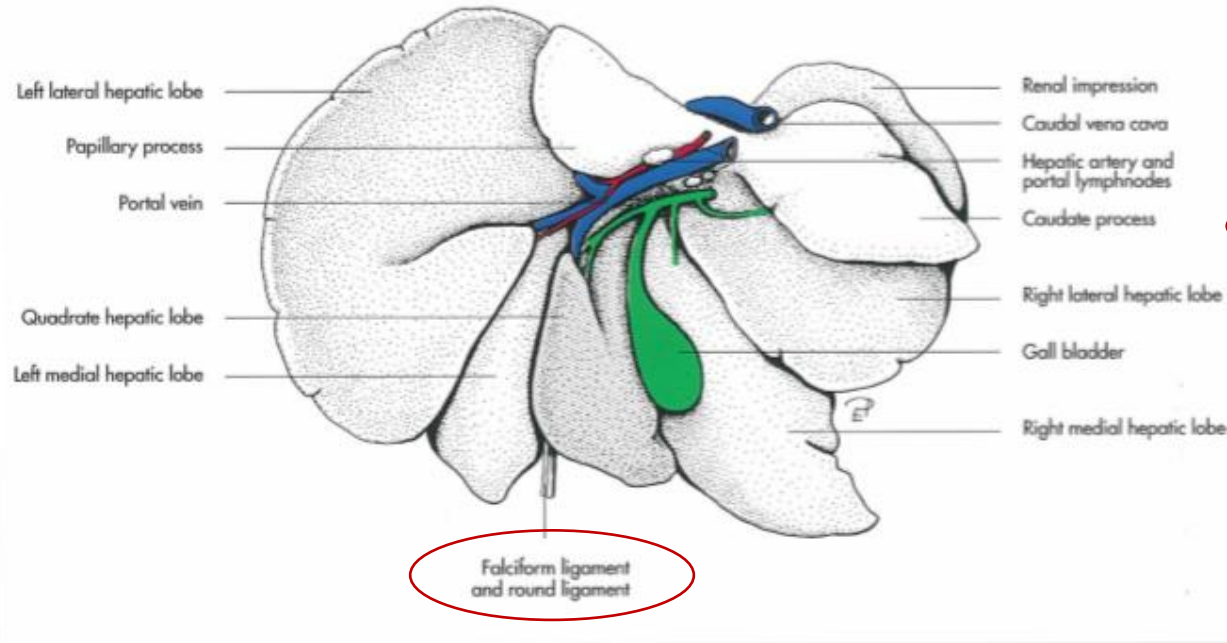


Fig 7-97. Liver of the dog, schematic, visceral surface.

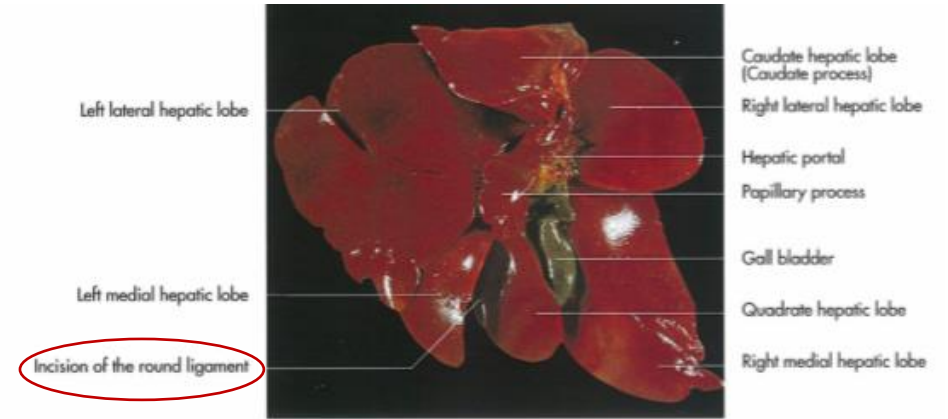
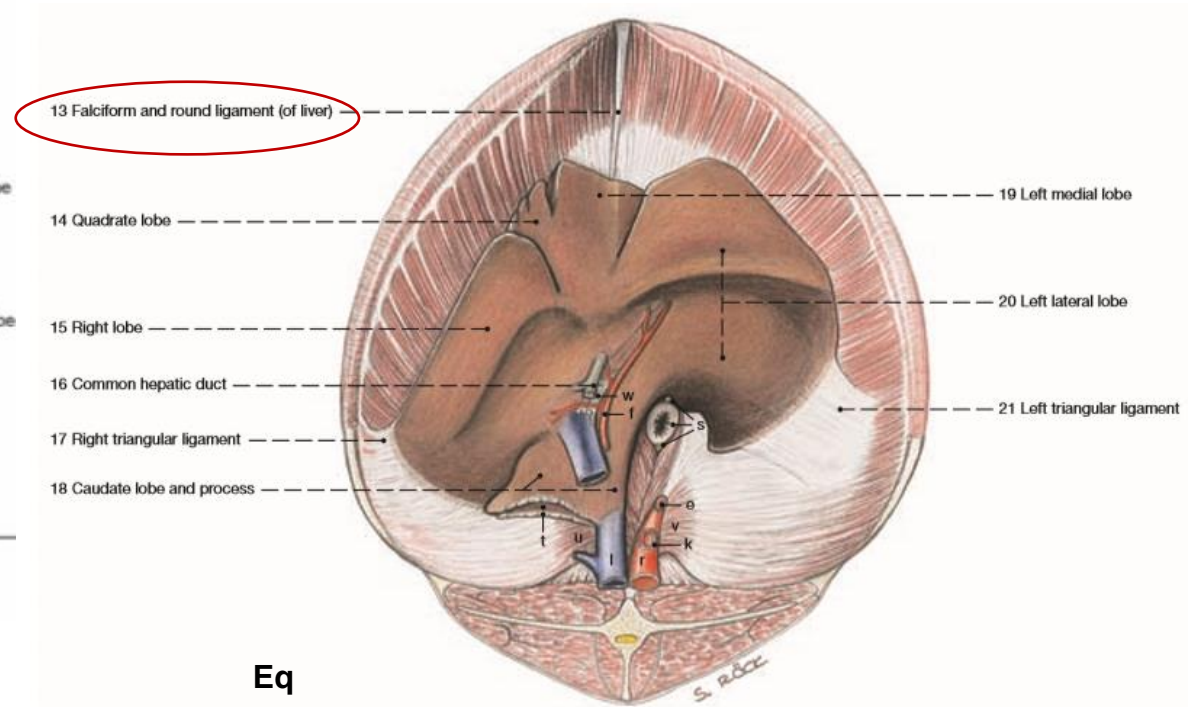


Fig 7-102. Liver of a cat, visceral surface (König, 1992).

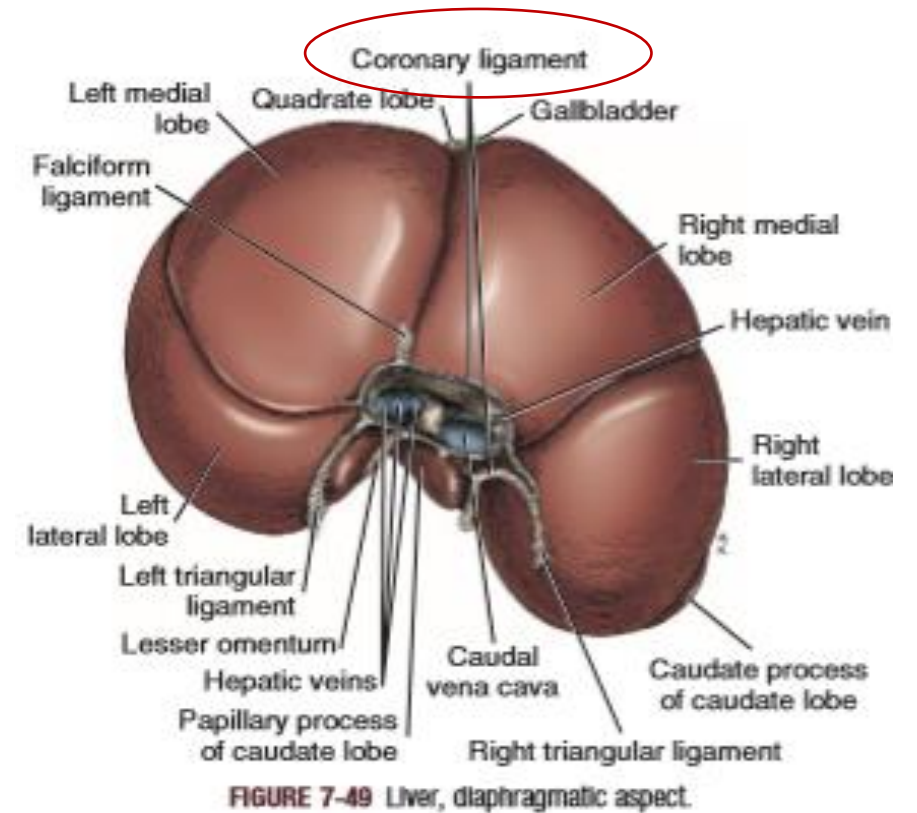
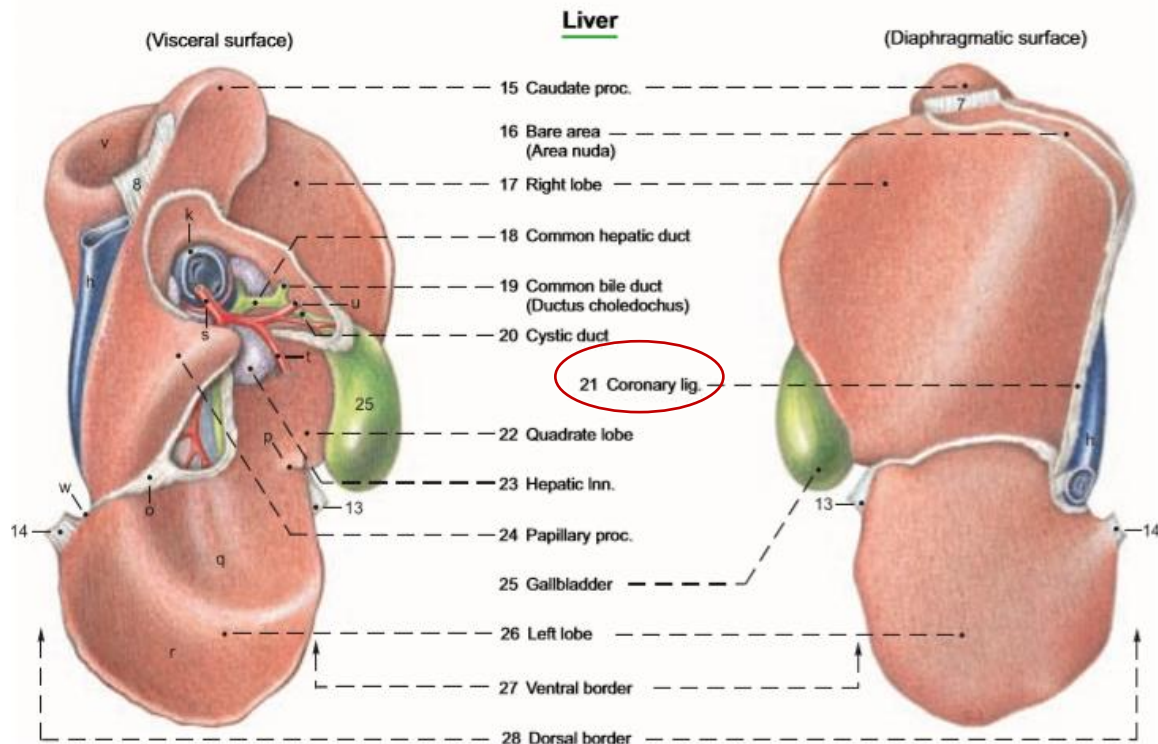


Eq

MÁJSZALAGOK

LIGAMENTUM CORONARIUM:

- vena cava caudalis körül
- máj és a diaphragma között
- ligamentum triangulare dext. et sin.-ban folytatódik



MÁJSZALAGOK

LIGAMENTUM TRIANGULARE DEXTRUM et SINISTRUM:

- jobb és a bal májlebenyt rögzítik a diaphragmához

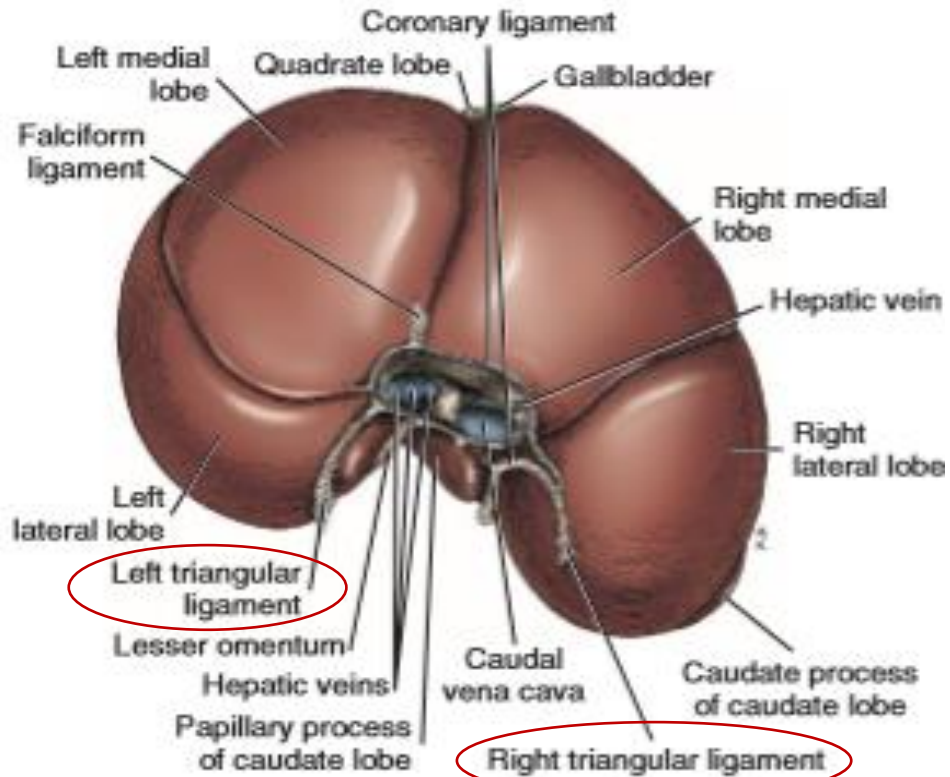
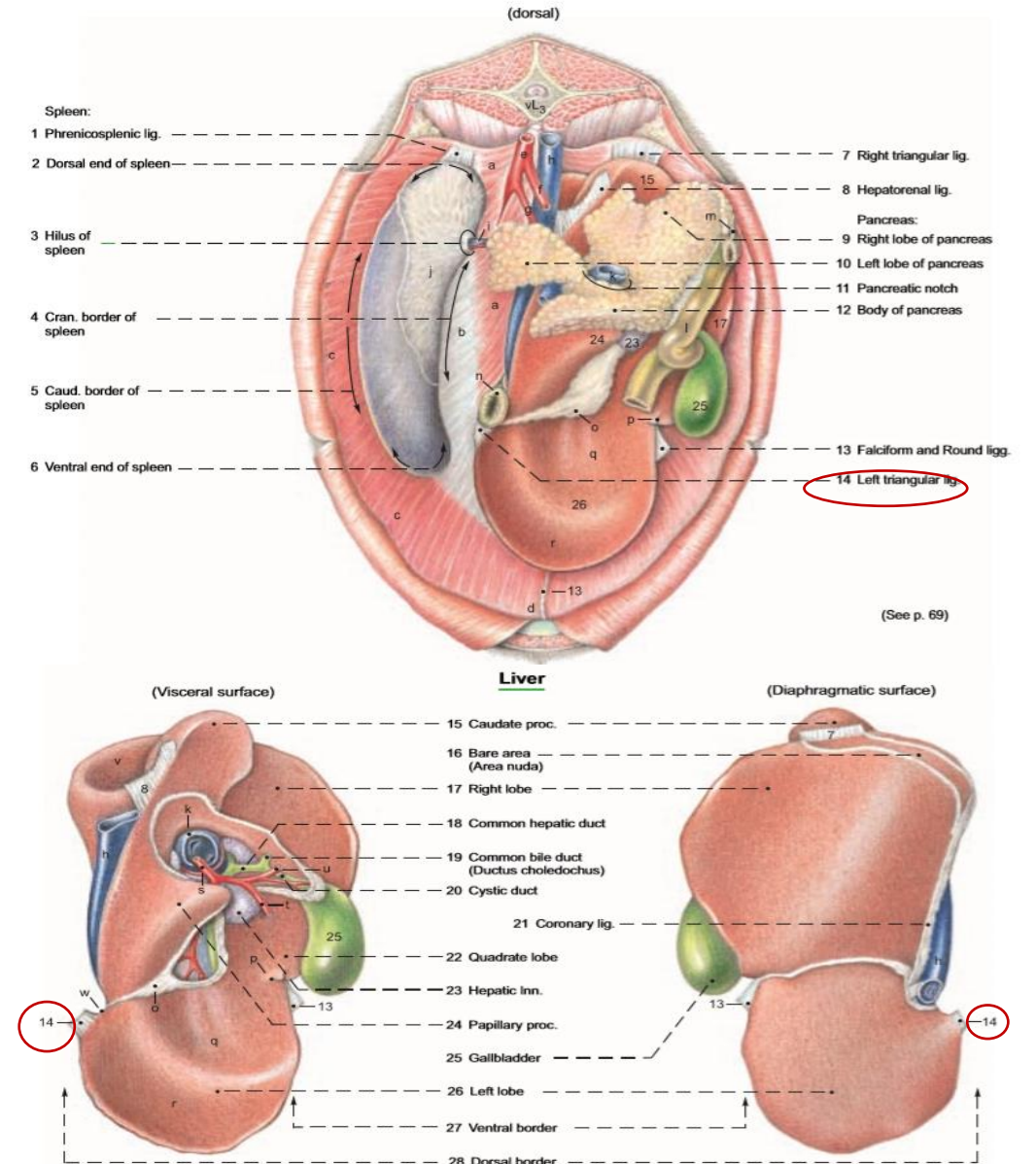


FIGURE 7-49 Liver, diaphragmatic aspect.

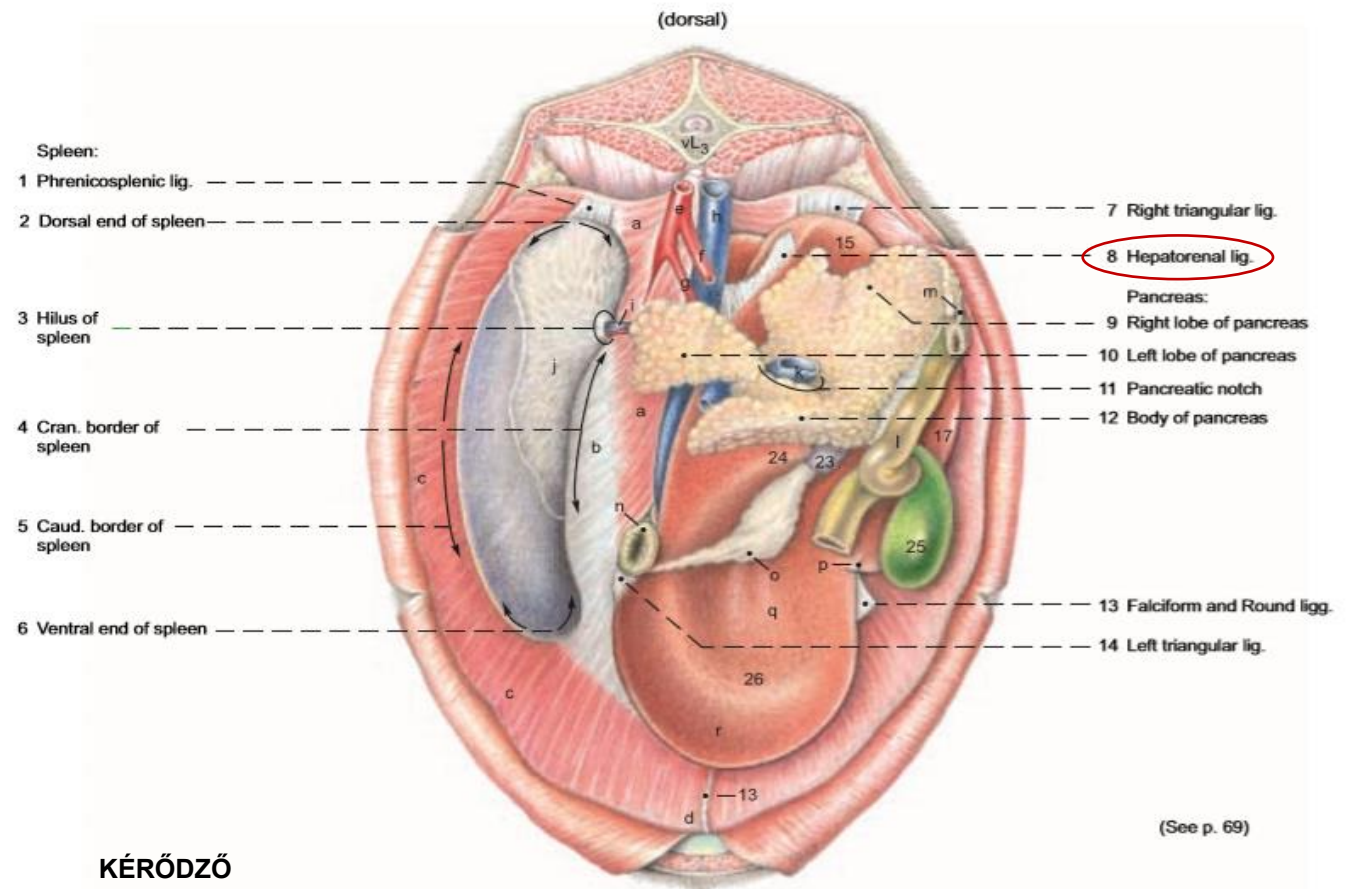


MÁJSZALAGOK

LÓBAN, KÉRŐDZŐBEN:

LIG. HEPATORENALE:

- processus caudatus a jobb veséhez és a vakbél fejéhez köti



KÉRŐDZŐ

MÁJ LEBENYEI (LOBUS HEPATIS)

1. LOBUS HEPATIS SINISTER

2. LOBUS HEPATIS DEXTER

3. LOBUS HEPATIS CAUDATUS

4. LOBUS HEPATIS QUADRATUS

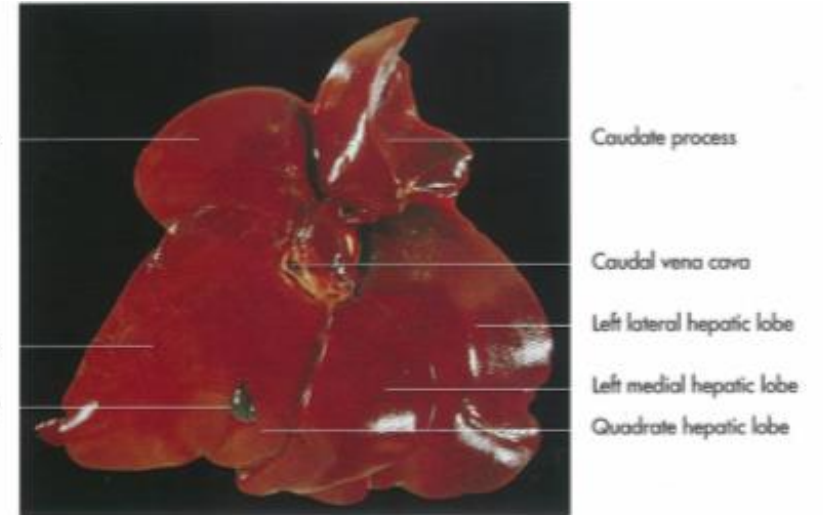
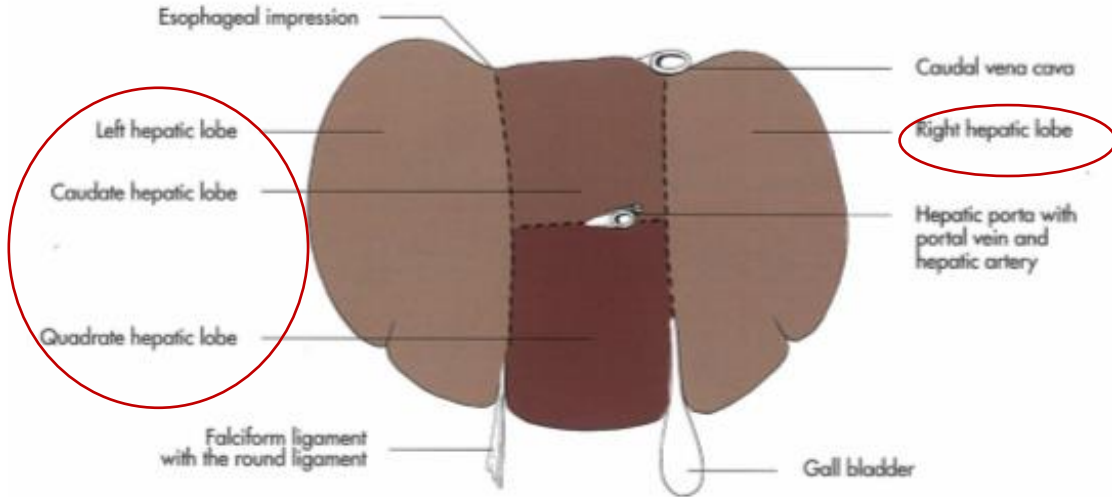


Fig 7-101. Liver of a cat, diaphragmatic surface (König, 1992).

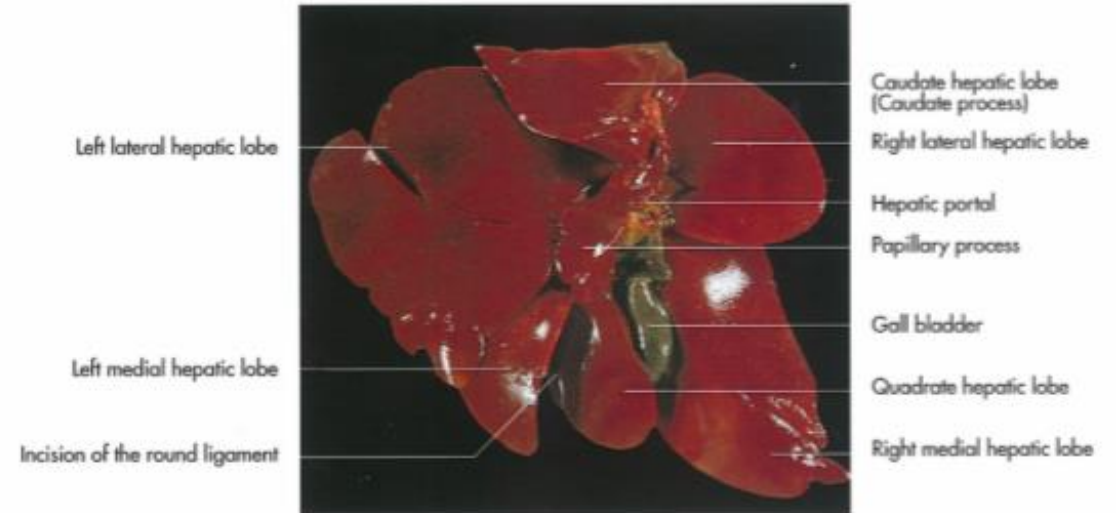


Fig 7-102. Liver of a cat, visceral surface (König, 1992).

MÁJ LEBENYEI (LOBUS HEPATIS)

LOBUS HEPATIS SINISTER:

részei:

1. lobus hepatis sinister medialis:

- bal laterális lebeny és az incisura lig. teretis között

2. lobus hepatis sinister lateralis

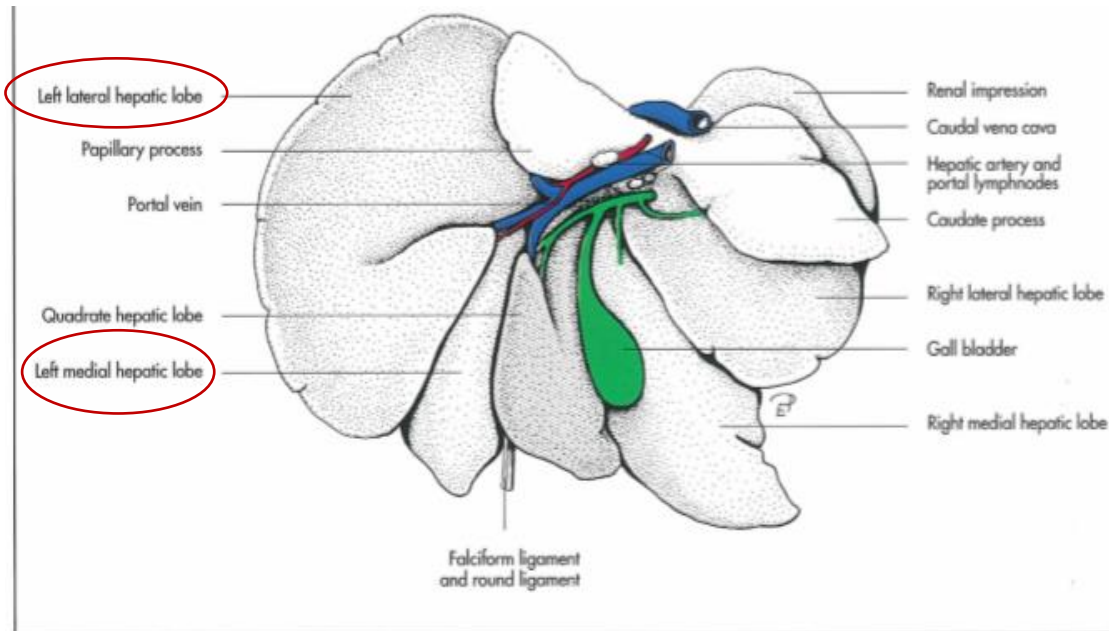


Fig 7-97. Liver of the dog, schematic, visceral surface.

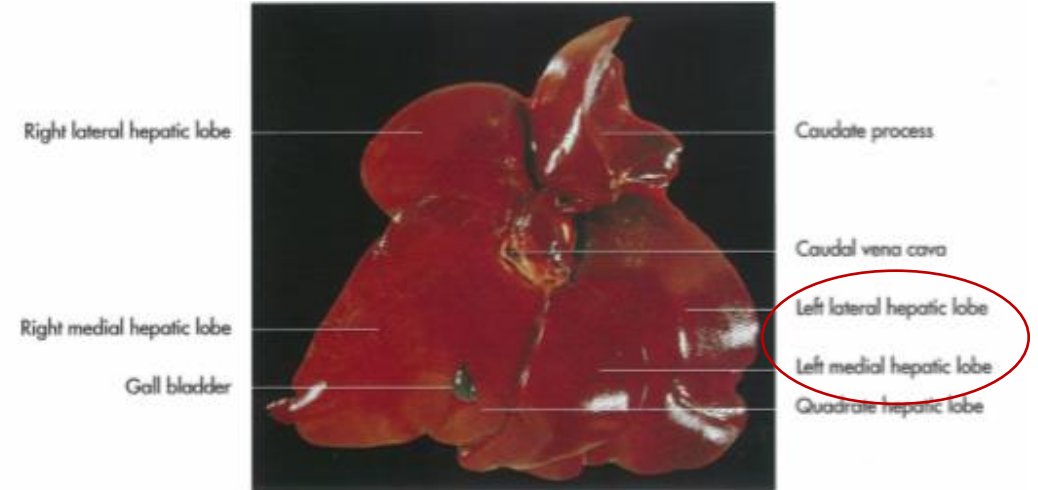


Fig 7-101. Liver of a cat, diaphragmatic surface [König, 1992].



Fig 7-102. Liver of a cat, visceral surface [König, 1992].

MÁJ LEBENYEI (LOBUS HEPATIS)

LOBUS HEPATIS DEXTER

részei:

1. lobus hepatis dexter medialis
2. lobus hepatis dexter lateralis

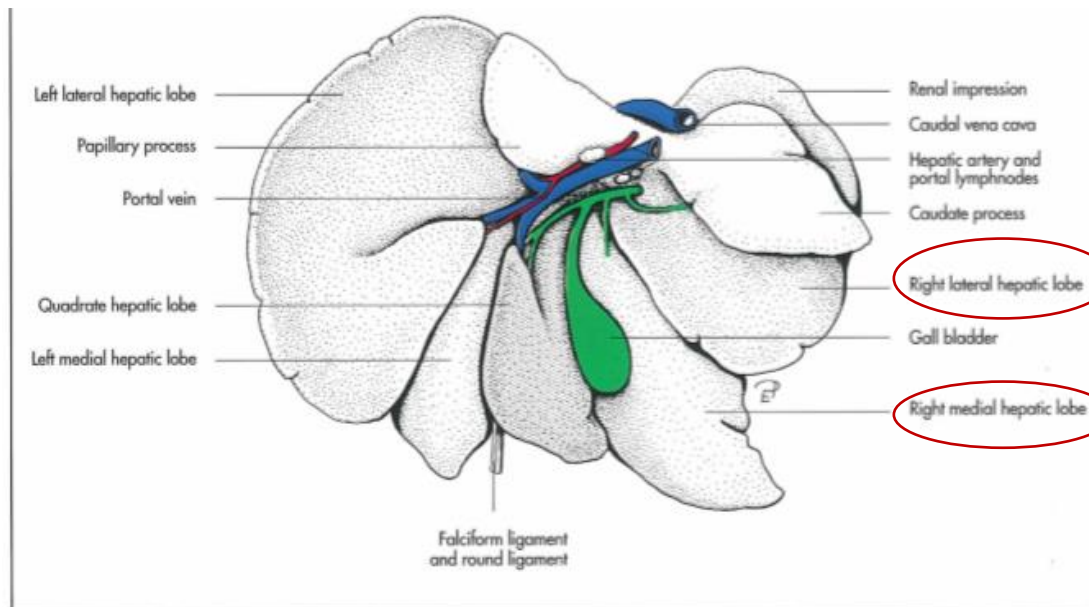


Fig 7-97. Liver of the dog, schematic, visceral surface.

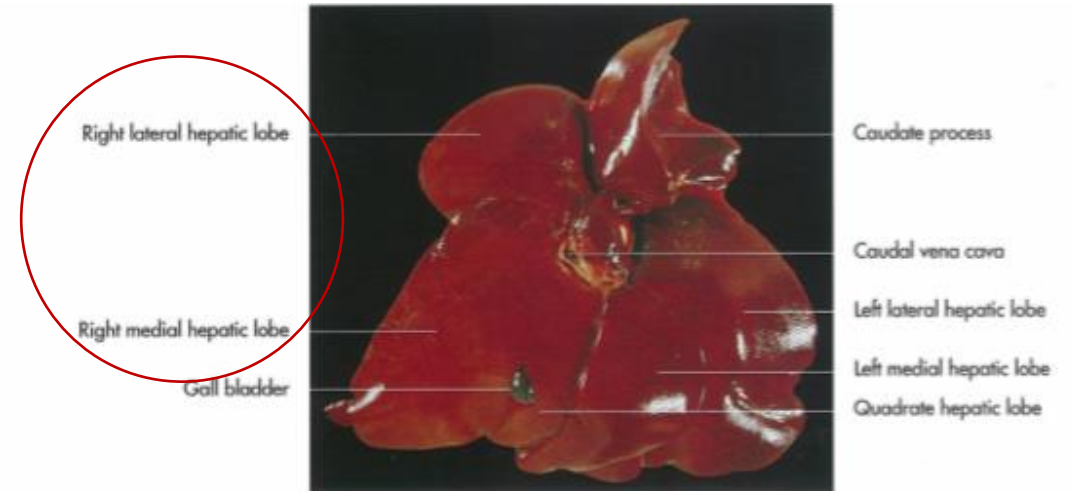


Fig 7-101. Liver of a cat, diaphragmatic surface [König, 1992].



Fig 7-102. Liver of a cat, visceral surface [König, 1992].

MÁJ LEBENYEI (LOBUS HEPATIS)

LOBUS HEPATIS CAUDATUS

- porta hepaticától dorsalisán

részei:

1. processus papillaris

- vestibulum bursae omentalisra mutat

2. processus caudatus

- jobb vese felé mutat

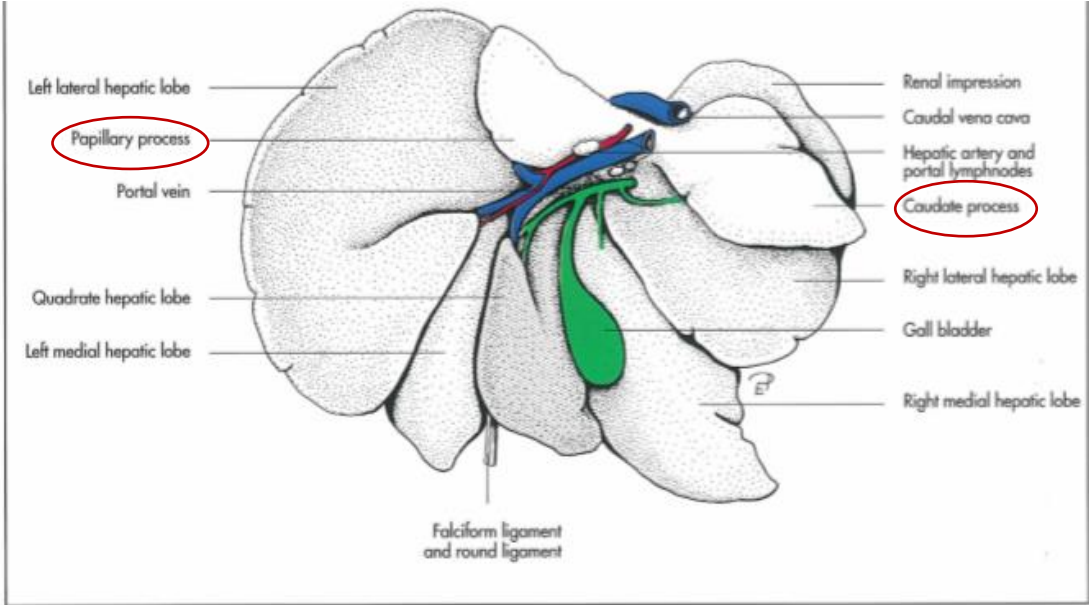


Fig 7-97. Liver of the dog, schematic, visceral surface.

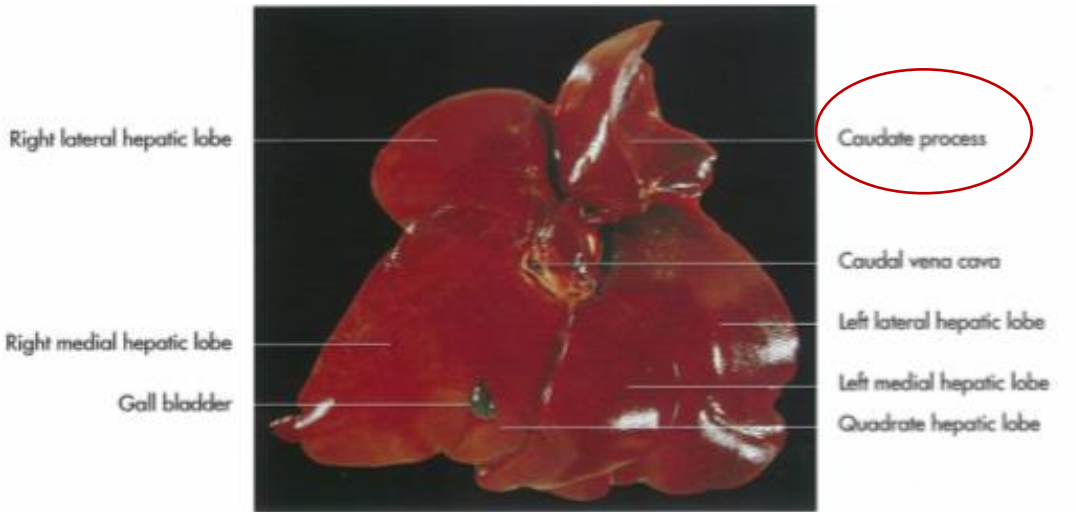


Fig 7-101. Liver of a cat, diaphragmatic surface (König, 1992).

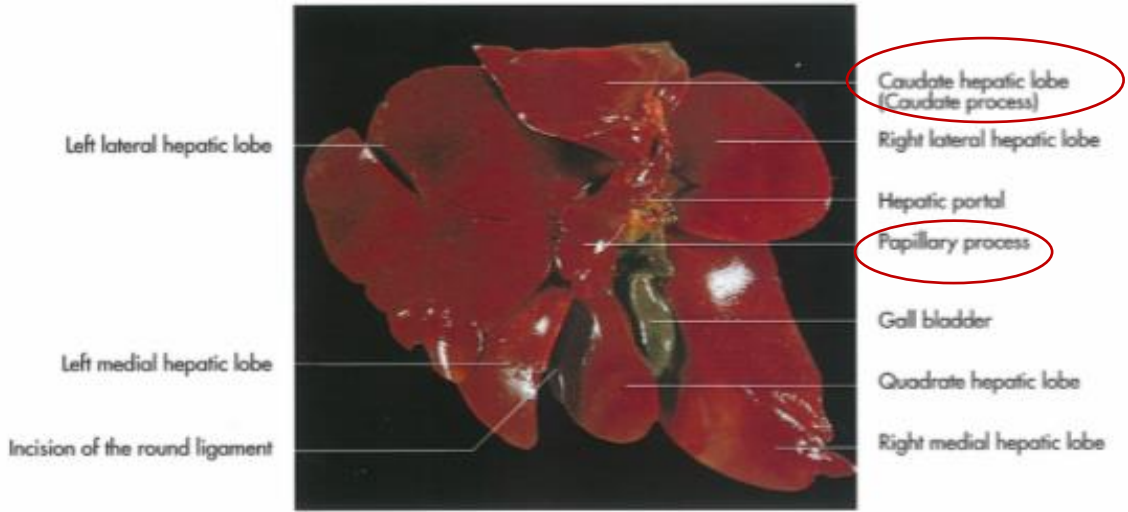


Fig 7-102. Liver of a cat, visceral surface (König, 1992).

MÁJ LEBENYEI (LOBUS HEPATIS)

LOBUS QUADRATUS

- porta hepaticától ventralisan

a. fossa vesicae fellea

b. incisura lig. teretis között

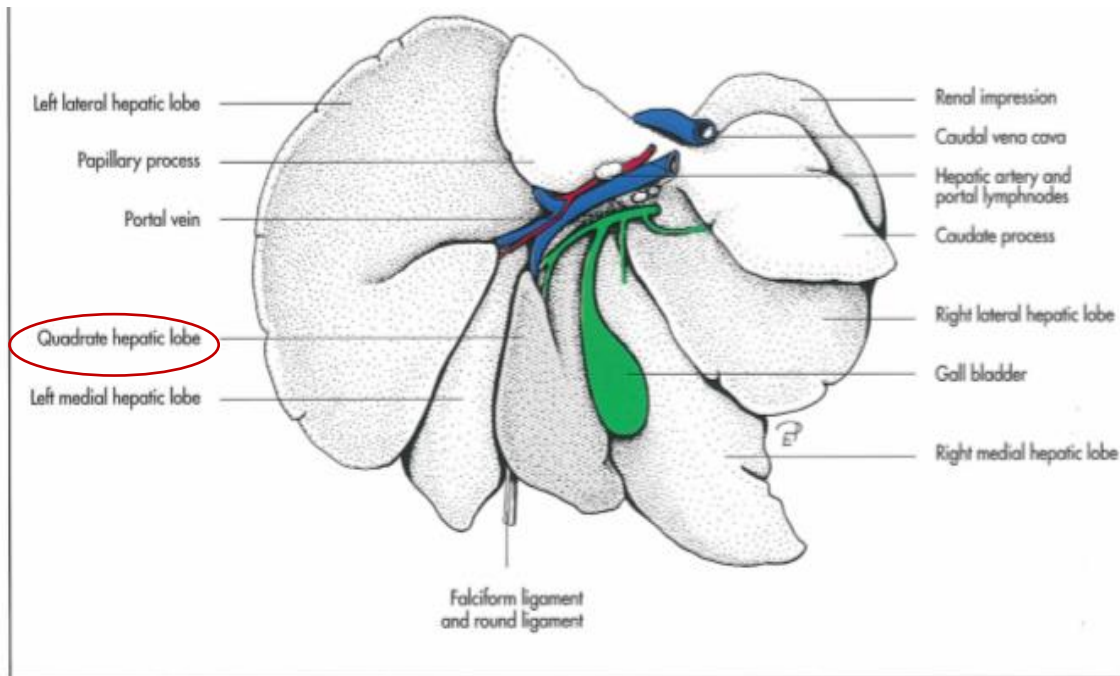


Fig 7-97. Liver of the dog, schematic, visceral surface.



Fig 7-101. Liver of a cat, diaphragmatic surface (König, 1992).



Fig 7-102. Liver of a cat, visceral surface (König, 1992).

MÁJ LEBENYEI (LOBUS HEPATIS)

HÚSEVŐKBEN:

1. Lobus hepatis sinister lateralis
2. Lobus hepatis sinister medialis
3. Lobus hepatis dexter lateralis
4. Lobus hepatis dexter medialis
5. Lobus quadratus
6. Lobus caudatus
 - a. proc. caudatus
 - b. proc. papillaris

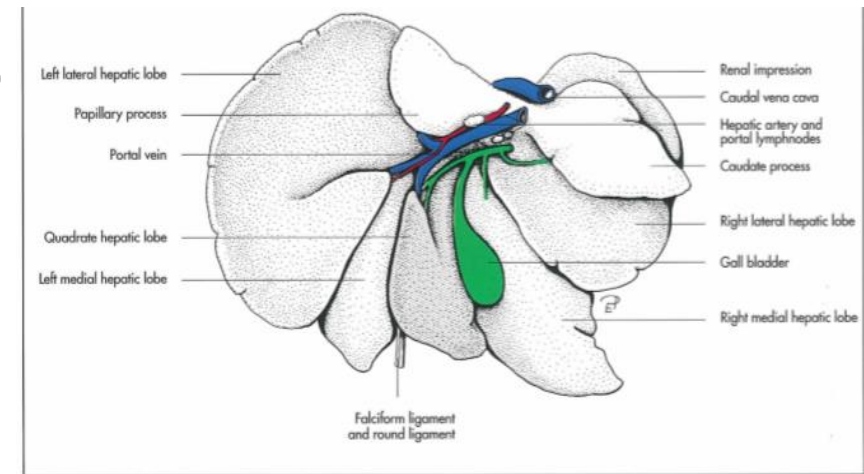
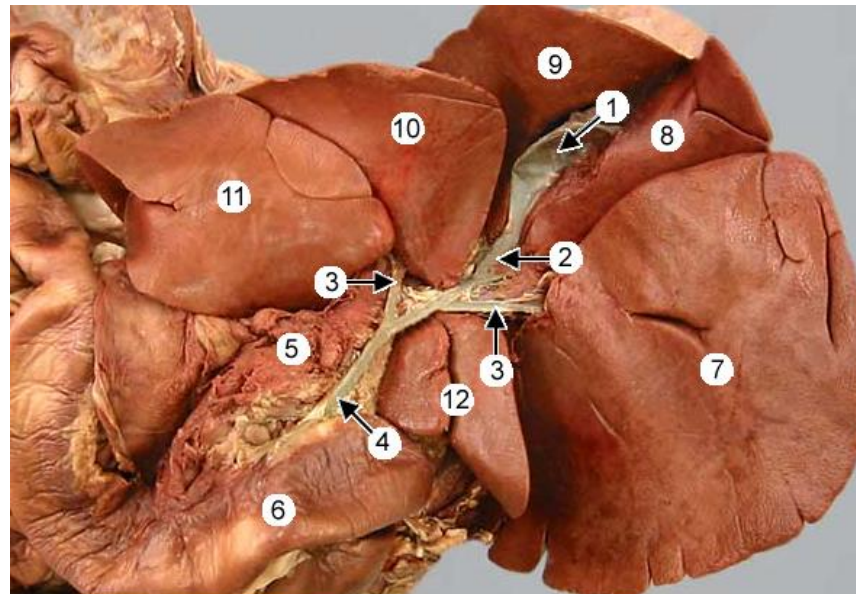
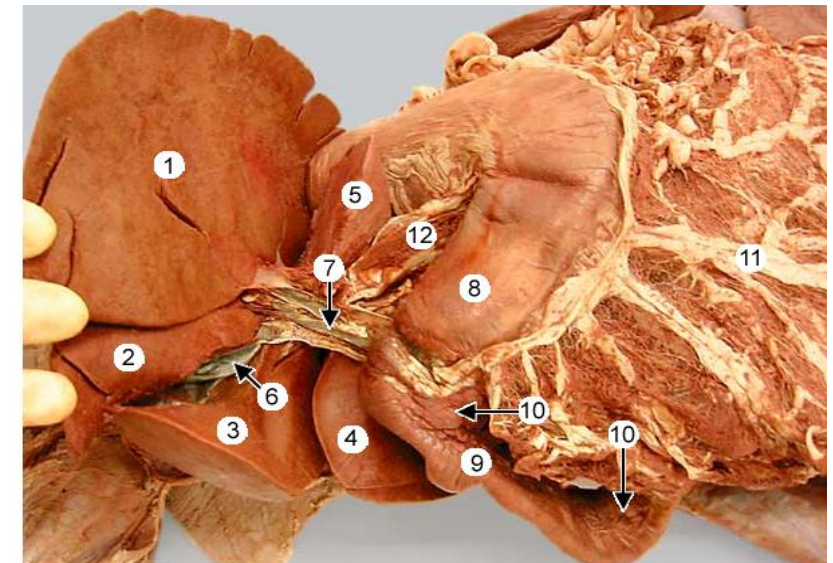


Fig 7-97. Liver of the dog, schematic, visceral surface.



Right lateral view of abdominal viscera with the liver reflected cranially and rotated (right toward the top). Observe the **gallbladder** (1), cystic duct (2), hepatic ducts (3), and the **bile duct** (4). The pancreas (5) has been reflected to expose the bile duct which opens into the duodenum (6). Identify **lobes of the liver**: left lateral (7), quadrate (8), right medial (9), right lateral (10), and the caudate (11) and papillary (12) processes of the caudate lobe.

<http://vanat.cvm.umn.edu/carnLabs/Lab16/lmg16-7.html>



Right side view of abdominal viscera with the liver reflected cranially (left side toward the top). In addition to the left lateral (1), quadrate (2), right medial (3), and right lateral (4) lobes of the liver, the papillary (5) process of the caudate lobe of the liver is visible. The **gallbladder** (6) and cystic duct drain into the bile duct (7). The pyloric region (8) of the stomach opens into the duodenum (9). The pancreas (10) is beside the duodenum. Identify the **greater omentum** (11) and **lesser omentum** (12).

<http://vanat.cvm.umn.edu/carnLabs/Lab16/lmg16-6.html>

MÁJ LEBENYEI (LOBUS HEPATIS)

HÚSEVŐ:

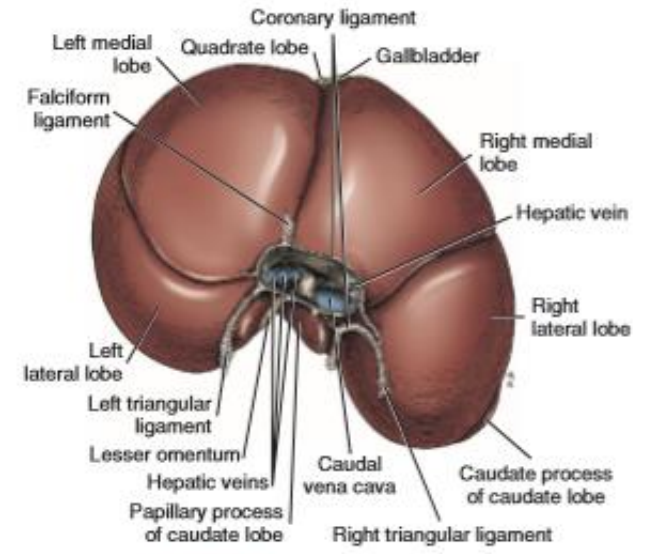
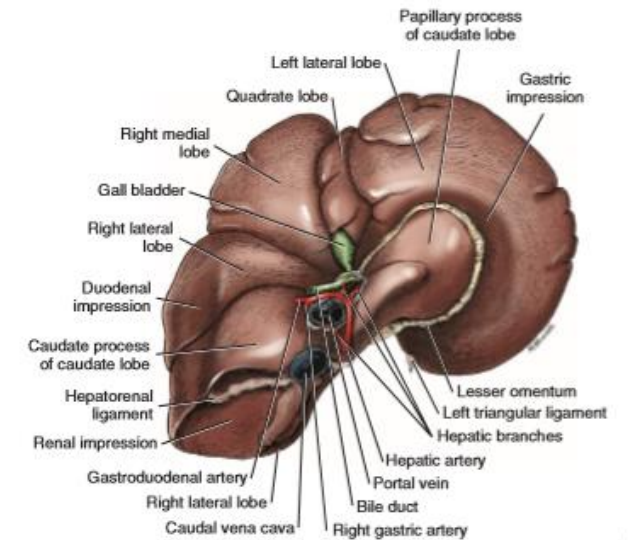


FIGURE 7-49 Liver, diaphragmatic aspect.



MÁJ LEBENYEI (LOBUS HEPATIS)

SERTÉS:

1. Lobus hepatis sinister lateralis
2. Lobus hepatis sinister medialis
3. Lobus hepatis dexter lateralis
4. Lobus hepatis dexter medialis
5. Lobus quadratus
6. Lobus caudatus
 - a. proc. caudatus – on the right

- NINCS proc. papillaris

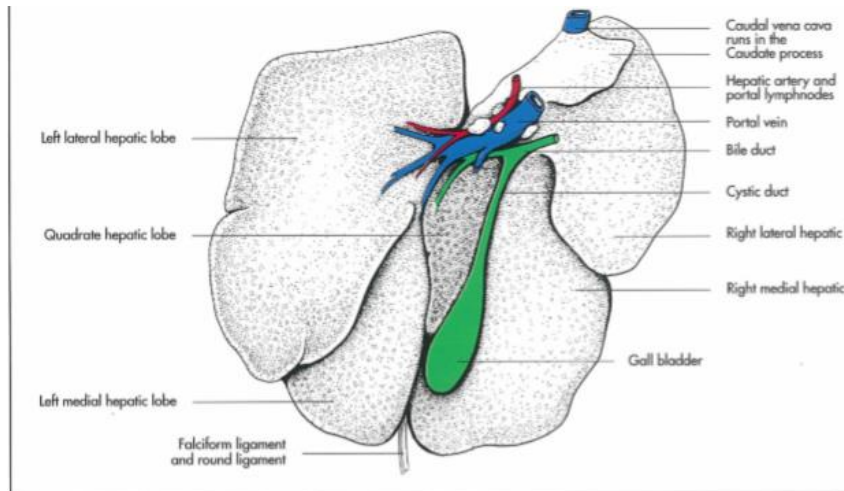


Fig 7-98. Liver of the pig, schematic, visceral surface.

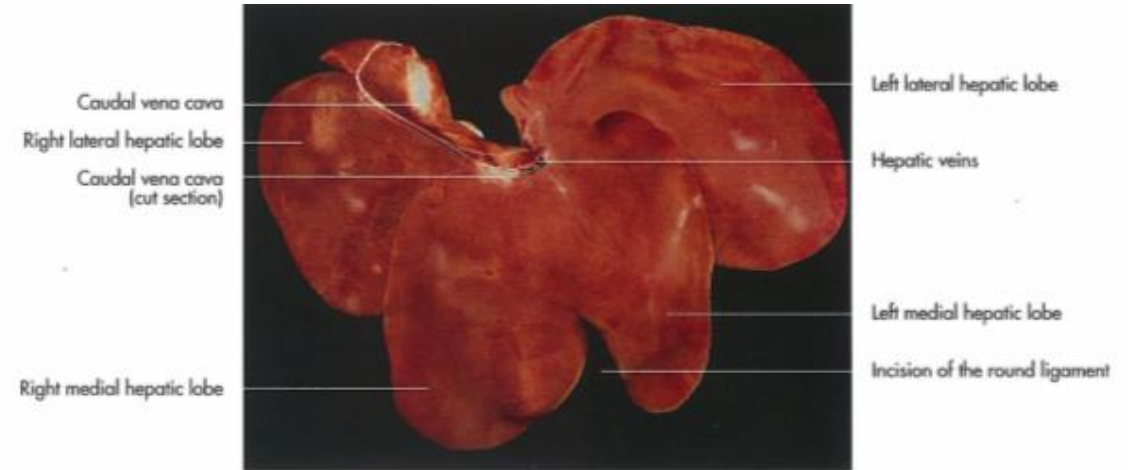


Fig 7-103. Liver of a pig, diaphragmatic surface.



Fig 7-104. Liver of a pig, visceral surface.

MÁJ LEBNENYEI (LOBUS HEPATIS)

SERTÉS:

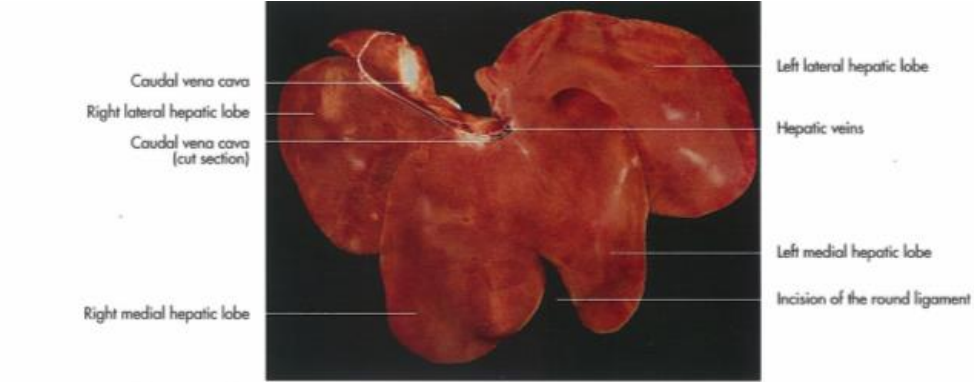


Fig 7-103. Liver of a pig, diaphragmatic surface.

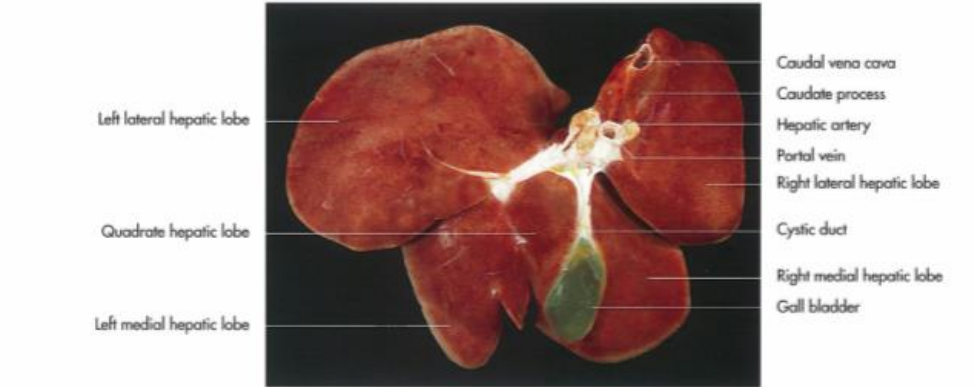


Fig 7-104. Liver of a pig, visceral surface.

MÁJ LEBENYEI (LOBUS HEPATIS)

KÉRŐDZŐ:

1. Lobus hepatis sinister
2. Lobus hepatis dexter
3. Lobus quadratus

NEM OSZTOTT!!!

- fossa ligamenti teretis és az epehólyag között

4. Lobus caudatus

a. proc. caudatus – NAGY

b. proc. papillaris - KICSI

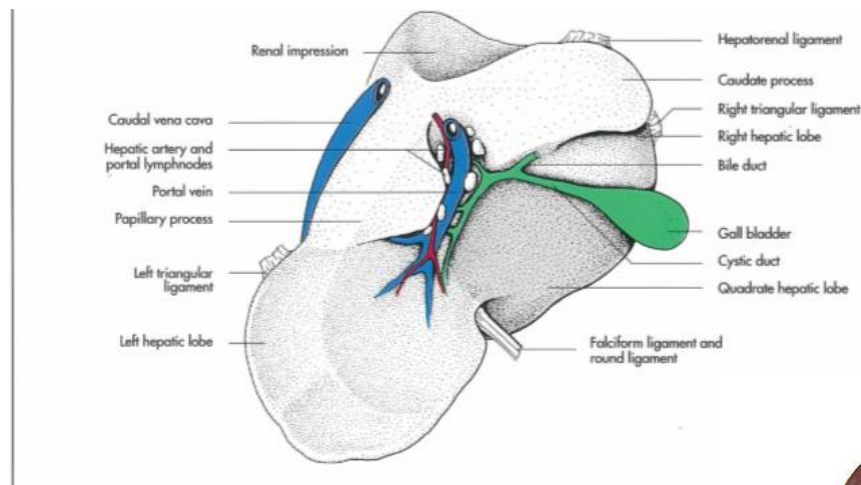
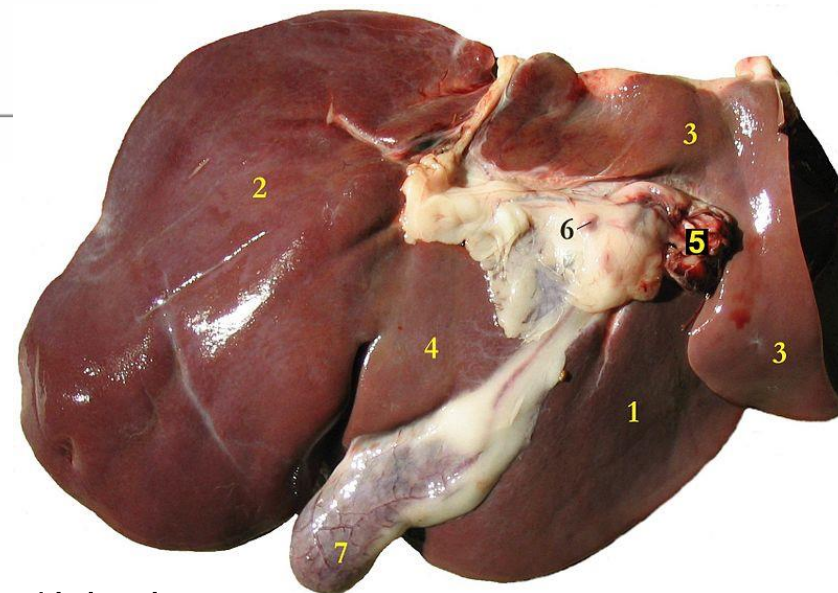
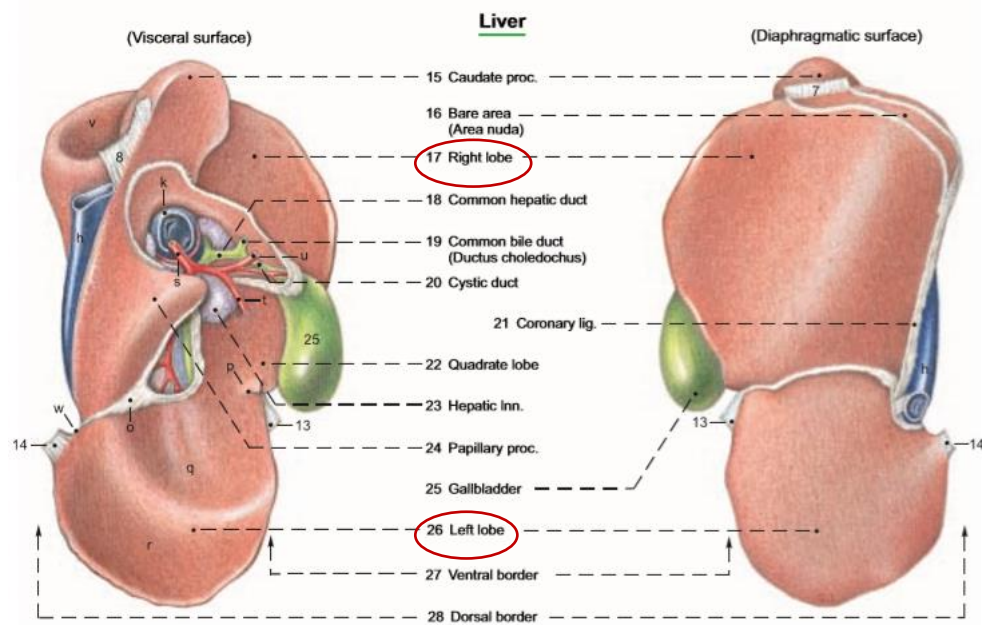


Fig 7-99. Liver of the ox, schematic, visceral surface.

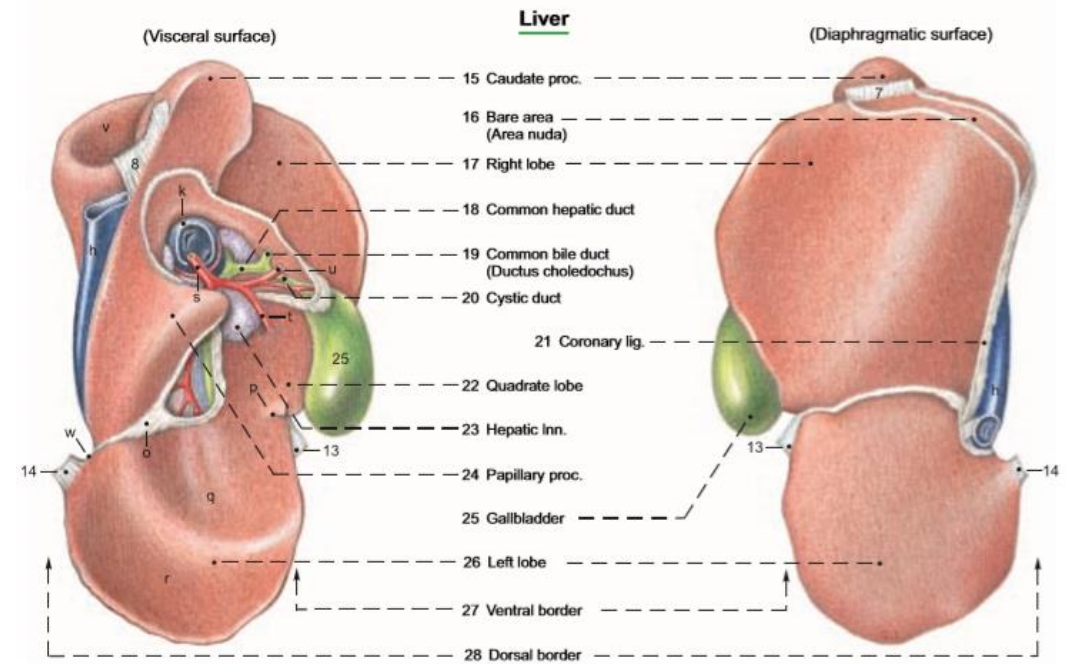
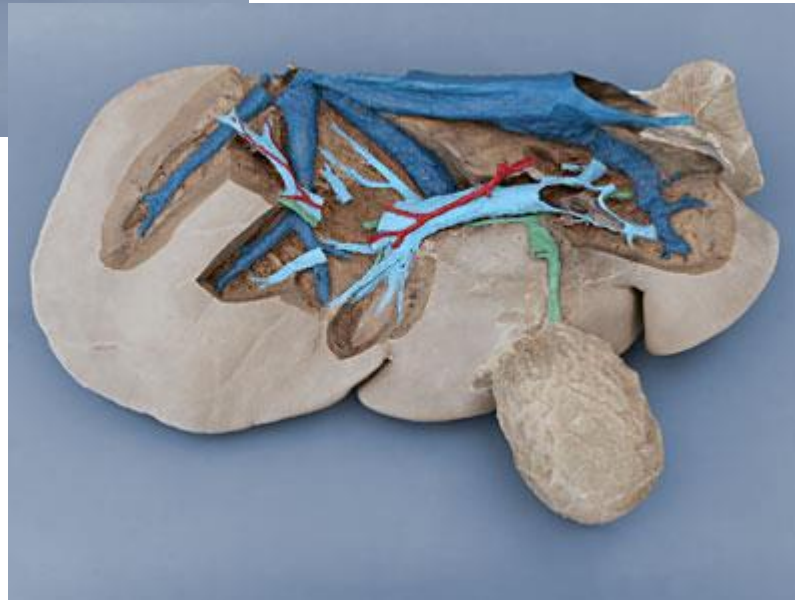


- 1 Lobus dexter,
Lobus sinister,
2 3 Lobus caudatus,
4 Lobus quadratus,
5 Porta hepatica
(Arteria hepatica et Vena portae),
6 Lymphonodi hepatici,
7 Vesica fellea

https://commons.wikimedia.org/wiki/File:Leber_Schaf.jpg

MÁJ LEBENYEI (LOBUS HEPATIS)

KÉRŐDZŐ:

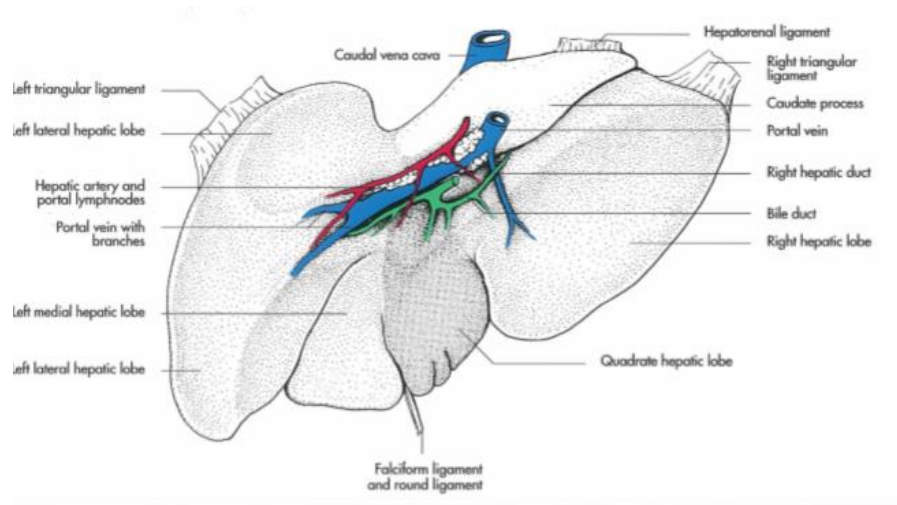


dunkelblau: Lebervenenensystem, hellblau: Pfortadersystem, grün: Gallengänge, rot: Arterien

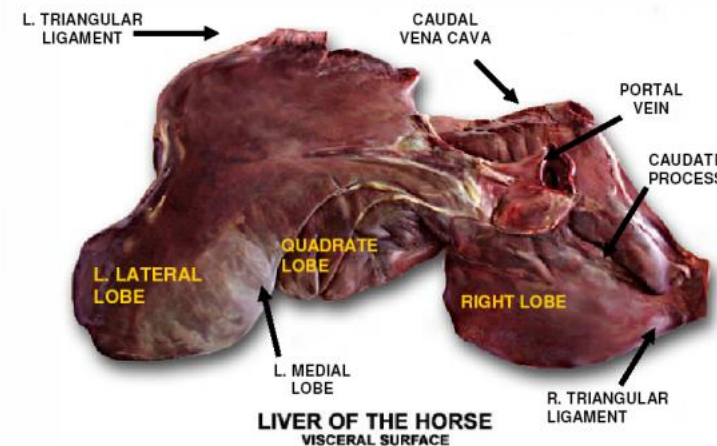
MÁJ LEBENYEI (LOBUS HEPATIS)

LÓBAN:

1. Lobus hepatis sinister lateralis
2. Lobus hepatis sinister medialis
3. Lobus hepatis dexter - **OSZTATLAN!!!**
4. Lobus quadratus



g 7-100. Liver of the horse, schematic, visceral surface.

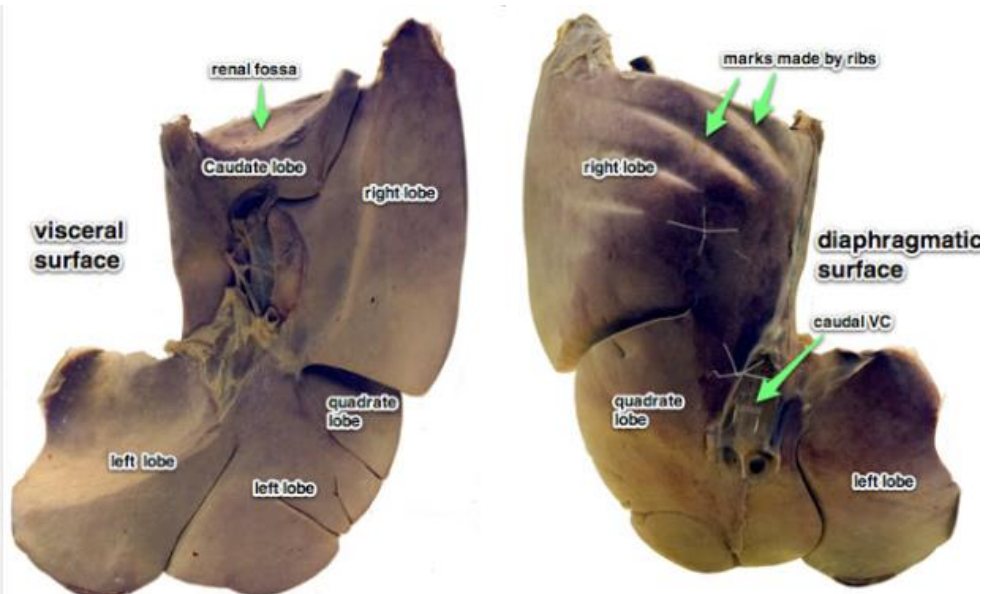


- fossa ligamenti teretis és az epehólyag között

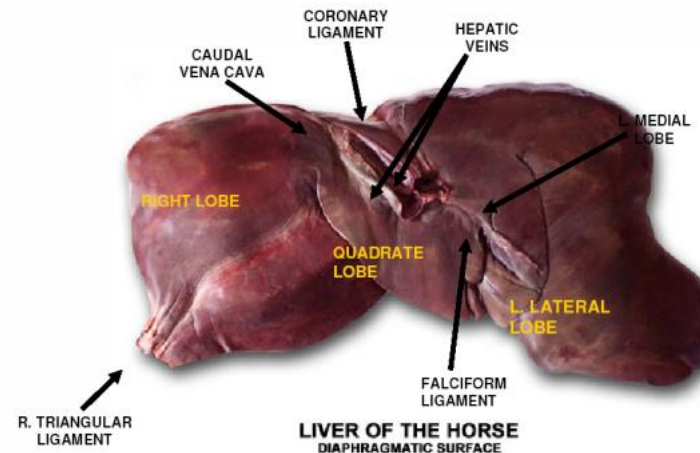
4. Lobus caudatus

a. proc. caudatus

b. **NINCS** proc. papillaris



<http://bvetmed1.blogspot.com/2013/03/horse-and-pig-abdomen-lecture-164.html>



https://www.quia.com/files/quia/users/medicinehawk/2107-Anatomy2/Liver_Pancreas.pdf

A MÁJ VÉRELLÁTÁSA

Arteria hepatica

- a. coeliaca ága
- porta hepatison lép be a májba
- leadja az aa. interlobulareseket
- az aa. interlobularesek a máj sinusoidokba ömlenek

A MÁJ MICROCIRCULÁTIÓJA

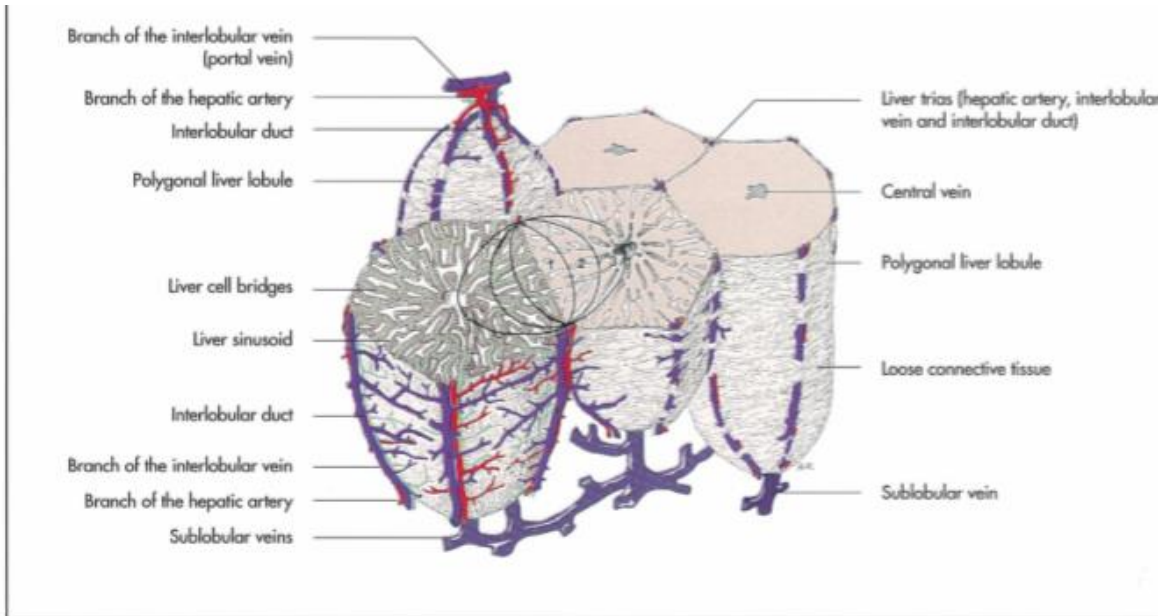


Fig 7-105. Hepatic lobules in relation to afferent and efferent vessels, three-dimensional, schematic [Liebich, 2004].

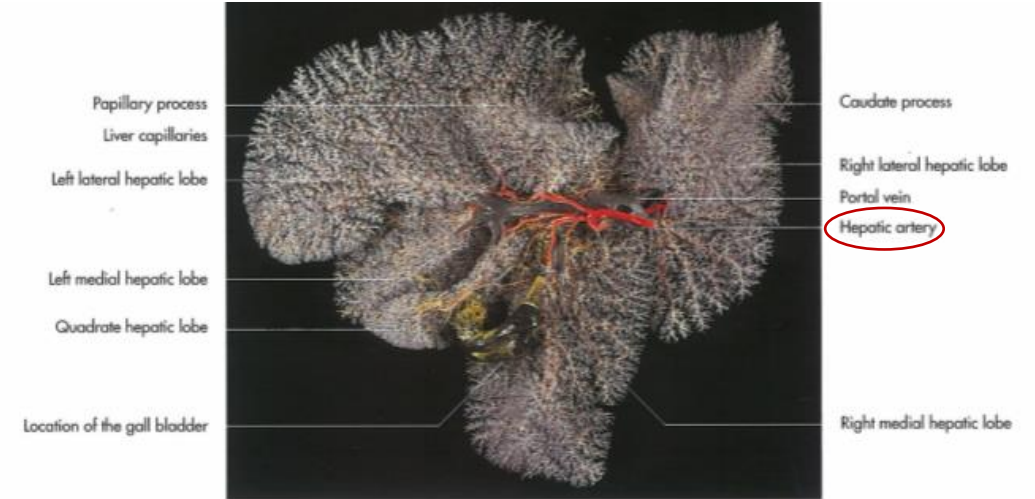
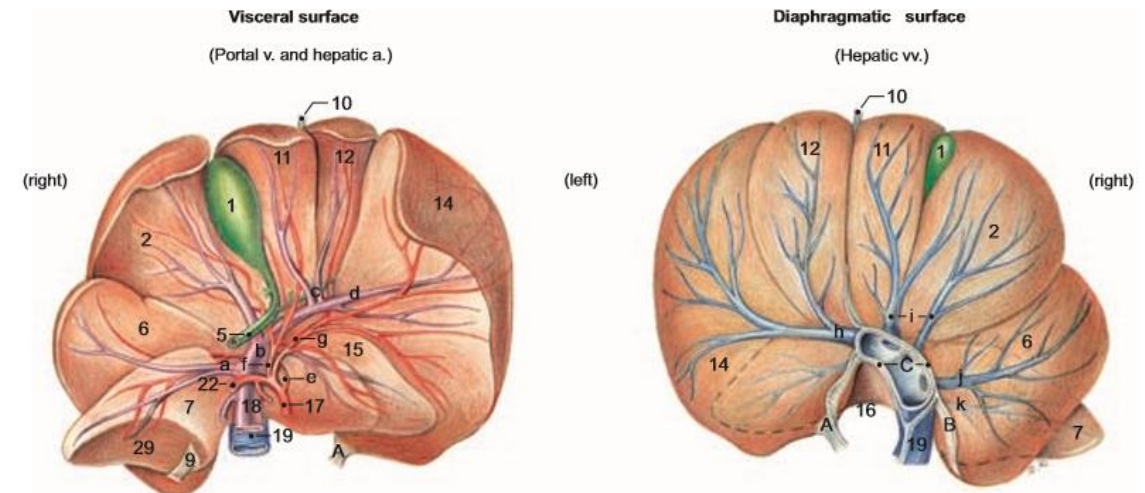


Fig 7-108. Corrosion cast of the liver of a dog after injection of the hepatic artery and the portal vein.



Legend :

A Left triangular lig.
B Right triangular lig.
C Coronary lig. of liver

Portal vein:
a Right br.
b Left br.
c Umbilical part
d Transverse part

Hepatic a.:
e Right lat. br.
f Right med. br.
g Left br.

Hepatic vv.:
h Left hepatic v.
i Middle hepatic v.
j Right hepatic v.
k Right acc. hepatic v.

DOG

A MÁJ VÉRELLÁTÁSA

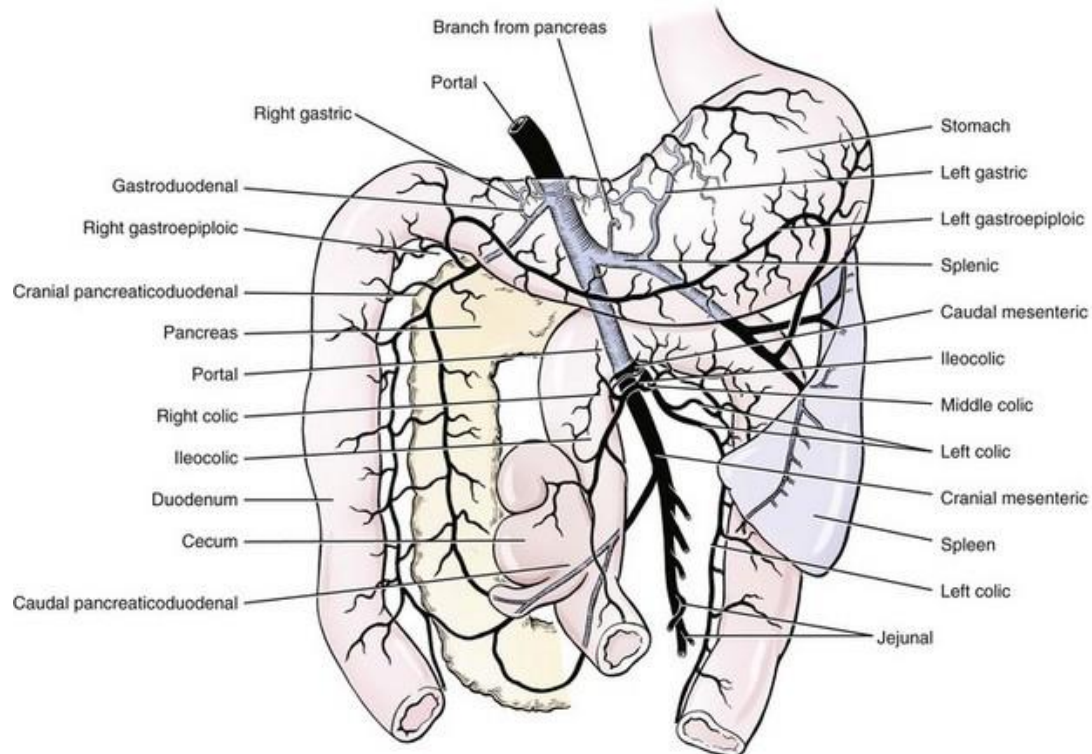
VENA PORTAE:

- vénás vért szállít a májba

- tápanyagban gazdag vért szállít a májba

vénás vért gyűjt össze:

1. gasztrointestinális traktusból
2. epehólyagból
3. pancreasból
4. lépből



Tributaries of the portal vein in a dog: ventral aspect. (From Evans HE, de Lahunta A: Miller's anatomy of the dog, ed 4, St Louis, 2013, Saunders/Elsevier.)

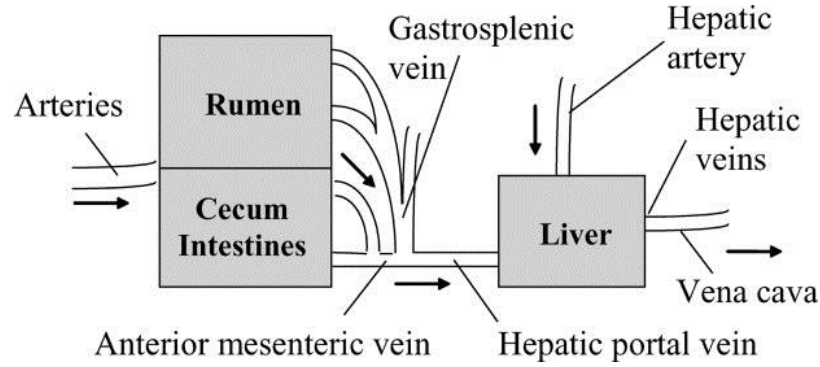


Corrosion cast of the portal vein and caudal vena cava of an adult dog. A, Right portal vein branch. B, Left portal vein branch. C, Central branch off the left portal vein. D, Branch to the left lateral and medial liver lobes. E, Right hepatic vein. F, Caudal vena cava, with central branches entering on the ventral midline. G, Left hepatic vein branches.

A MÁJ VÉRELLÁTÁSA

VENA PORTÉBA SZÁJADZÓ VÉNÁK:

1. VENA LIENALIS
2. VENA MESENTERICA CRANIALIS
3. VENA MESENTERICA CAUDALIS



Stylized view of the splanchnic vasculature; arrows show direction of blood flow.

<https://www.sciencedirect.com/science/article/pii/S0022030206722007>

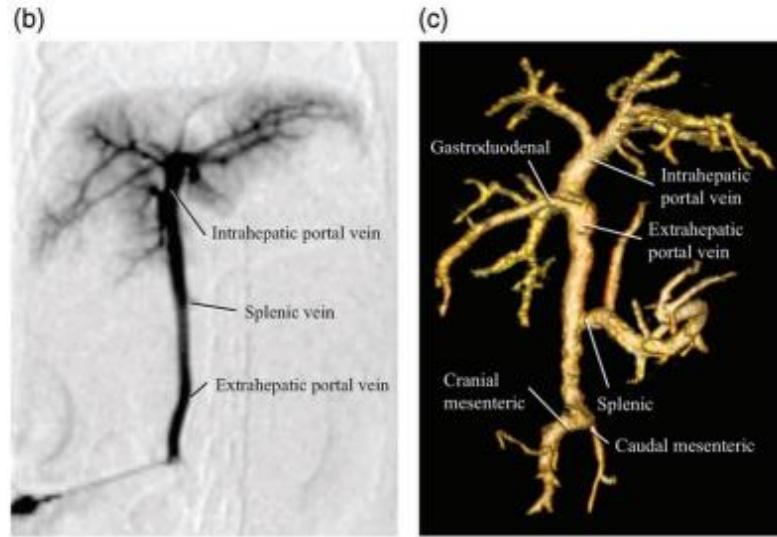
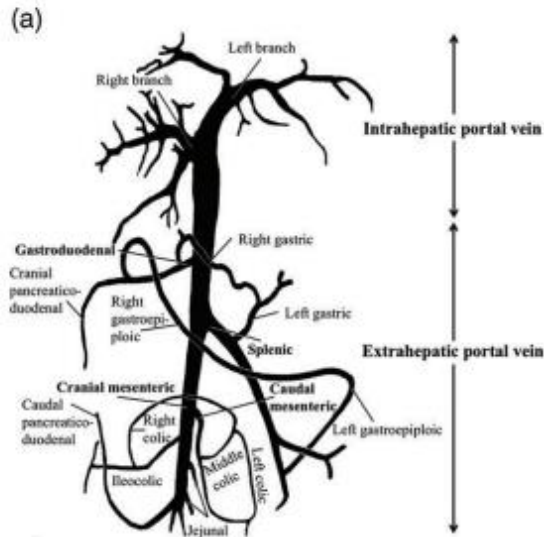
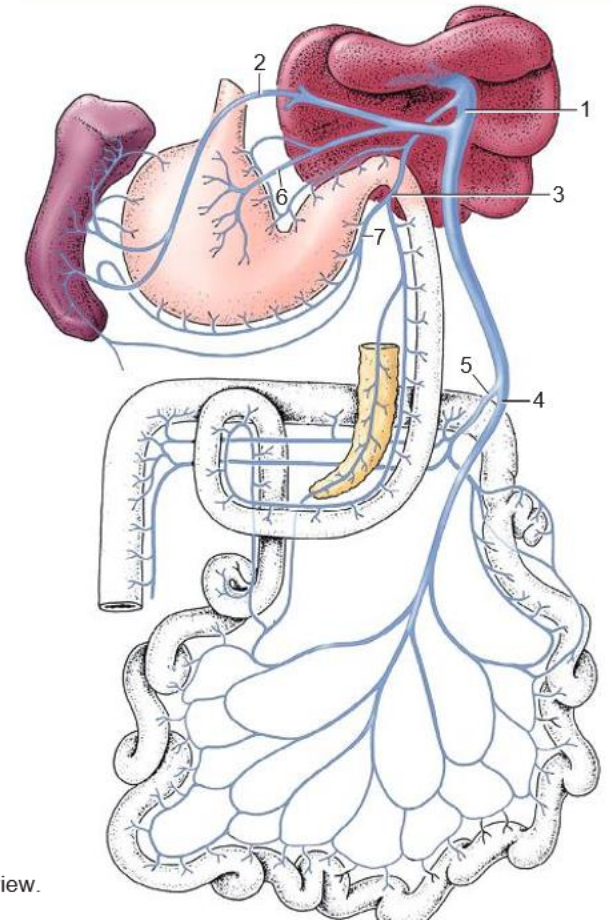


FIG 1. Anatomy of the portal vein. (a) Diagrammatic representation of the portal vein and its tributaries. (b) Example of a static image from an intra-operative mesenteric portovenography video loop. Minimal back filling of the splenic vein is identified. (c) Example of a computed tomography angiography surface shaded volume-rendered 3D image of the portal vein.

<https://onlinelibrary.wiley.com/doi/pdf/10.1111/jsap.12392>



1. Portal vein
2. Splenic vein
3. Gastroduodenal vein
4. Cranial mesenteric vein
5. Caudal mesenteric vein
6. Left gastric vein
7. Right gastroepiploic vein

Note: Semischematic dorsal view.

A MÁJ MIKROCIRKULÁCIÓJA

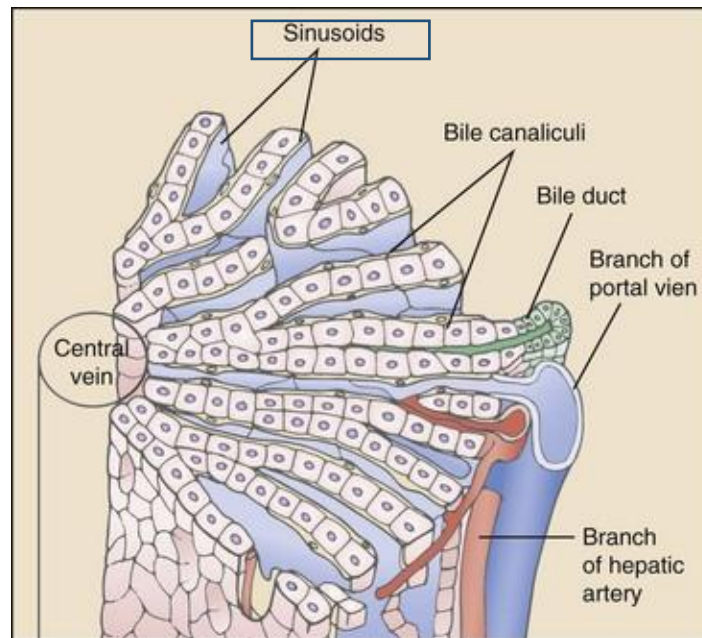
VENA PORTAE:

- porta hepatison belép a májba
- vv. Interlobuláreseket adja le
- vv. Interlobuláresek a máj sinusoidokba ömlenek

MÁJ SINUSOIDOKBAN KEVERT VÉR:

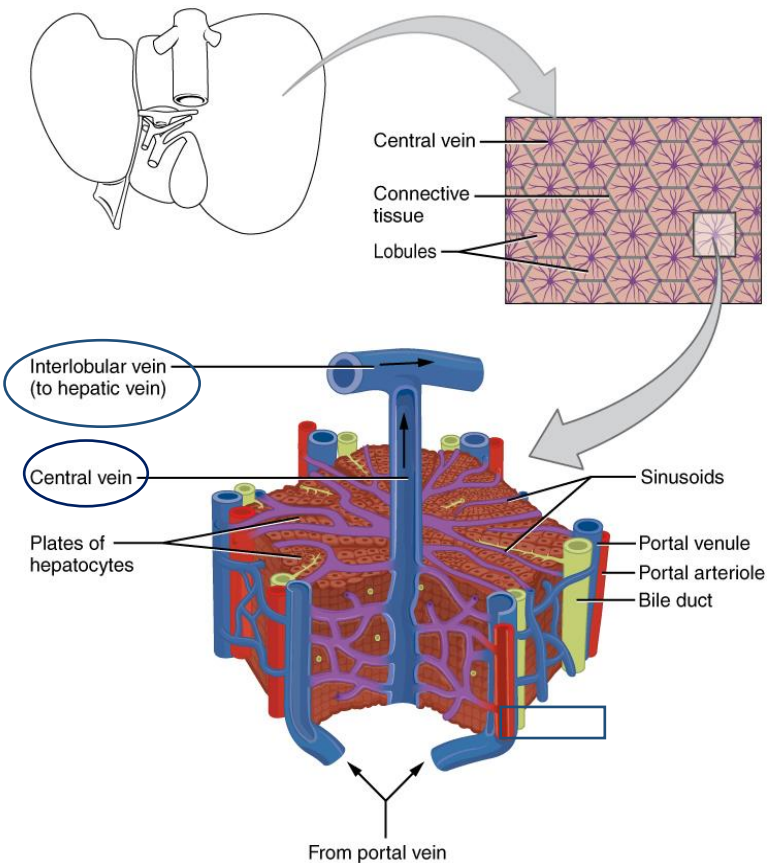
- artériás vér az aa. interlobuláresekből
- vénás vér a vv. Interlobuláresekből

- máj sinusoidok a v. centralisok felé vezetik a vénás vért



Microscopic anatomy of the liver. (From Levy MN: Berne & Levy principles of physiology, ed 4, St Louis, 2005, Mosby/Elsevier.)

<https://veteriankey.com/hepatic-vascular-anomalies/>



https://en.wikipedia.org/wiki/Liver#/media/File:2423_Microscopic_Anatomy_of_Liver.jpg

A MÁJ MIKROCIRKULÁCIÓJA

V. CENTRALIS:

- v. sublobularisba ömlik

V. SUBLOBULARIS

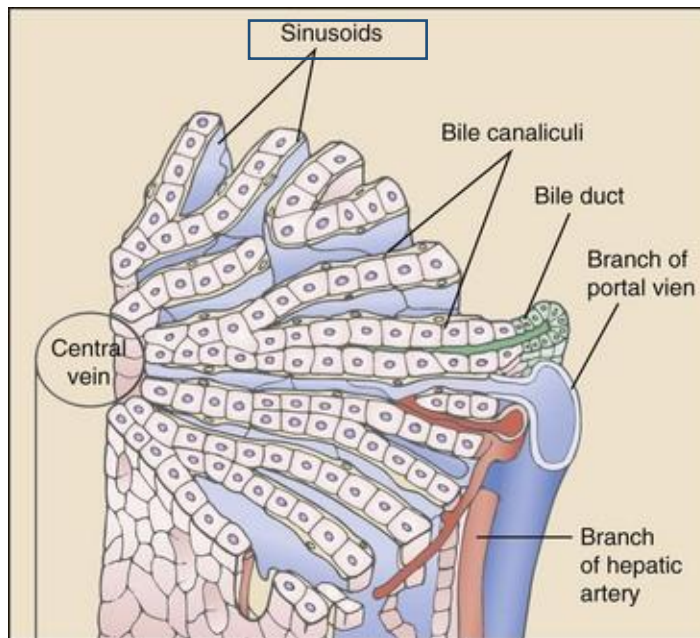
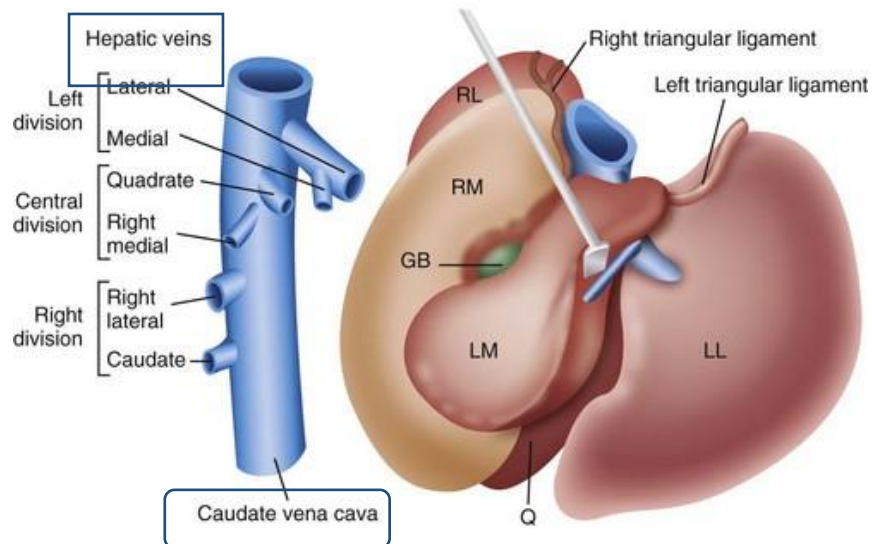
- vv. Hepaticaebe ömlik

VENAE HEPATICAE:

Máj saját vénája

- elhagyja a májat

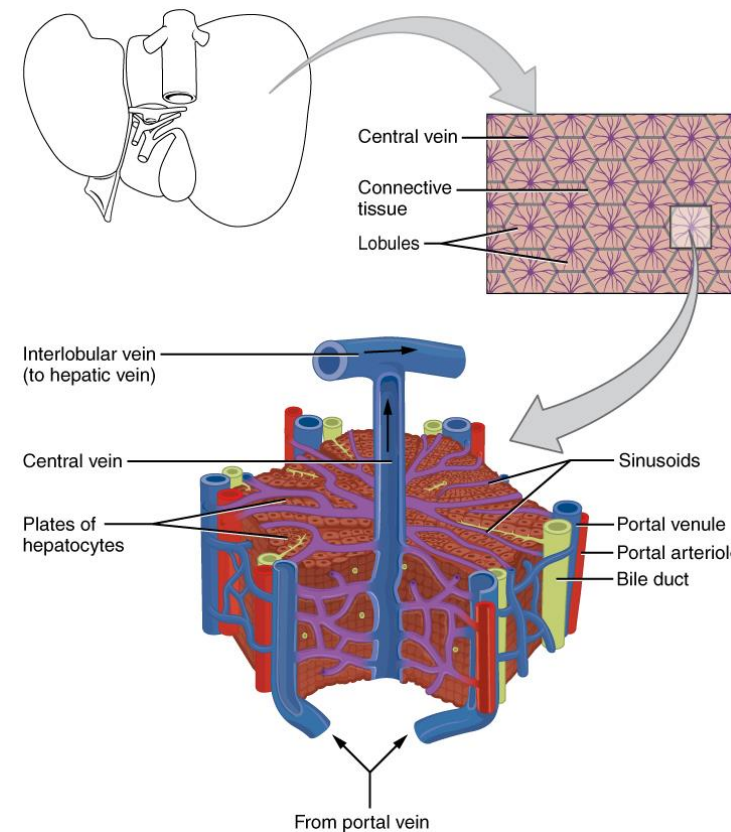
- vena cava caudaliba ömlik



Microscopic anatomy of the liver. (From Levy MN: Berne & Levy principles of physiology, ed 4, St Louis, 2005, Mosby/Elsevier.)

Gross anatomy of the liver (diaphragmatic surface) and hepatic veins. GB, Gallbladder; ligament; LL, left lateral; LM, left medial; Q, quadrate; RL, right lateral; RM, right medial.

<https://veteriankey.com/hepatic-vascular-anomalies/>



https://en.wikipedia.org/wiki/Liver#/media/File:2423_Microscopic_Anatomy_of_Liver.jpg

EPEVEZETÉK RENDSZER

EPE:

1. hepatocyták termelik
2. epe canaliculusokba ömlik
3. epe canaliculusok – ductus interlobulareskbe ömlenek
4. ductus interlobularisok ductus biliferusokba (ductus lobaris) ömlenek

intrahepaticus
epevezeték
rendszer

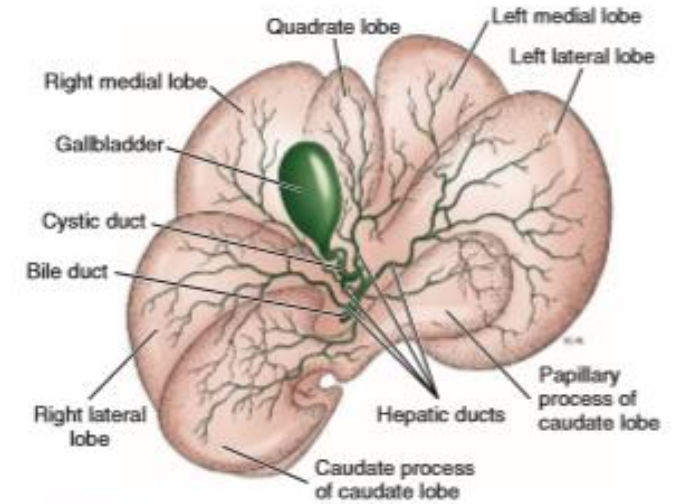
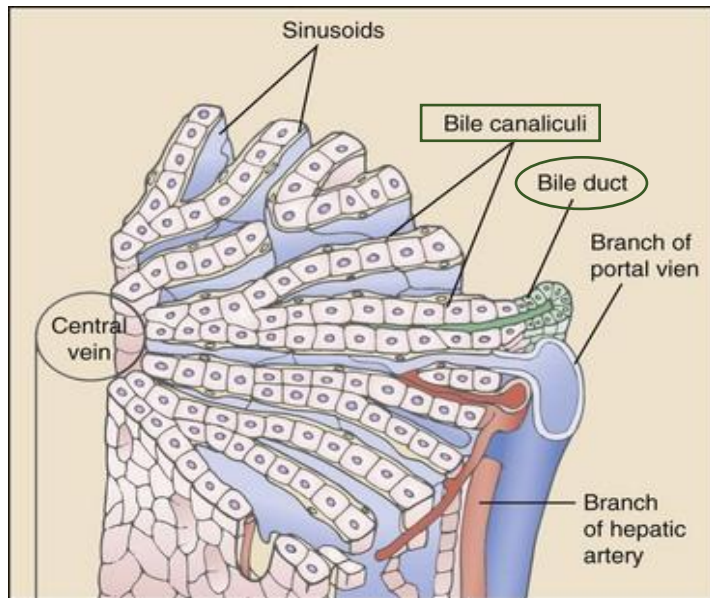
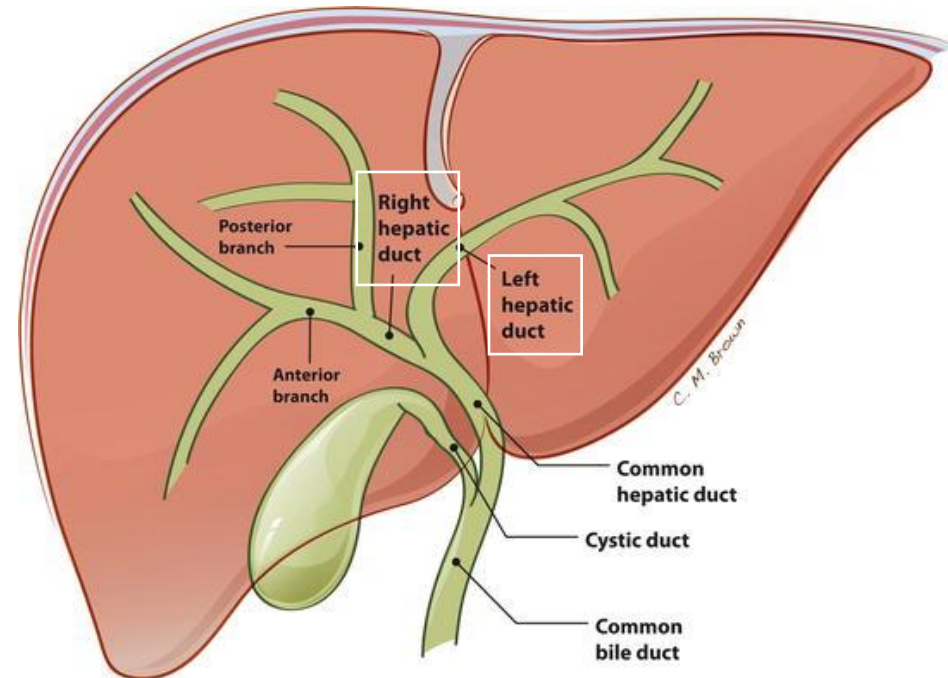


FIGURE 7-51 Schema of the gallbladder and hepatic ducts, visceral aspect.



Microscopic anatomy of the liver. (From Levy MN: Berne & Levy principles of physiology, ed 4, St Louis, 2005, Mosby/Elsevier.)



https://link.springer.com/referenceworkentry/10.1007%2F978-3-642-13327-5_144

<https://veteriankey.com/hepatic-vascular-anomalies/>

EPEVEZETÉK RENDSZER

EXTRAHEPATICUS EPEVEZETÉK RENDSZER:

5. intrahepaticus epeutak a jobb és a bal ductus hepaticusba ömlenek

DUCTUS HEPATICUS:

LÓBAN, KÉRŐDZŐBEN:

- ductus biliferusok - ductus hepaticus dext. et sin.-be ömlenek
- ductus hepaticus dext. et sin. egyesül - ductus hepaticus communis hozzák létre
- ductus hepaticus comm. és a ductus cysticus ductus choledochus hozzák létre
- ductus choledochus papilla duodeni majoron nyílik a pars descendens duodenibe

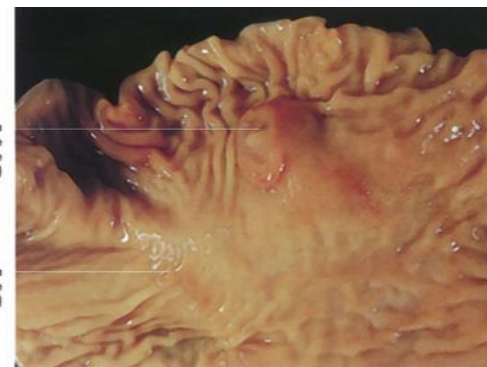
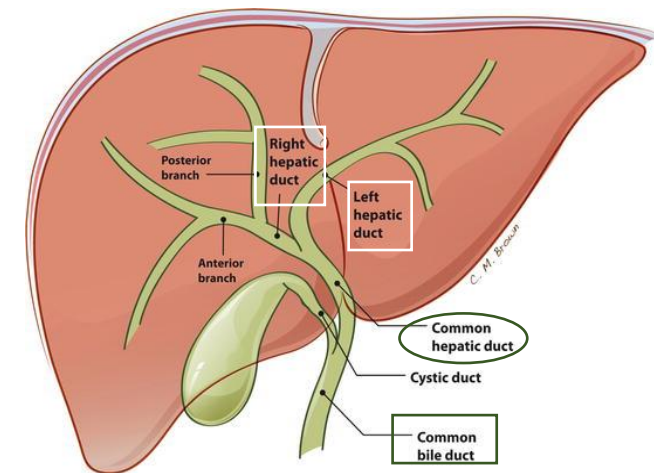


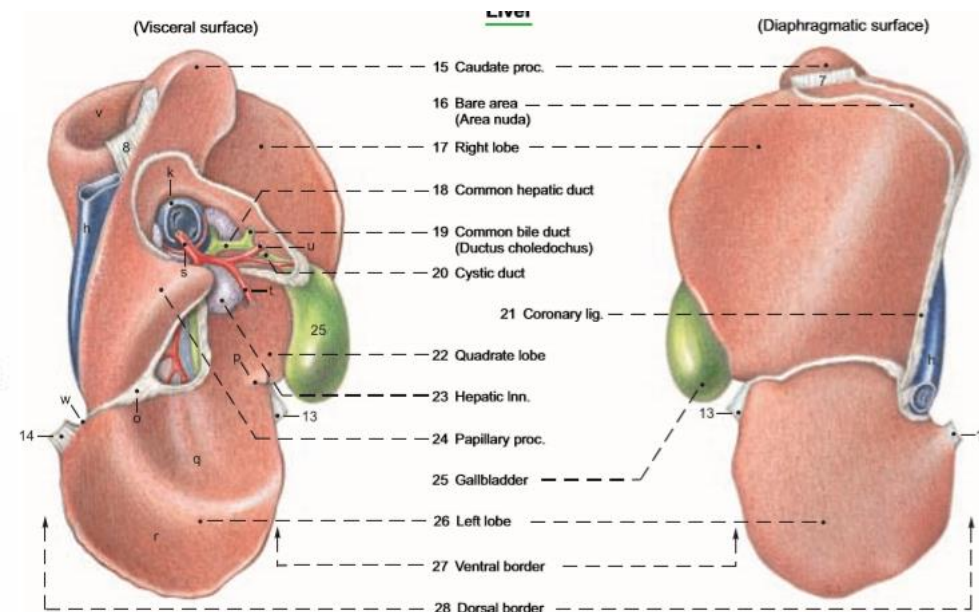
Fig 7-82. Luminal surface of the duodenal mucosa of a horse.



https://link.springer.com/referenceworkentry/10.1007%2F978-3-642-13327-5_144



Fig 7-109. Bile drainage system of a sheep, corrosion cast (courtesy of Prof. Dr. Ana Carretero, Barcelona).



EPEVEZETÉK RENDSZER

HÚSEVŐBEN:

- mindegyik lebenynek saját ductus lobalis van
- ductus lobalisok beleömlenek a ductus cysticusba
- NINCS ductus hepaticus dext. et sin.
- NINCS ductus hepaticus communis
- ductus choledochus a papilla duodeni majoron nyílik a pars descendens duodenibe

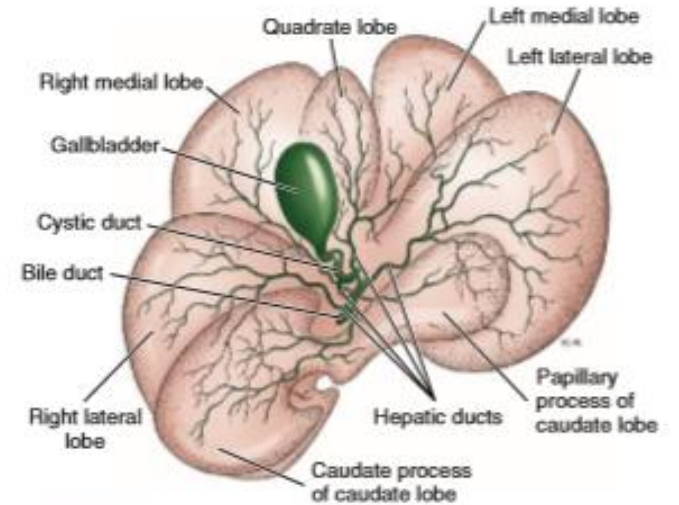


FIGURE 7-51 Schema of the gallbladder and hepatic ducts, visceral aspect.

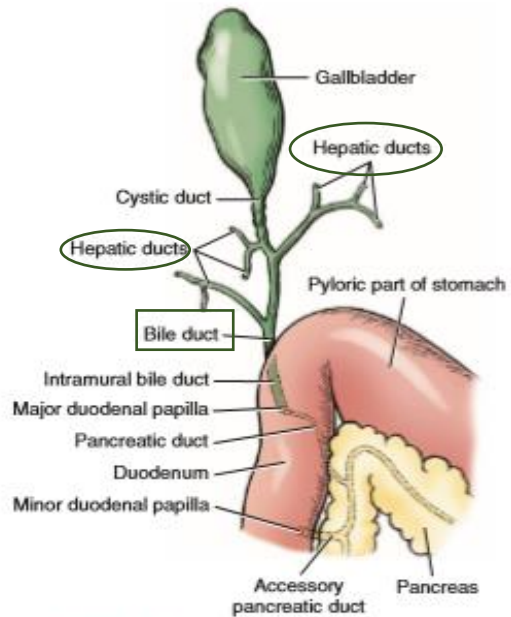
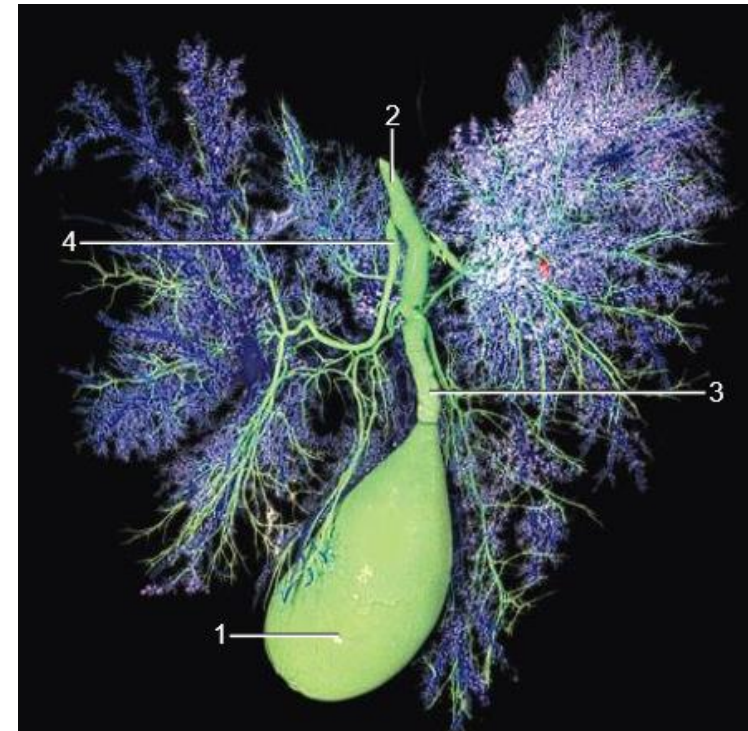
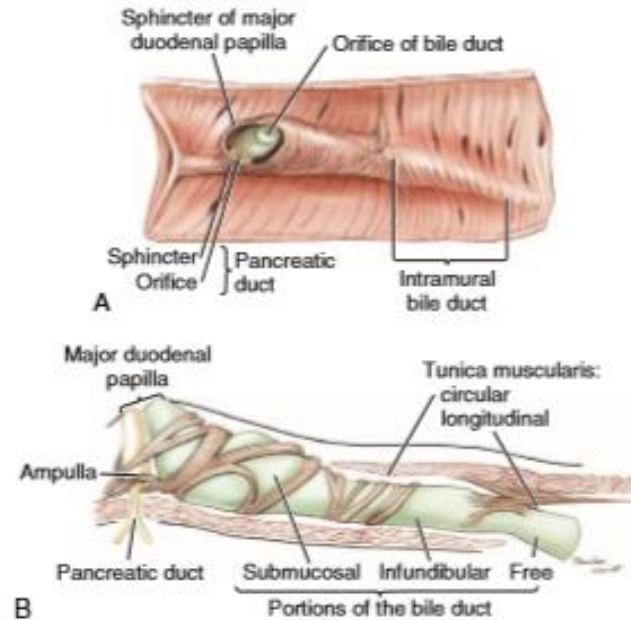


FIGURE 7-52 Bile, hepatic, and pancreatic ducts.



1. Gallbladder
2. Bile duct
3. Cystic duct
4. Hepatic ducts

EPEVEZETÉK RENDSZER

DUCTUS HEPATOCYSTICUS:

- a májból direkt az epehólyagba vezet
- Car és Ru

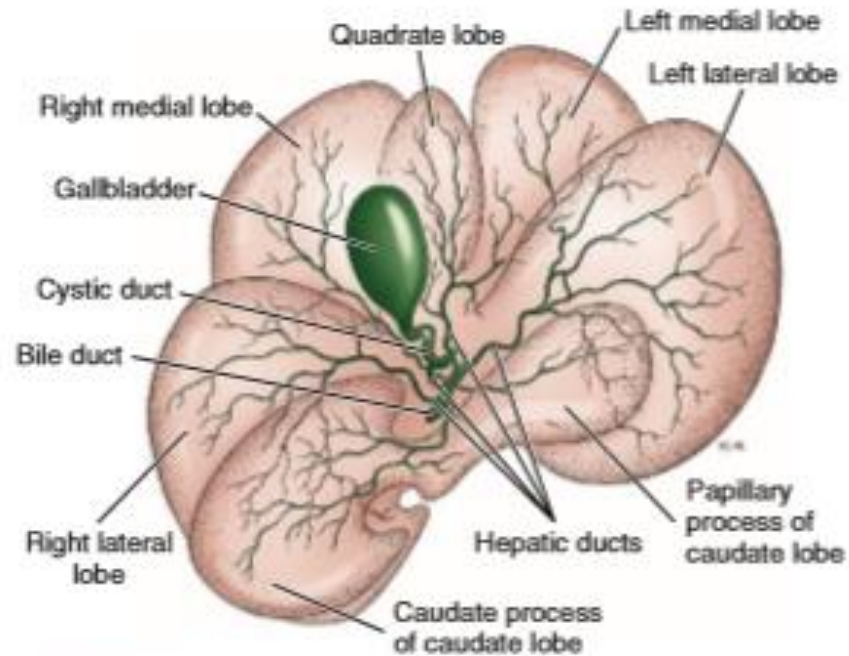
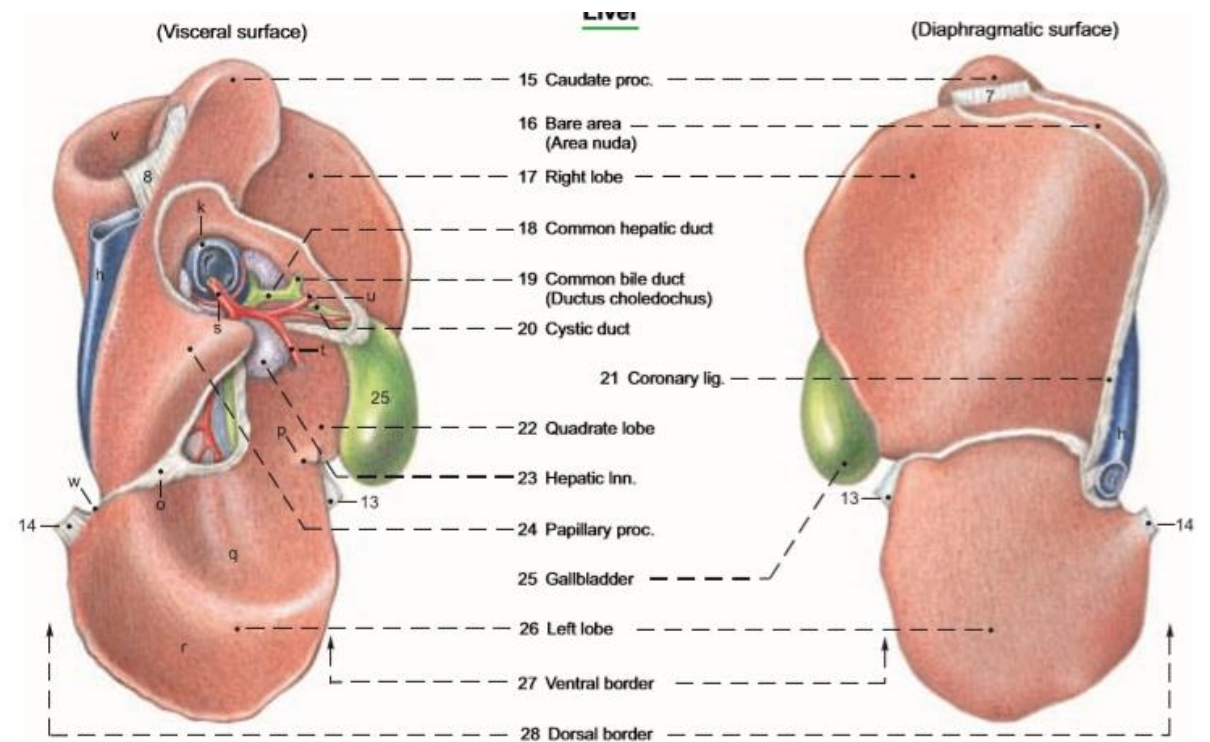


FIGURE 7-51 Schema of the gallbladder and hepatic ducts, visceral aspect.

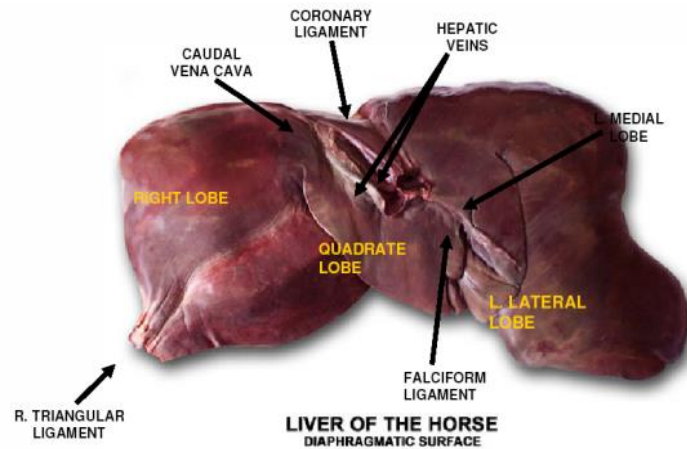
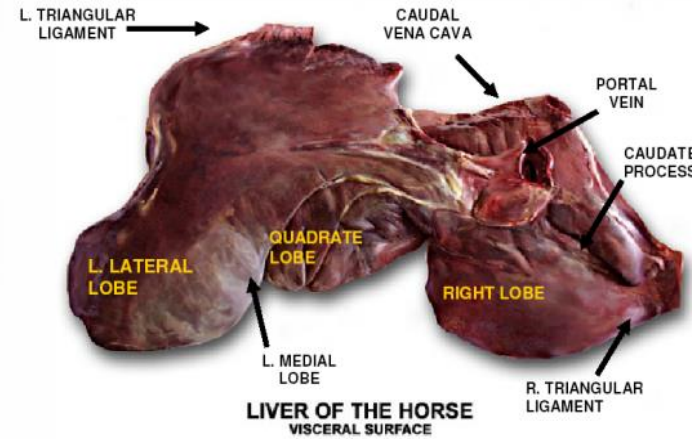


EPEHÓLYAG (VESICA FELLEA)

FELADATA:

1. epe raktározása
2. epe sűrítése vízvisszaszívással
3. epe leadása a duodenumba

- LÓNAK NINCS EPEHÓLYAGJA



https://www.quia.com/files/quia/users/medicinehawk/2107-Anatomy2/Liver_Pancreas.pdf

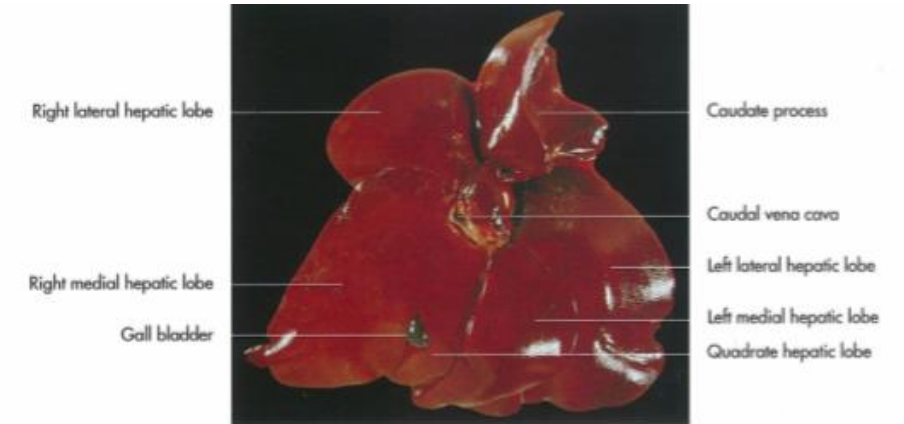


Fig 7-101. Liver of a cat, diaphragmatic surface (König, 1992).



Fig 7-102. Liver of a cat, visceral surface (König, 1992).

EPEHÓLYAG (VESICA FELLEA)

- máj zsigeri felszínén
- fossa vesicae felleaeben

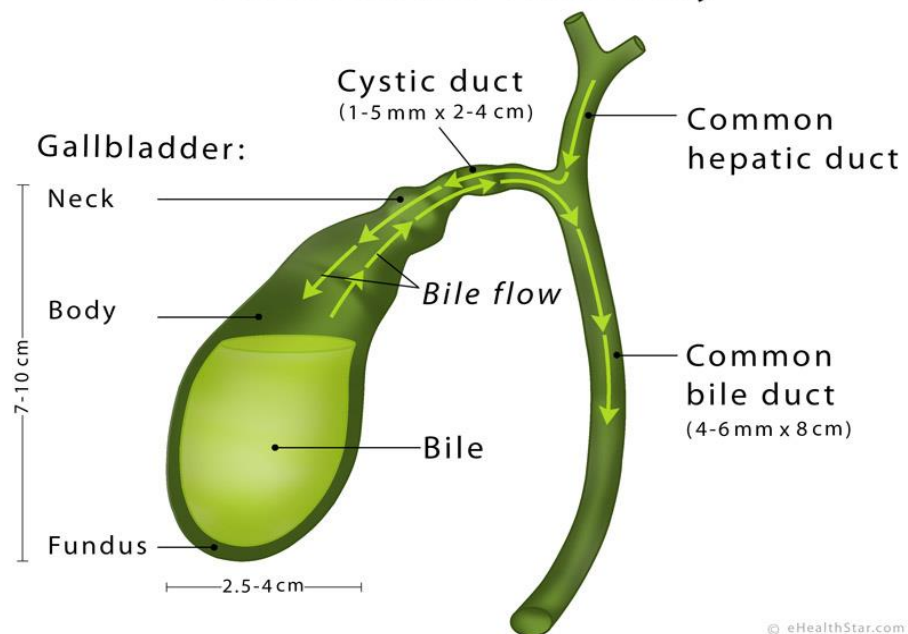
RÉSZEI:

1. COLLUM VESICAE FELLEA
2. CORPUS VESICAE FELLEA
3. FUNDUS VESICAE FELLEA



102. Liver of a cat, visceral surface (König, 1992).

Gallbladder Anatomy



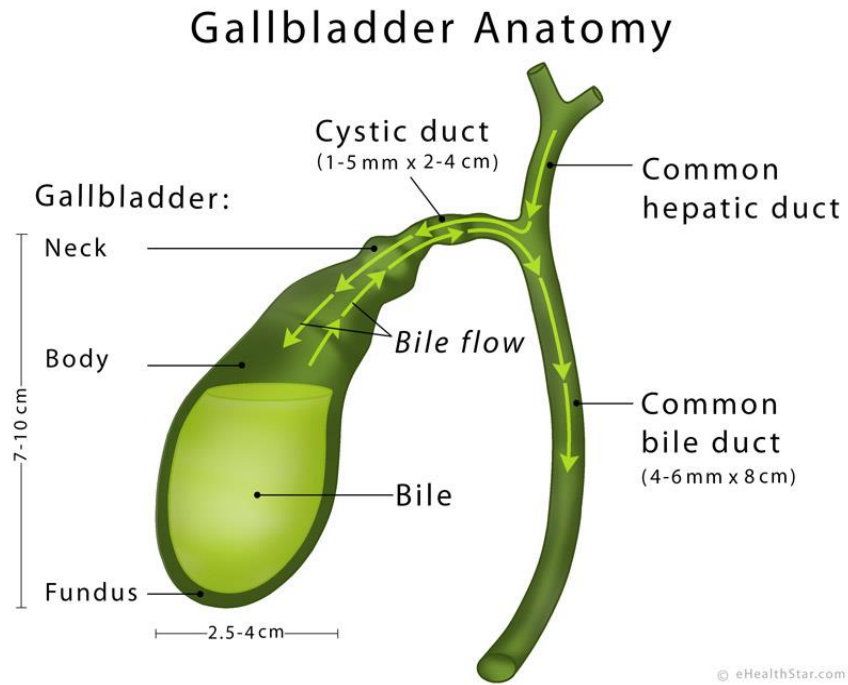
© eHealthStar.com

<https://www.ehealthstar.com/anatomy/gallbladder>

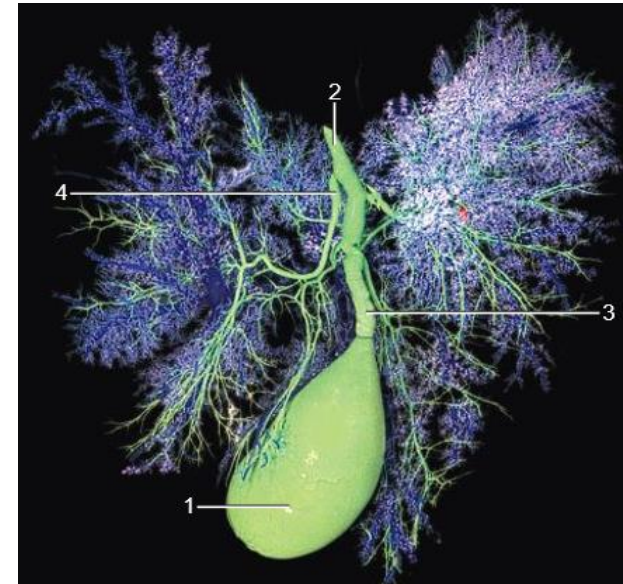
EPEHÓLYAG (VESICA FELLEA)

DUCTUS CYSTICUS:

- ductus cysticus + ductus hepaticus comminis = ductus choledochus



<https://www.ehealthstar.com/anatomy/gallbladder>



1. Gallbladder
2. Bile duct
3. Cystic duct
4. Hepatic ducts

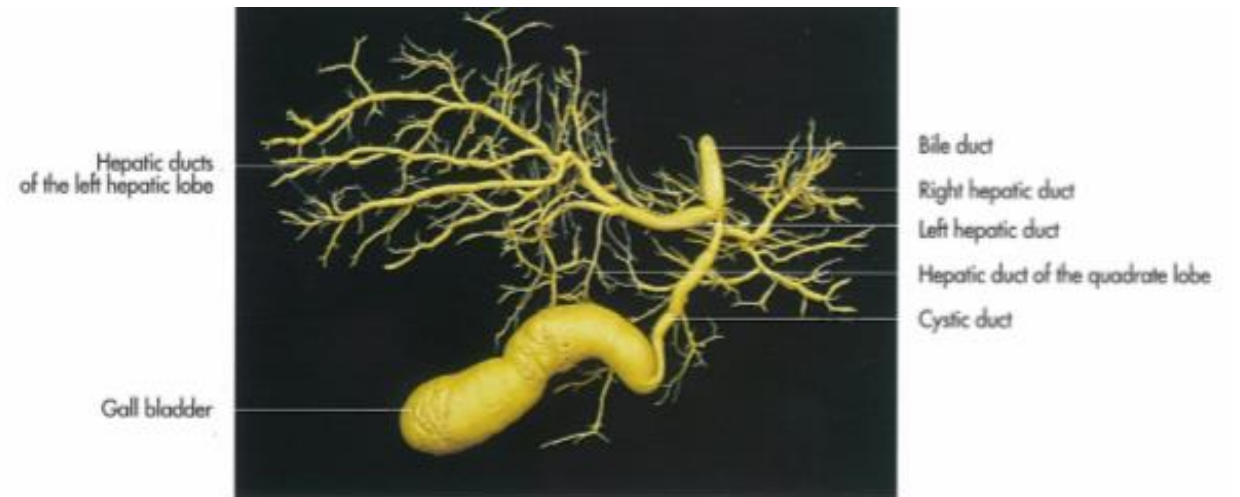


Fig 7-109. Bile drainage system of a sheep, corrosion cast (courtesy of Prof. Dr. Ana Carretero, Barcelona).

HASNYÁLMIRIGY (PANCREAS)

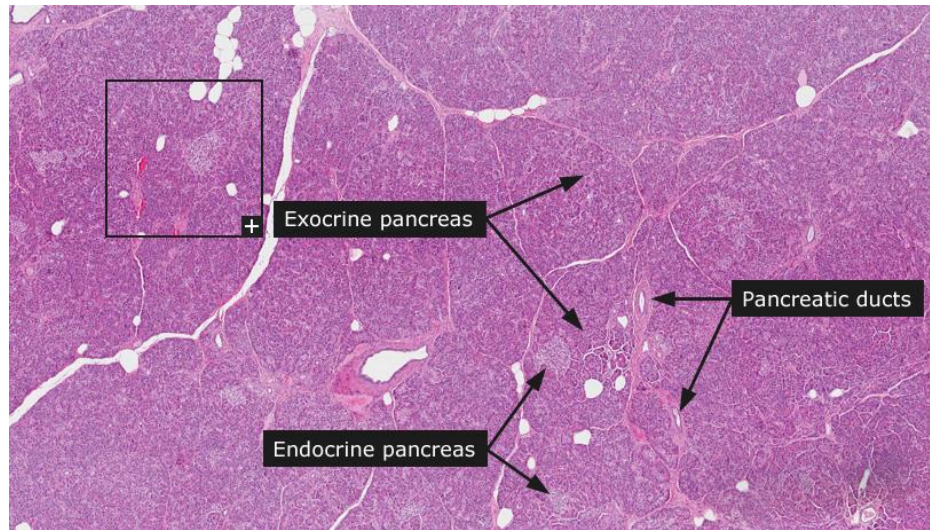
EXOKRIN PANCREAS:

- Emésztőenzimek termelése

ENDOKRIN PANCREAS:

termeli:

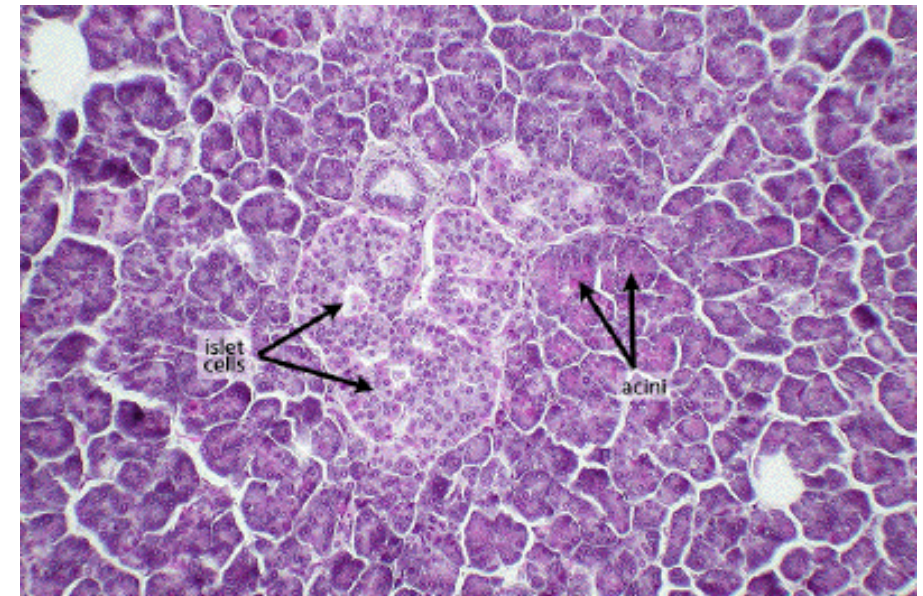
1. insulin
2. glucagon
3. somatostatin



<https://www.proteinatlas.org/learn/dictionary/normal/pancreas>



Fig 7-111. Pancreas of a dog, dorsal aspect.



https://www.dartmouth.edu/~anatomy/Histo/lab_6/endocrine/DMS143/popup.html

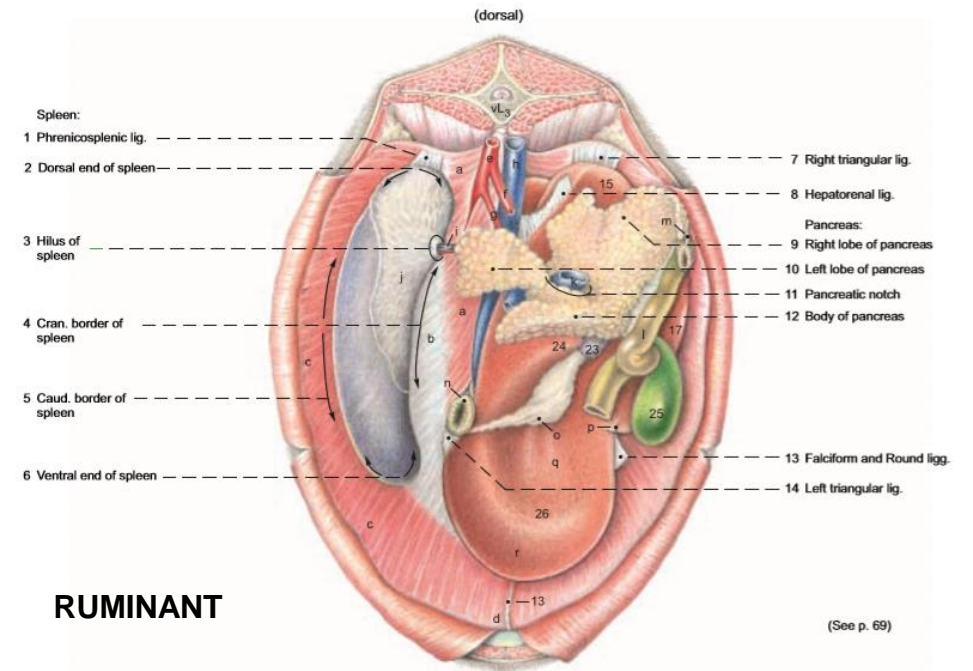
HASNYÁLMIRIGY (PANCREAS)

ELHELYEZKEDÉS:

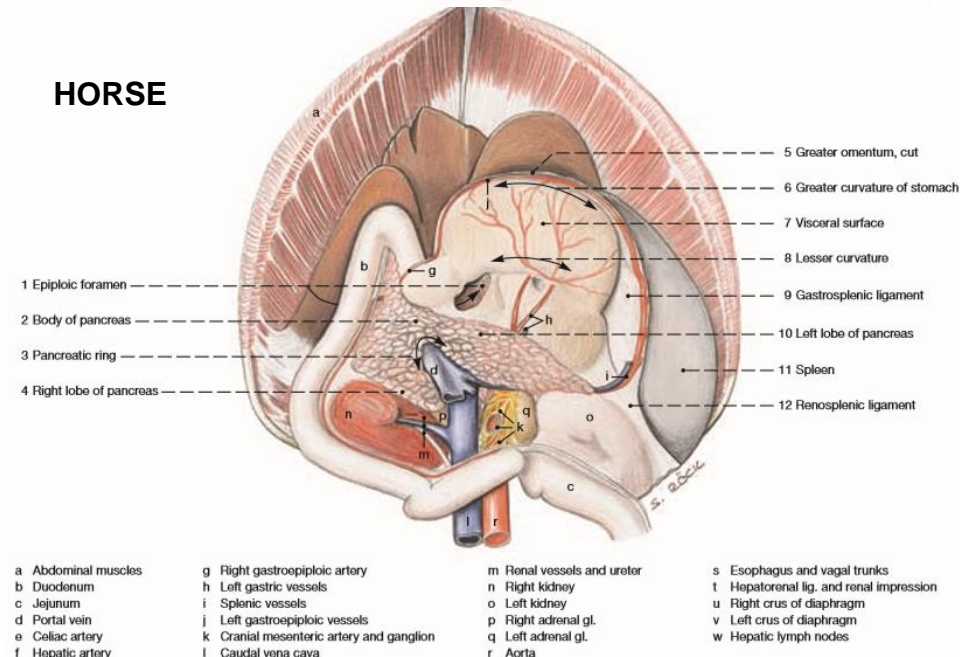
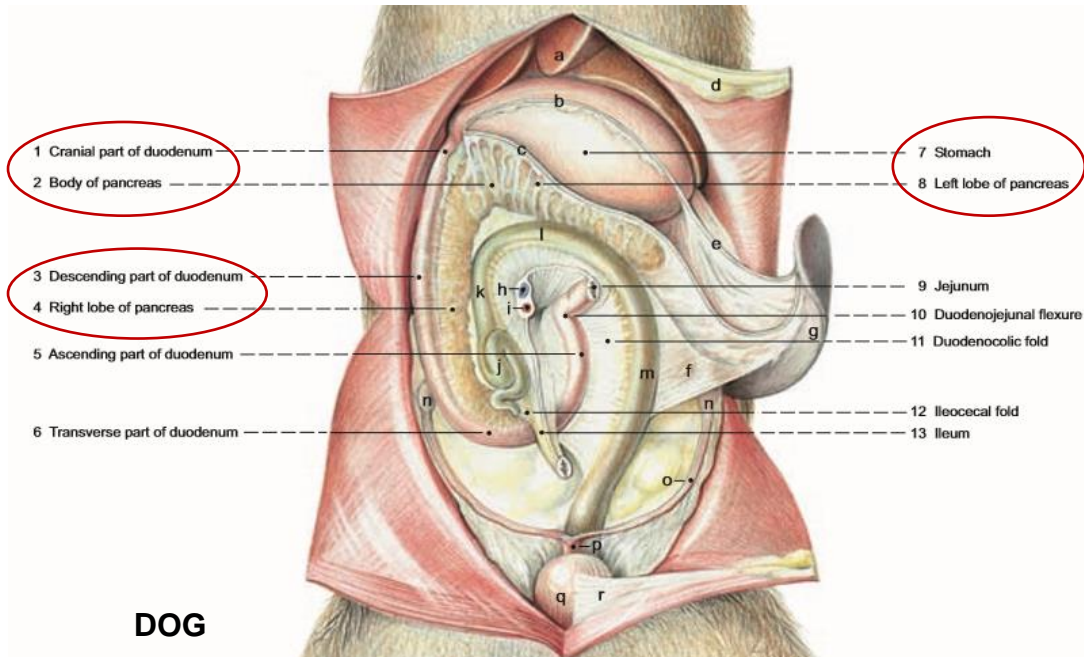
- a máj és a gyomor mögött
- duodenum fölött harántul, rejtetten

összeköttetés:

- gyomorral
- pars cranialis et descendens duodenivel



RUMINANT



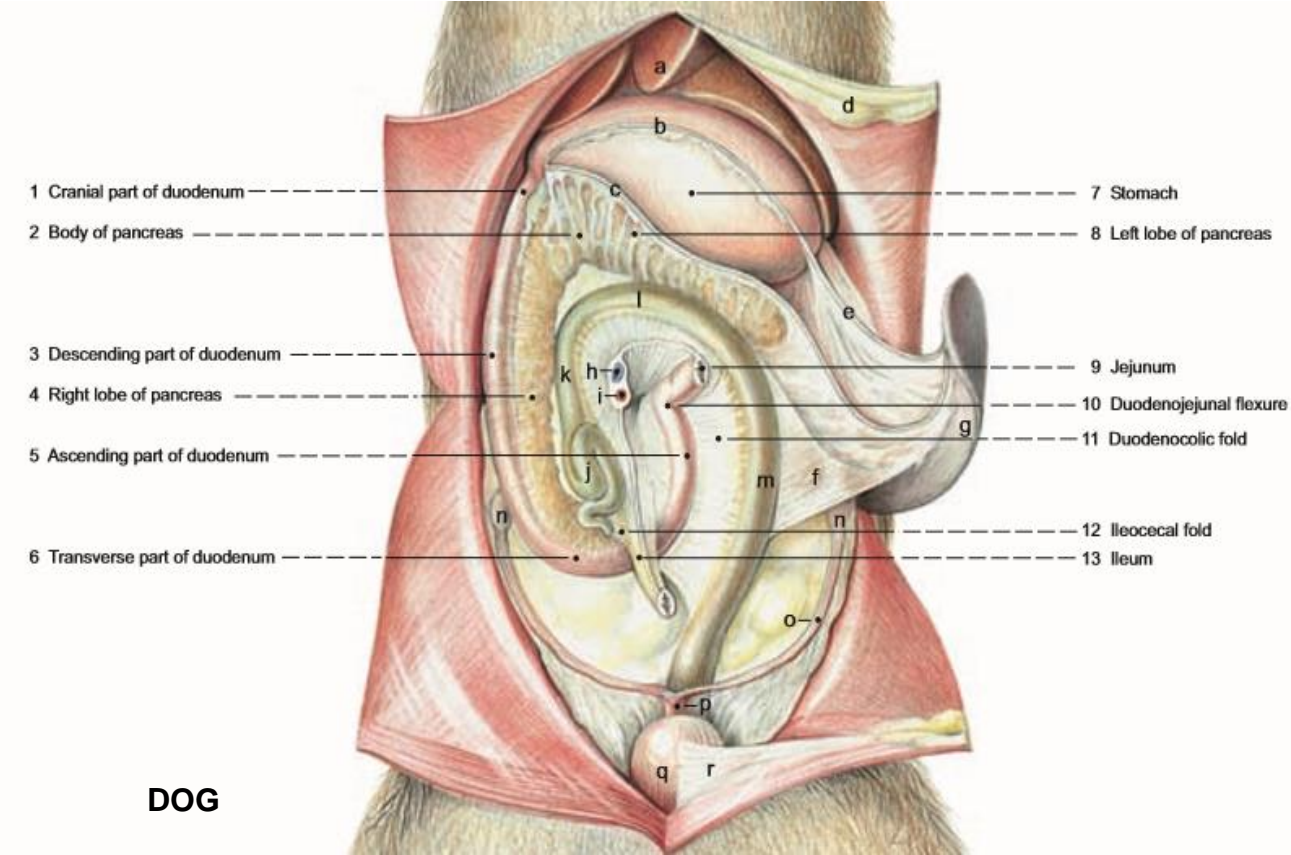
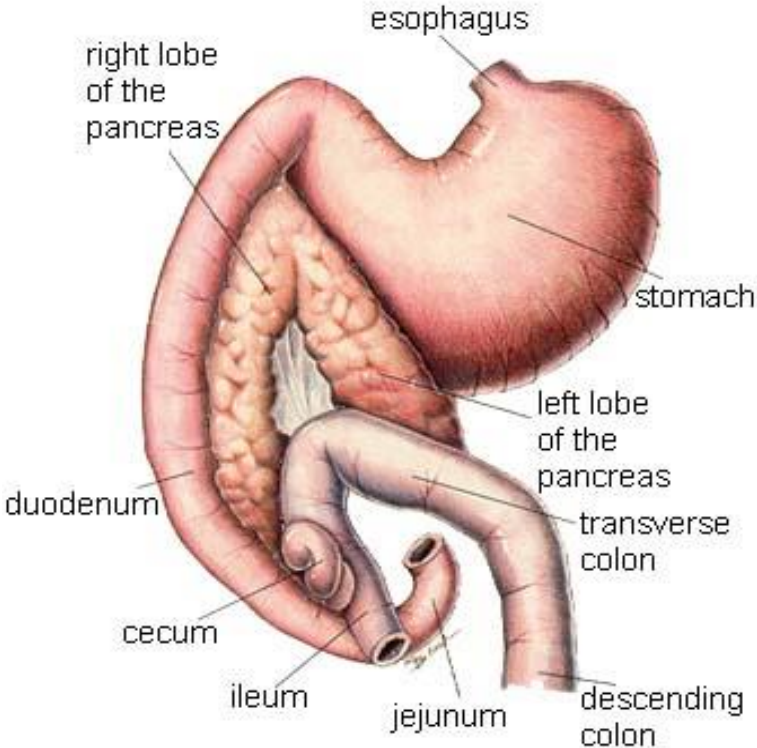
HORSE

HASNYÁLMIRIGY (PANCREAS)

FELSZÍNEI:

1. FACIES VENTRALIS

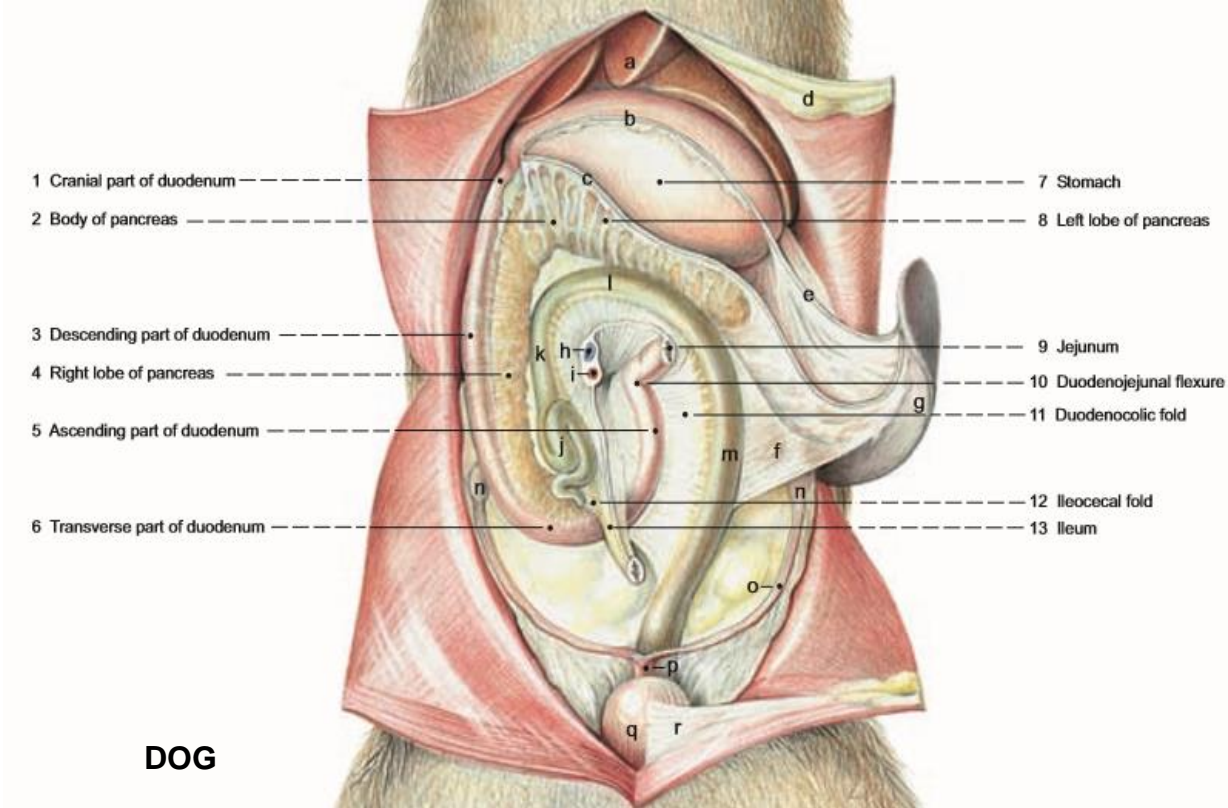
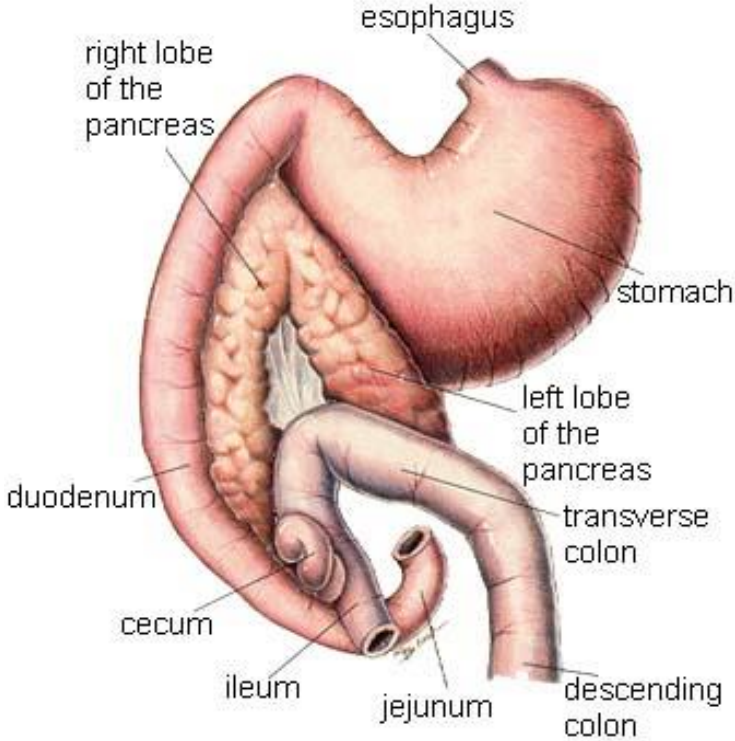
2. FACIES DORSALIS



<http://www.vetmed.wsu.edu/outreach/Pet-Health-Topics/categories/cat-and-dog-anatomy/digestive-system-of-the-dog>

HASNYÁLMIRIGY (PANCREAS)

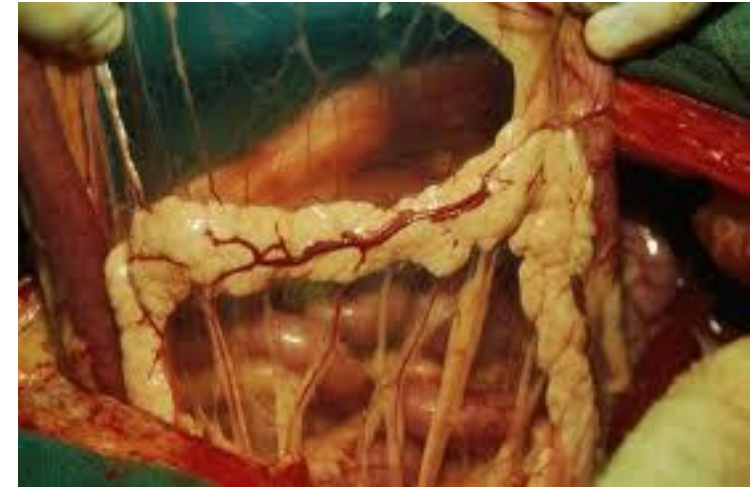
- 1. MARGO CRANIALIS
- 2. MARGO CAUDALIS
- 3. MARGO DEXTER
- 4. MARGO SINISTER



HASNYÁLMIRIGY (PANCREAS)

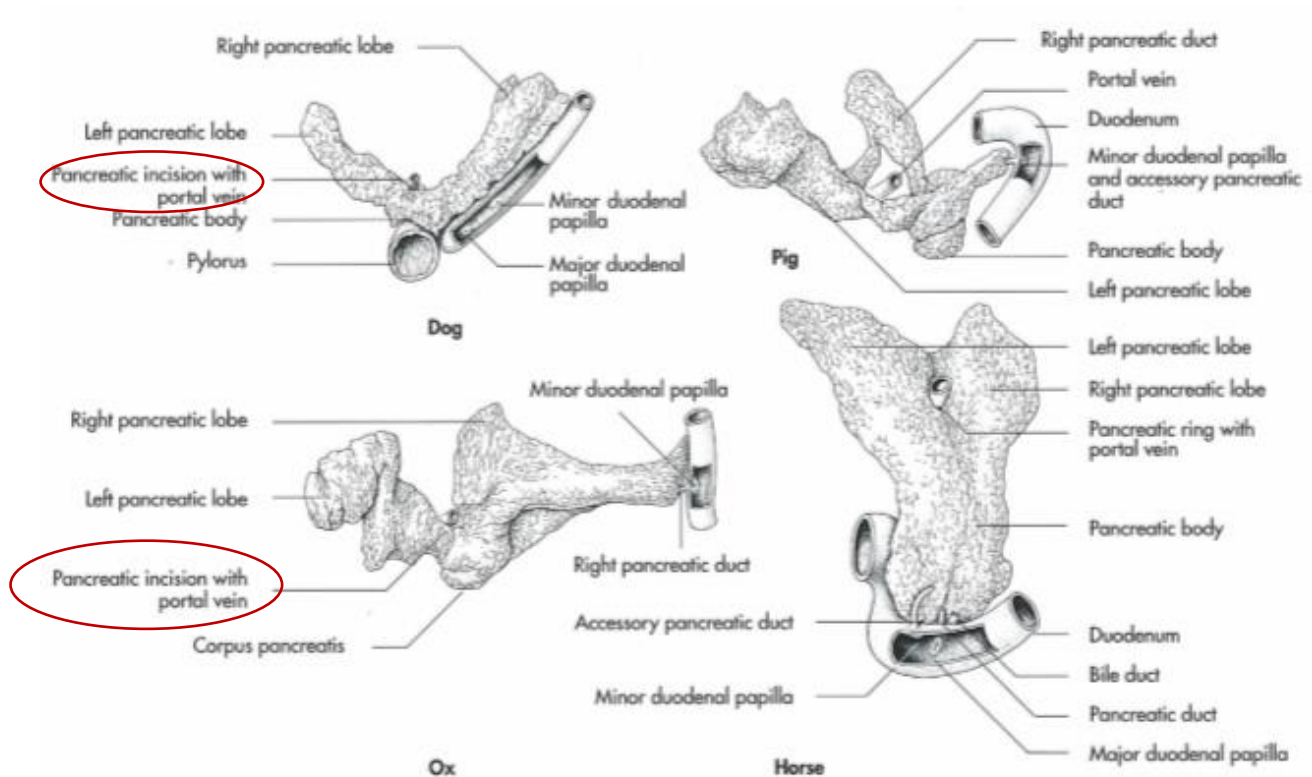
INCISURA PANCREATIS:

- Car, Ru
- vena portae körül
- margo caudalison



a normal canine pancreas

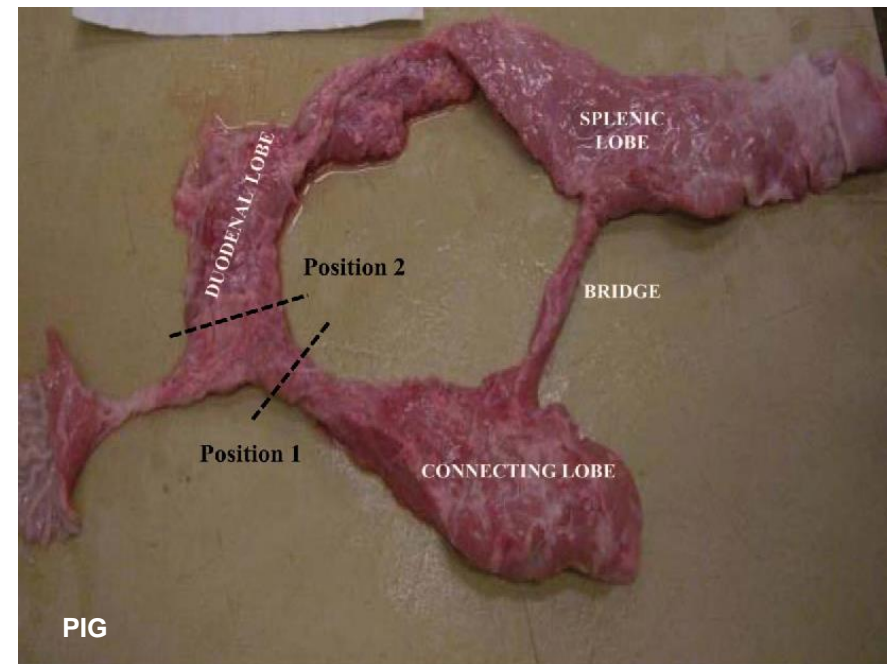
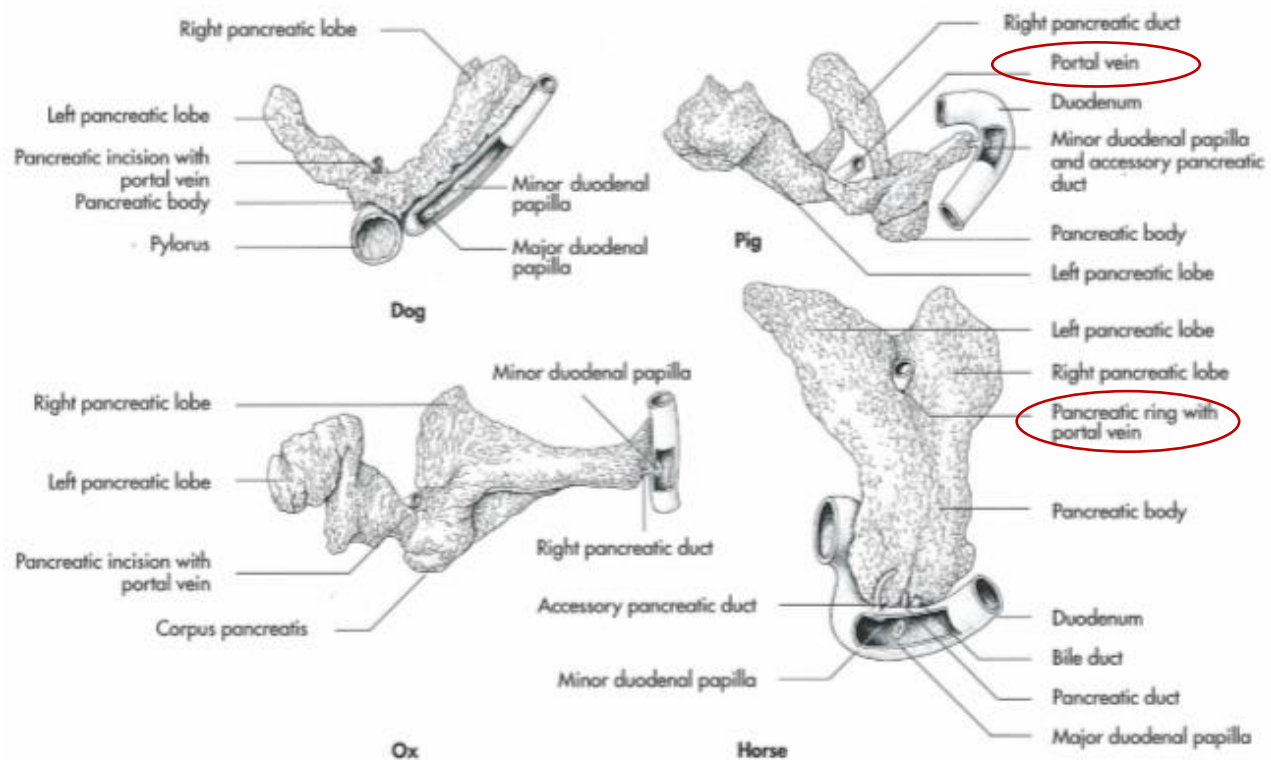
<https://epi4dogs.com/the-pancreas/>



HASNYÁLMIRIGY (PANCREAS)

ANULUS PANCREATIS:

- Eq, Su
- vena portae körüli gyűrű



<https://www.semanticscholar.org/paper/Pig-pancreas-anatomy%3A-implications-for-pancreas-and-Ferrer-Scott/084f64a3fa05a49e9bae5958bad7ad4fd23fb07f0>

HASNYÁLMIRIGY (PANCREAS)

RÉSZEI:

- 1. CORPUS PANCREATIS
- 2. LOBUS PANCREATIS DEXTER
- 3. LOBUS PANCREATIS SINISTER

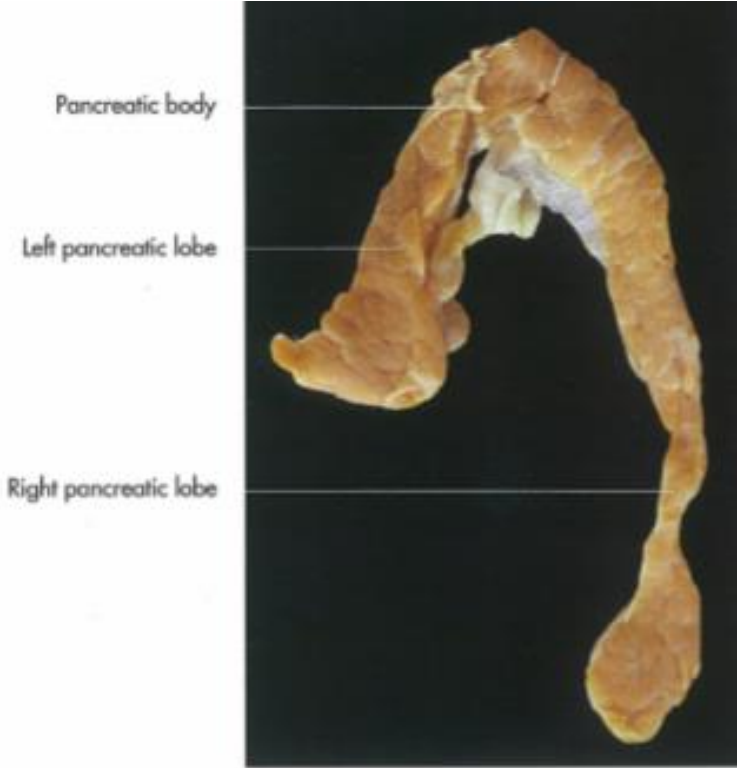
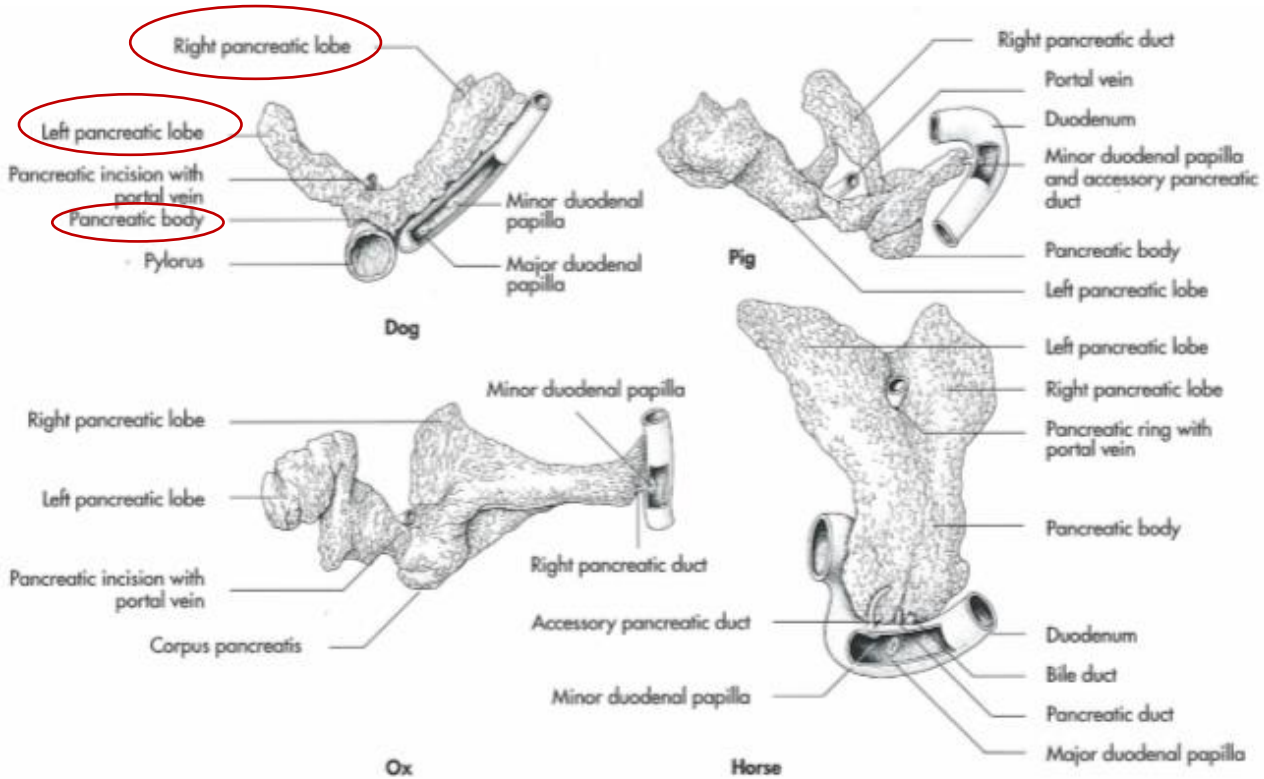
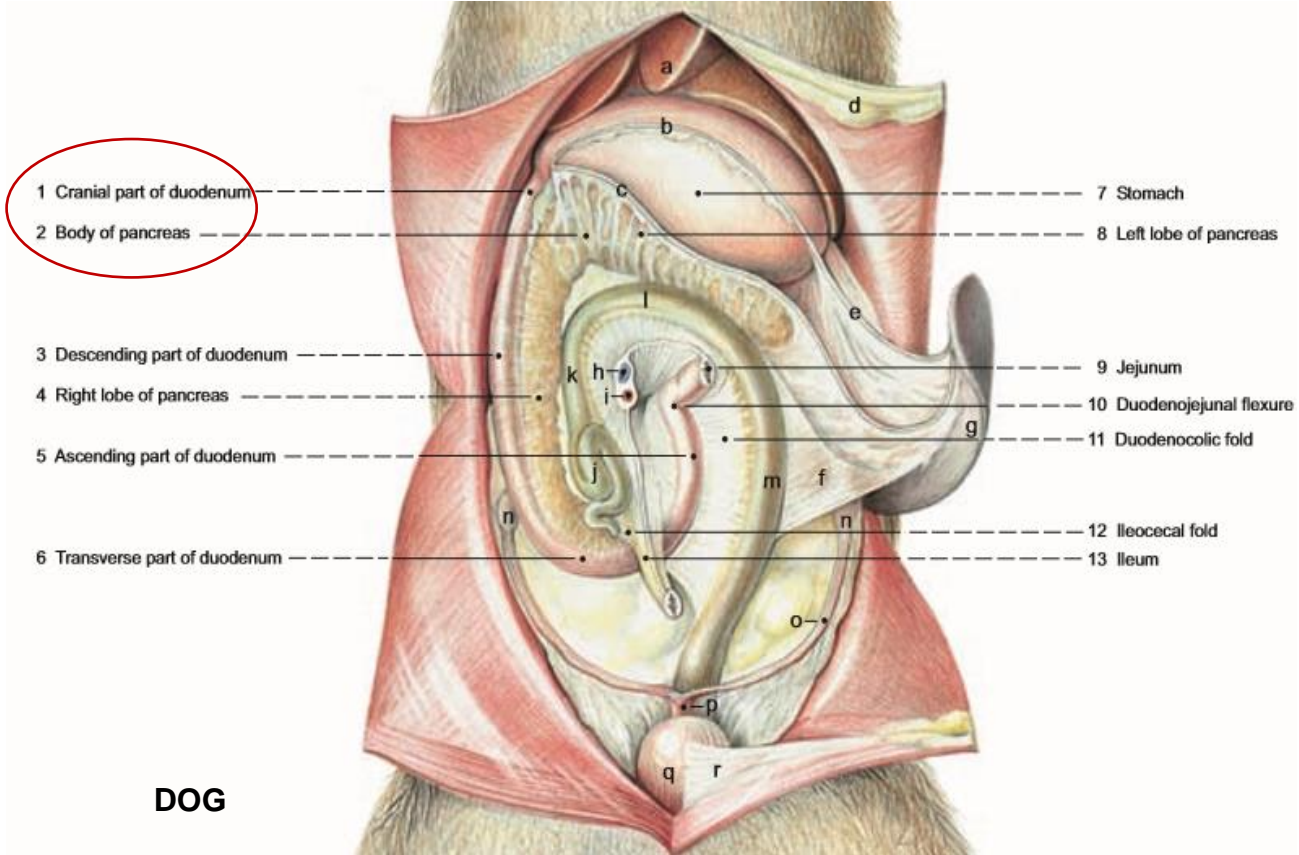
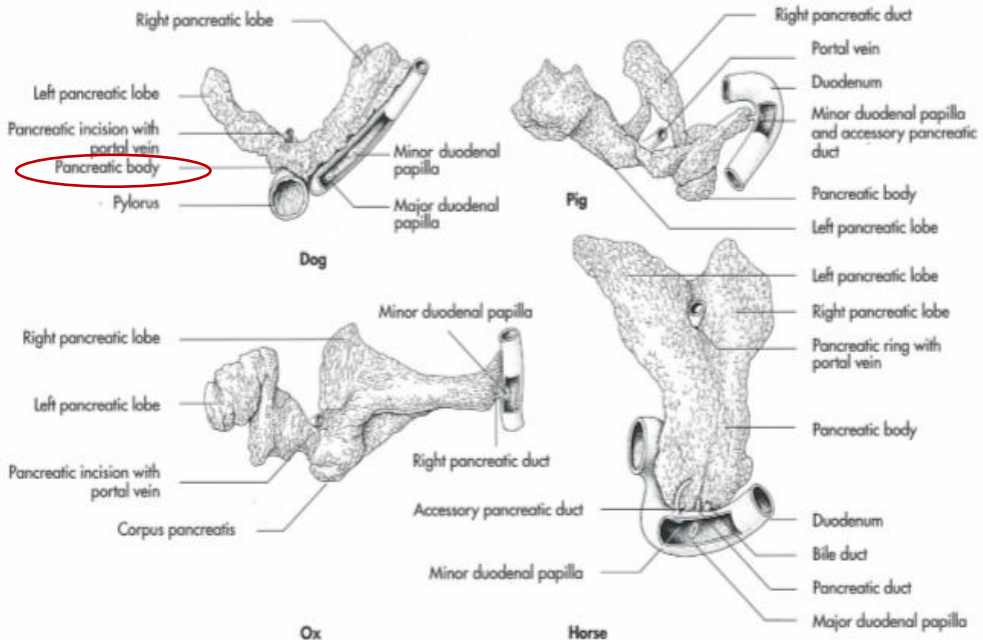


Fig 7-111. Pancreas of a dog, dorsal aspect.

HASNYÁLMIRIGY (PANCREAS)

CORPUS PANCREATIS:

- középső rész
- pars cranialis duodeni alatt

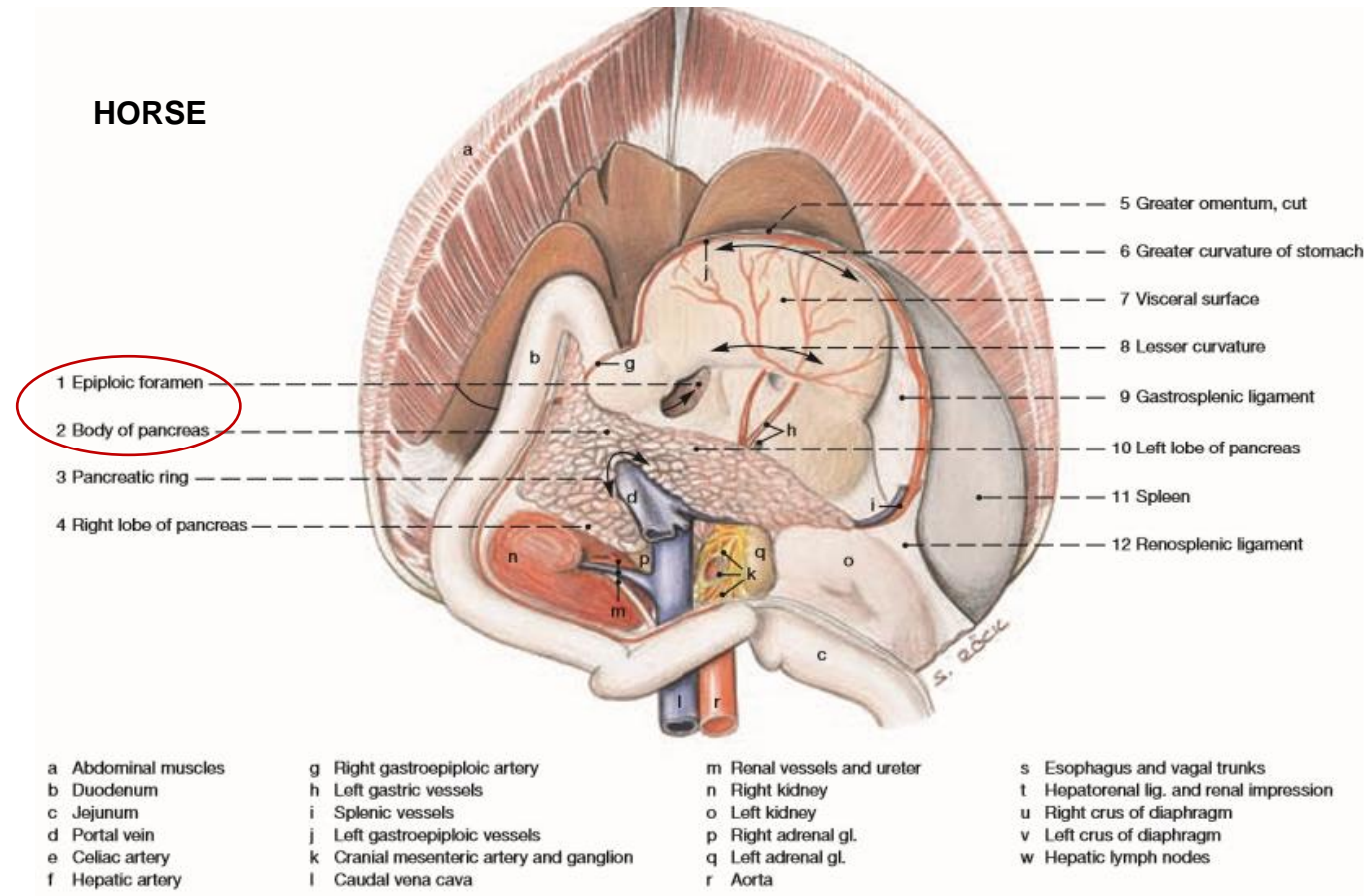


HASNYÁLMIRIGY (PANCREAS)

TUBER OMENTALE:

- ventrális kiemelkedés a testen

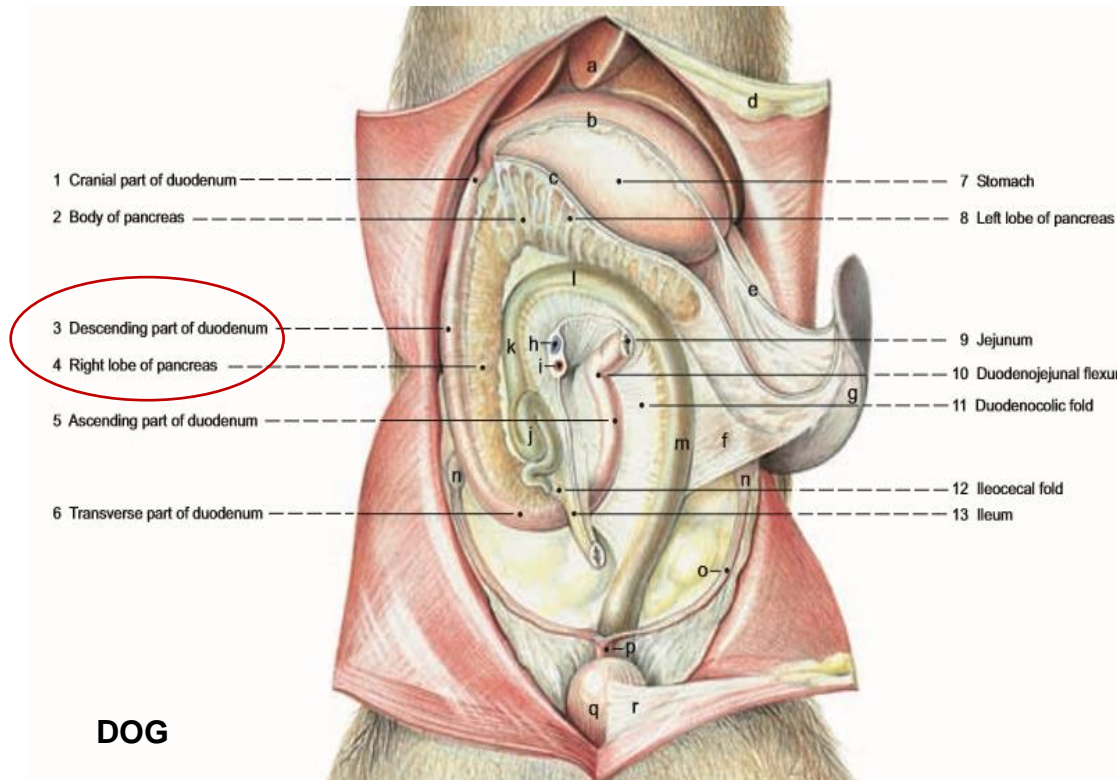
- bursa omentalis



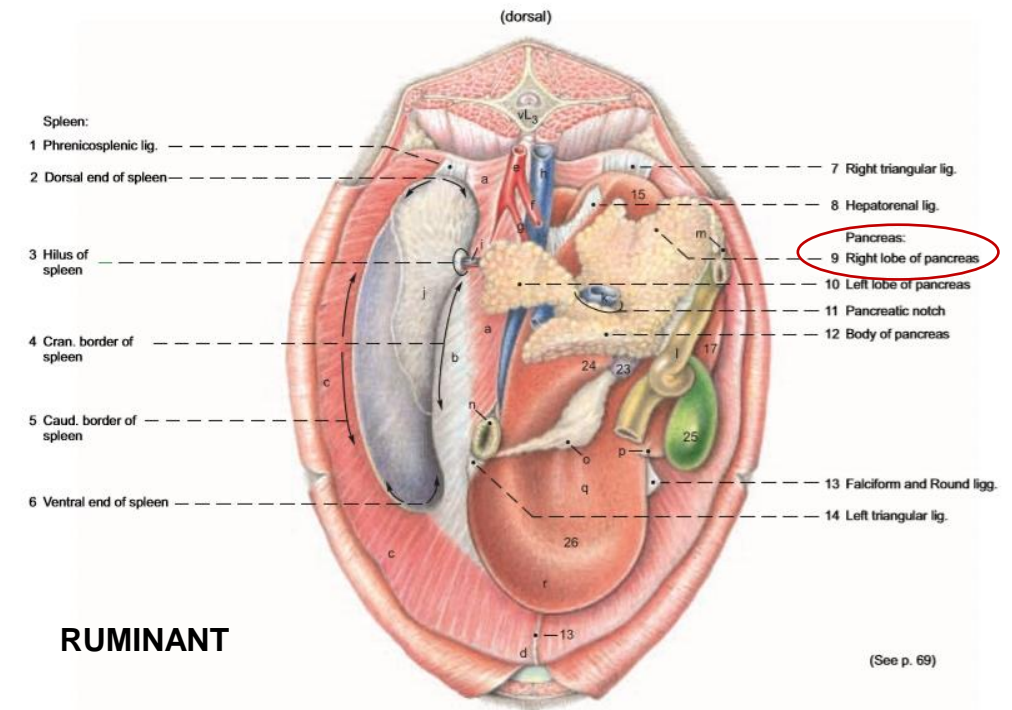
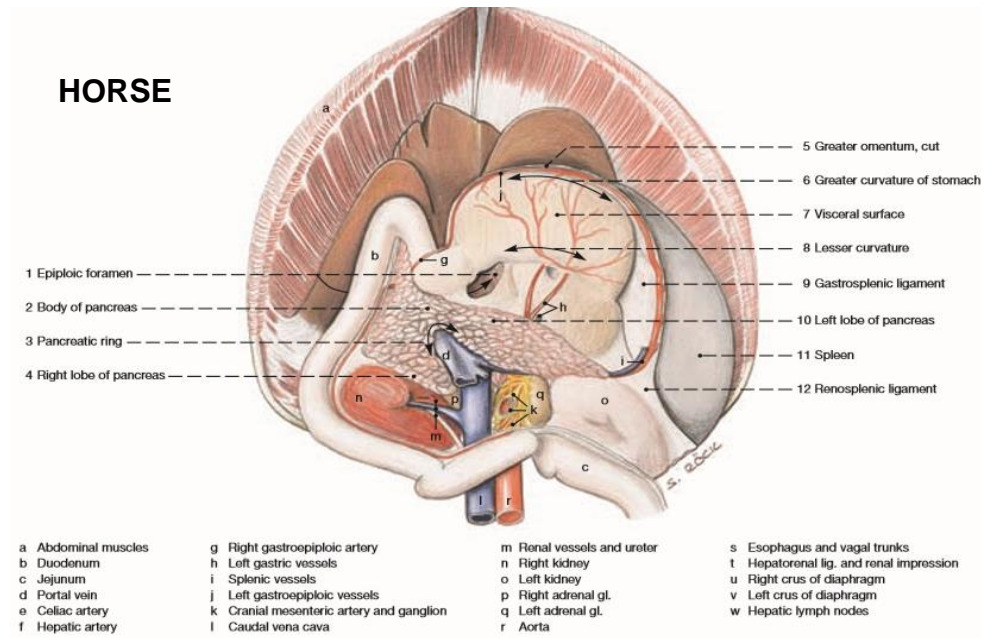
HASNYÁLMIRIGY (PANCREAS)

LOBUS PANCREATIS DEXTER:

- mesoduodenum descendensben
- pars descendens duodeni mentén (kivétel Eq)



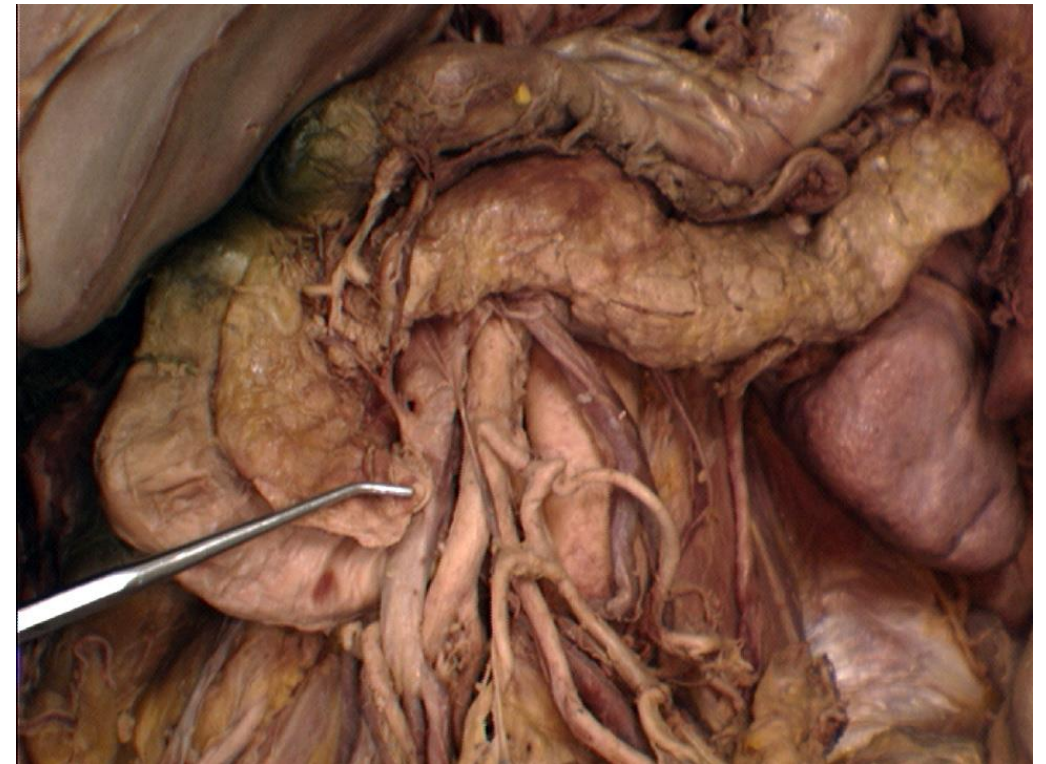
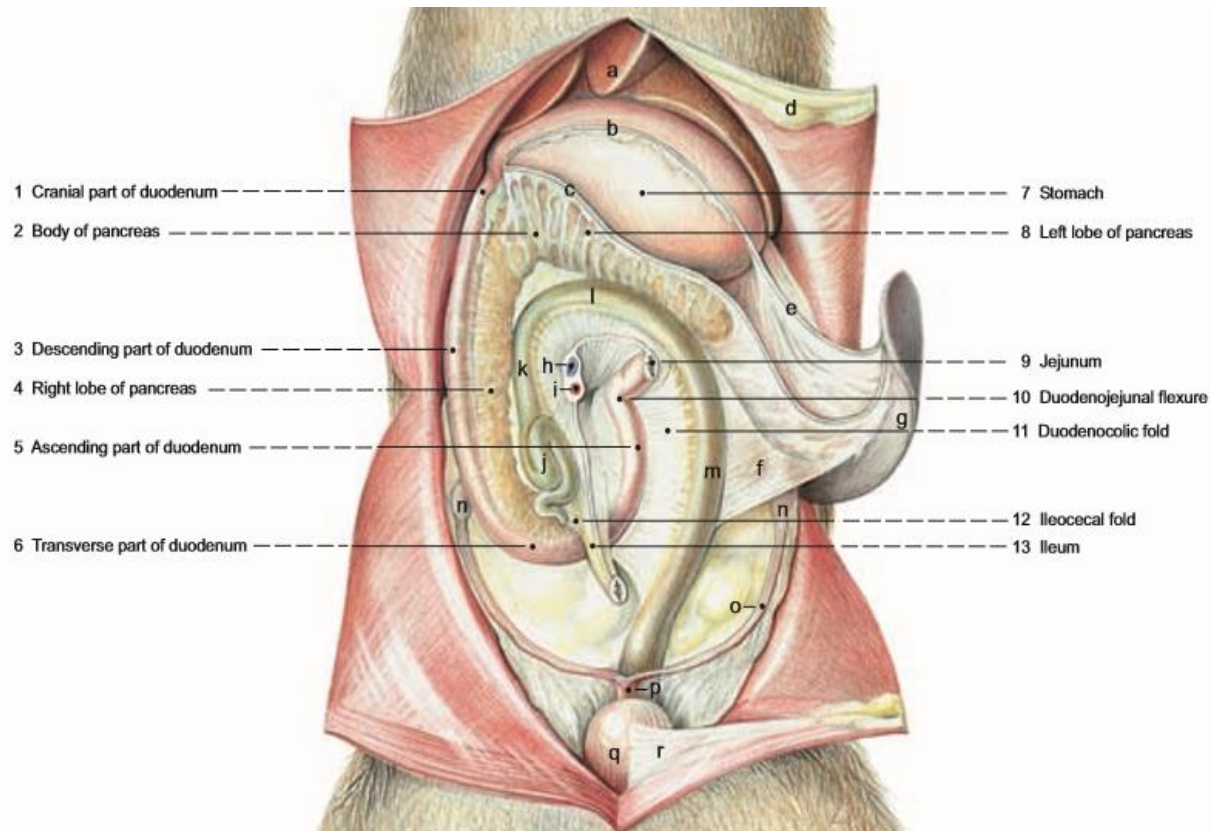
HORSE



HASNYÁLMIRIGY (PANCREAS)

PROCESSUS UNCINATUS:

- a jobb lebenyből jobbra és caudalisan ered
- a pars descendens duodeni fodrában a 2–4. ágyékcsigolyáig terjed a jobb hasfal mentén



[Processus uncinatus](#)

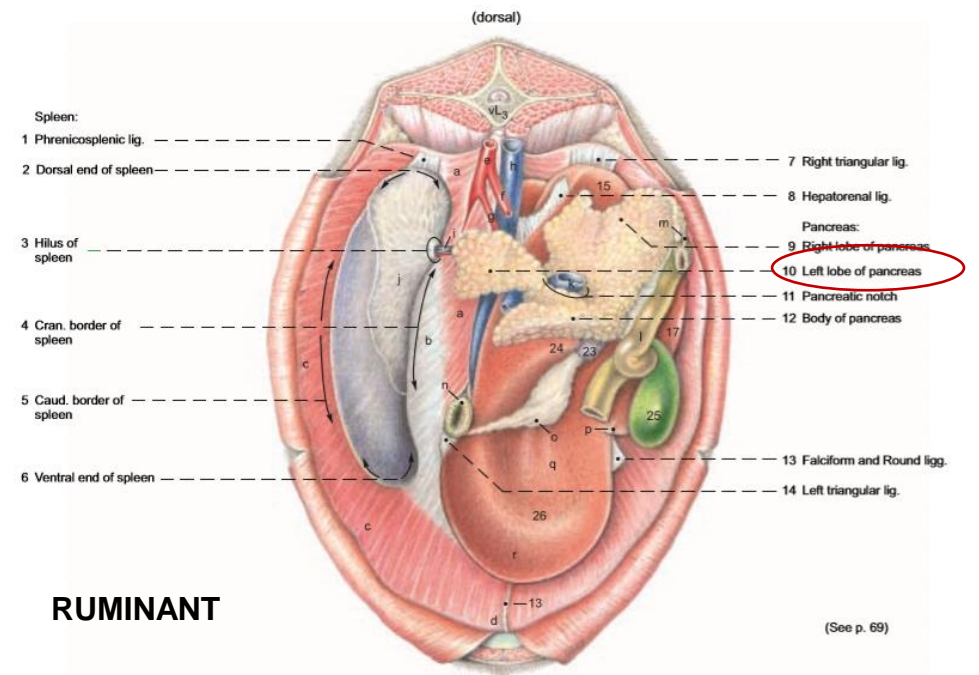
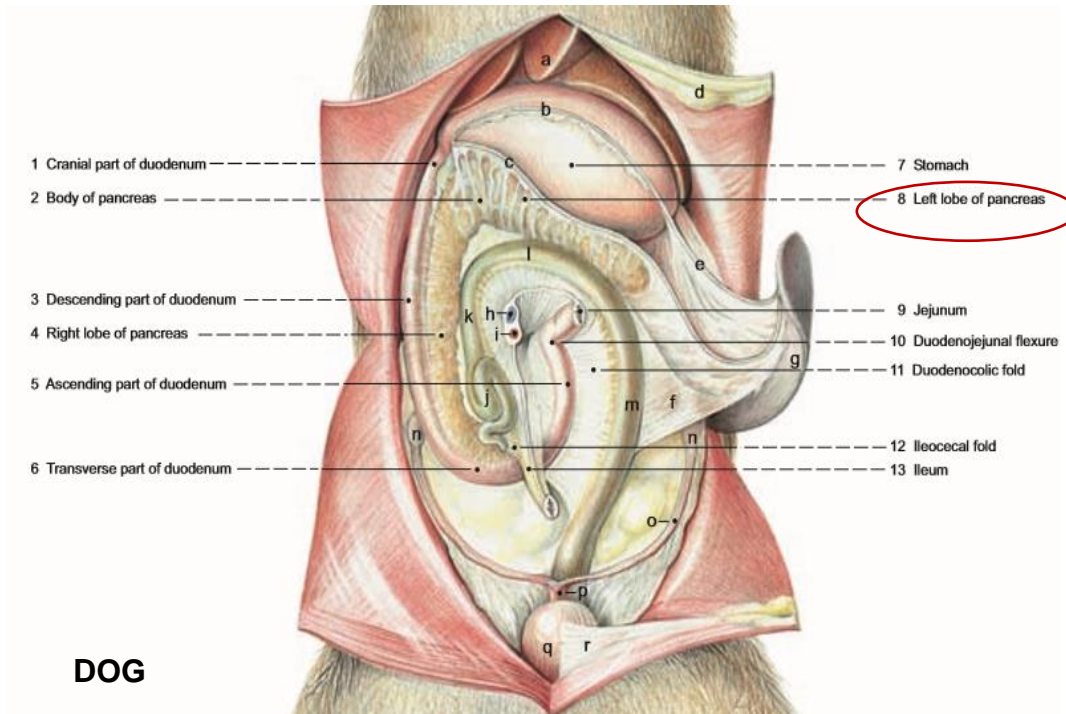
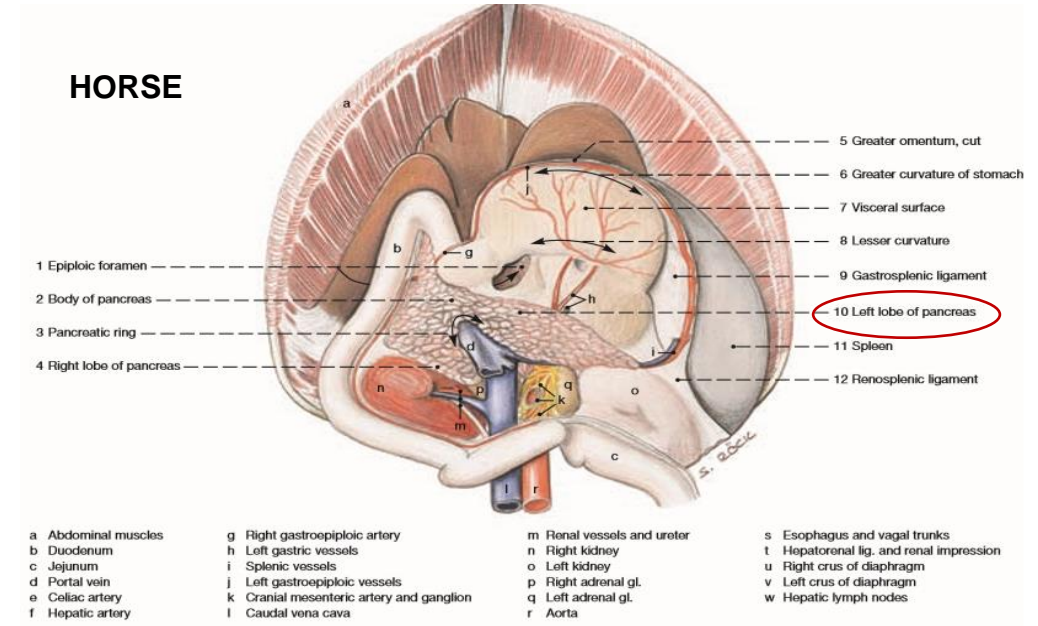
http://www.thebodyonline.net/body_view.php?image_path=abdomen/pancreas_uncinate_process.jpg

HASNYÁLMIRIGY (PANCREAS)

LOBUS PANCREATIS SINISTER:

- a gyomor visceralis felszínén

- kérérdőben – rumentől dorsálisan



HASNYÁLMIRIGY (PANCREAS)

HÚSEVŐBEN:

- U (V) - alakú

1. Corpus:

- centrálisan

2. Bal lebeny:

- rövidebb, vékonyabb
- a nagycseplez eredésében halad
- dorsális hasfalán

3. Jobb lebeny:

- hosszabb
- pars descendens duodeni mentés
- mesoduodenum descendensben

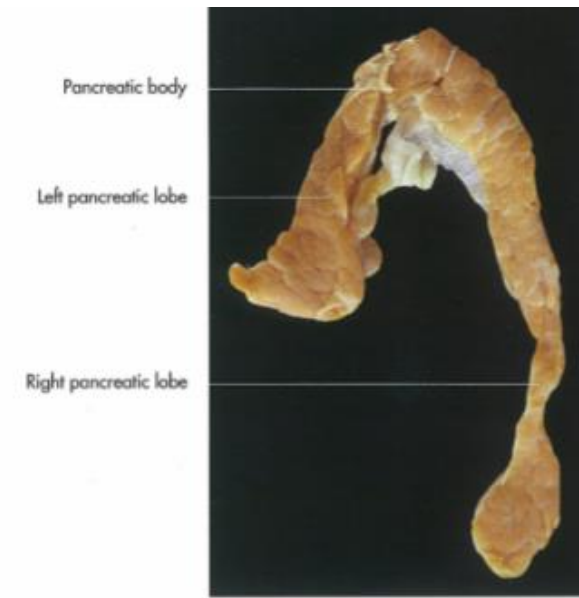
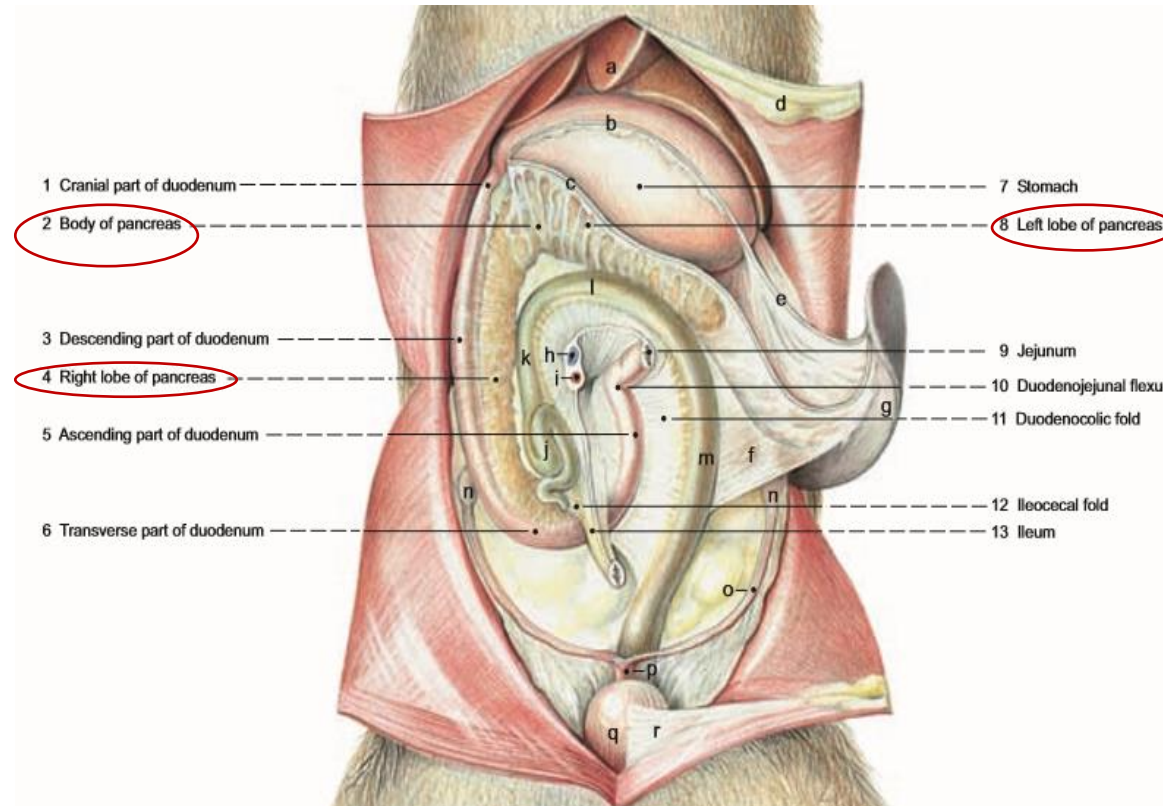


Fig 7-111. Pancreas of a dog, dorsal aspect.

HASNYÁLMIRIGY (PANCREAS)

SERTÉS:

- villa alakú

1. corpus:

- gyomor kiszögélyével és a pars duodenivel határos

- anulus pancreatis

2. Bal lebeny:

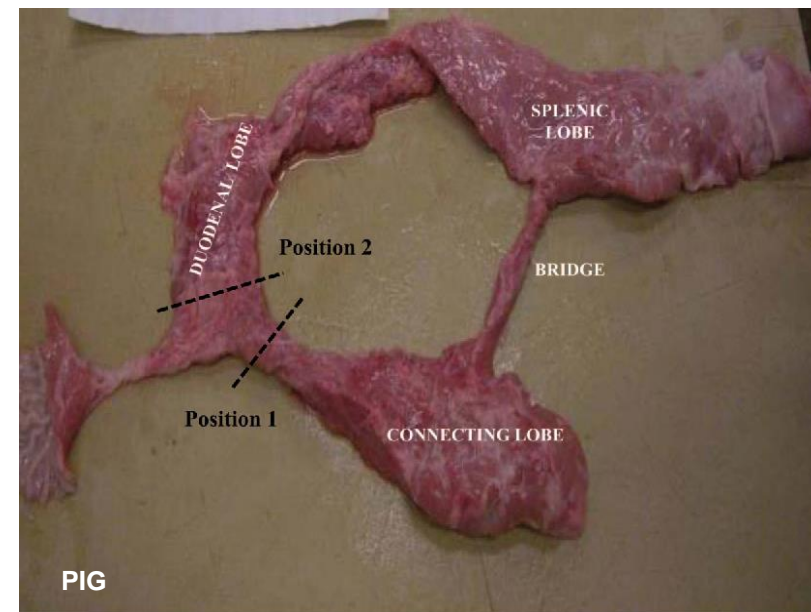
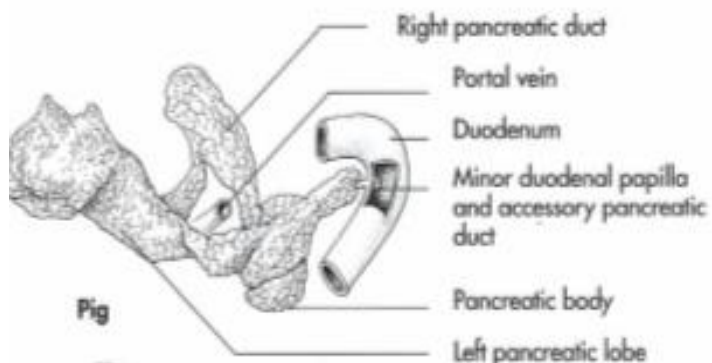
- nagyobb

- léppel és a bal vesével szomszédos

3. Jobb lebeny :

- kisebb

- jobb vese közepe tájáig terjed, a flexura secunda duodeni övezi



<https://www.semanticscholar.org/paper/Pig-pancreas-anatomy%3A-implications-for-pancreas-and-Ferrer-Scott/084f64a3fa05a49ebae5958bad7ad4fd23fb07f0>



<https://www.meiwoscience.com/animal-plastinated-specimens/pig-liver-pancreas-duodenum-spleen-plastinated-specimen.html>

HASNYÁLMIRIGY (PANCREAS)

LÓ:

- háromszög alakú

1. Corpus:

- nagy, kompakt

• máj visceralis felületére fekszik rá

• duodenum S alakú görbületének második hajlata benyomatot is képez rajta

- anulus pancreatis

2. Bal lebeny:

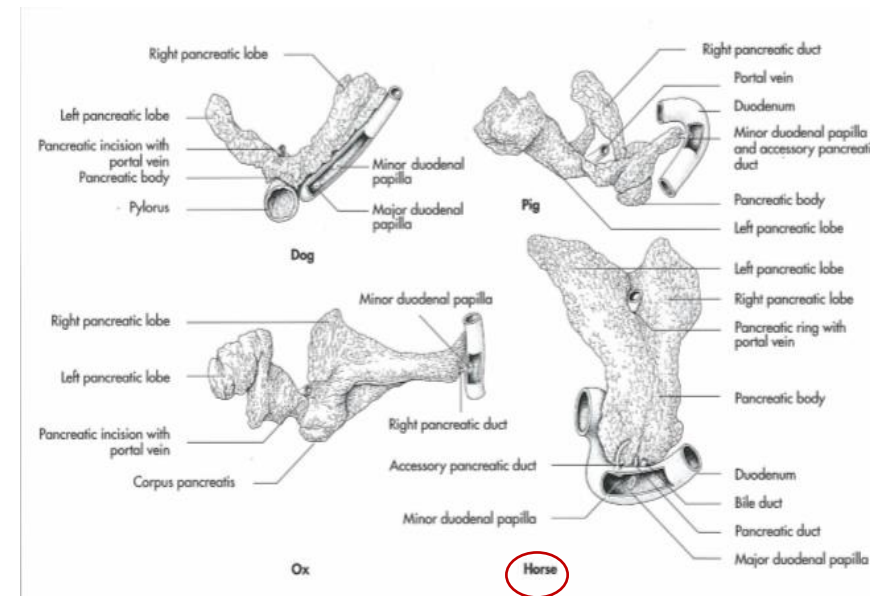
- hosszú

- gyomor vakzsákján át a lépig ér

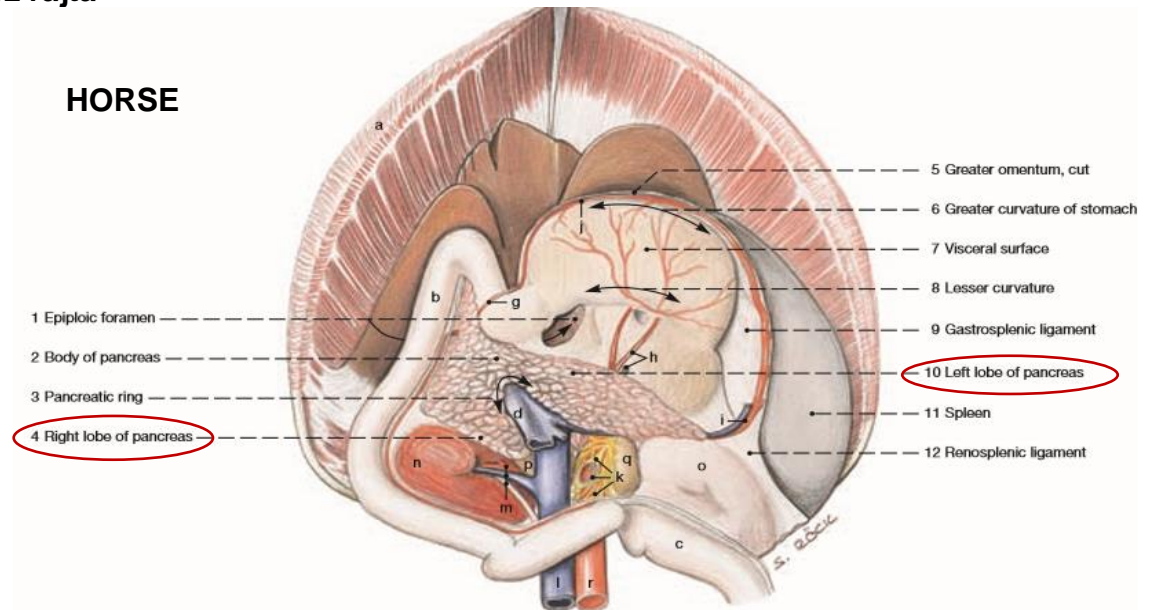
3. Jobb lebeny:

- rövid

- pars descendens duodenit kíséri a jobb veséig



HORSE



a Abdominal muscles
b Duodenum
c Jejunum
d Portal vein
e Coliac artery
f Hepatic artery

g Right gastroepiploic artery
h Left gastric vessels
i Splenic vessels
j Left gastroepiploic vessels
k Cranial mesenteric artery and ganglion
l Caudal vena cava

m Renal vessels and ureter
n Right kidney
o Left kidney
p Right adrenal gl.
q Left adrenal gl.
r Aorta

s Esophagus and vagal trunks
t Hepatorenal lig. and renal impression
u Right crus of diaphragm
v Left crus of diaphragm
w Hepatic lymph nodes

HASNYÁLMIRIGY (PANCREAS)

KÉRŐDZŐ:

- U - alak

1. Corpus:

- vékony

- máj és a szájrétű gyomor dorsalis szélére fekszik rá

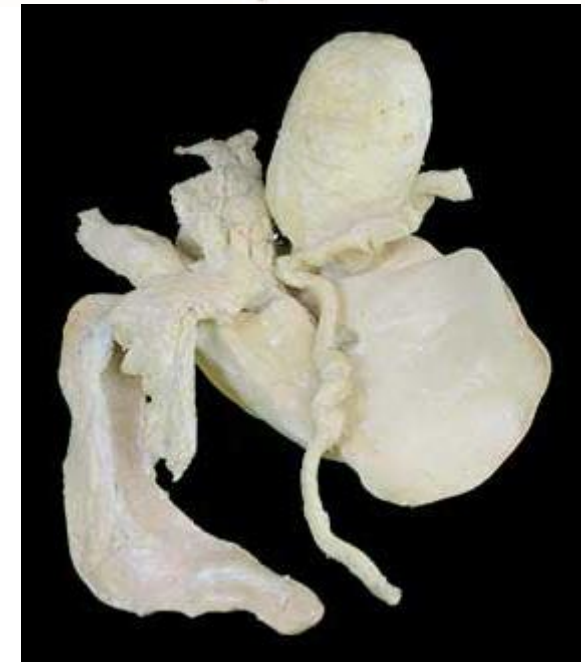
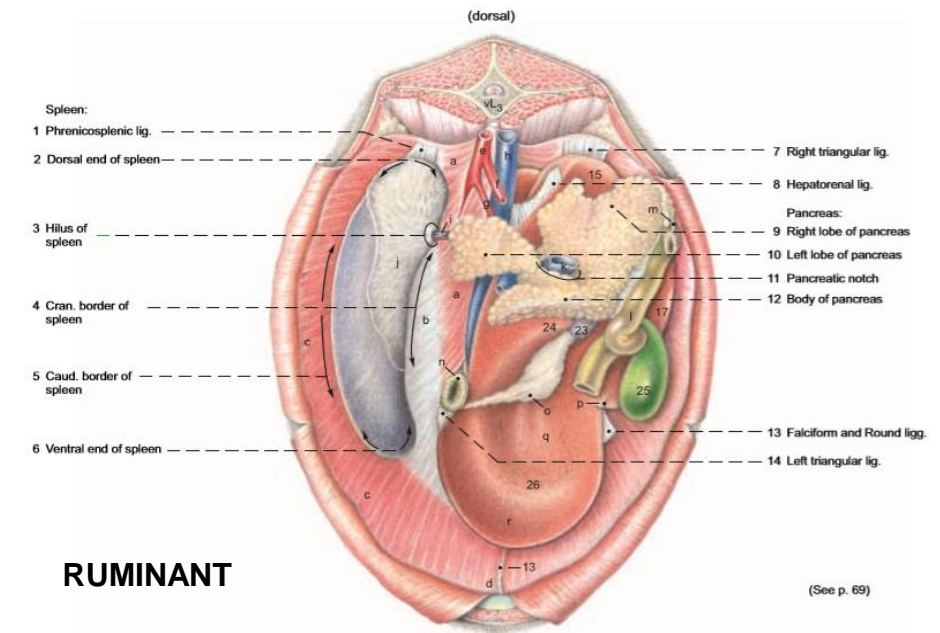
- incisura pancreatis:

2. Bal lebeny:

- széles

- a bendő dorsalis zsákja és a rekesz bal szára közé ékelődik

- gyakran a lépet is eléri

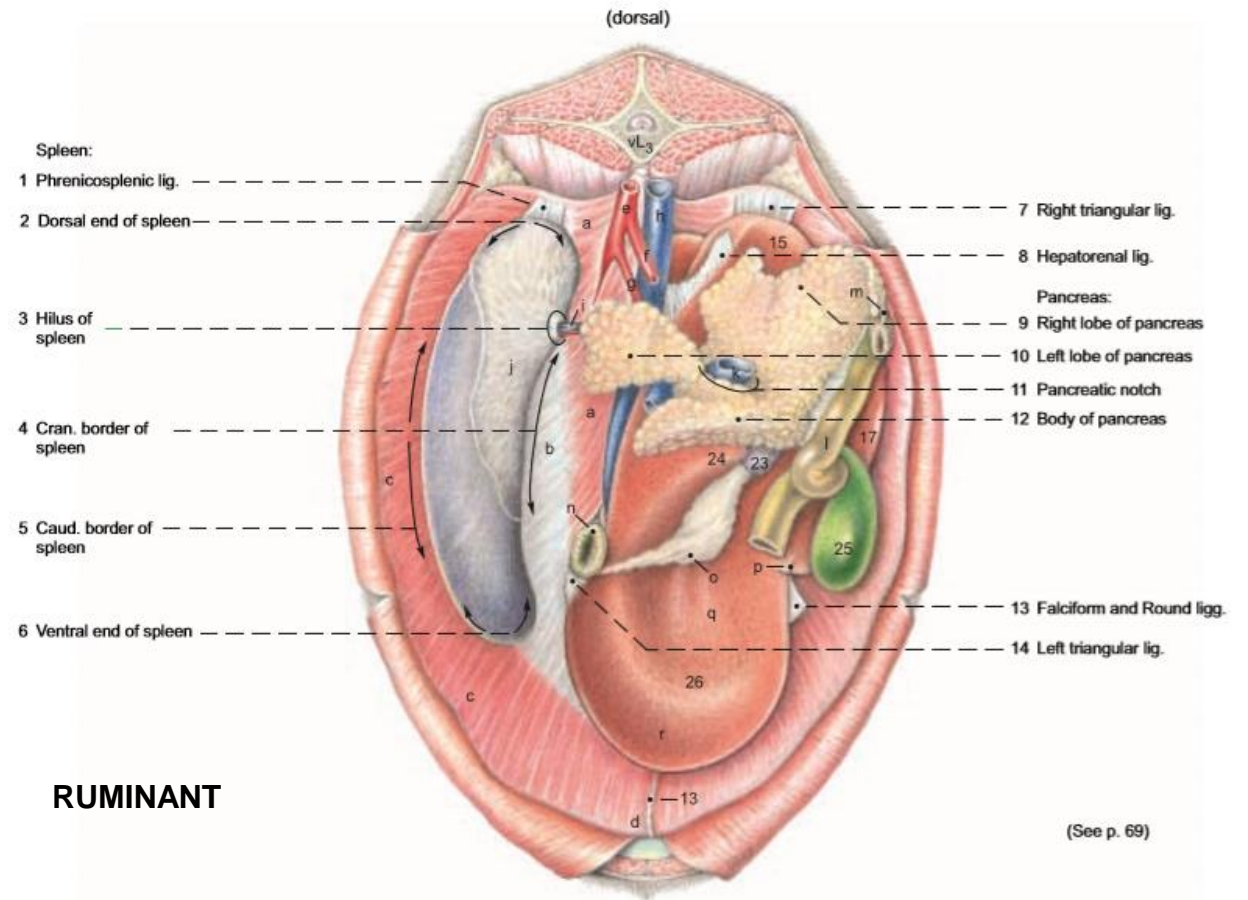
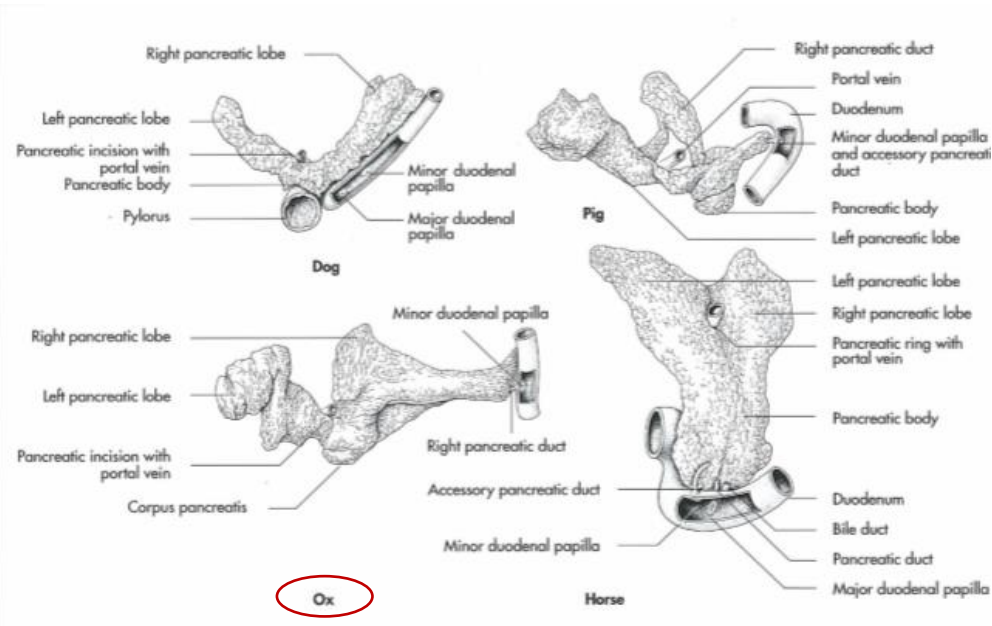


HASNYÁLMIRIGY (PANCREAS)

KÉRŐDZŐ:

3. Jobb lebeny:

- hosszú
- máj és a szájrétű gyomor dorsalis szélére fekszik rá
- mesoduodenum descendenseben



RUMINANT

(See p. 69)

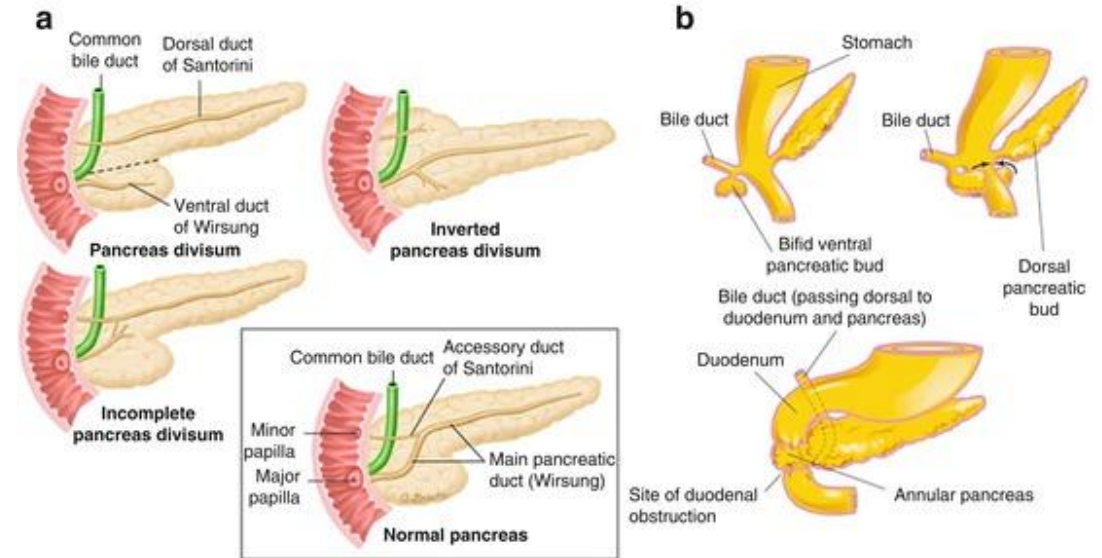
DUCTUS PANCREATICUS

1. DUCTUS PANCREATICUS MAJOR (WIRSUNG):

- corpus pancreatisban
- papilla duodeni majoron át nyílik a pars descendens duodenibe
- **lóban a fő kivezető cső**
- húsevőben vékonyabb
- **sertésben, kérődzőben nincs**

2. DUCTUS PANCREATICUS MINOR (SANTORINI):

- papilla duodeni minoron ürül a pars descendens duodenibe
- **legnagyobb kivezető cső húsevőkben**
- lóban kisebb kivezető cső
- **egyetlen kivezető cső sertésben és kérődzőben**



https://link.springer.com/chapter/10.1007/978-3-319-58256-6_2

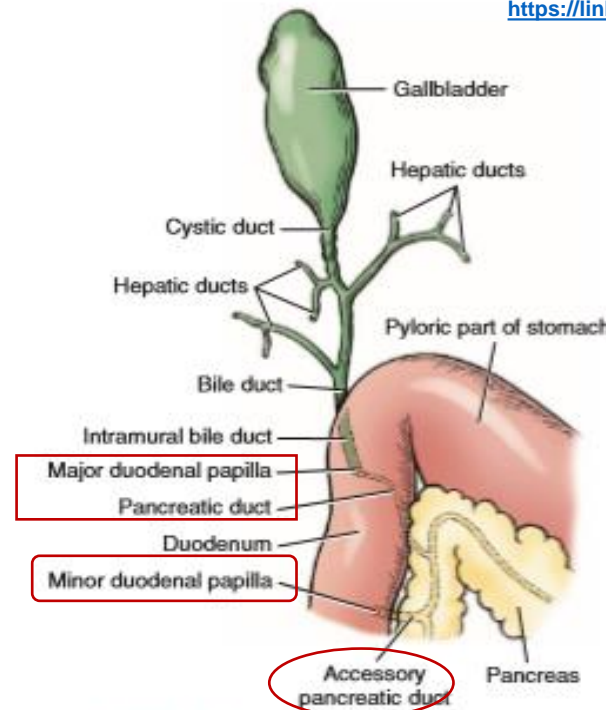
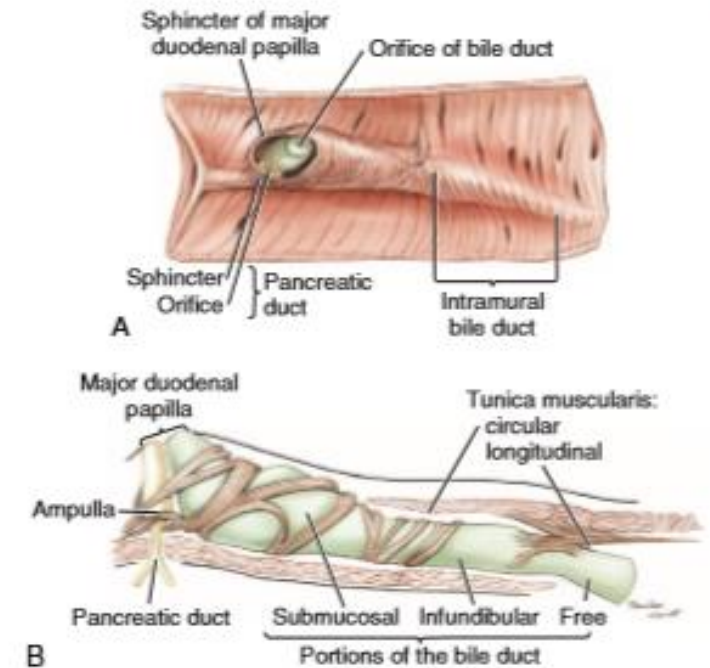


FIGURE 7-52 Bile, hepatic, and pancreatic ducts.



PANCREAS VÉRELLÁTÁSA

1. ARTERIA PANCREATODUODENALIS CRANIALIS:

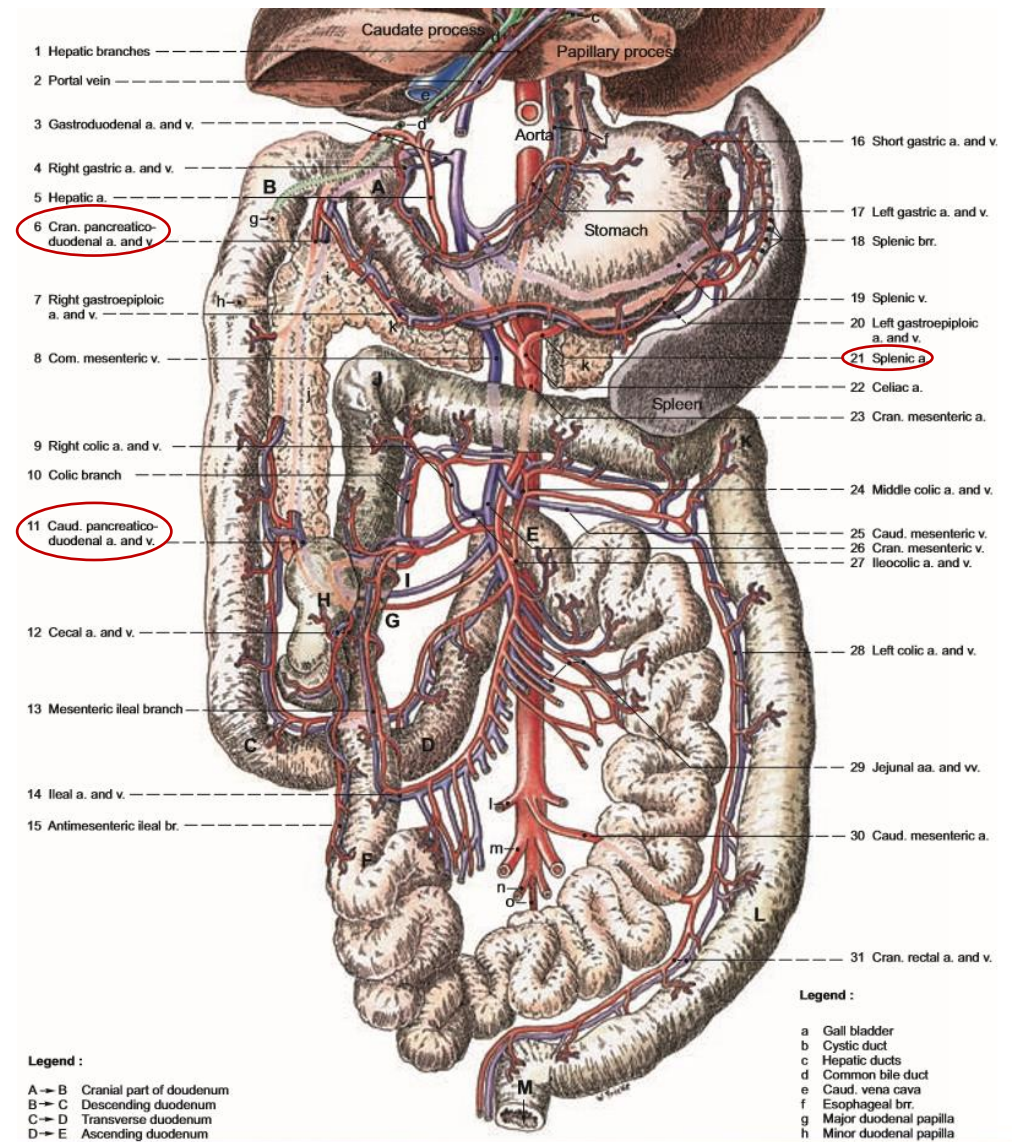
- a. hepatica ága
- jobb lebenyt látja el

2. ARTERIA PANCREATODUODENELIS CAUDALIS:

- a. mesenterica cranialis ága
- coprust és bal lebenyt látja el

3. ARTERIA LIENALIS:

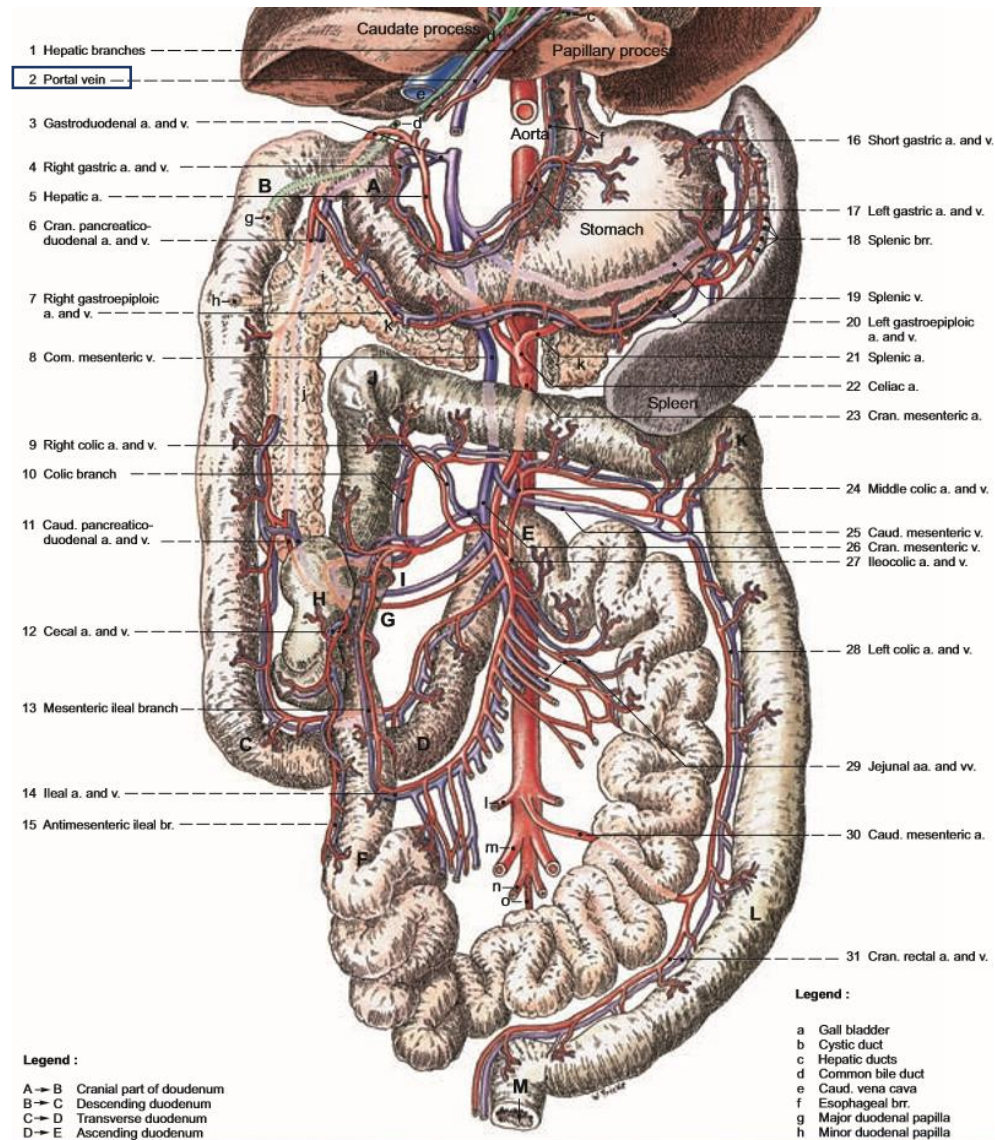
- a. coeliaca ága
- leadja a rr. pancreaticiket
- corpust és a bal lebenyt látja el



PANCREAS VÉRELLÁTÁSA

VÉNÁK:

- vena portaeba vezetődnek el



LÉP (LIEN, SPLEN)

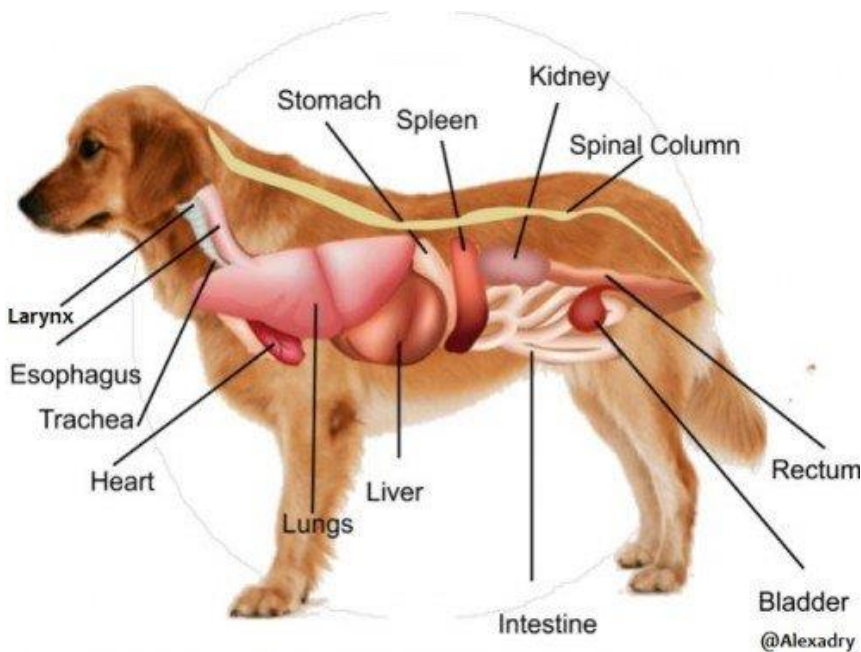
FELADAT:

EMBRYONÁLIS ÉLETBEN:

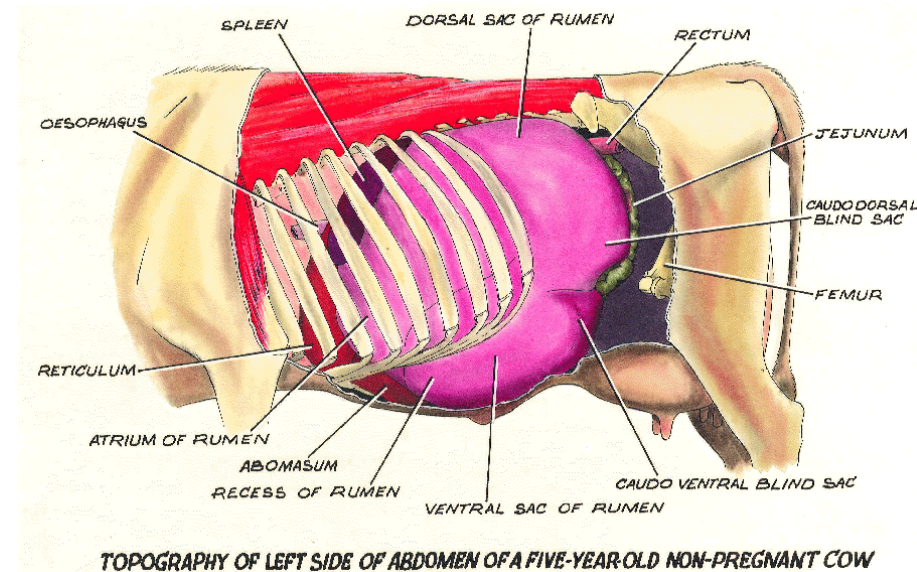
- Erythrocyta termelése

SZÜLETÉS UTÁN:

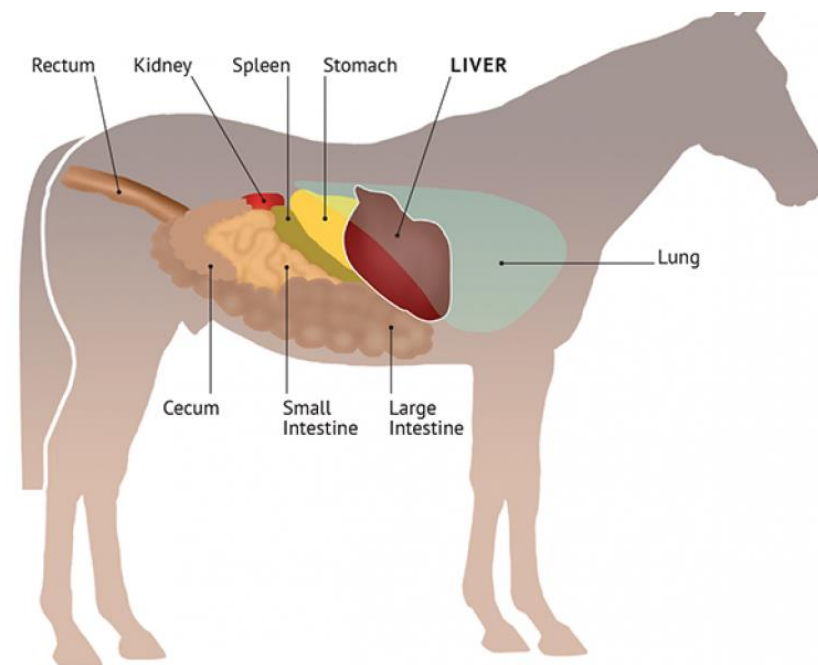
- lymphocyta termelése
- erythrocyták destrukciója
- vas (hemosiderin) rakározása
- vérraktár



<https://pethelpful.com/dogs/Causes-of-Abdominal-Enlargement-in-Dogs>



<http://www.ucd.ie/vetanat/images/image.html>

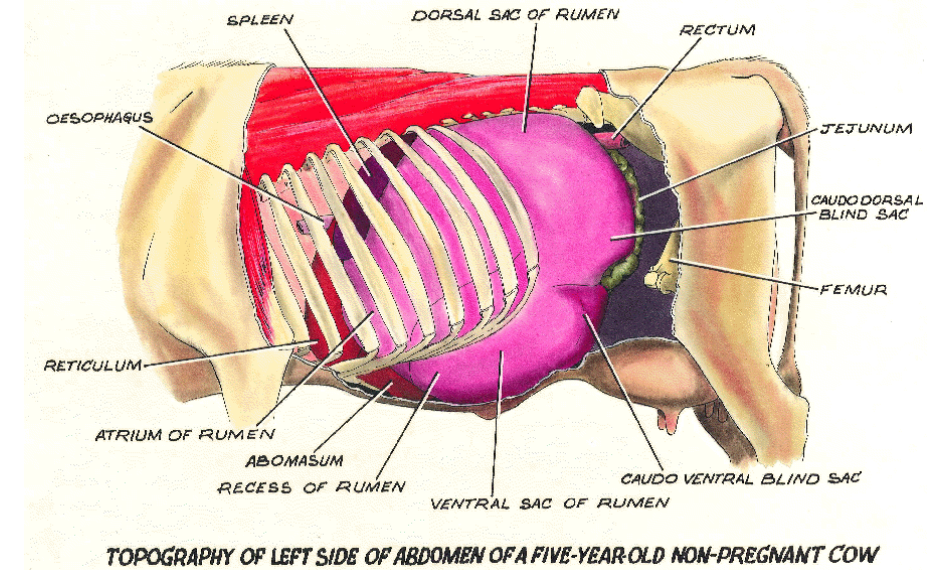


<https://www.horsejournals.com/understanding-equine-liver>

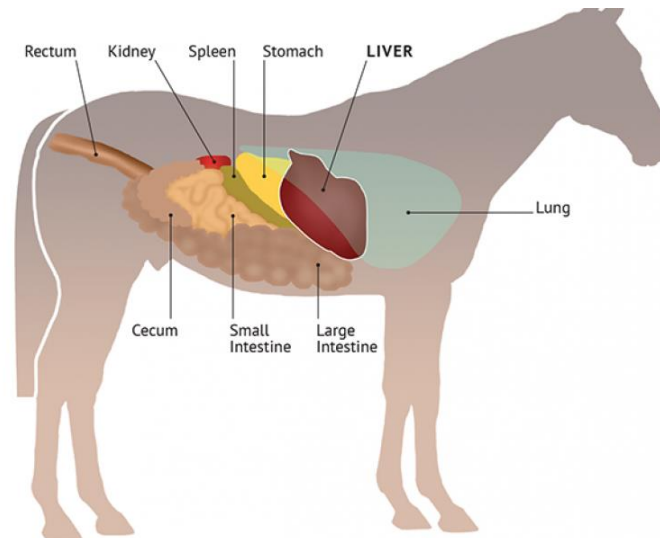
LÉP (LIEN, SPLEN)

ELHELYEZKEDÉS:

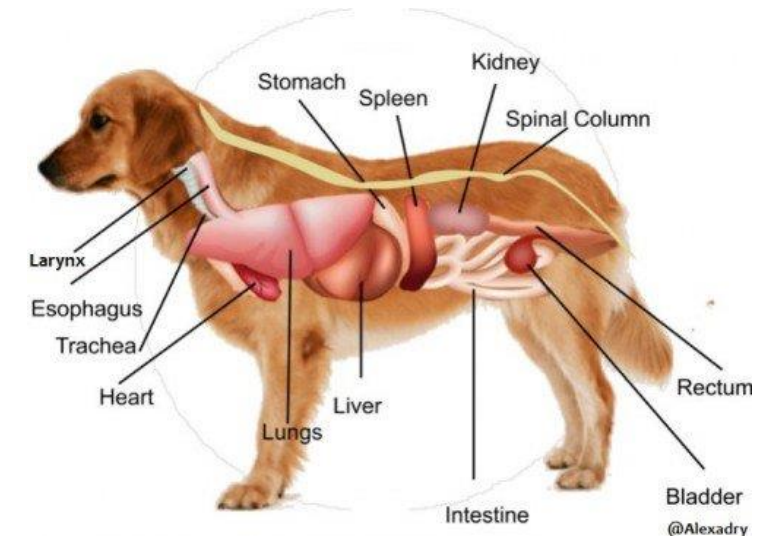
- intraperitoneális
- CAPSULA LIENIS – peritoneum alatt
- a nagycseplesznek a gyomor görbületéről eredő ventralis lemezébe nő bele
- a hasüreg bal, cranialis részében
- diaphragmától caudálisan
- a bal borda alatti tájékon, intrathoracalisán helyeződik
- húsevőkben és sertésben, a gyomor teltségi állapota nagymértékben befolyásolja



<http://www.ucd.ie/vetanat/images/image.html>



<https://www.horsejournals.com/understanding-equine-liver>



<https://pethelpful.com/dogs/Causes-of-Abdominal-Enlargement-in-Dogs>

LÉP (LIEN, SPLEN)

ALAKJA:

1. kaszapenge – Eq
2. nyelv alakú – Su
3. zokni alakú - Car
4. juhban háromszögletű
5. kecskében trapéz
6. hosszant megnyúlt, lekerekített szélű– Ru



<http://www1.zu.edu.eg/Plastination/spleen-Horse2.jpg>

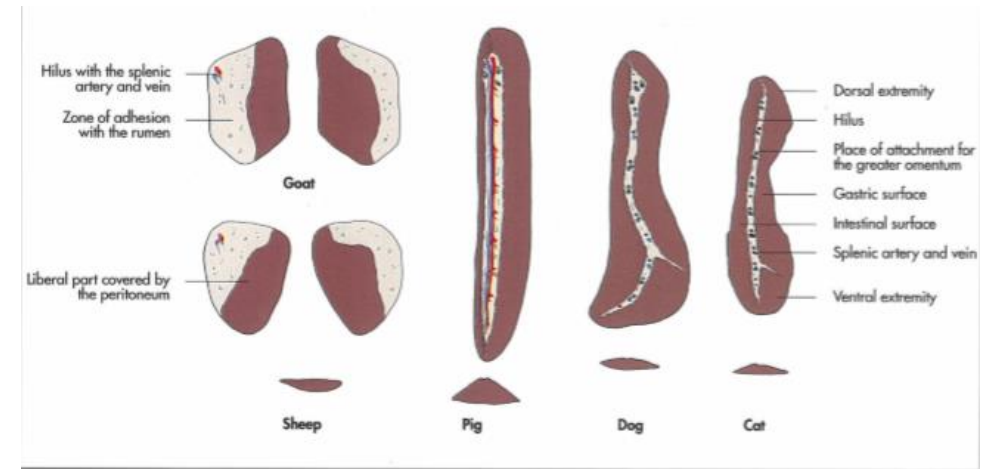
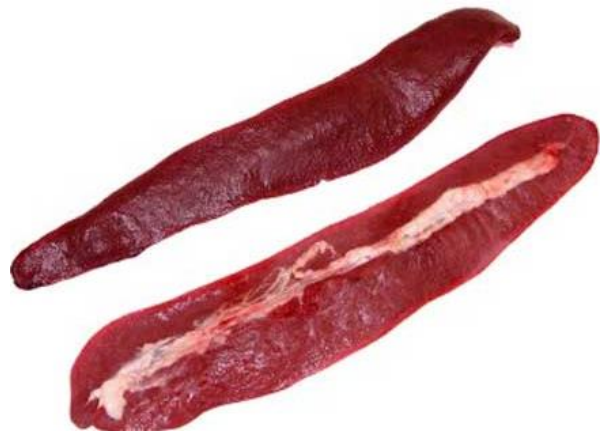


Fig. 13-20. Spleen of the small ruminants, pig, dog and cat, medial aspect and cross section, schematic.



Su

<http://gqb.co.za/product/pork-spleen/>



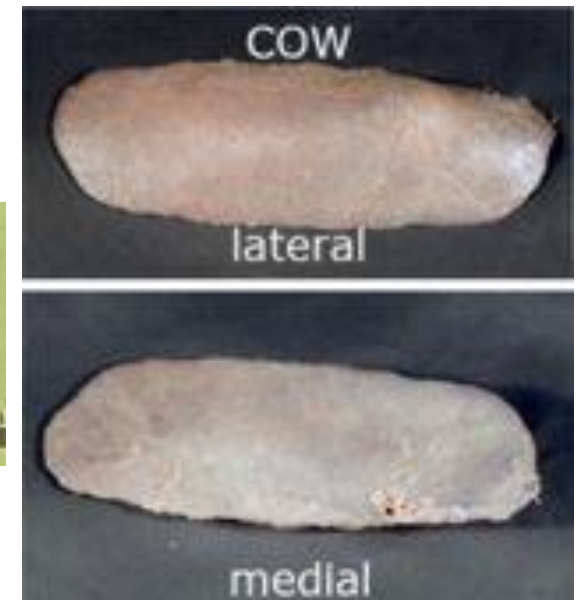
A normal spleen in a medium sized dog

<https://www.lbah.com/canine/spleen-disease/>



sheep

https://vet.uga.edu/oldvpp/programs/afvet/aps_disturbances_of_growth_wk1.php



<https://en.wikivet.net/Spleen - Anatomy %26 Physiology>

LÉP (LIEN, SPLEN)

FACIES PARIETALIS (diaphragmatica):

- domború
- sima
- a rekeszizomra és a bal oldali hasfalra fekszik rá



<http://www1.zu.edu.eg/Plastination/photo16.htm>

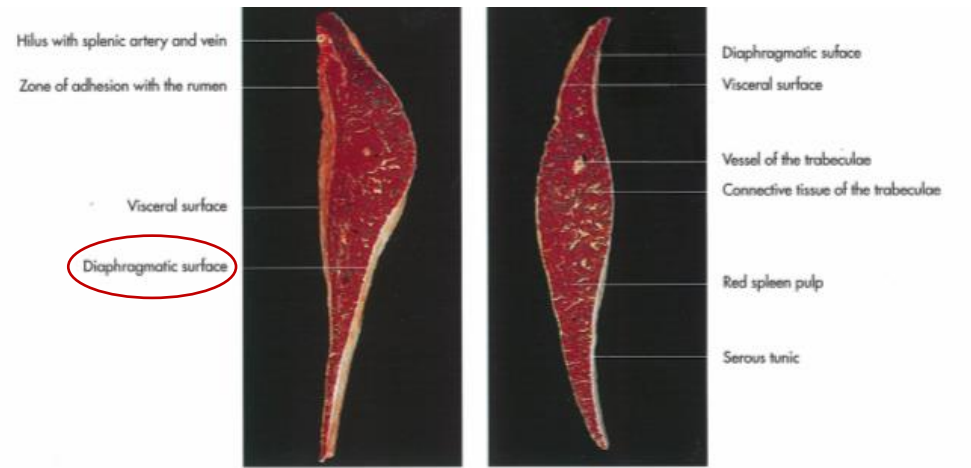
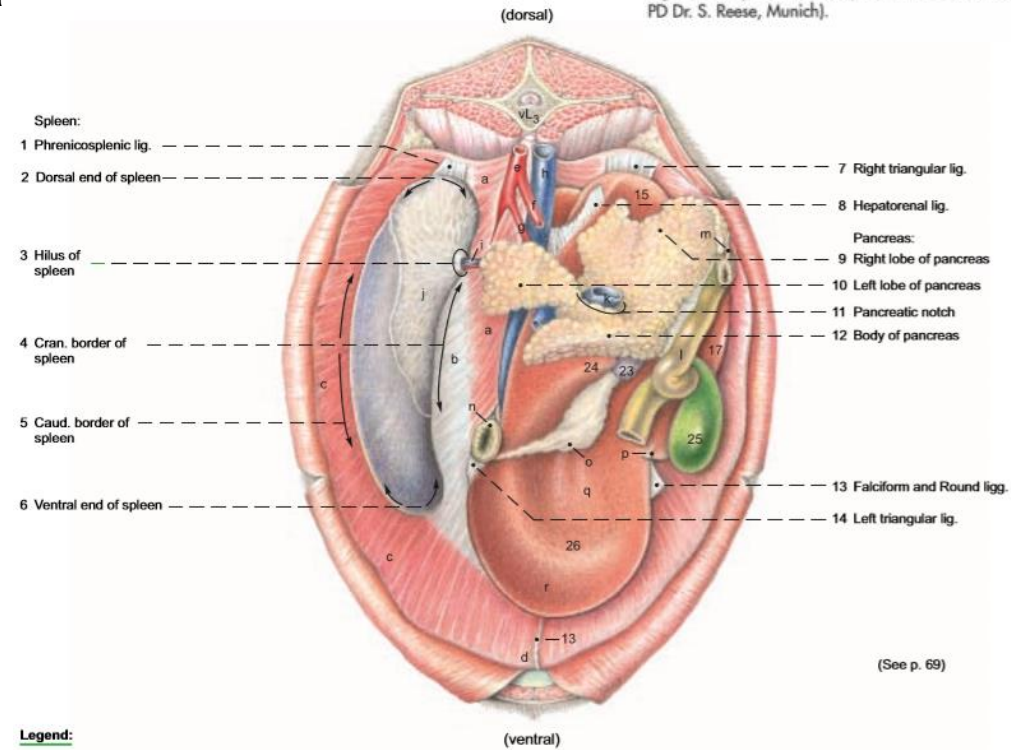


Fig. 13-22. Spleen of an ox, proximal end, cross section (courtesy of PD Dr. S. Reese, Munich).

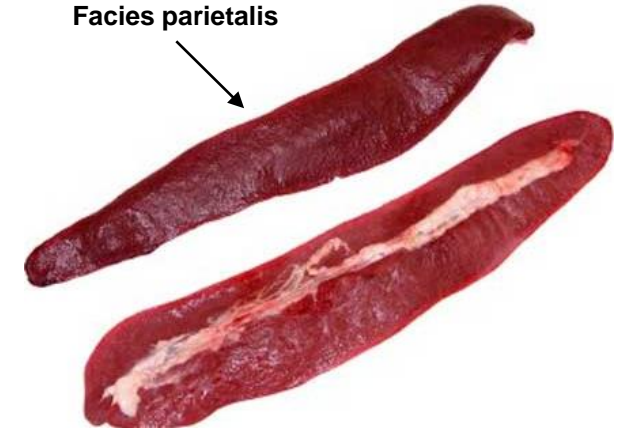
Fig. 13-23. Spleen of an ox, distal end, cross section (courtesy of PD Dr. S. Reese, Munich).



Legend:

- | | | | | |
|--------------------|-----------------------|-----------------------------|--------------------------|------------------------------------|
| Diaphragm: | e Aorta | j Splenico-ruminal adhesion | o Lesser omentum | t Right gastric a. |
| a Lumbar part | f Cran. mesenteric a. | k Portal v. | p Fissure for round lig. | u Gastroduodenal a. |
| b Tendinous center | g Celiac a. | l Duodenum | q Omasal impression | v Renal impression |
| c Costal part | h Caud. vena cava | m Accessory pancreatic duct | r Reticular impression | w Esophageal impression (cut edge) |
| d Sternal part | i Splenic a. and v. | n Esophagus | s Hepatic a. | |

Facies parietalis



Su

<http://gqb.co.za/product/pork-spleen/>

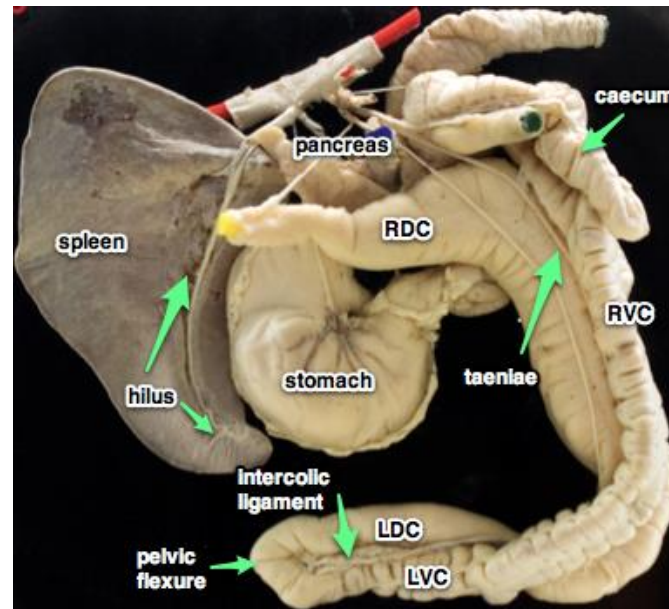
LÉP (LIEN, SPLEN)

FACIES VISCERALIS:

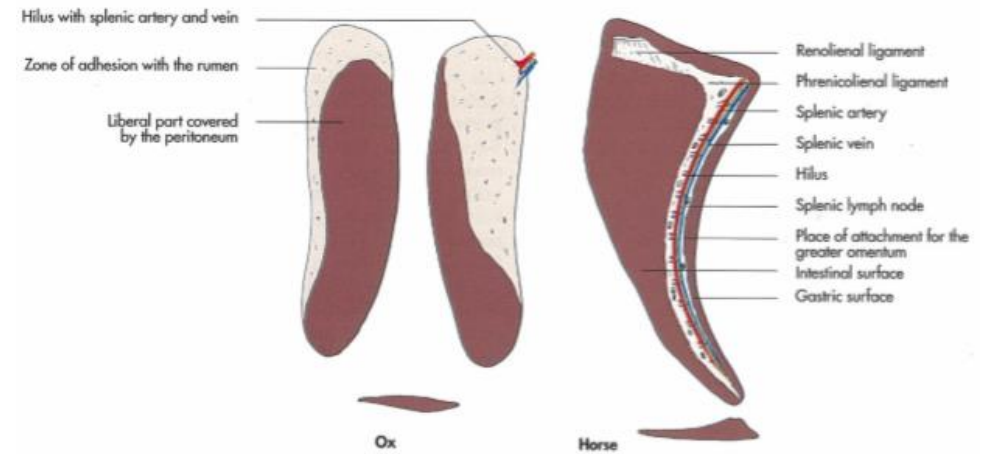
- konkáv, mediális
- HILUS LIENIS
- kérődzőben nagy része peritoneum mentes



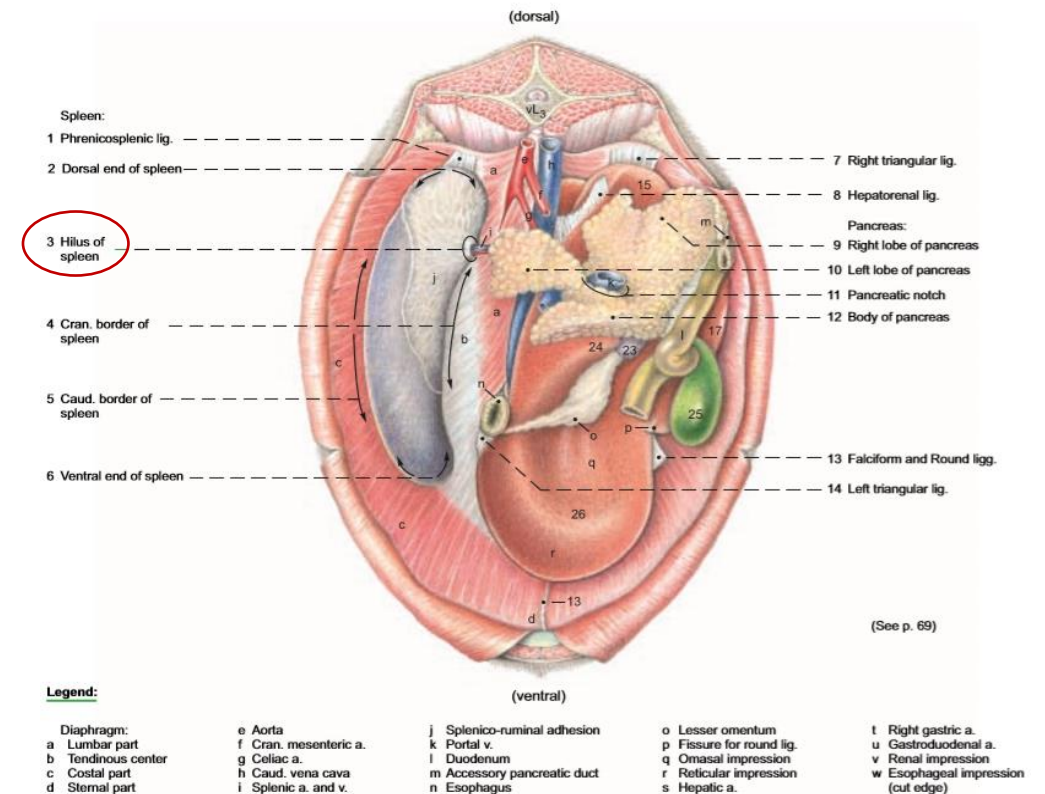
<http://www1.zu.edu.eg/Plastination/photo16.htm>



<http://bvetmed1.blogspot.com/2013/03/horse-and-pig-abdomen-lecture-164.html>



ig. 13-21. Spleen of the ox (medial and lateral aspect, cross section) and horse (medial aspect, cross section), schematic.

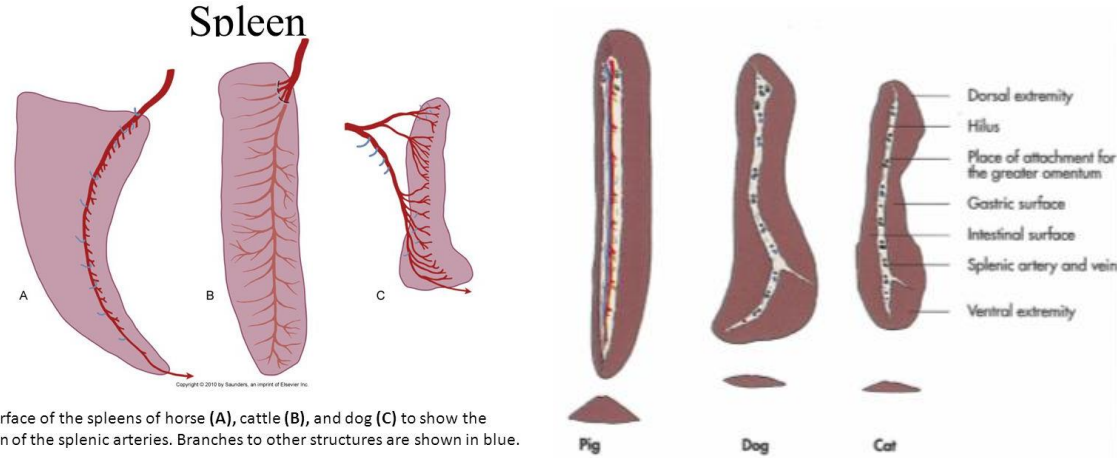


LÉP (LIEN, SPLEN)

FACIES VISCERALIS:

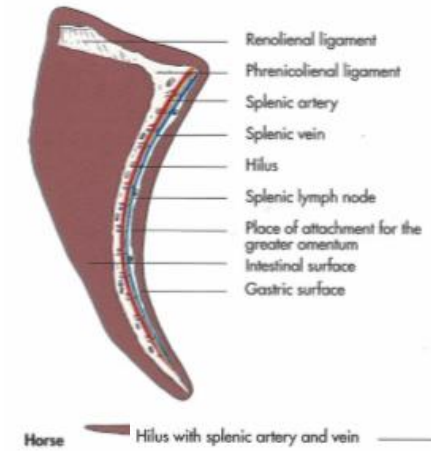
HILUS LIENIS:

- Longitudinális - Car, Su, Eq
- kerek bemélyedés - Ru
- a. et v. lienalis
- nyirokerek, idegek



Visceral surface of the spleens of horse (A), cattle (B), and dog (C) to show the distribution of the splenic arteries. Branches to other structures are shown in blue.

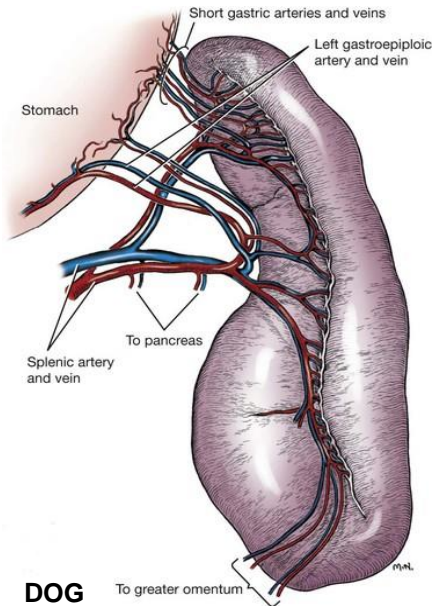
<https://slideplayer.com/slide/4767166/>



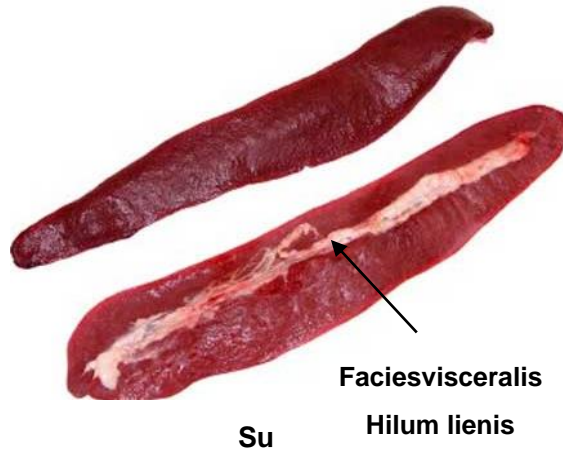
Hilus with splenic artery and vein

Zone of adhesion with the rumen

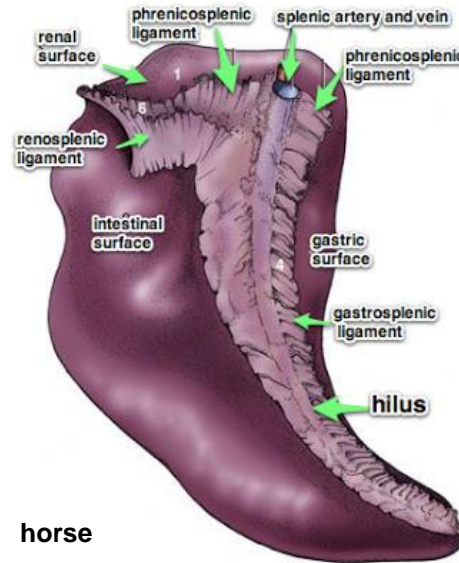
Liberal part covered by the peritoneum



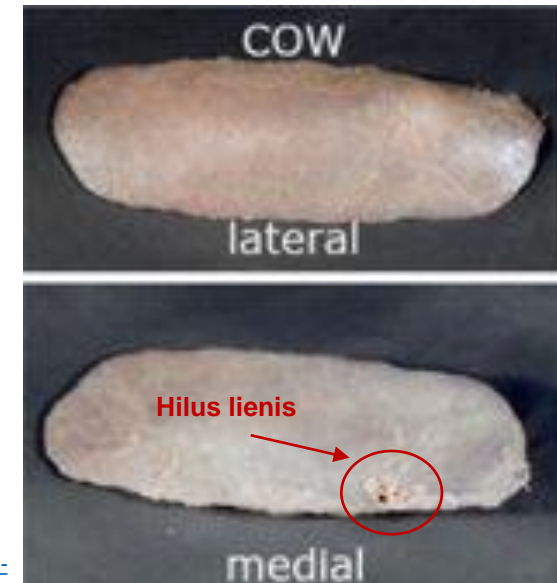
<https://veteriankey.com/spleen/>



<http://qgb.co.za/product/pork-spleen/>



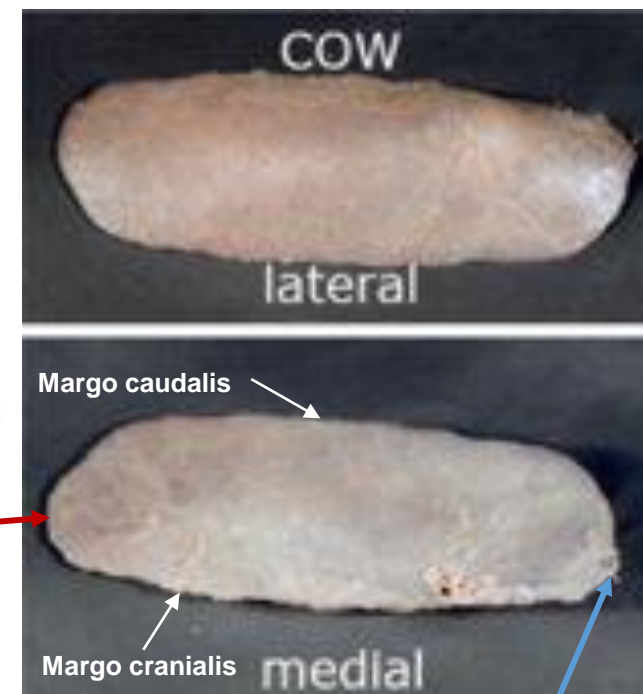
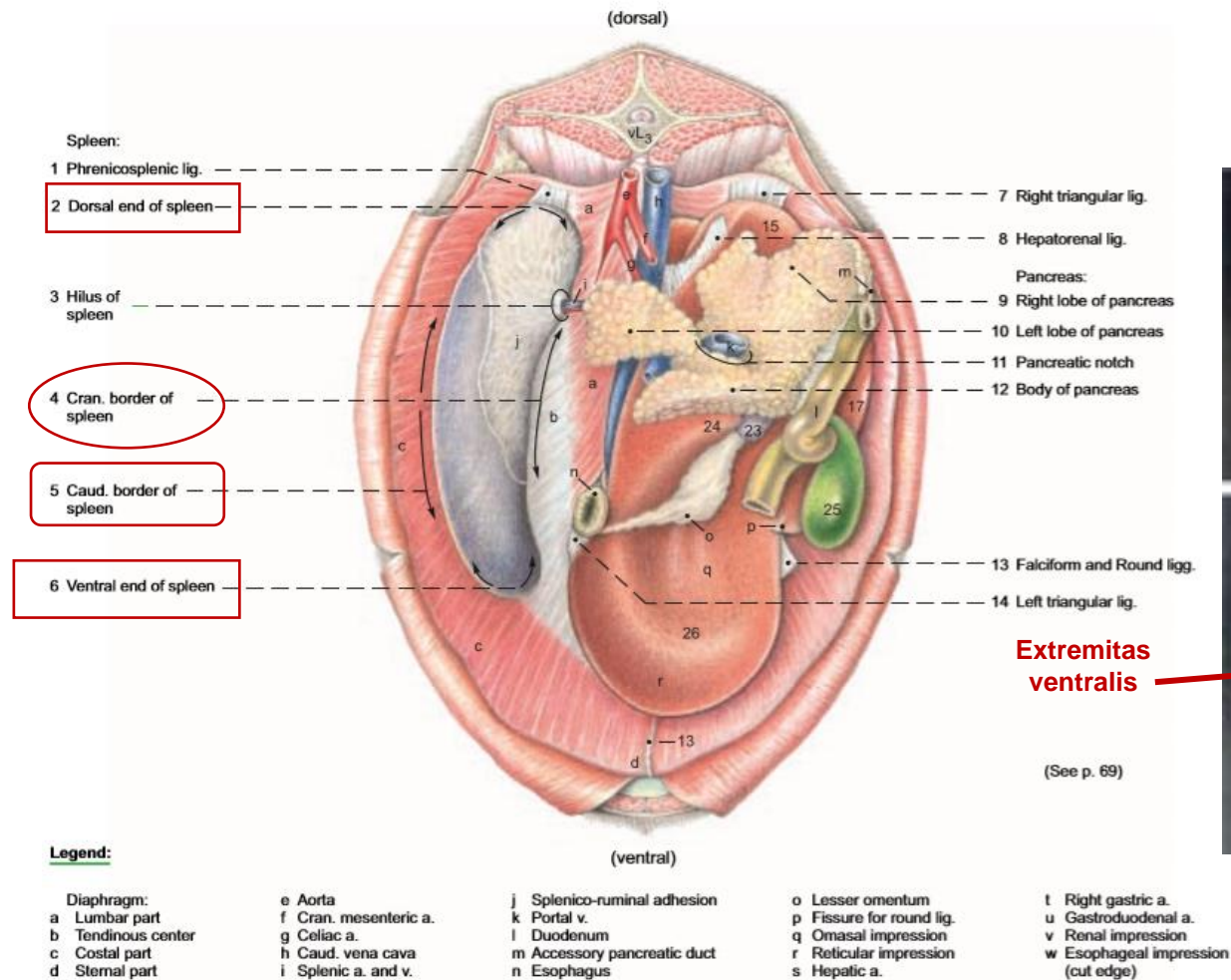
<http://bvmed1.blogspot.com/2013/03/horse-and-pig-abdomen-lecture-164.html>



<https://en.wikivet.net/Spleen - Anatomy %26 Physiology>

LÉP (LIEN, SPLEN)

1. EXTREMITAS DORSALIS
2. EXTREMITA VENTRALIS
3. MARGO CAUDALIS
4. MARGO CRANIALIS

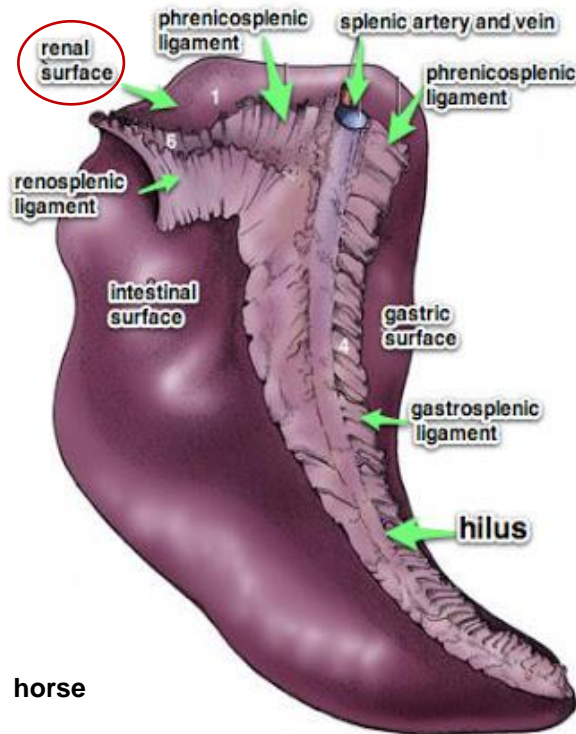


LÉP (LIEN, SPLEN)

FACIES VISCERALIS:

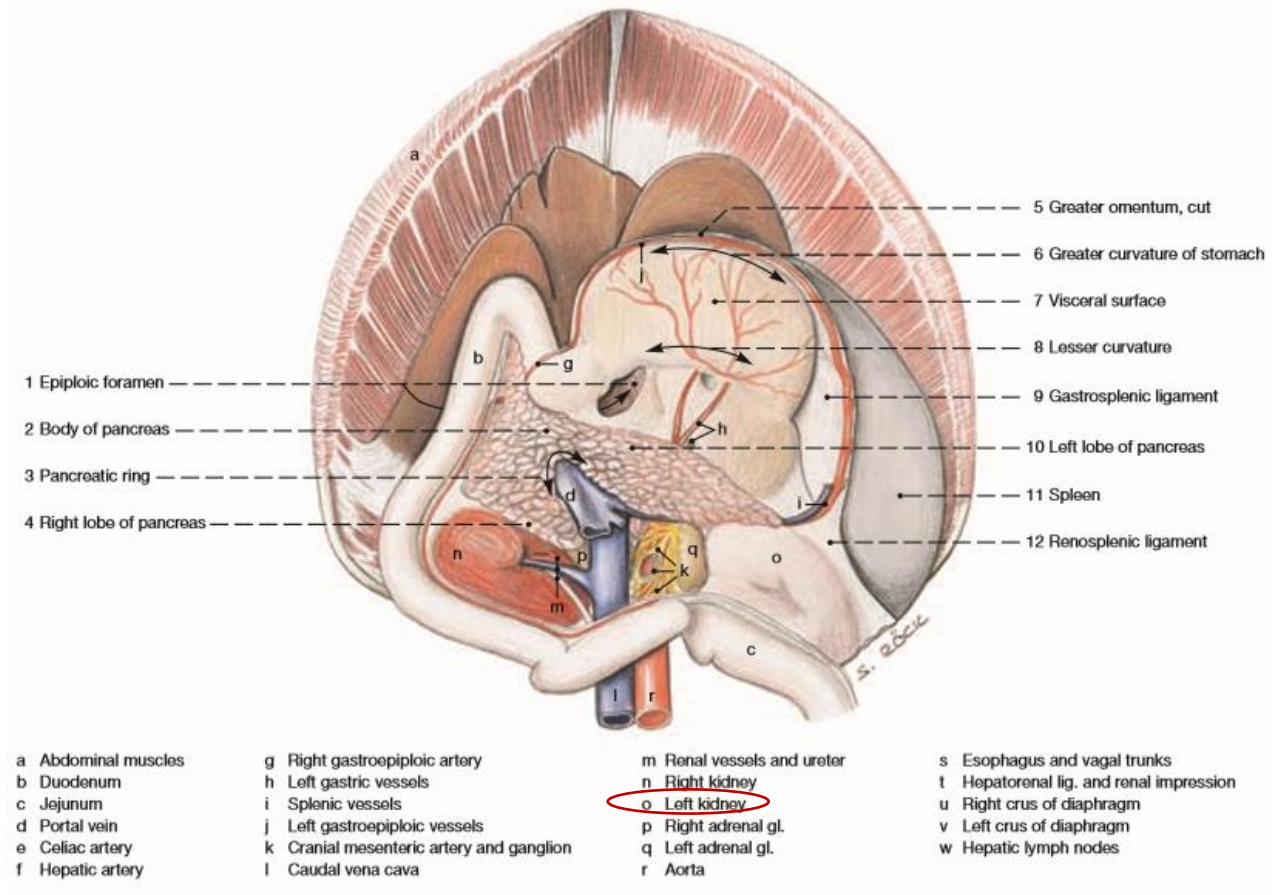
1. Facies renalis:

- dorsalisan
- bal vese
- hiányzik - Ru



horse

<http://bvetmed1.blogspot.com/2013/03/horse-and-pig-abdomen-lecture-164.html>

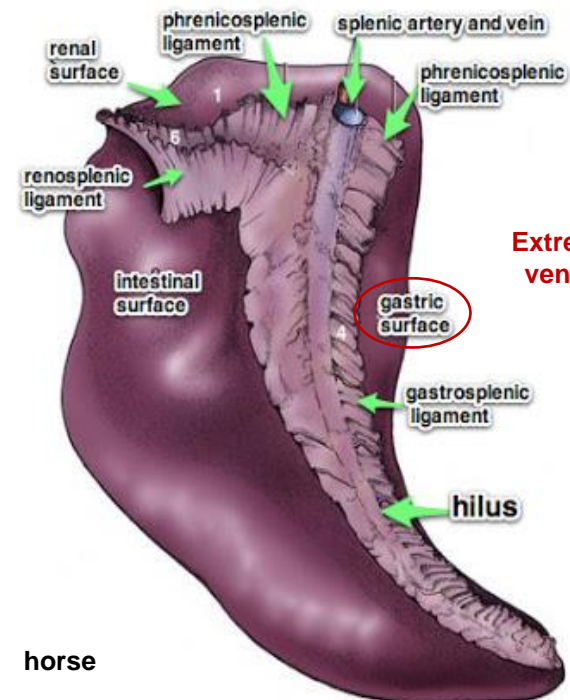
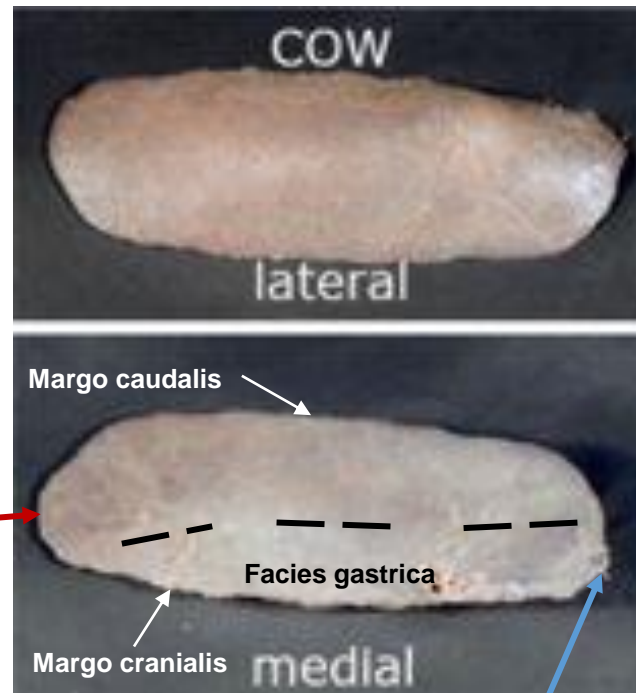


LÉP (LIEN, SPLEN)

FACIES VISCERALIS:

2. Facies gastrica:

- facies visceralis cranialis részén
- gyomor nagycsücsülete
- az egész zsigeri felszín - Ru



Extremitas ventralis

Extremitas dorsalis

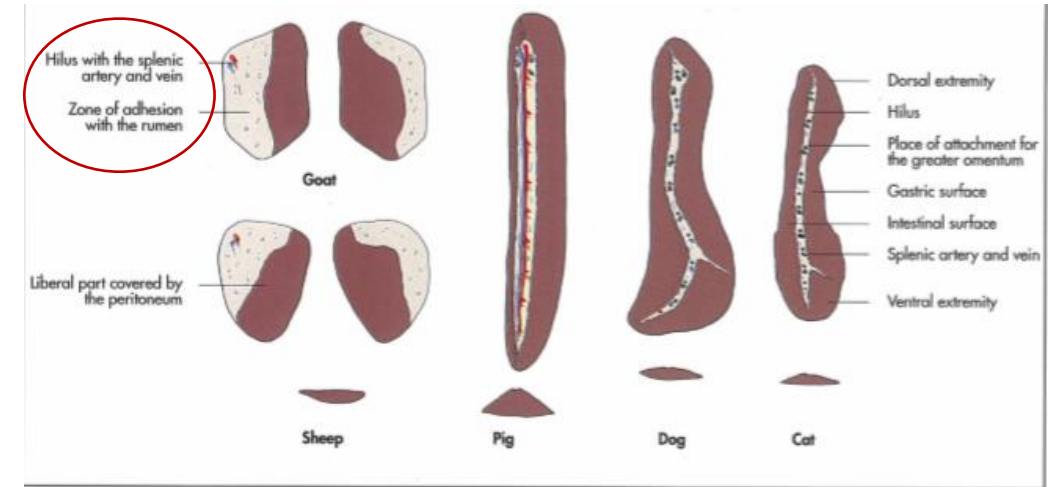


Fig. 13-20. Spleen of the small ruminants, pig, dog and cat, medial aspect and cross section, schematic.

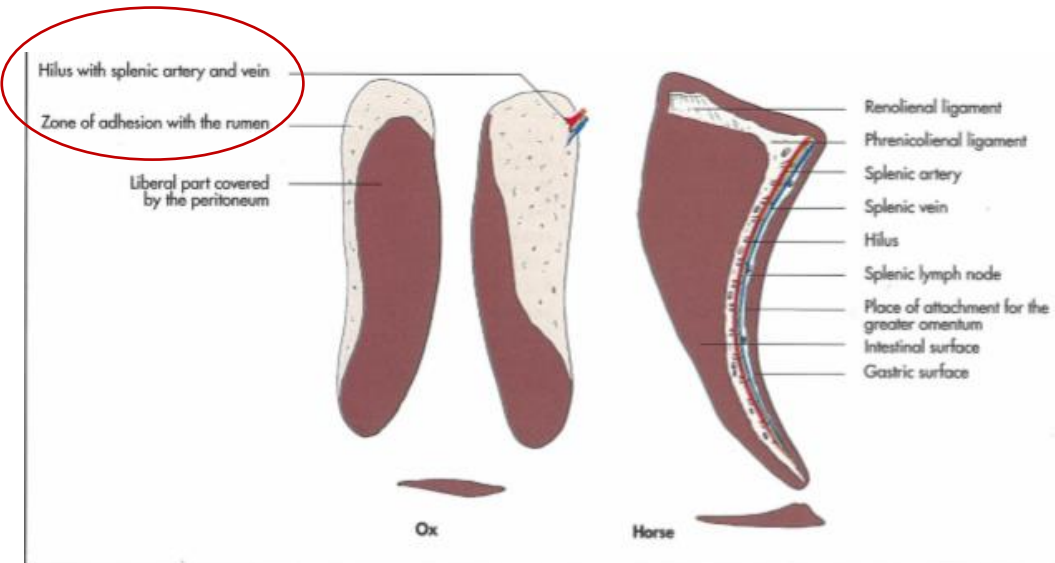


Fig. 13-21. Spleen of the ox (medial and lateral aspect, cross section) and horse (medial aspect, cross section), schematic.

LÉP (LIEN, SPLEN)

FACIES VISCERALIS:

3. Facies intestinalis:

- facies visceralis caudalis része
- jejunum és colon
- hiányzik - Ru

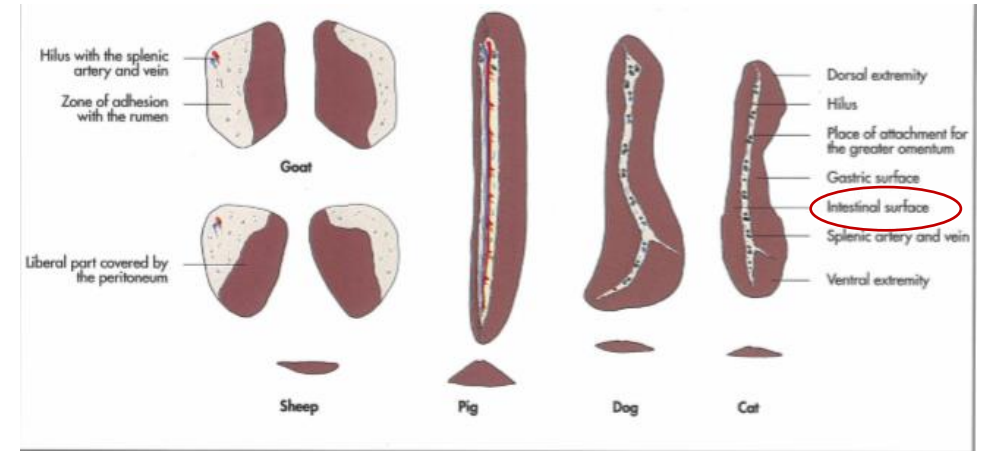
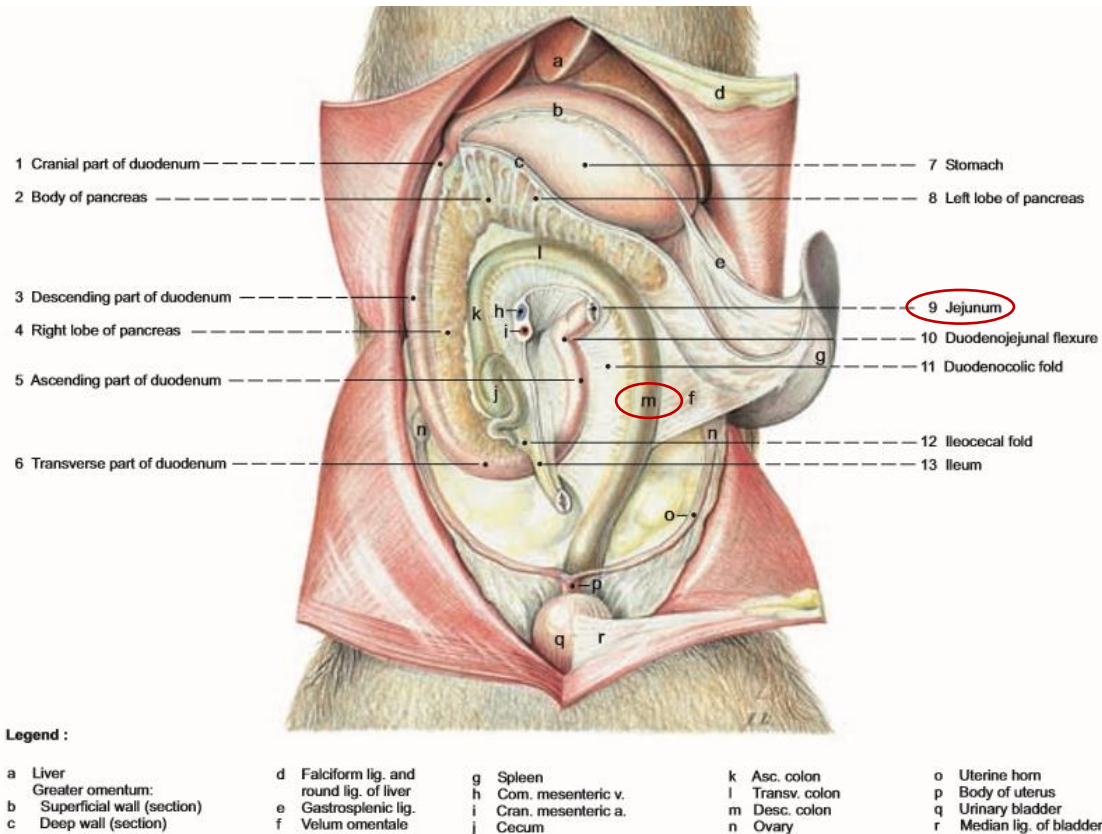


Fig. 13-20. Spleen of the small ruminants, pig, dog and cat, medial aspect and cross section, schematic.

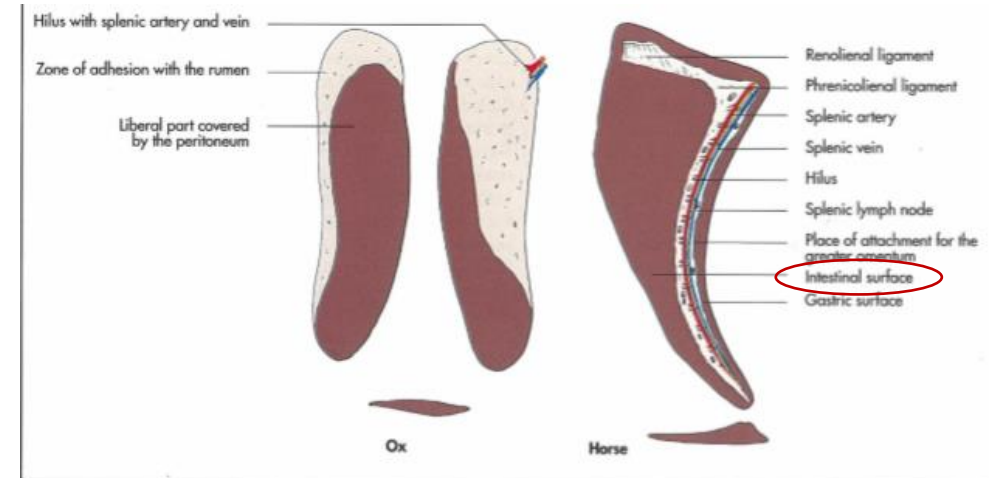
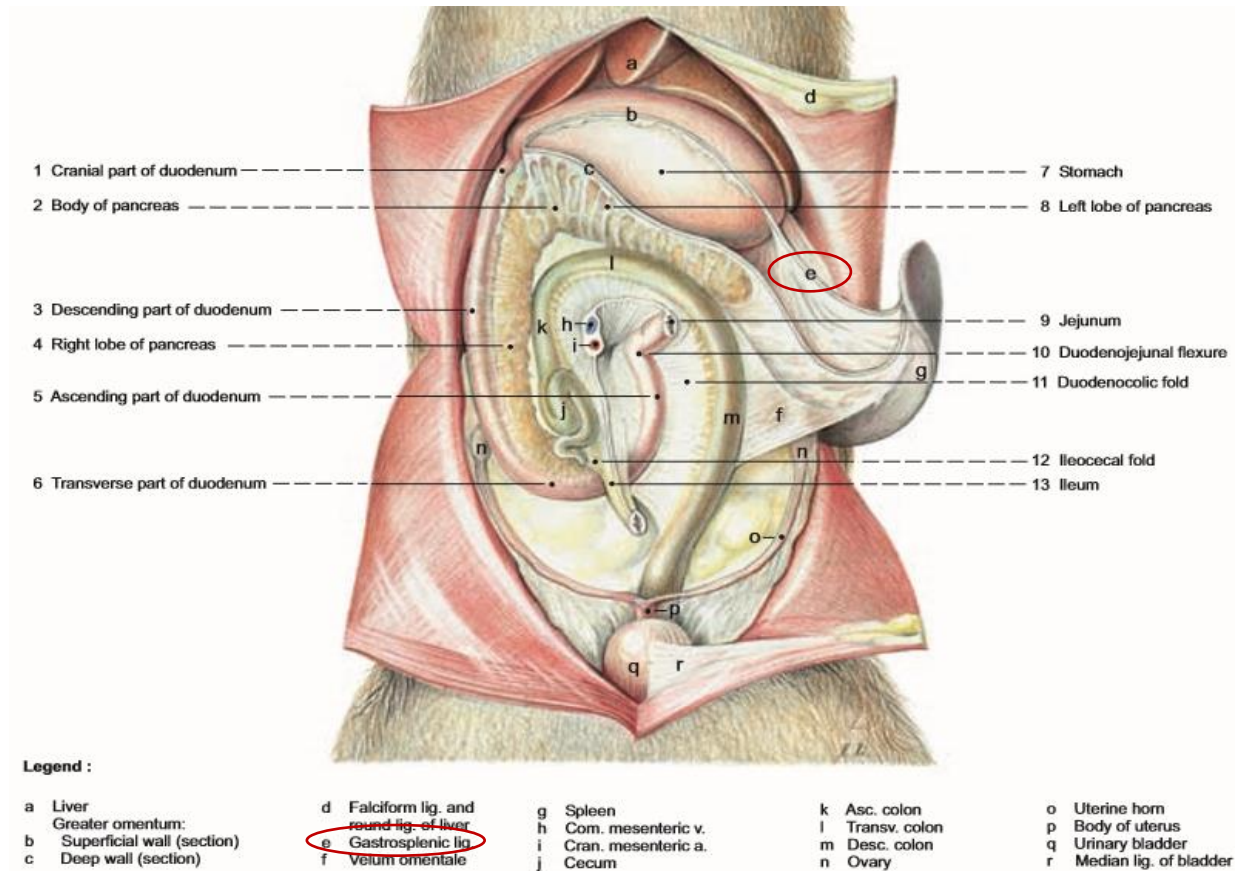


Fig. 13-21. Spleen of the ox (medial and lateral aspect, cross section) and horse (medial aspect, cross section), schematic.

LÉP SZALAGJAI

LIGAMENTUM GASTROSPLENICUM:

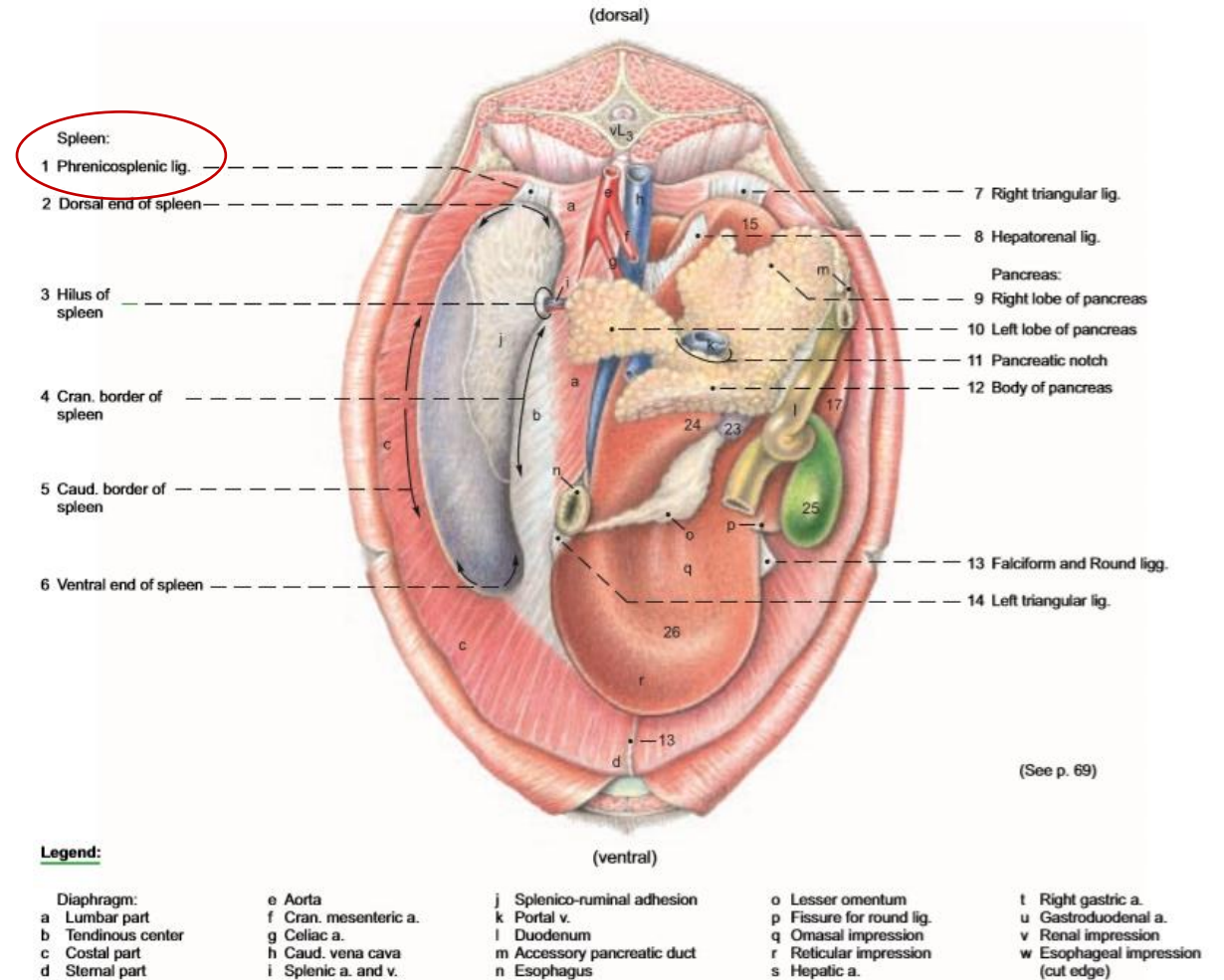
- a nagycseplesznek a gyomor nagygörbületéről eredő és a lépet a gyomorhoz fűző részlete
- a léptől caudalisan folytatódó szakasza pedig – kérődzők kivételével – a nagycseplesz dorsalis lemeze
- állatfajok szerint különböző hosszúságú
- kutyában hosszú - lép csavarodás



LÉP SZALAGJAI

LIGAMENTUM PHRENICOSPLENICUM:

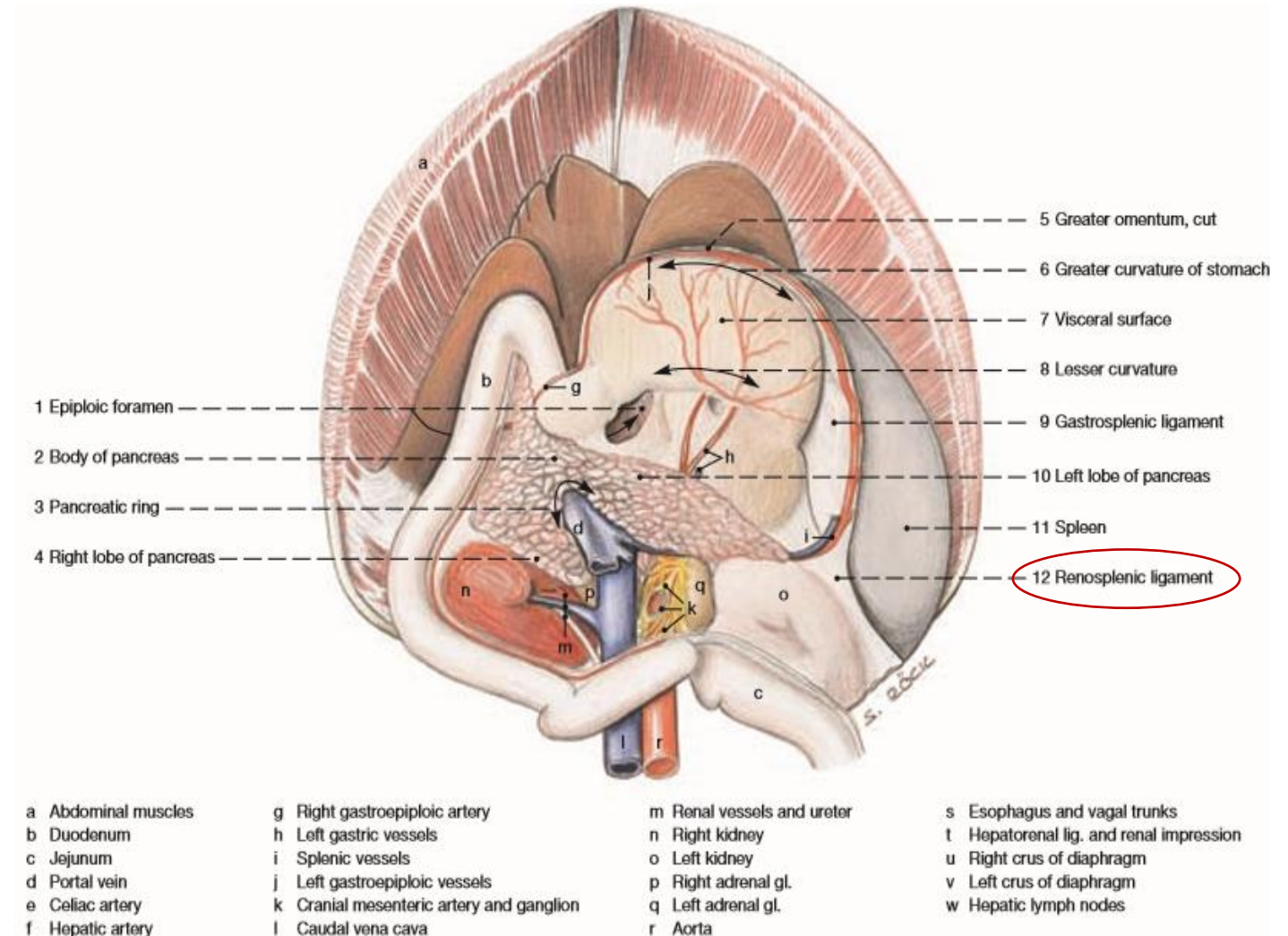
- diaphragma és a facies parietalis között



LÉP SZALAGJAI

LIGAMENTUM LIENORENALE:

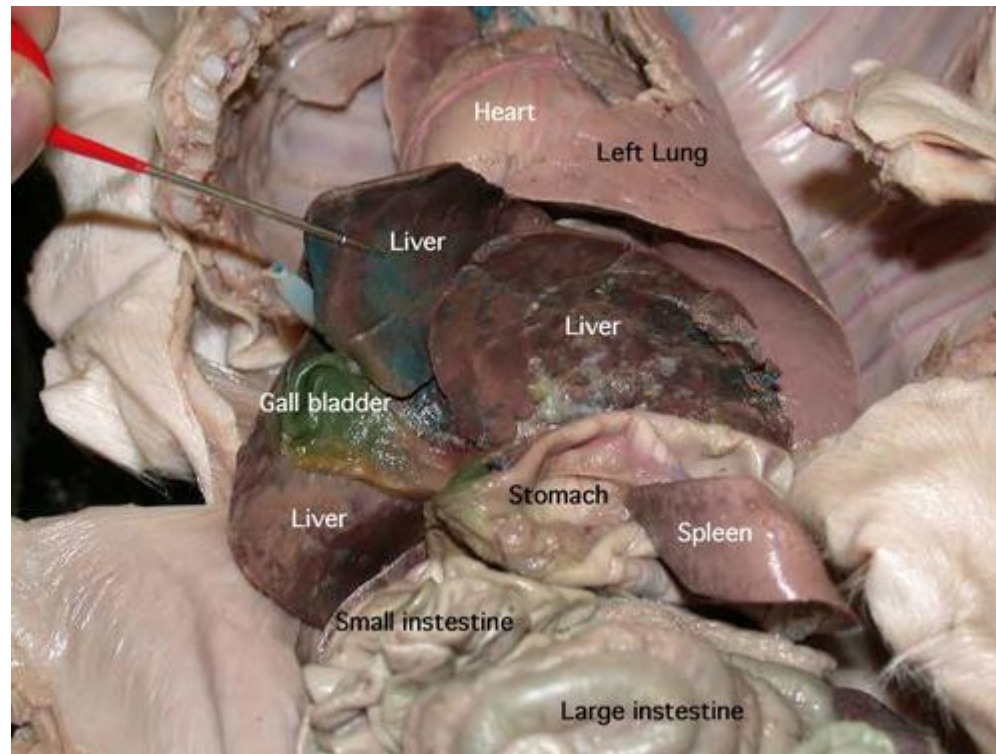
- **Eq**
- lép és a bal vese között
- spatium nephrosplenicum alkotása - kólika



LÉP (LIEN, SPLEN)

LIEN ACCESSORICUS:

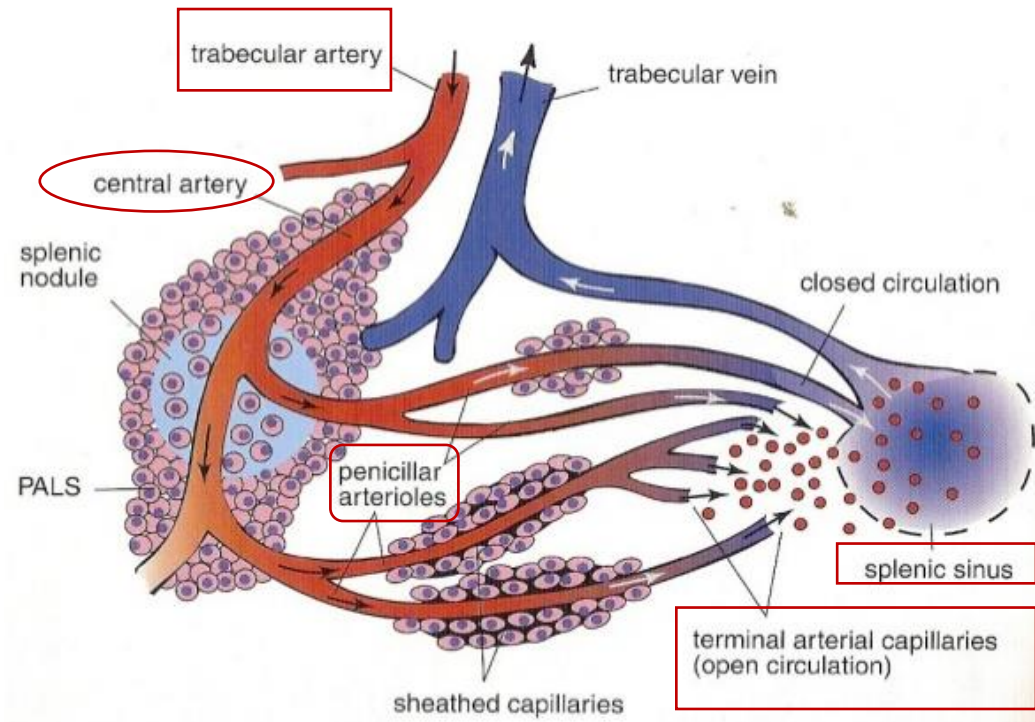
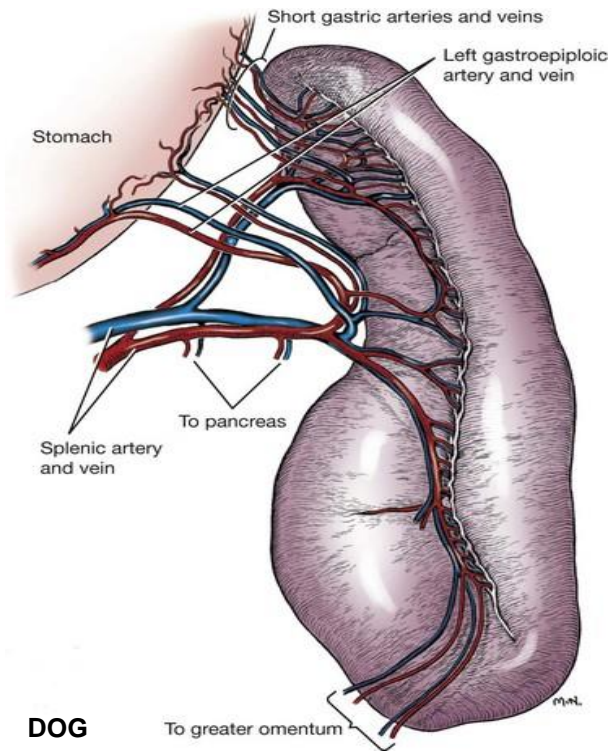
- járulékos képlet
- lig. gastrolienaléban
- sertésben



A LÉP VÉRELLÁTÁSA

ARTERIA LIENALIS:

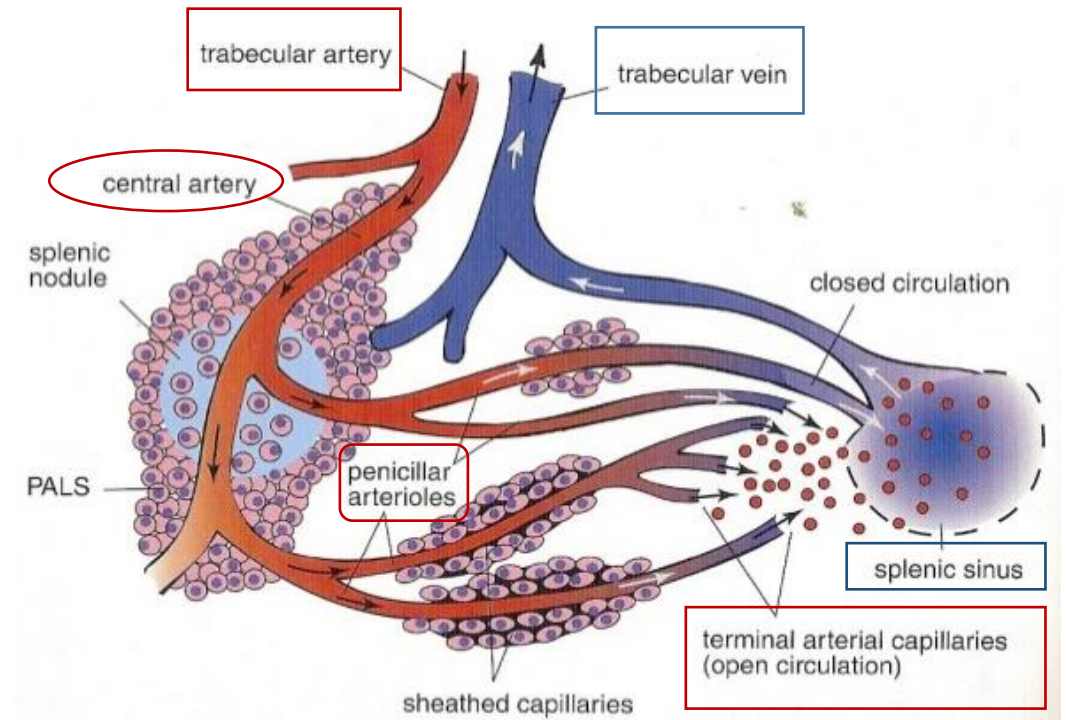
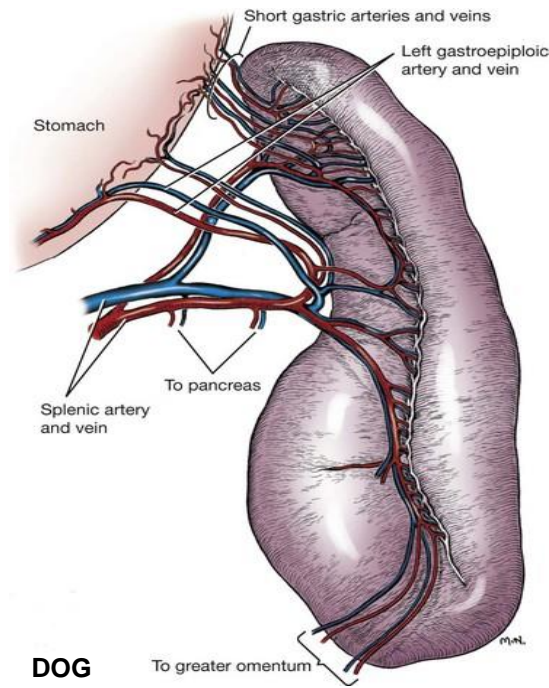
- a. coeliaca ága
- rr. lienalis – aa. trabeculares – aa. arteriolae centrales – aa. penicillares – kapillárisokban végződik – lép sinusokba lép



A LÉP VÉRELLÁTÁSA

VÉNÁS ELVEZETÉS:

1. vénás sinusok – vörös pulpa vénáiba nyílnak
2. vörös pulpa vénái – vv. trabeculares
3. vv. trabeculares - VENA LIENALIS-ba nyílnak
4. VENA LIENALIS - VENA PORTAE-ba ömlik



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