

LÉGZŐRENDSZER ANATÓMIÁJA (APPARATUS RESPIRATORIUS)

Heinzlmann Andrea

Állatorvostudományi Egyetem

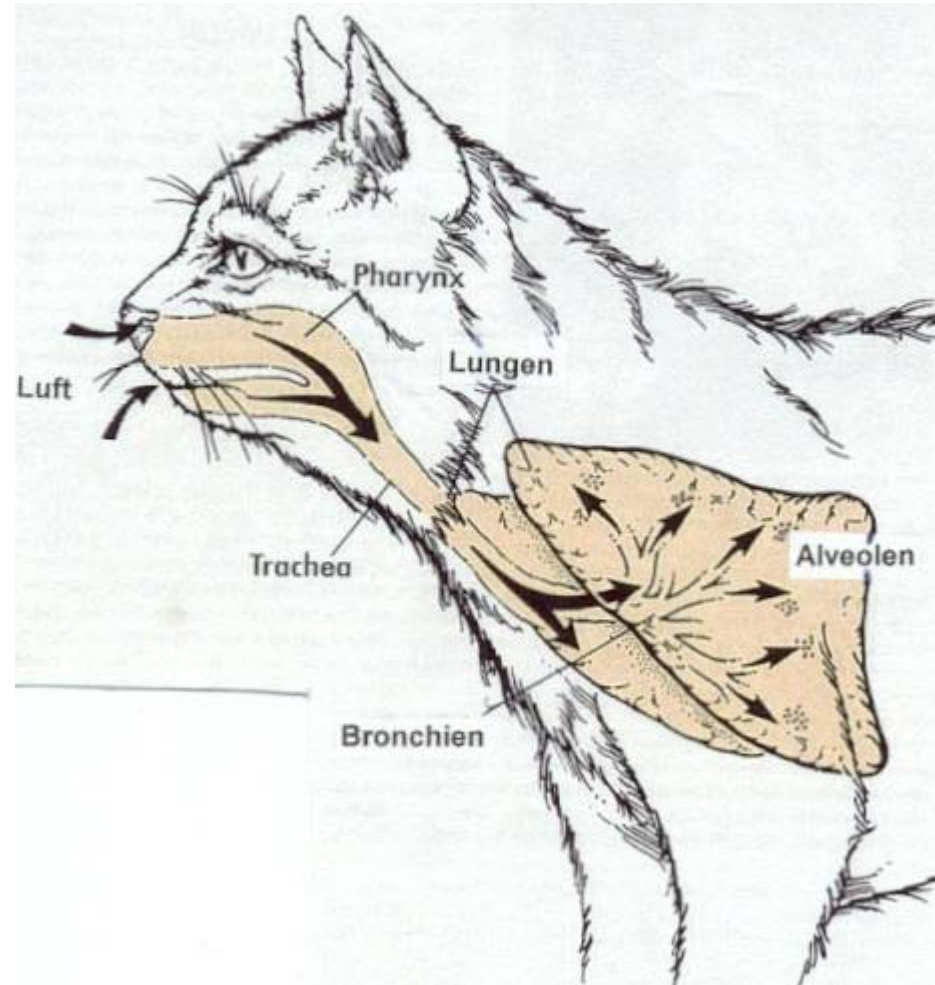
Anatómiai és Szövetani Tanszék

2019 április 25.

LÉGZŐRENDSZER

FELADAT:

1. szaglás
2. gázcsere
3. hangképzés
4. immunfeladat
5. belélegzett levegő párasítása
6. belélegzett levegő felmelegítése
7. belélegzett levegő szűrése - filter funkció
8. „mukociliáris clearance”

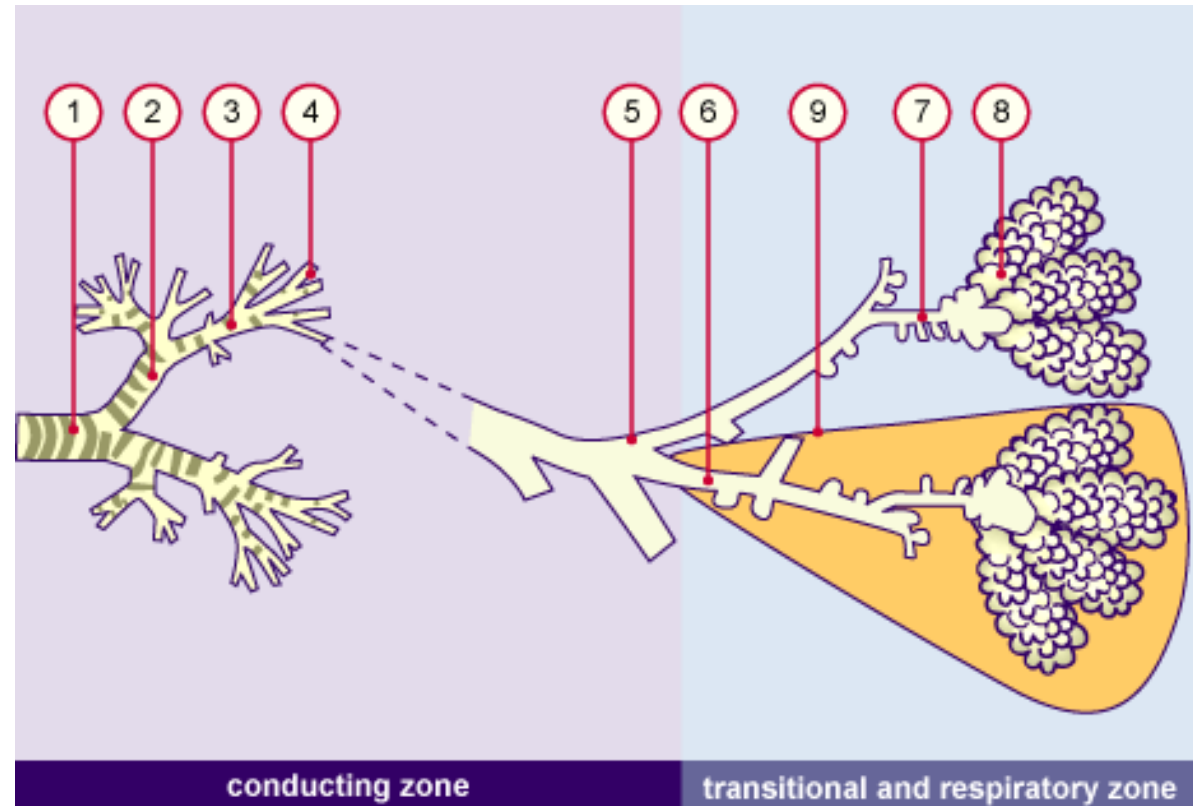
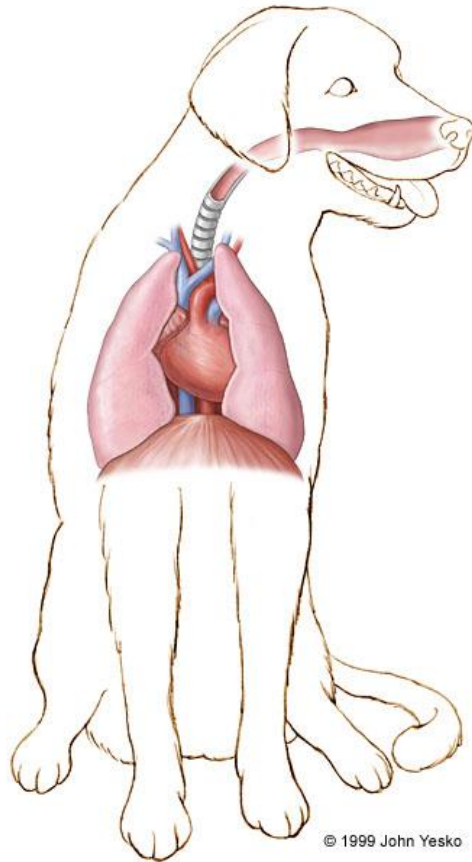


LÉGZŐRENDSZER

RÉSZEI:

1. EXTRAPULMINÁLIS LÉGUTAK

2. INTRAPULMONÁLIS LÉGUTAK



- | | |
|-------------------------------------|------------------------------|
| 1. Trachea | 6. Bronchiolus respiratorius |
| 2. Hauptbronchus | 7. Ductus alveolaris |
| 3. Regio respiratoria Lobarbronchus | 8. Sacculus alveolaris |
| 4. Segmentalbronchus | 9. Azinus |
| 5. Bronchiolus terminalis | |

<http://www.med.umich.edu>

LÉGZŐRENDSZER

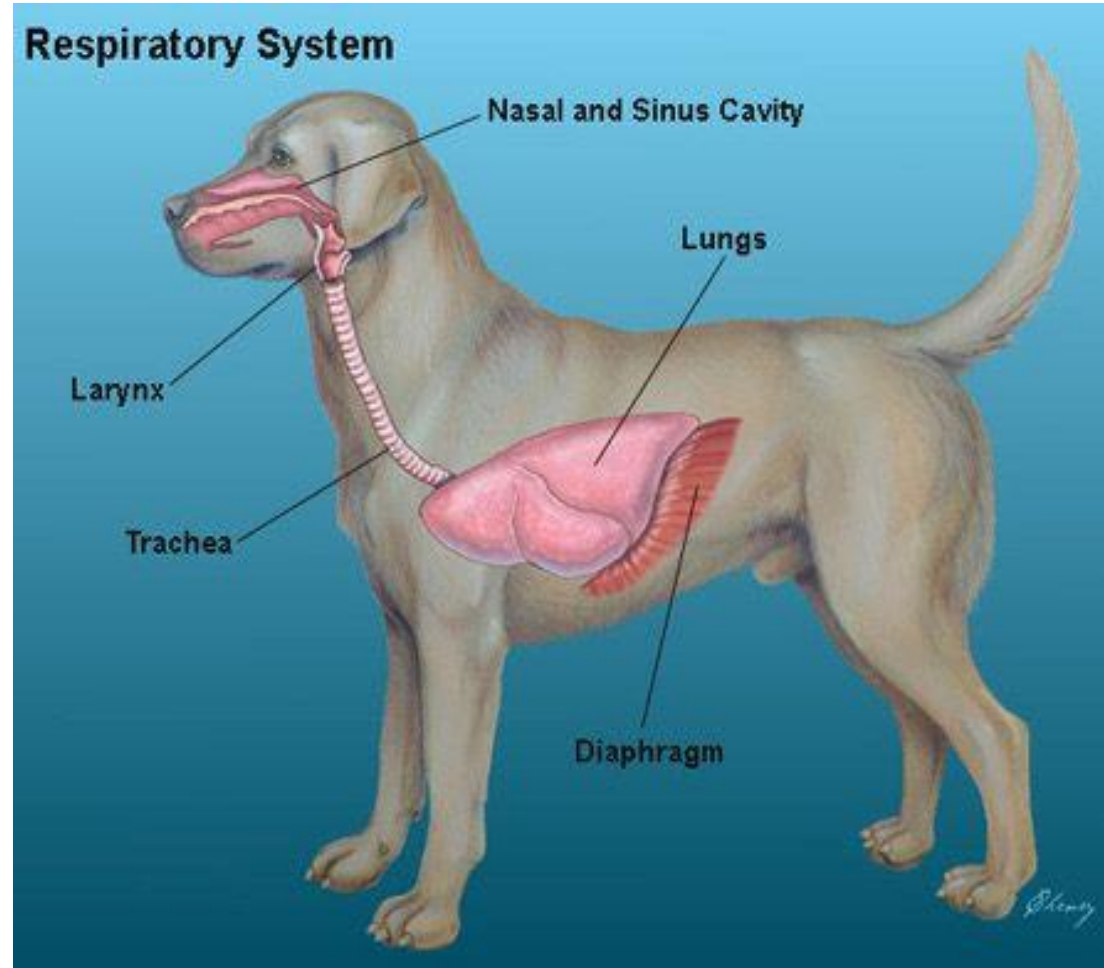
I. EXTRAPULMONÁLIS LÉGUTAK:

- levegő vezetése a tüdő felé

- a) Orrüreg (cavum nasi)
- b) Orrmelléküregek (sinus paranasales)
- c) Garat (pharynx)
- d) Gége (larynx)
- e) Légcső (trachea)
- f) Főbronchusok (bronchus princialis)

FELSŐ
LÉGUTAK

ALSÓ
LÉGUTAK

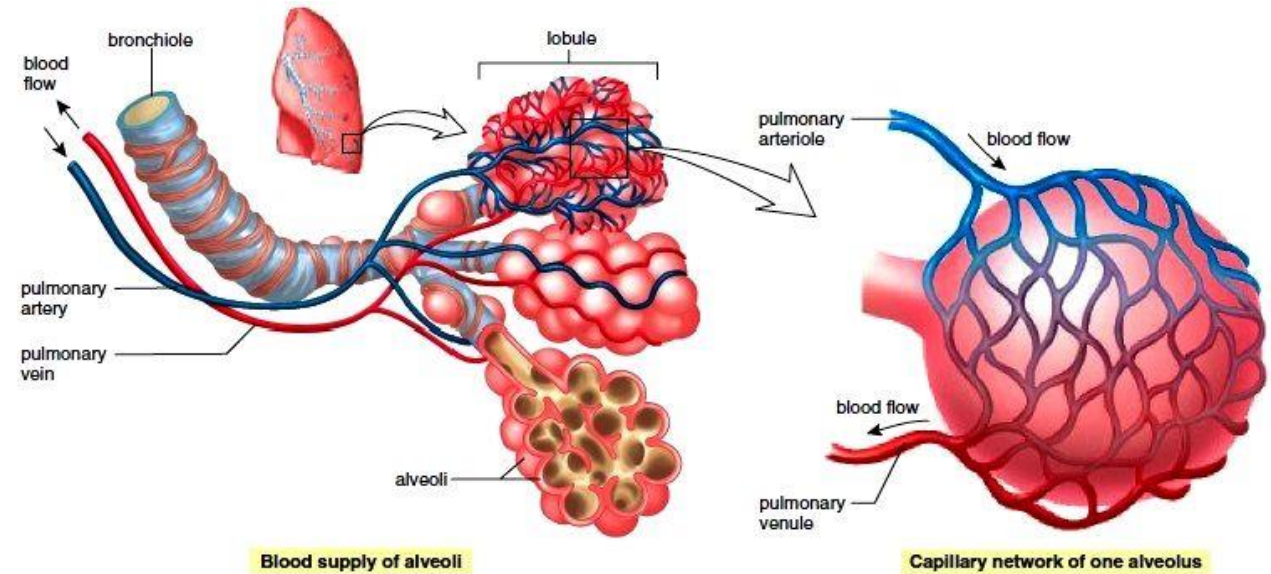
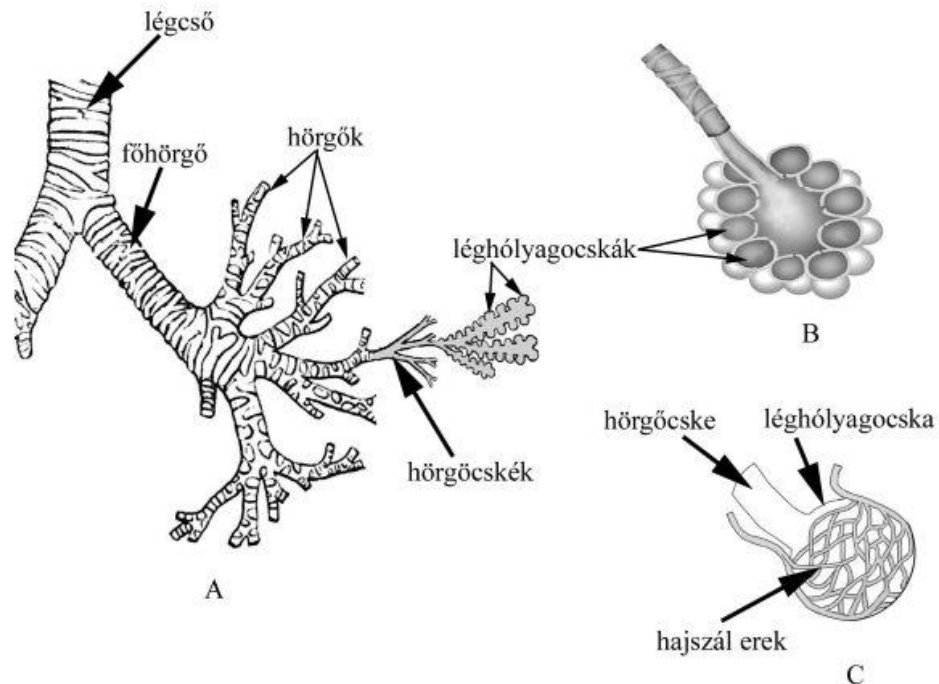


LÉGZŐRENDSZER

INTRAPULMONÁLIS LÉGUTAK:

- gázcsere

1. Bronchioli respiratorii
2. Ductus alveolares
3. Saccus alveolares
4. Alveolen (Alveoli pulmonis)



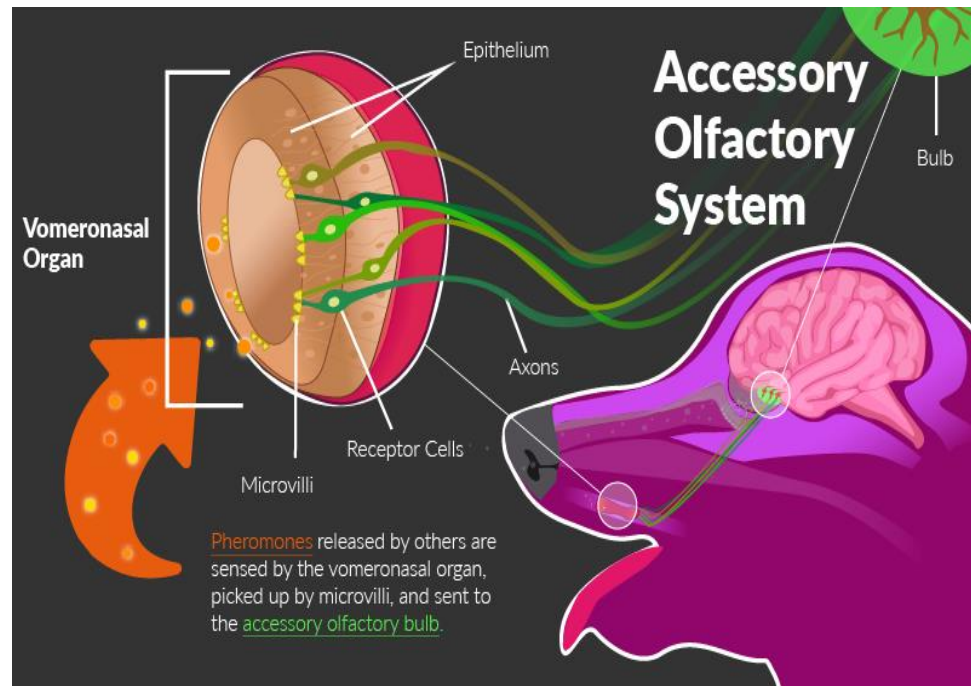
<https://hu.pinterest.com/pin/62768988530255791/>

LÉGZŐRENDSZER

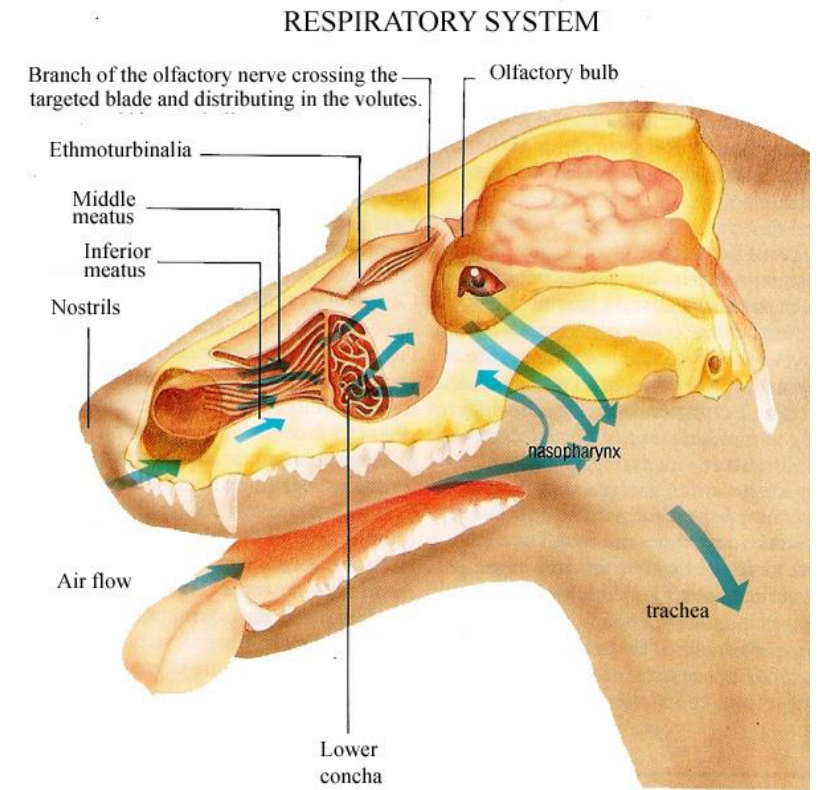
- respirációs hámborítás

SZAGLÓHÁM:

- az orrüreg legfelső területén speciális hám
- szaganyagok érzékelése
- itt szedődnek össze a szaglóideg rostjai, melyek a rostalemezen át az agy homloklebenyébe jutnak



<https://www.petpooskiddoo.com/blog/how-is-a-dogs-sense-of-smell-different-from-ours-and-why/>



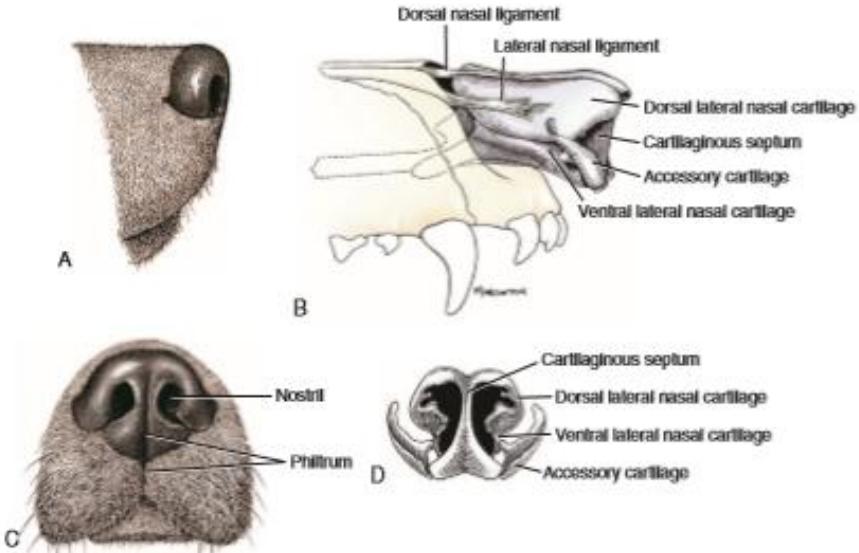
<http://actiinfochiens.free.fr/RESPIRATORY%20SYSTEM.html>

ORR (RHIN, NASUS)

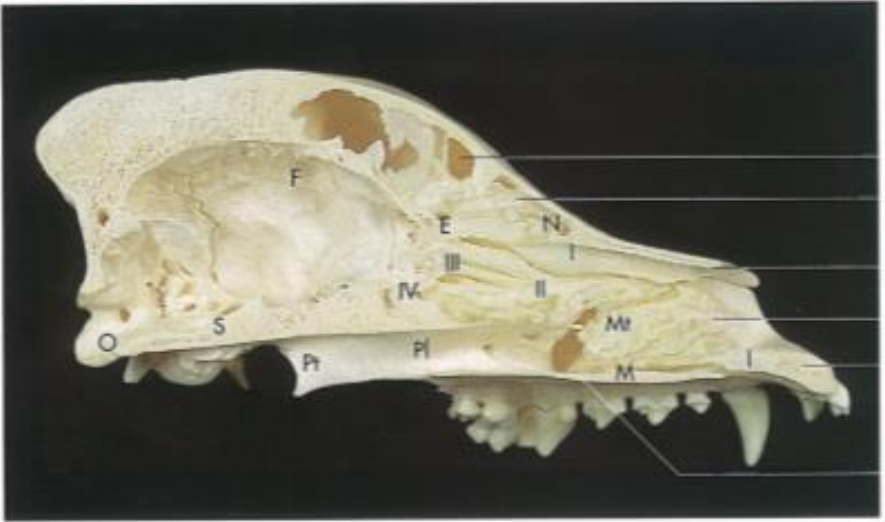
- üreges szerv

RÉSZEI:

1. ORRHÁT (DORSUM NASI)
2. OLDALSÓ RÉSZ (REGIONES LATERALES NASI)
3. ORRHEGY (APEX NASI) – ORRNYÍLÁS (NARES)
4. - az orrnyílások helye (regio narium) – összeolvad a felső ajakkal – regio nasolabialis



- E Ethmoid
 - F Frontal
 - I Incisive
 - M Maxilla
 - Mt Maxilloturbinate
 - N Nasal
 - O Occipital
 - Pl Palatine
 - Pt Pterygoid
 - S Sphenoid
-
- I Endoturbinat I
 - II Endoturbinat II
 - III Endoturbinat III
 - IV Endoturbinat IV



- Frontal sinus
- Septal process of the nasal bone
- Rostral process of the nasal bone
- Nasal process of the incisive bone
- Palatine process of the incisive bone
- Palatine process of the maxilla

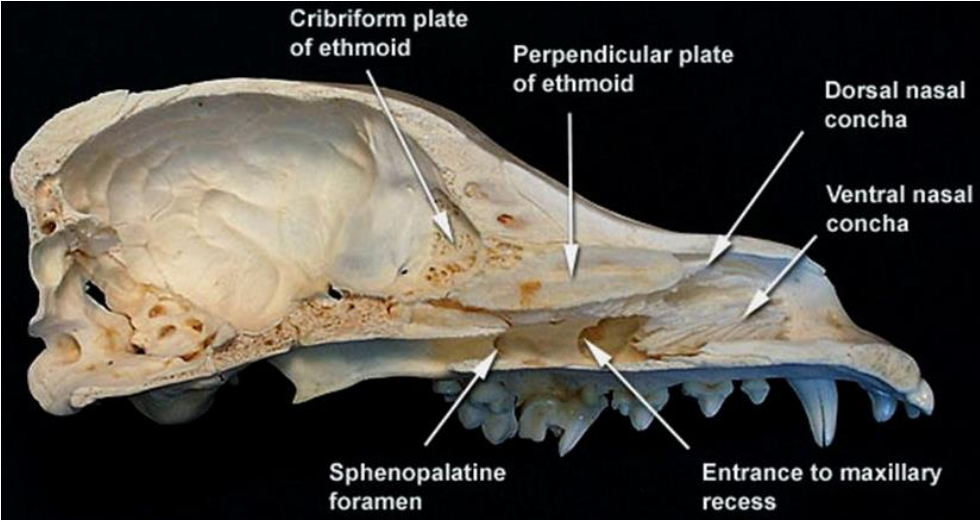
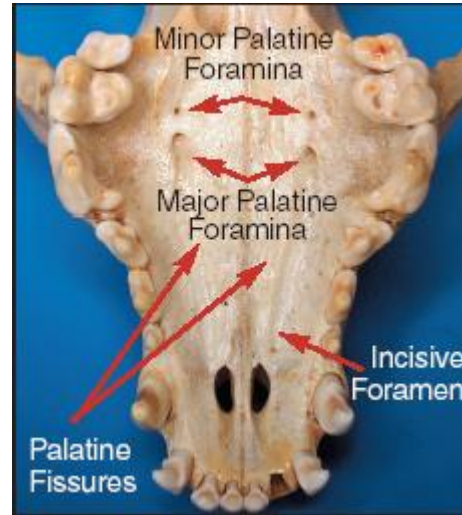


Fig. 1-30. Skull of a dog (medial aspect of sagittal section).

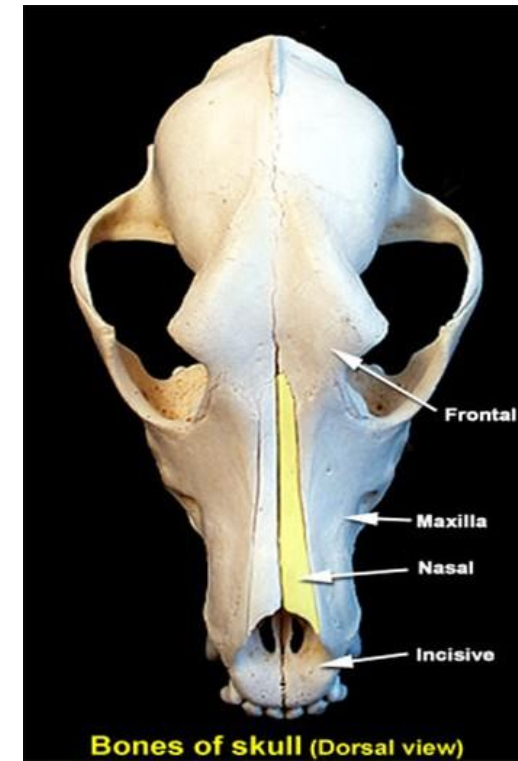
ORR (RHIN, NASUS)

CSONTOS VÁZA:

1. dorsalisan os nasale, os frontale
2. lateralisan maxillae
3. ventralisan proc. alveolaris maxillae, os palatina, os incisiva
4. caudalisan – lamina cribrosa ossis etmoidales
5. medialisan - septum nasi osseum et cartilagineum
6. fundus nasi



<https://veterinarydentistry.net/navigating-clinical-oral-anatomy-imperative-successful-oral-care/>



Bones of skull (Dorsal view)

<https://slideplayer.com/slide/5379039/>

E Ethmoid
F Frontal
I Incisive
M Maxilla
Mt Maxilloturbinate
N Nasal
O Occipital
Pl Palatine
Pt Pterygoid
S Sphenoid

I Endoturbinat I
II Endoturbinat II
III Endoturbinat III
IV Endoturbinat IV

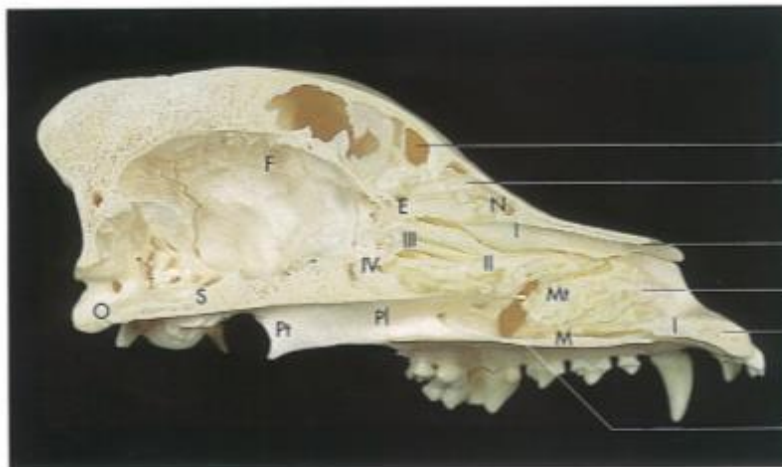


Fig. 1-30. Skull of a dog (medial aspect of sagittal section).

Frontal sinus
Septal process of the nasal bone
Rostral process of the nasal bone
Nasal process of the incisive bone
Palatine process of the incisive bone
Palatine process of the maxilla

E Ethmoid
F Frontal
I Incisive
Mt Maxilloturbinate
N Nasal
O Occipital
Pl Palatine
Pt Pterygoid
S Sphenoidal

Osseous tentorium
Crest of the petrous part
Internal acoustic meatus
Hypophyseal fossa
Sphenoidal sinus
Tympanic bulla

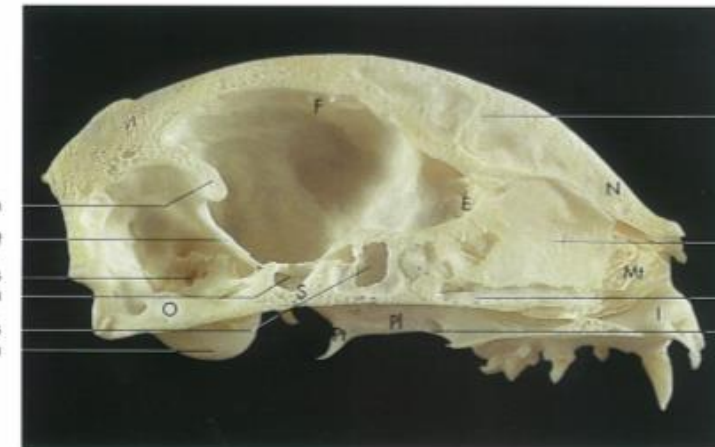


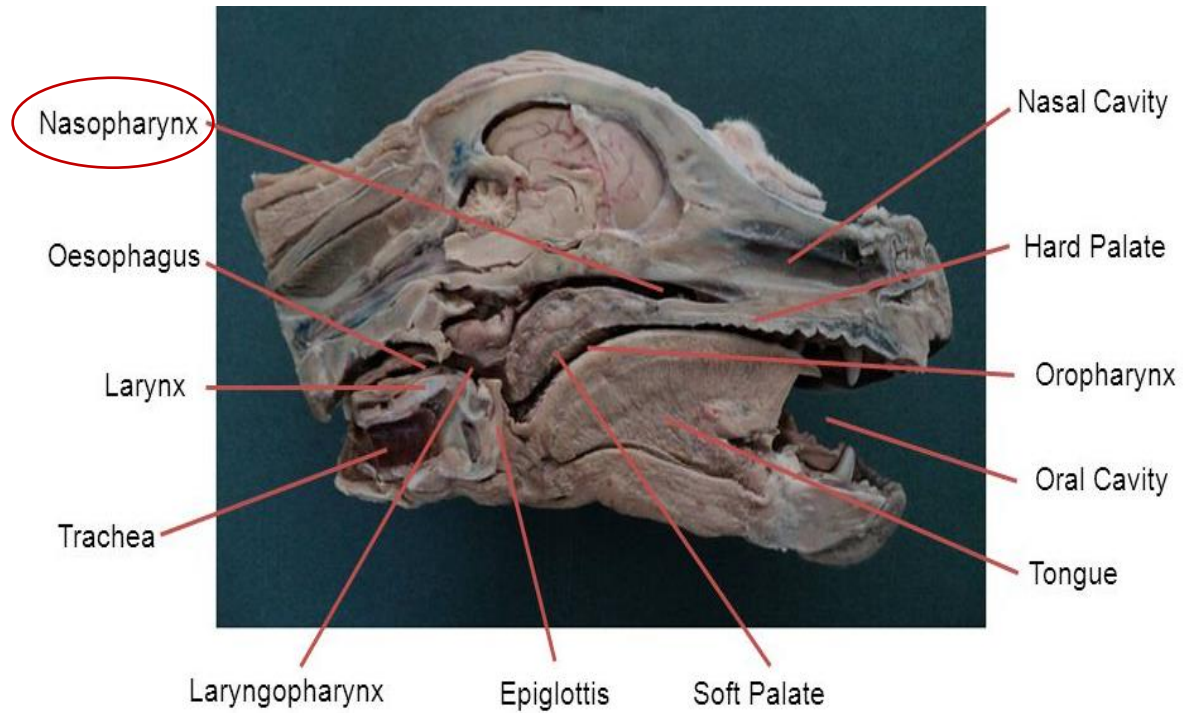
Fig. 1-49. Skull of a cat (medial aspect of sagittal section).

Septum of frontal sinuses
Nasal septum
Vomer
Nasopharyngeal meatus

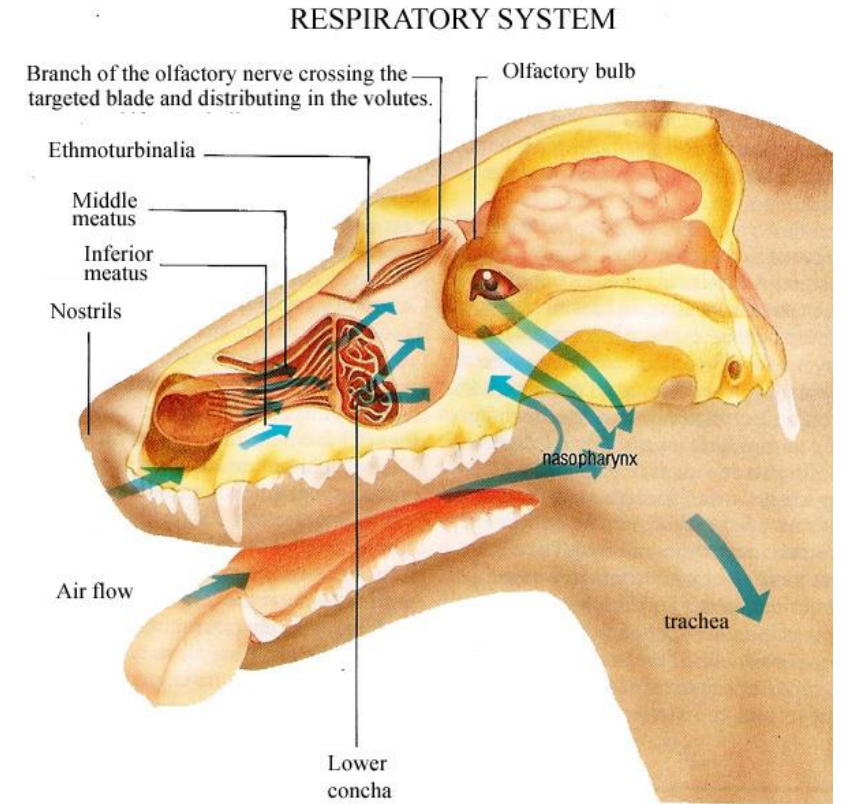
ORR (RHIN, NASUS)

HATÁRAI:

- ventralisan a nasopharynxban folytatódik



<https://markylla.eu/the-respiratory-system-nasal-cavity-pharynx-larynx.html>



<http://actiinfochiens.free.fr/RESPIRATORY%20SYSTEM.html>

ORR (RHIN, NASUS)

ORRHEGY (APEX NASI):

- felső ajak kontúrját adja

nevezéktana állatfajonként más:

MARHÁBAN – FÉNYSZÁJ, SZUTYAK (planum nasolabiale):

- szőrtelen, vastag bőr
- savós váladékot termelő mirigyek (gll. nasolabiales) – nedvesen tartják a felületet
- bőrfelületen barázdák – hatszögletű mezőket (areolae) határolnak – ezekben árkok (foveolae)
- a foveolákba nyílnak a szutyak mirigyei



<https://animal-affairs.photoshelter.com/image/I0000x5qUPX.8Bp4>

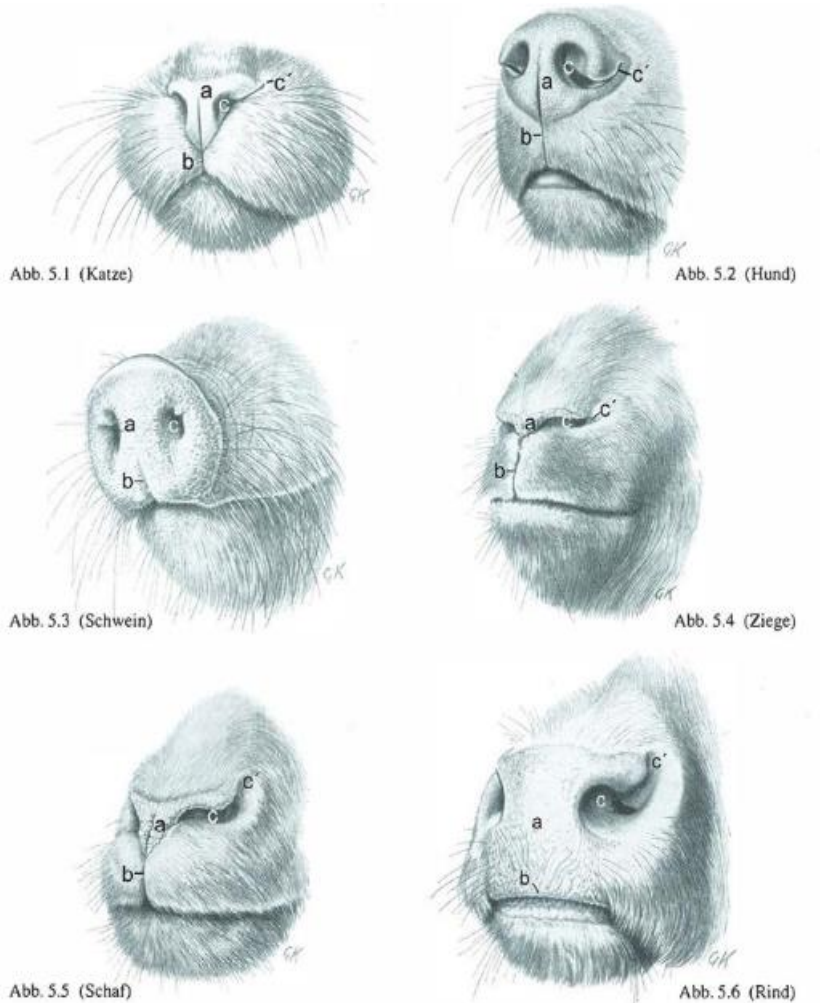


Abb. 5.1–5.6 Naseneingang von *Katze*, *Hund*, *Schwein*, *Ziege*, *Schaf* und *Rind*. Linke kranio-laterale Ansicht.

a Planum nasale (*Katze*, *Hund*, *Ziege*, *Schaf*), Planum rostrale (*Schwein*), Planum nasolabiale (*Rind*), Areae, Sulci und Foveolae gut sichtbar; b Philtrum; c Nares, c' Sulcus alaris (exkl. *Schwein*)

<https://www.thieme-connect.de/products/ebooks/pdf/10.1055/b-0037-148410.pdf>

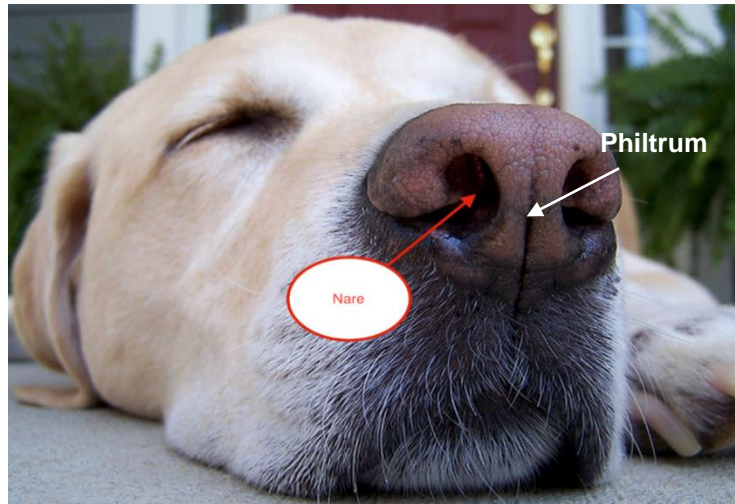
ORR (RHIN, NASUS)

ORRHEGY (APEX NASI):

JUHFÉLÉK, HÚSEVŐK:

ORRTÜKÖR-nek (planum nasale) nevezik

- orrnyílások
- az orrtükörbe az ajakbarázda (philtrum) beterjed
- az orrtükör bőre szőrtelen
- barázdák - areolák
- húsevőkben az orrtükröt a laterális orrmirigyek (gll. nasalis lateralis) tartják nedvesen



<https://nationalpurebreddogday.com/external-nares/>



Nasenspiegel eines Haushundes



Nasenspiegel einer Hauskatze

<https://de.wikipedia.org/wiki/Nasenspiegel>

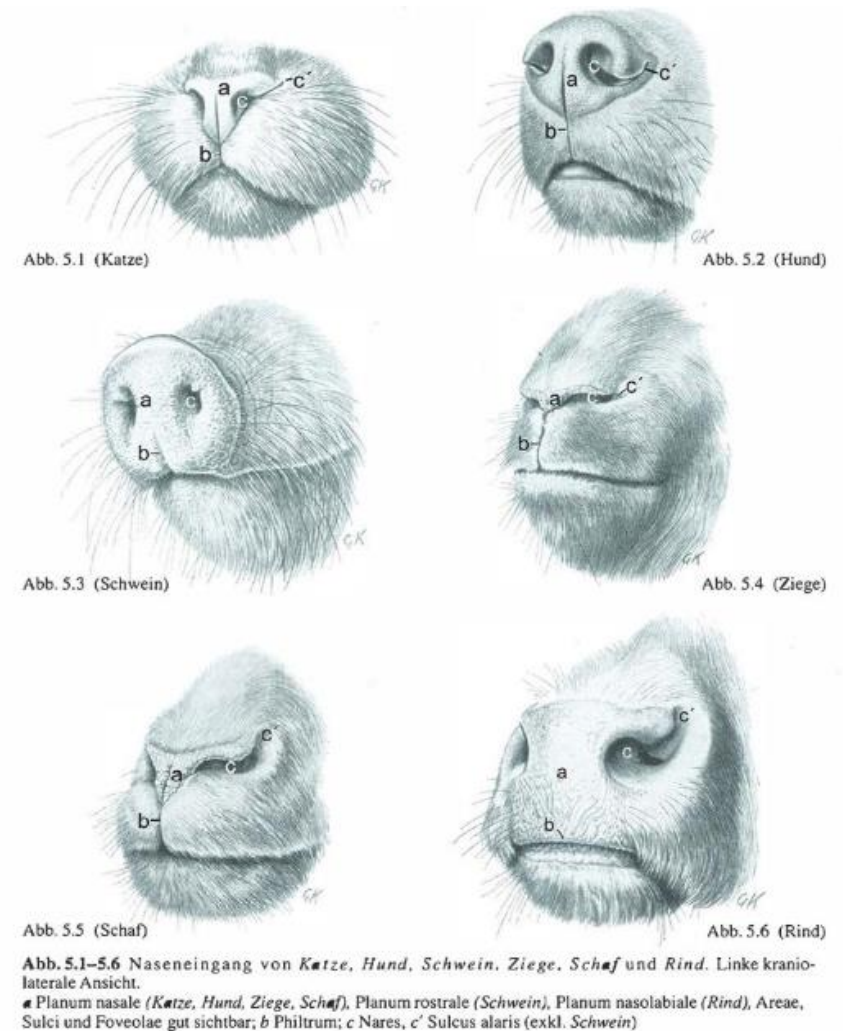


Abb. 5.1–5.6 Naseneingang von *Katze*, *Hund*, *Schwein*, *Ziege*, *Schaf* und *Rind*. Linke kranio-laterale Ansicht.
 a Planum nasale (*Katze*, *Hund*, *Ziege*, *Schaf*), Planum rostrale (*Schwein*), Planum nasolabiale (*Rind*), Areae, Sulci und Foveolae gut sichtbar; b Philtrum; c Nares, c' Sulcus alaris (exkl. *Schwein*)

<https://www.thieme-connect.de/products/ebooks/pdf/10.1055/b-0037-148410.pdf>

ORR (RHIN, NASUS)

ORRHEGY (APEX NASI):

SERTÉSBEN:

ORRKORONG-nak (planum rostrale) nevezik

- szőrtelen
- barázdák – areolák – foveolák
- foveolákba az orrtükrök mirigyei nyílnak
- os rostrale



<http://allinfo.space/2018/11/22/a-meningocoque-est-de-peril-en-la-demeure/>

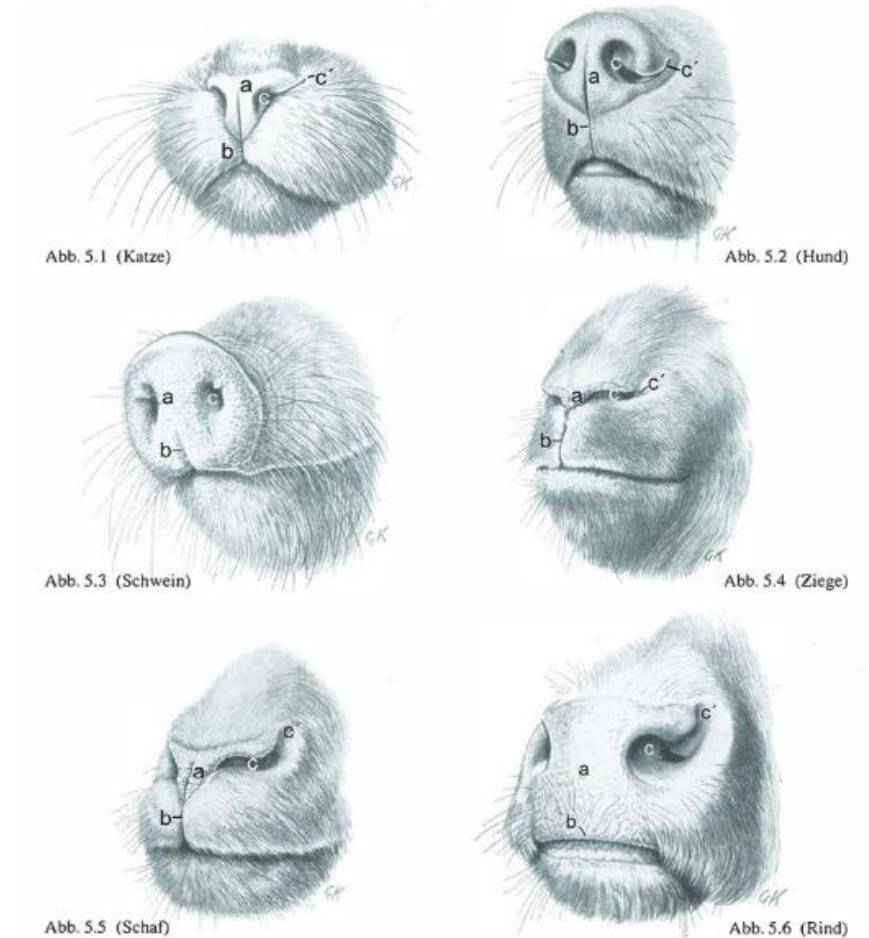


Abb. 5.1–5.6 Naseneingang von *Katze*, *Hund*, *Schwein*, *Ziege*, *Schaf* und *Rind*. Linke kranio-laterale Ansicht.
▲ Planum nasale (*Katze*, *Hund*, *Ziege*, *Schaf*), Planum rostrale (*Schwein*), Planum nasolabiale (*Rind*), Areae, Sulci und Foveolae gut sichtbar; b Philtrum; c Nares, c' Sulcus alaris (exkl. *Schwein*)

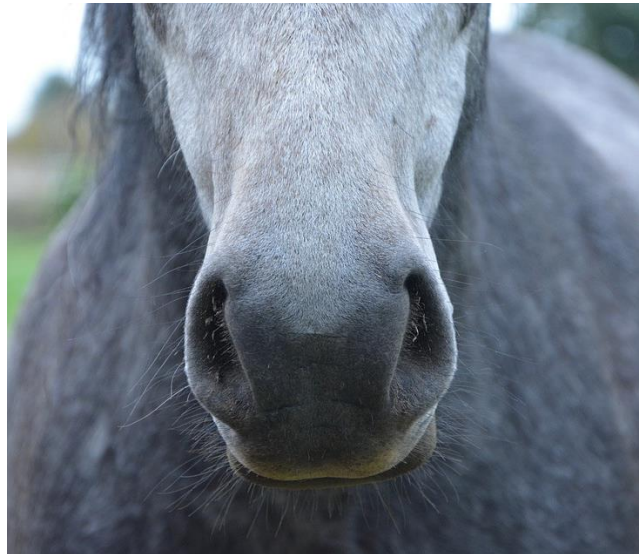
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ORR (RHIN, NASUS)

ORRHEGY (APEX NASI):

LÓBAN

- orr – ajaki tájék
- bőre vékony
- finom, rövid szőr
- ajaki részének középső és két oldalán tapintó szőrök (sinus - szőrök)



<https://pixabay.com/de/photos/pferd-n%C3%BCstern-schnauze-fase-reiten-2743641/>

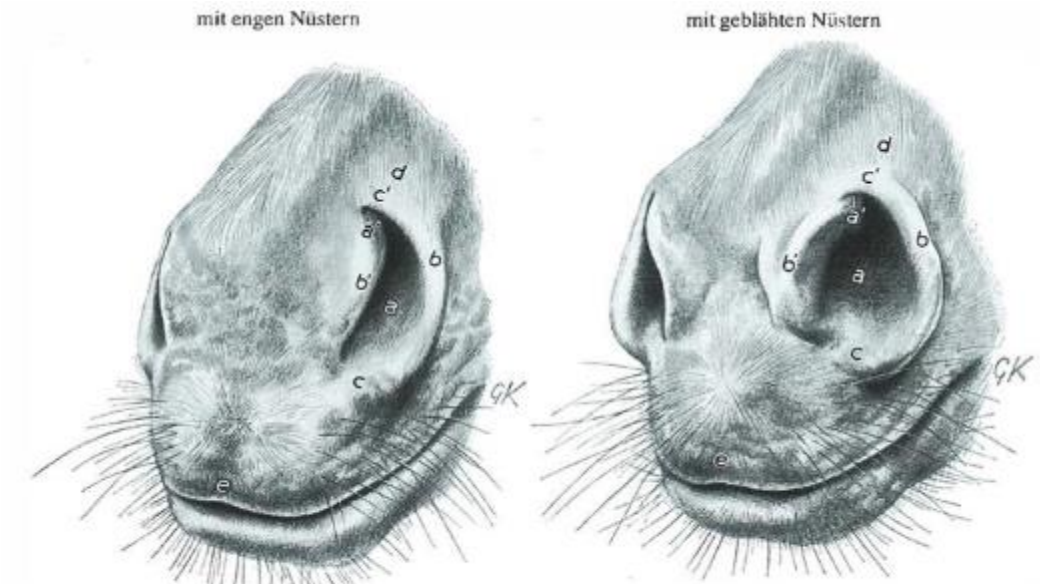


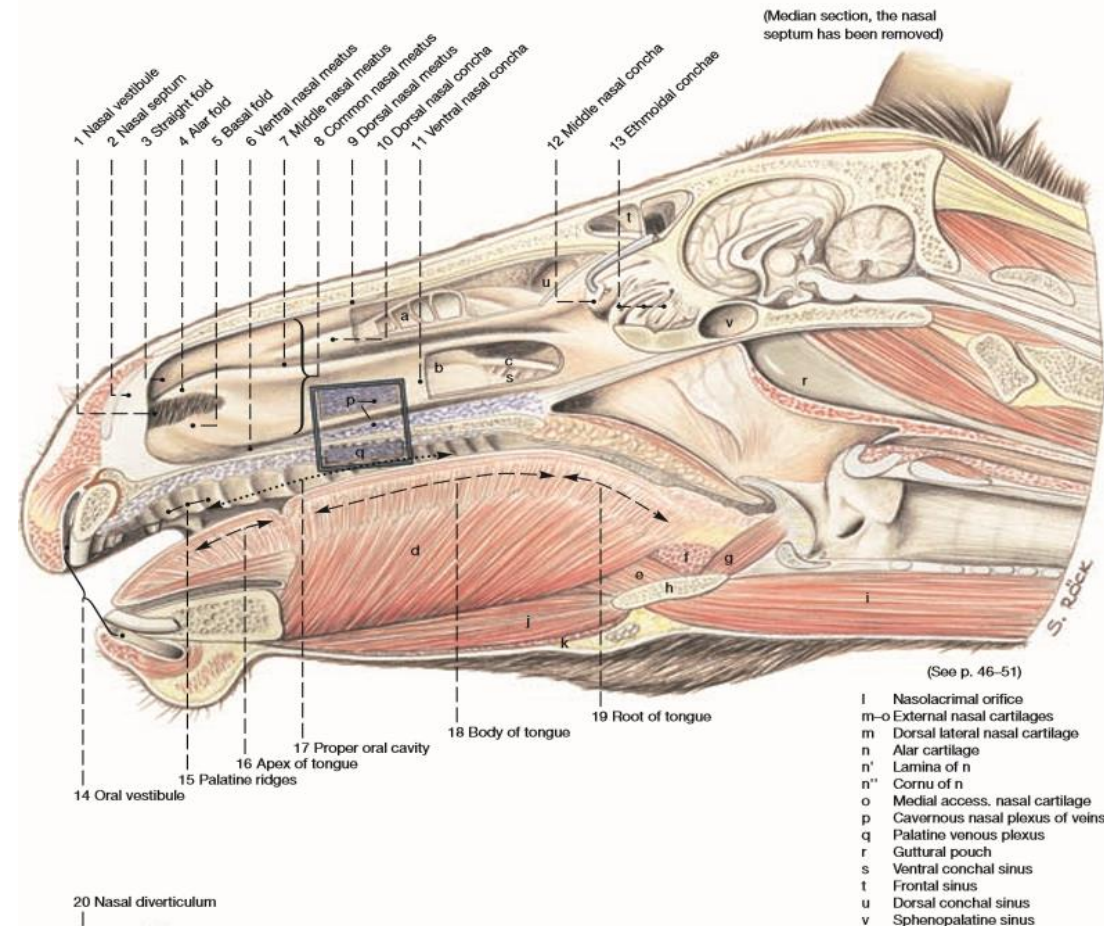
Abb. 5.7, 5.8 Naseneingang eines Pferdes. Linke kranio-laterale Ansicht.
■ Naris, ■' Eingang in die Nasentrompete, Diverticulum nasi; b laterale, b' mediale Ala nasi; c ventraler, c' dorsaler Winkel des Nasenlochs; ■ Diverticulum nasi; e Philtrum

<https://www.thieme-connect.de/products/ebooks/pdf/10.1055/b-0037-148410.pdf>

ORR (RHIN, NASUS)

ORRÜREG (CAVA NASI) RÉSEZI:

1. Vestibulum nasi (orrtornác)
2. Cavum nasi proprium
3. Conchae nasales (orrkagylók)
4. Conchae ethmoidales
5. Fundus nasi (orrüreg alapja)
6. Meatus nasopharyngeus – caudoventralisan a choanákön át a pars nasalis pharyngisba vezet



ORR (RHIN, NASUS)

ORRTORNÁC (VESTIBULUM NASI):

- orrüreg bemenete
- pigmentált bőr borítja
- limen nasi – határ a bőr és a respirációs hám között, ami az orrüreg belső részét borítja
- lóban ide nyílik a ductus nasolacrimalis

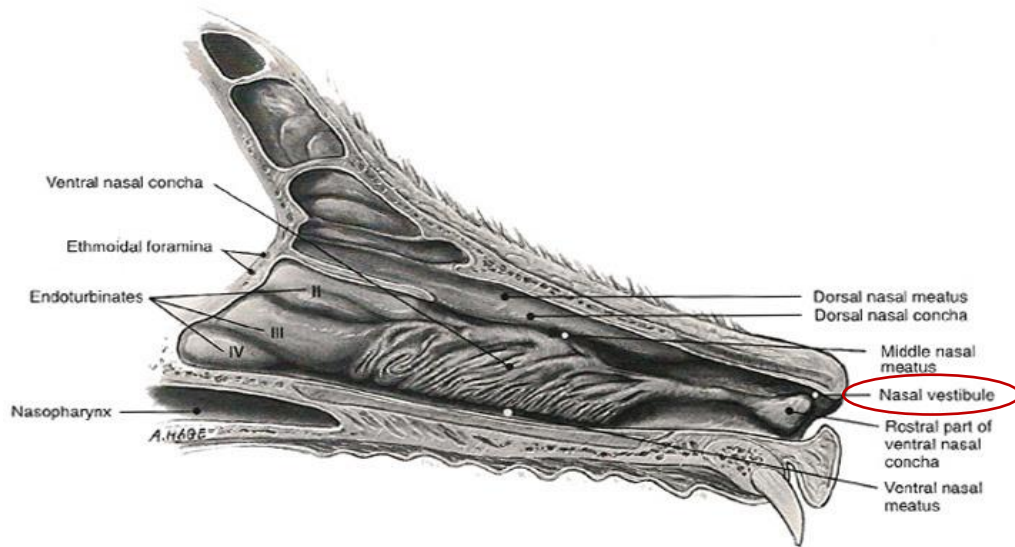
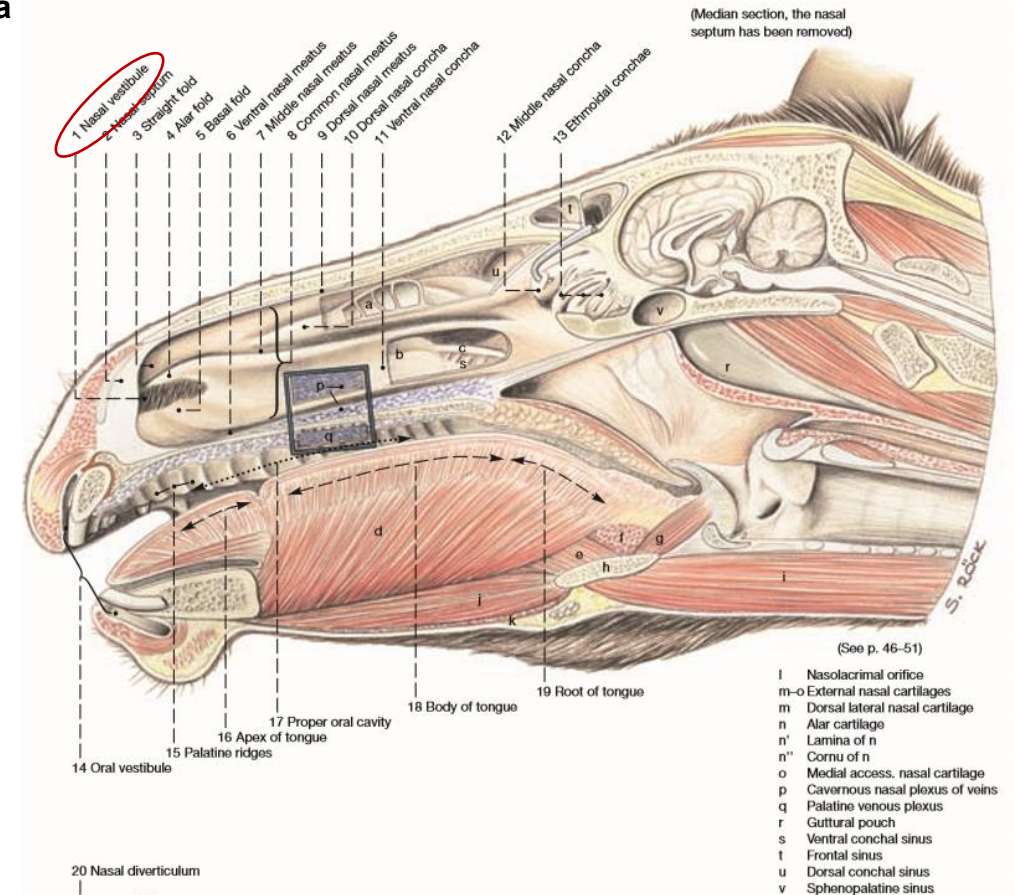


FIG. 1-87 The ventral nasal concha (parasagittal sectional view). The ventral nasal concha (formerly maxilloturbinates) is attached to the inner surface of the maxilla at the conchal crest. The concha continues rostrally into the nasal vestibule as a mucous-membrane-covered, knob-like structure. The ventral nasal concha is a separately formed bone distinct from the ethmoid bone.

<http://actiinfochiens.free.fr/RESPIRATORY%20SYSTEM.html>



ORR (RHIN, NASUS)

ORRÜREG (CAVA NASI PROPRIUM):

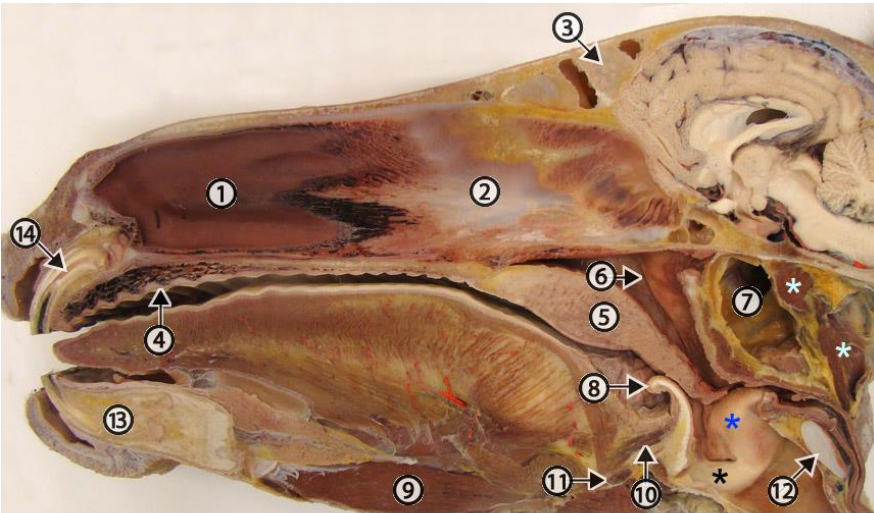
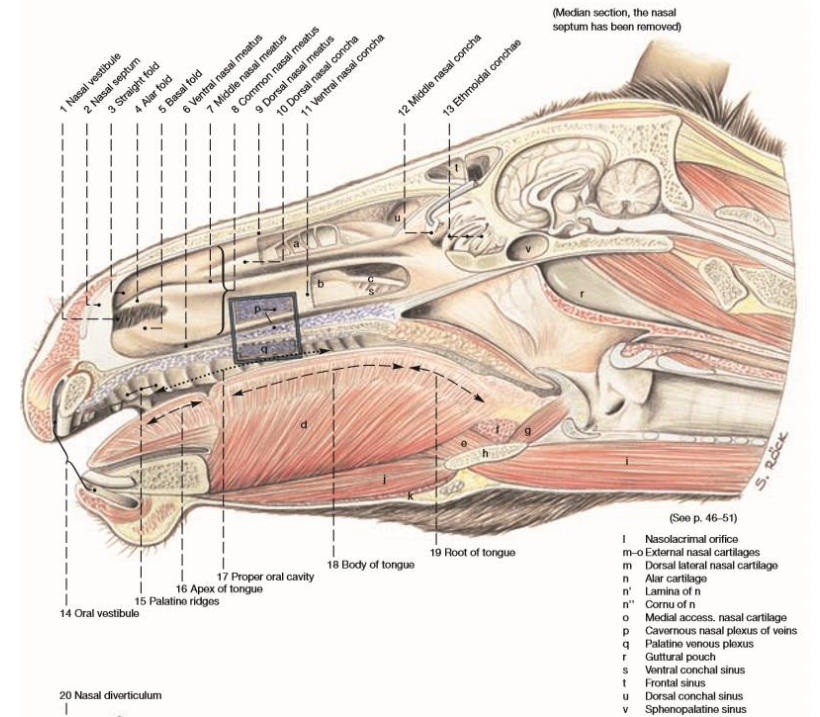
REGIO RESPIRATORIA:

1. Cavum nasi

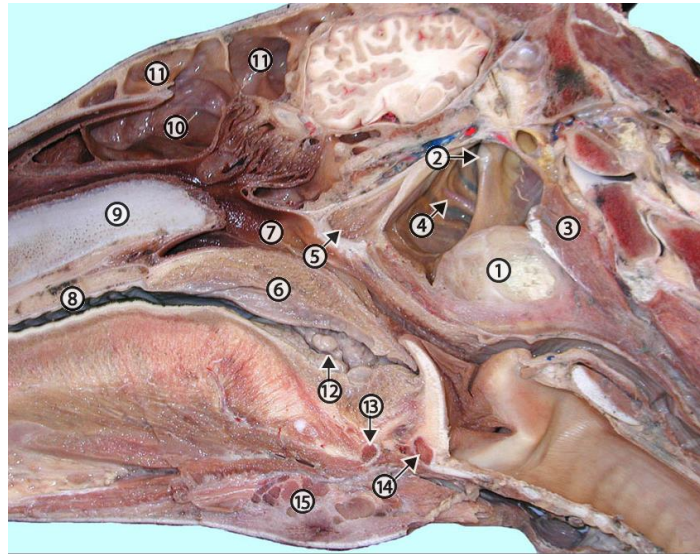
2. Septum nasi

- respirációs hám

- érfonatban gazdag - belélegzett levegő felmelegítése, párásítása

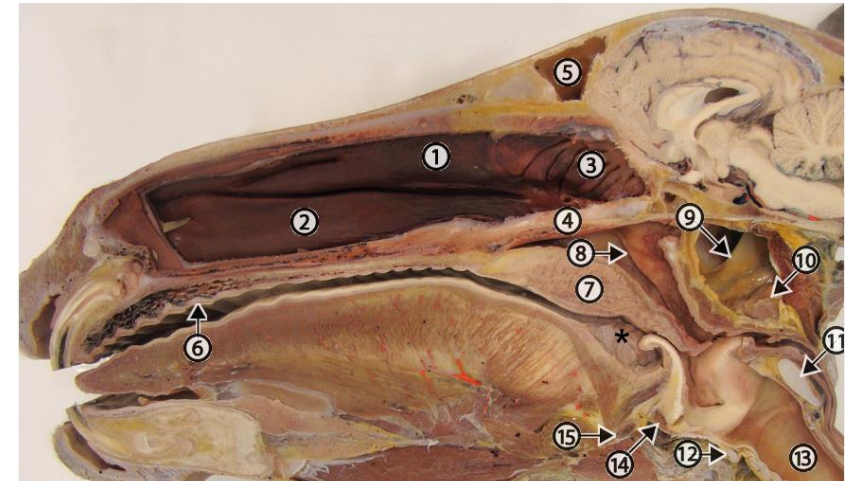


Midline view of split equine head. 1, nasal septum covered with mucosa; 2, cartilage of the nasal septum; 3, midline bony septum between frontal sinuses; 4, hard palate; 5, soft palate; 6, orifice of auditory tube (entrance to guttural pouch); 7, interior of guttural pouch; light blue asterisk, longus capitis m., blue asterisk, arytenoid cartilage covered with mucosa; black asterisk, vocal fold; 8, epiglottis; 9, geniohyoideus m., 10, hyoepiglottis m.; 11, basihyoid bone; 12, cricoid cartilage; 13, mandibular symphysis; 14, pulp cavity.



Equine split head with a large strangles abscess (1) on the ventral aspect of the guttural pouch. 2, temporohyoid joint; 3, longus capitis m.; 4, maxillary artery; 5, auditory tube; 6, soft palate; 7, nasopharynx; 8, hard palate; 9, cartilage of nasal septum; 10, dorsal conchal sinus; 11, frontal sinus; 12, palatine tonsil; 13, basihyoid bone; 14, ossified rostral edge of the thyroid cartilage; 15, mandibular lymph nodes.

<http://vanat.cvm.umn.edu/ungDissect/Lab20/Lab20.html>



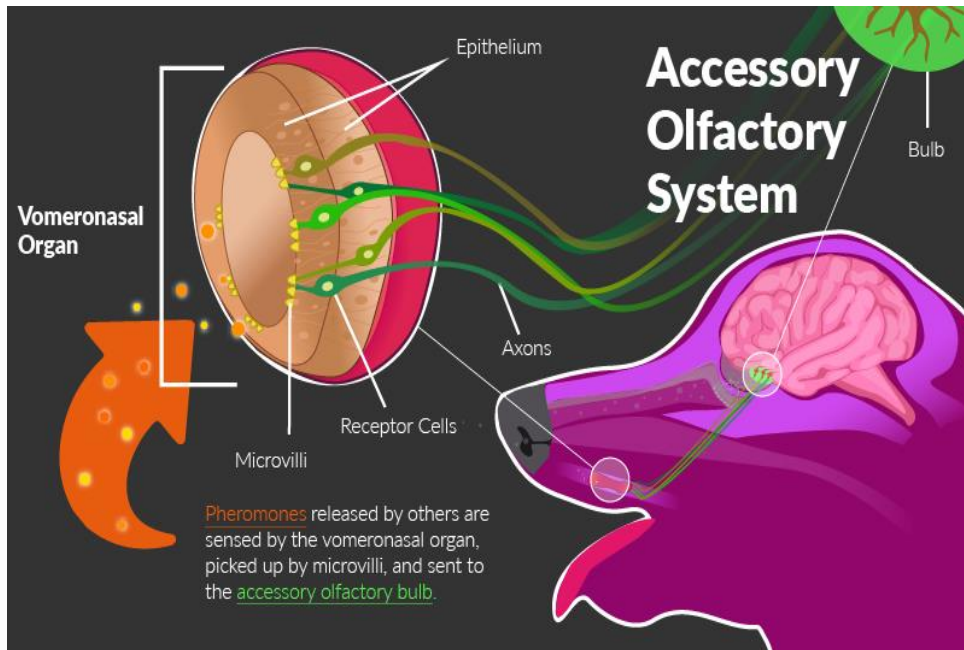
Equine split head after removal of the nasal septum to expose the nasal cavity. 1, dorsal concha; 2, ventral concha; 3 ethmoidal conchas; 4, vomer (bone); 5, frontal sinus; 6, hard palate; 7, soft palate; 8, orifice of the auditory tube on the lateral wall of the nasopharynx. At this place, an endoscope can be passed into the guttural pouch. 9, stylohyoid bone; 10, medial retropharyngeal lymph nodes adjacent to the ventral wall of the guttural pouch; 11, cricoid cartilage; 12, cricoid cartilage (ventral), 13, trachea; 14, ossified rostral edge of the thyroid cartilage; 15, basihyoid bone; asterisk, palatine tonsil.

ORR (RHIN, NASUS)

ORRÜREG (CAVA NASI):

REGIO OLFACTORIA:

- orrüreg felső részén
- szaglóhám



<https://www.petpooskiddoo.com/blog/how-is-a-dogs-sense-of-smell-different-from-ours-and-why/>



Figure 1. Lateral view of the nasal septum of an adult dog, showing the difference in color between sensory (yellow-brown) and respiratory (red-orange) mucosa. The rectangle frames the vomeronasal organ. Scale bar: 2 cm (see Figure S1).

<https://www.frontiersin.org/articles/10.3389/fnana.2014.00106/full>

ORR (RHIN, NASUS)

ORRKAGYLÓK (CONCHAE NASALES):

- orrüreg oldalsó falán

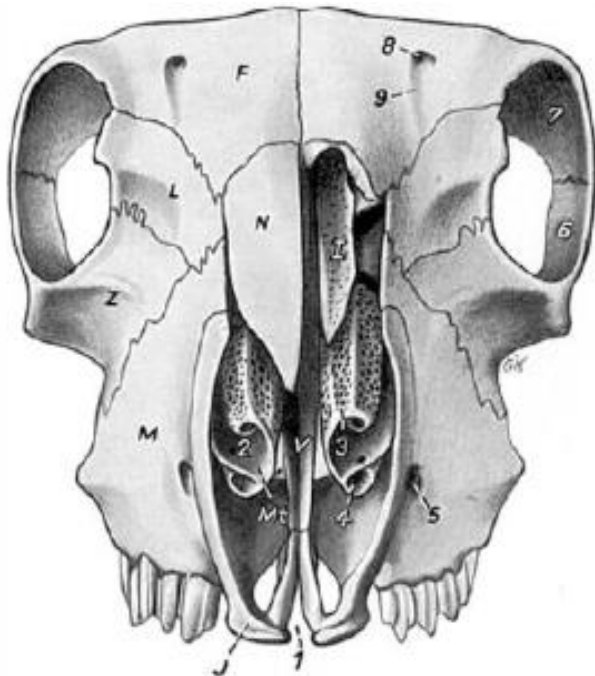
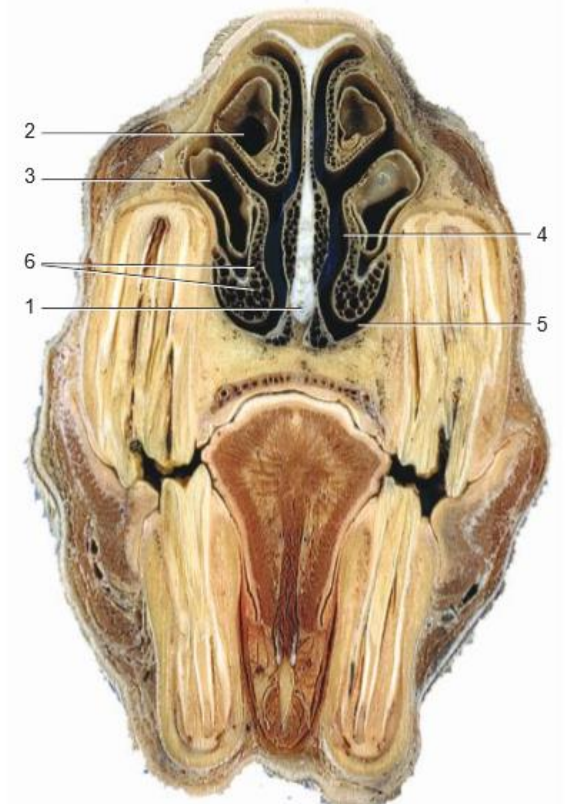


Abb. 267. Schädel des Schafes. Ansicht von vorn. Linkes Nasenbein entfernt.

F Os frontale; *I* Os incisivum; *L* Os lacrimale; *M* Maxilla; *Mt* Os conchae nasalis ventralis; *N* Os nasale; *V* Vomer; *Z* Os zygomaticum

I linkes erstes Endoturbinale

1 Fiss. interincisiva; *2* Basallamelle des rechten Os conchae nasalis ventralis; *3* dorsale, *4* ventrale Spirallamelle des linken Os conchae nasalis ventralis; *5* For. infraorbitale; *6* Proc. frontalis des Zygomaticum; *7* Proc. zygomaticus des Frontale; *8* For. supraorbitale; *9* Sulcus supraorbitalis



1. Nasal septum
2. Dorsal concha
3. Ventral concha
4. Common meatus
5. Ventral meatus
6. Venous plexus in nasal mucosa

ORR (RHIN, NASUS)

ORRKAGYLÓK (CONCHAE NASALES):

1. BASALIS LAMINÁK – koponyacsontokhoz rögzül

2. SPIRALIS LAMINÁK

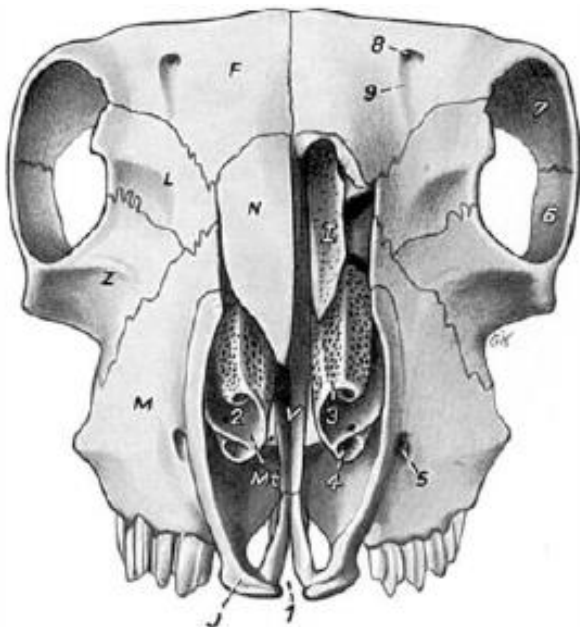


Abb.267. Schädel des Schafes. Ansicht von vorn. Linkes Nasenbein entfernt.

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1 Fiss. interincisiva; 2 Basallamelle des rechten Os conchae nasalis ventralis; 3 dorsale, 4 ventrale Spirallamelle des linken Os conchae nasalis ventralis; 5 For. infraorbitale; 6 Proc. frontalis des Zygomaticum; 7 Proc. zygomaticus des Frontale; 8 For. supraorbitale; 9 Sulcus supraorbitalis

<https://www.thieme-connect.de/products/ebooks/pdf/10.1055/b-0037-148384.pdf>

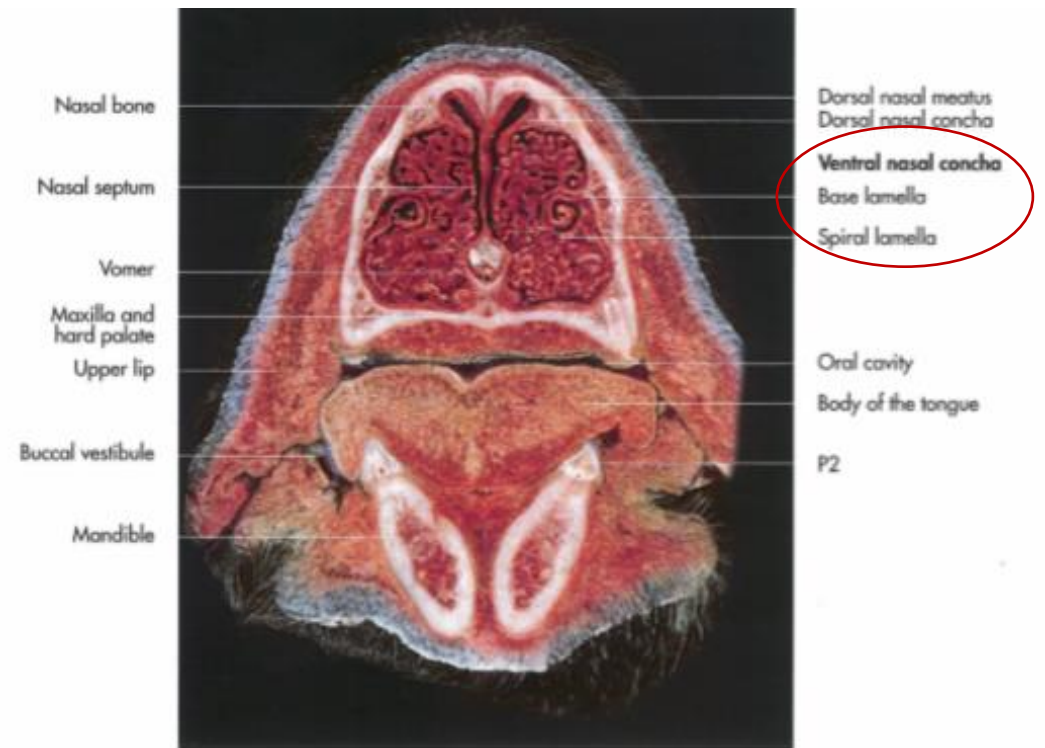


Fig. 8-7. Transverse section of the head of a dog at the level of the second premolar, frontal aspect (courtesy of PD Dr. J. Maierl, Munich).

ORR (RHIN, NASUS)

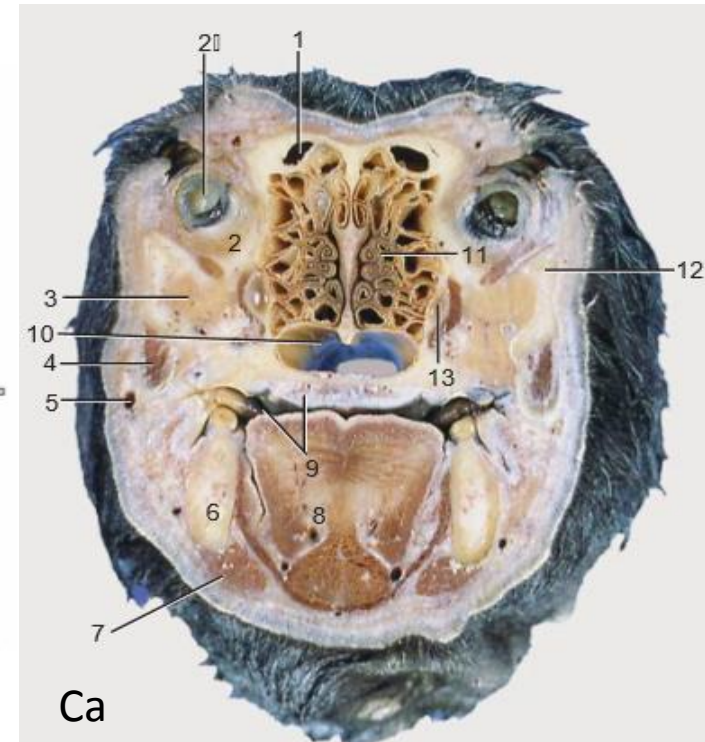
ORRKAGYLÓK (CONCHAE NASALES):

1. SPIRÁLIS LAMINÁK:

- recessusokat határolnak
- szabad szélük bullákat alkotnak
- bullákat ferde sővények még cellulákra osztják

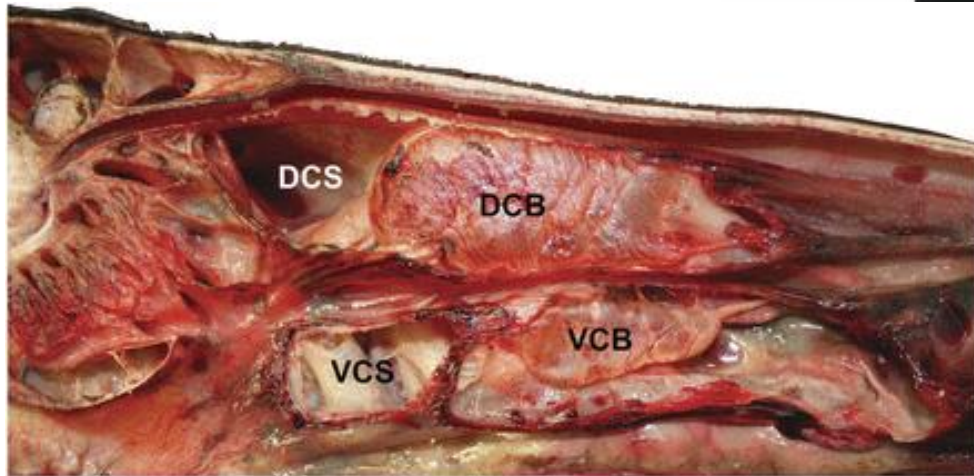


the head of a dog, medial aspect (courtesy of PD Dr. J. Maierl, Munich).



Ca

1. Frontal sinus
2. Orbital structures
- 2'. Eye
3. Zygomatic gland
4. Masseter
5. Facial vein
6. Mandible
7. Digastricus
8. Tongue
9. Oral cavity and hard palate
10. Choana
11. Ethmoid turbinates
12. Zygomatic arch
13. Maxillary recess



The medial aspect of the left side of an equine head following excision of the nasal septum and the medial wall of spiral lamellae of both nasal conchae, illustrating the dorsal conchal sinus (DCS), ventral conchal sinus (VCS), dorsal conchal bulla (DCB) and ventral conchal bulla (VCB)



The medial aspect of a left dorsal conchal bulla following excision of its medial wall. Five vertically oriented septae divide the bulla into six cellulae

ORR (RHIN, NASUS)

ORRKAGYLÓK (CONCHAE NASALES):

SINUS CONCHAE:

- a spirális laminák szabad szélei vagy a bazális laminákkal vagy a szomszédos koponyacsontokkal összenőve hozzák létre a sinusokat

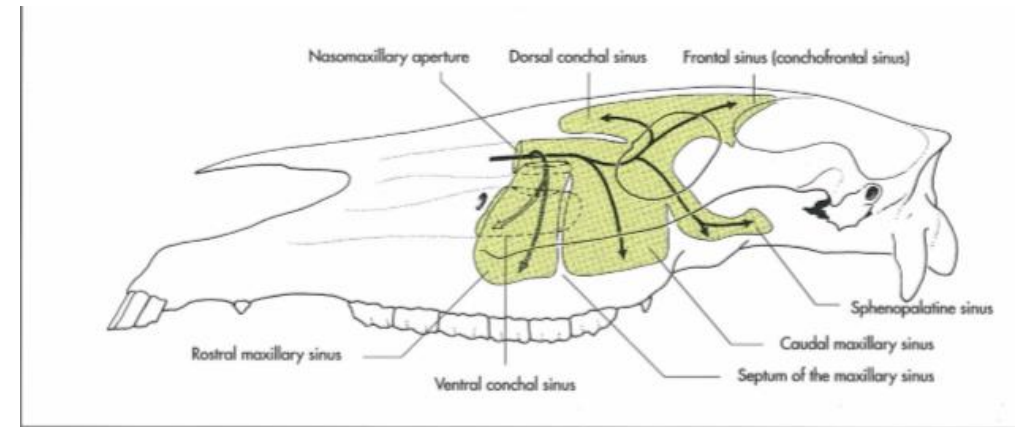
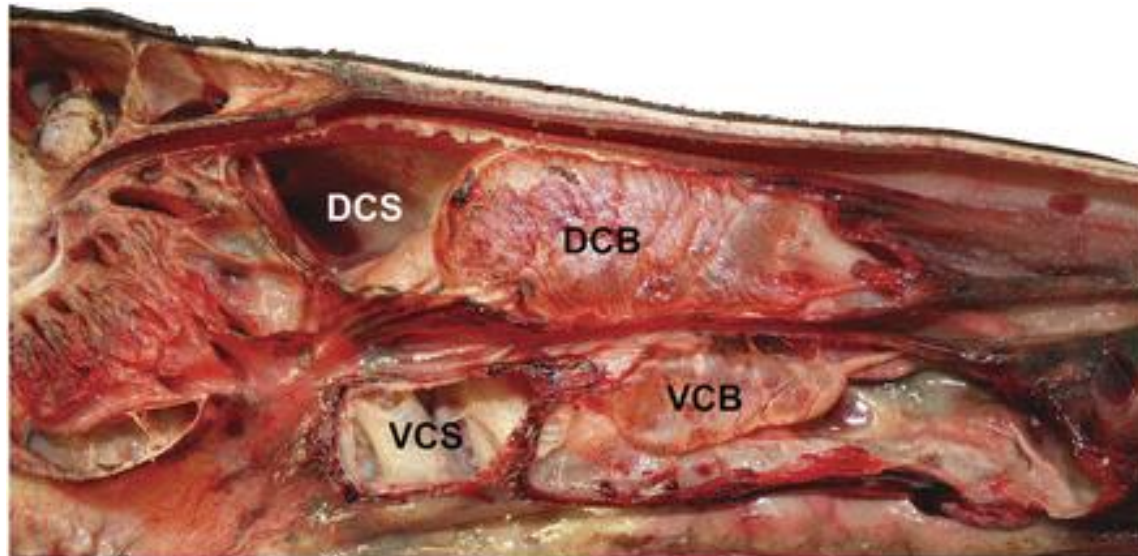
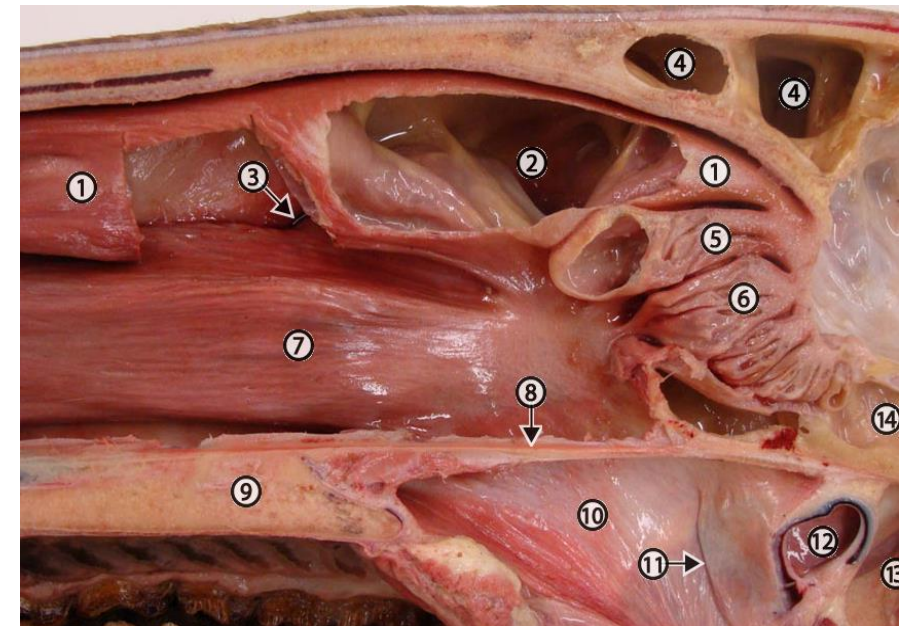


Fig. 8-12. Paranasal sinuses of the horse, schematic.



The medial aspect of the left side of an equine head following excision of the nasal septum and the medial wall of spiral lamellae of both nasal conchae, illustrating the dorsal conchal sinus (DCS), ventral conchal sinus (VCS), dorsal conchal bulla (DCB) and ventral conchal bulla (VCB)

<https://veterinaryrecord.bmj.com/content/177/21/542>



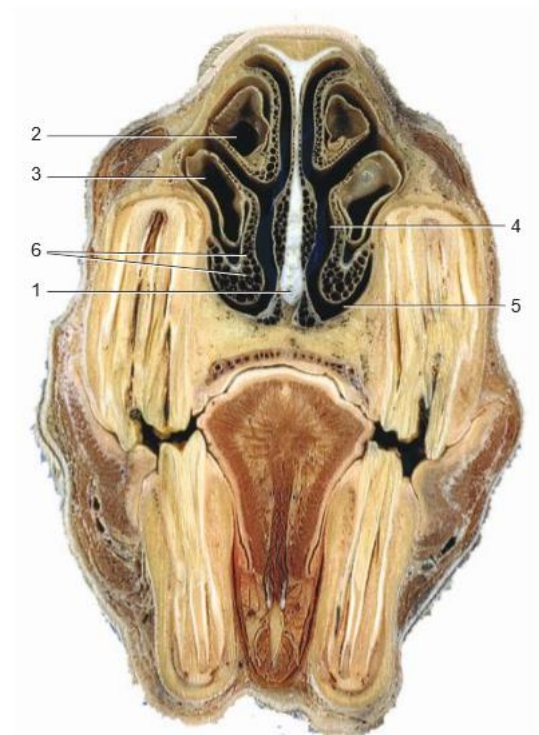
Split equine head. 1, dorsal concha (ethmoconcha I); 2, dorsal conchal sinus; 3, nasomaxillary aperture; 4, frontal sinus; 5, ethmoconcha II; 6, ethmoconcha III; 7, ventral concha; 8, vomer; 9, hard palate; 10, lateral wall of the nasopharynx; 11, entrance to the auditory tube and guttural pouch; 12, lumen of the auditory tube; 13, guttural pouch; 14, sphenopalatine sinus.

<http://vanat.cvm.umn.edu/ungDissect/Lab20/lmg20-15.html>

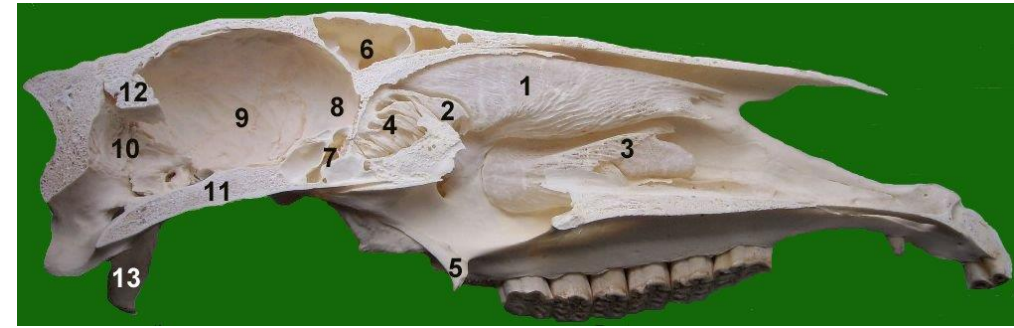
ORR (RHIN, NASUS)

ORRKAGYLÓK (CONCHAE NASALES):

1. CONCHA NASALIS DORSALIS
2. CONCHA NASALIS MEDIA
3. CONCHA NASALIS VENTRALIS
4. CONCHAE ETHMIODALES



1. Nasal septum
2. Dorsal concha
3. Ventral concha
4. Common meatus
5. Ventral meatus
6. Venous plexus in nasal mucosa



- 1 : Concha nasalis dorsalis
- 2 : Concha nasalis media
- 3 : Concha nasalis ventralis

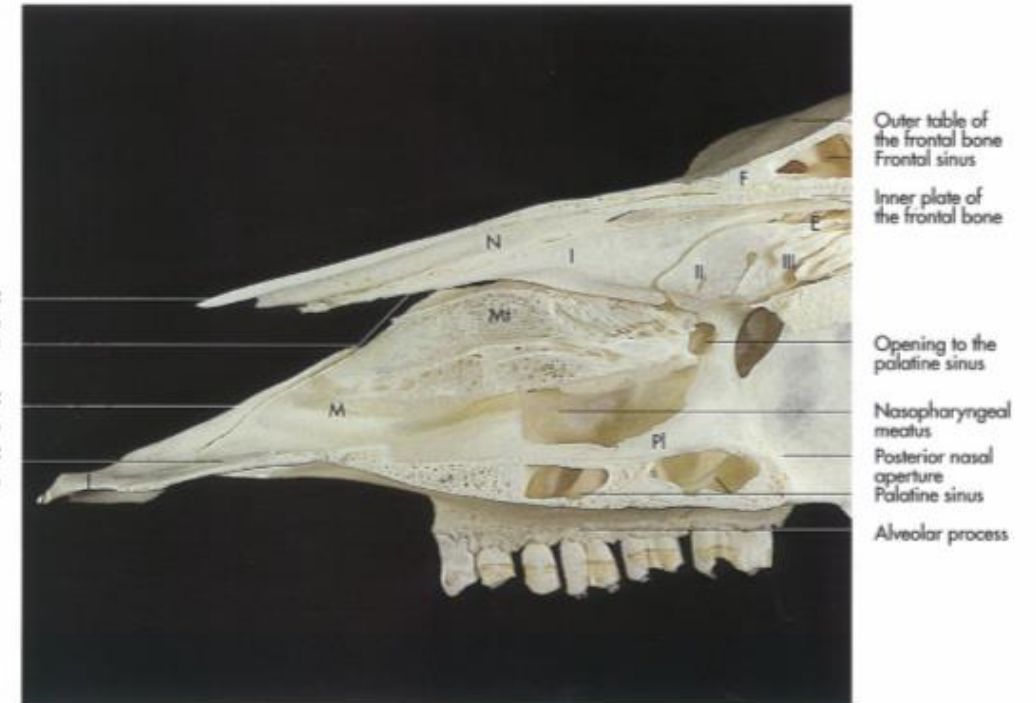
http://www.wikiwand.com/en/Nasal_concha

E Ethmoid
 F Frontal
 I Incisive
 M Maxilla
 Mt Maxilloturbinate
 N Nasal
 Pl Palatine

I Endoturbinete I
 II Endoturbinete II
 III Endoturbinete III

Rostral process of the nasal bone
 Nasoincisive notch

Nasal process of the incisive bone
 Palatine process of the incisive bone



Outer table of the frontal bone
 Frontal sinus
 Inner plate of the frontal bone

Opening to the palatine sinus

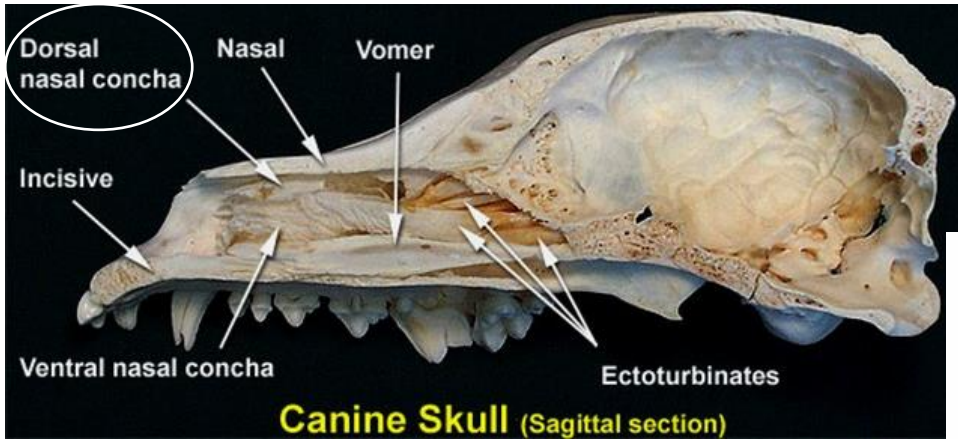
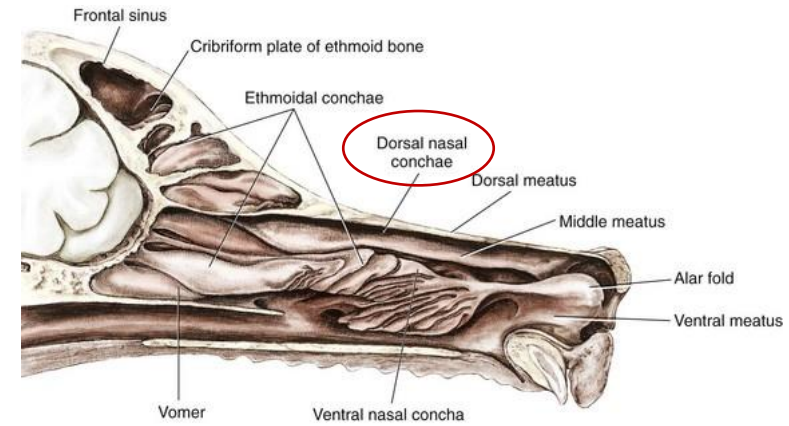
Nasopharyngeal meatus
 Posterior nasal aperture
 Palatine sinus
 Alveolar process

Fig. 1-32. Bones of the facial part of an equine skull (medial aspect of sagittal section).

ORR (RHIN, NASUS)

CONCHA NASALIS DORSALIS:

- endoturbinale I. csontos alapja - crista ethmoidalis ossis nasalishoz rögzül
- rostrál felé előreugrik



<https://slideplayer.com/slide/5379039/>

- E Ethmoid
- F Frontal
- I Incisive
- M Maxilla
- Mt Maxilloturbinate
- N Nasal
- O Occipital
- Pl Palatine
- Pt Pterygoid
- S Sphenoid

- I Endoturbinate I
- II Endoturbinate II
- III Endoturbinate III
- IV Endoturbinate IV

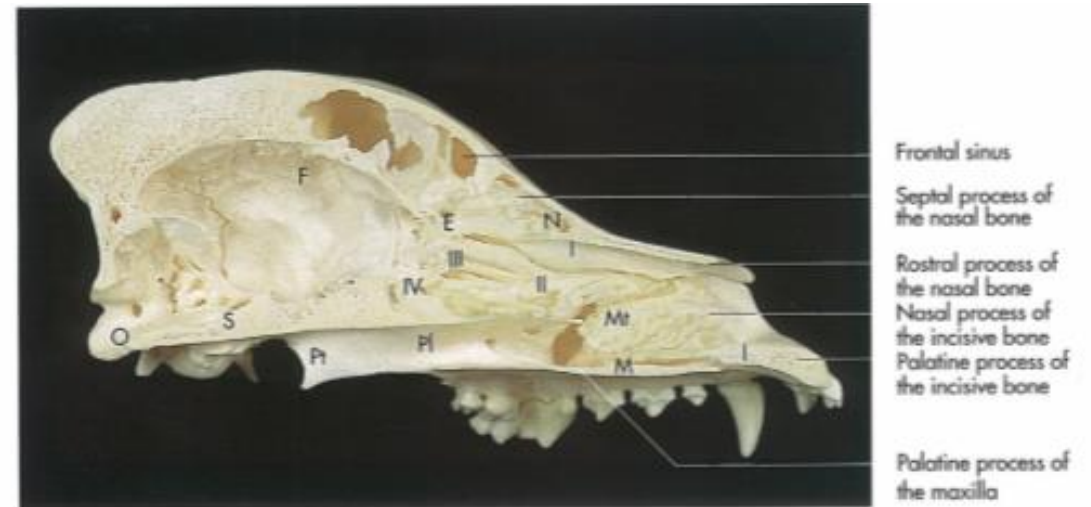


Fig. 1-30. Skull of a dog (medial aspect of sagittal section).

ORR (RHIN, NASUS)

CONCHA NASALIS MEDIA:

- sertésnél, lónál kicsi – az orrüreg caudális részében
- a rostacsont endoturbinale II. – nek felel meg

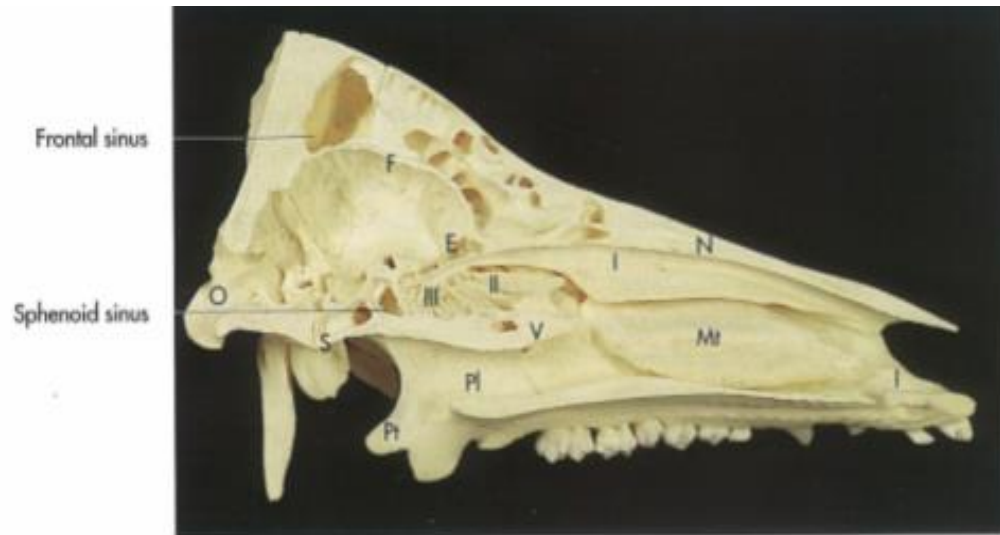


Fig. 1-31. Skull of a pig (medial aspect of sagittal section).

- E Ethmoid
- F Frontal
- I Incisive
- M Maxilla
- Mt Maxilloturbinate
- N Nasal
- Pt Palatine

- I Endoturbinale I
 - II Endoturbinale II
 - III Endoturbinale III
- Rostral process of the nasal bone
 - Nasoincisive notch
 - Nasal process of the incisive bone
 - Palatine process of the incisive bone

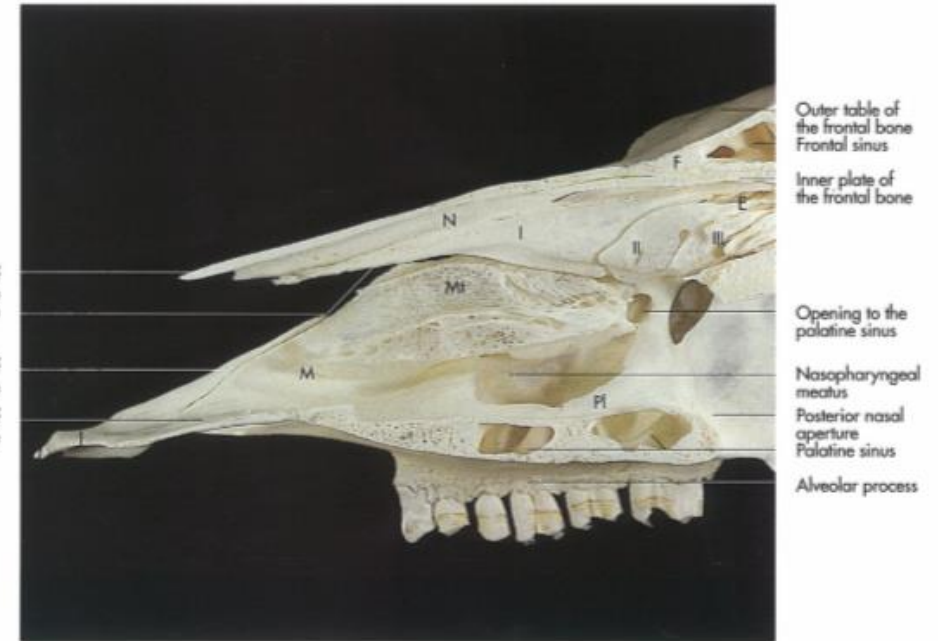


Fig. 1-32. Bones of the facial part of an equine skull (medial aspect of sagittal section).

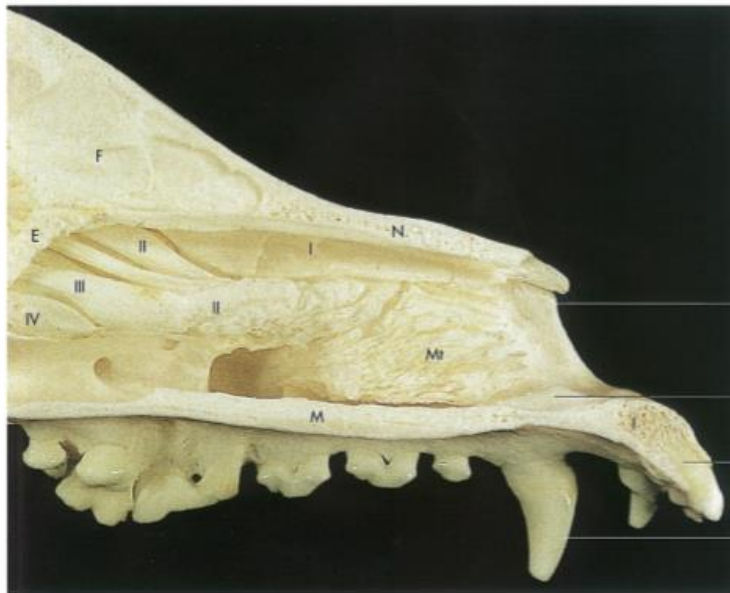
- E Ethmoid
 - F Frontal
 - I Incisive
 - Mt Maxilloturbinate
 - N Nasal
 - O Occipital
 - Pt Palatine
 - Pt Pterygoid
 - S Sphenoid
 - V Vomer
- I Endoturbinale I
 - II Endoturbinale II
 - III Endoturbinale III

ORR (RHIN, NASUS)

CONCHA NASALIS MEDIA:

- húsevőknél – erősen fejlett – rostral fele terjed
- endoturbinale II csontos alapja

F Frontal
E Ethmoid
I Incisive
M Maxilla
Mt Ventral nasal concha
N Nasal



Nasal process of the incisive bone
Palatine process of the incisive bone
Body of the incisive bone
Canine

Fig. 1-23. Bones of the facial part of a canine skull (medial aspect of sagittal section).

E Ethmoid
F Frontal
N Nasal
Mt Maxilloturbinate
O Occipital
Pl Palatine
Pt Pterygoid
S Sphenoid

Tentorium osseum
Internal acoustic meatus
Sphenoidal sinus
Foramen magnum
Occipital condyle



Frontal sinus
Ectoturbinale II
Dorsal nasal concha
Cribriform plate of the ethmoid bone
Middle nasal concha
Ventral nasal concha
Remnant of nasal septum
Vomer
Nasopharyngeal meatus

Fig. 1-29. Skull of a cat (medial aspect of sagittal section).

E Ethmoid
F Frontal
I Incisive
M Maxilla
Mt Maxilloturbinate
N Nasal
O Occipital
Pl Palatine
Pt Pterygoid
S Sphenoid

I Endoturbinale I
II Endoturbinale II
III Endoturbinale III
IV Endoturbinale IV



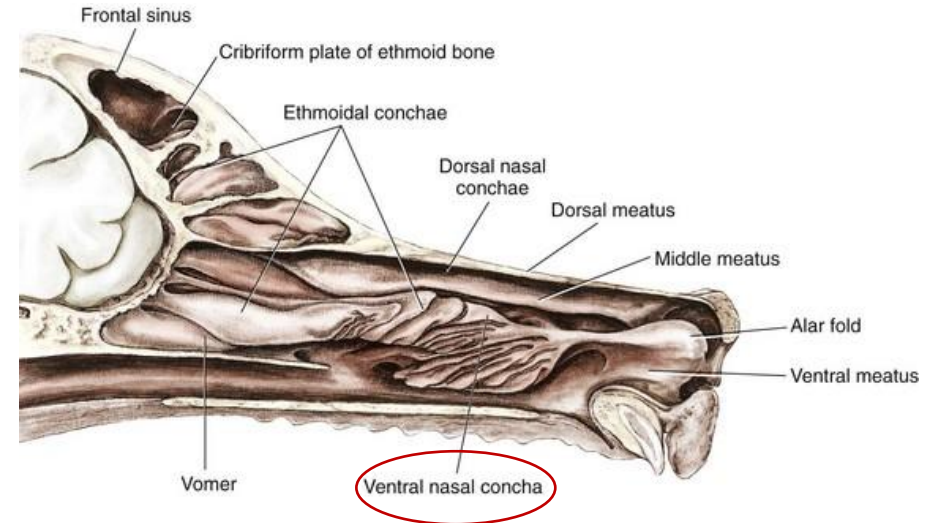
Frontal sinus
Septal process of the nasal bone
Rostral process of the nasal bone
Nasal process of the incisive bone
Palatine process of the incisive bone
Palatine process of the maxilla

Fig. 1-30. Skull of a dog (medial aspect of sagittal section).

ORR (RHIN, NASUS)

CONCHAE NASALIS VENTRALIS (MAXILLOTURBINALE):

- crista conchalis maxillae



- E Ethmoid
- F Frontal
- I Incisive
- M Maxilla
- Mt Maxilloturbinate
- N Nasal
- Pl Palatine

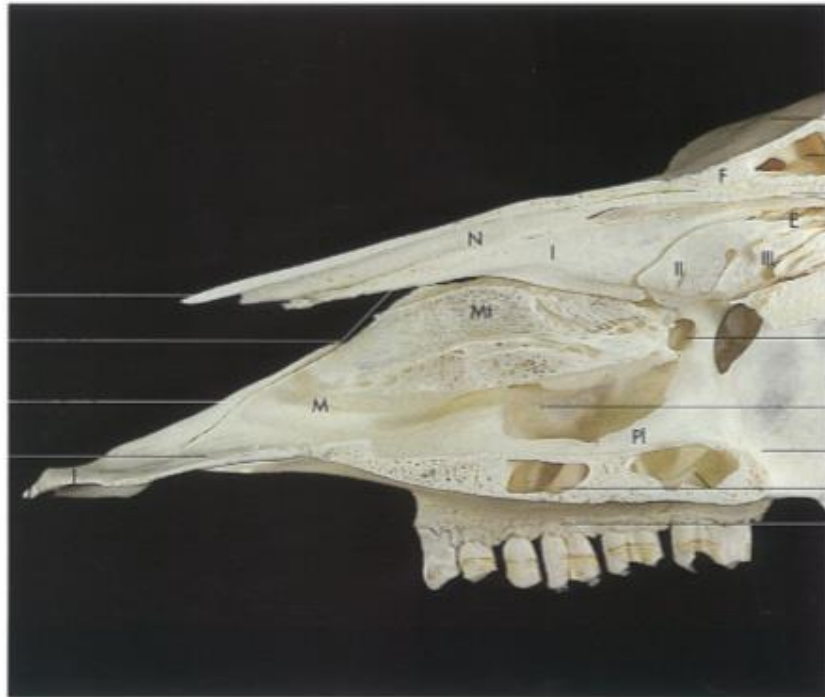
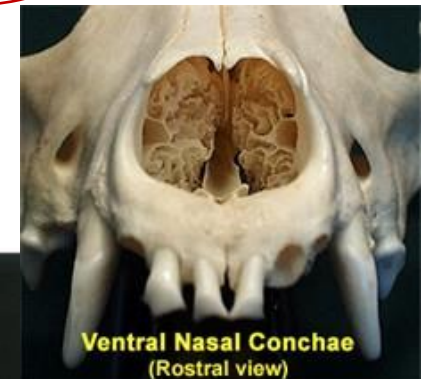


Fig. 1-32. Bones of the facial part of an equine skull (medial aspect of sagittal section).



- F Frontal
- E Ethmoid
- I Incisive
- M Maxilla
- Mt Ventral nasal concha
- N Nasal

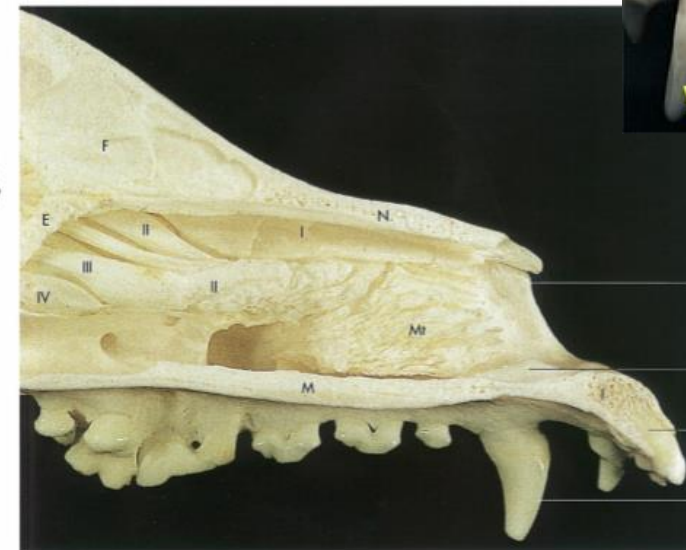


Fig. 1-23. Bones of the facial part of a canine skull (medial aspect of sagittal section).

<https://slideplayer.com/slide/5379039/>

OBERE LUFTWEGE NASE (RHIN, NASUS)

CONCHAE ETHMIODALES (SIEBBEINMUSCHELN):

- orrüreg felső részén

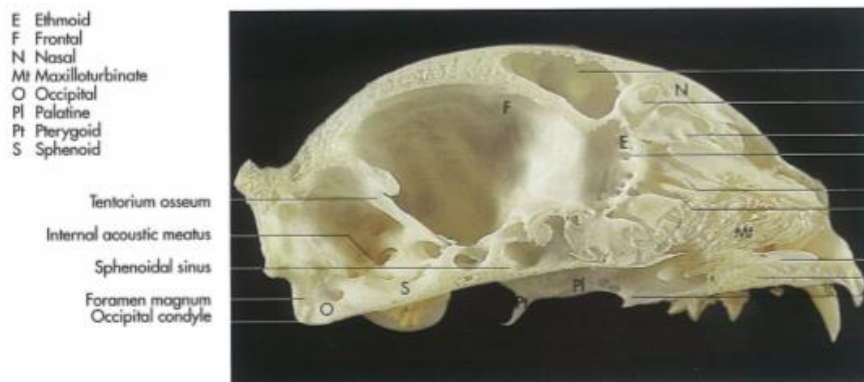
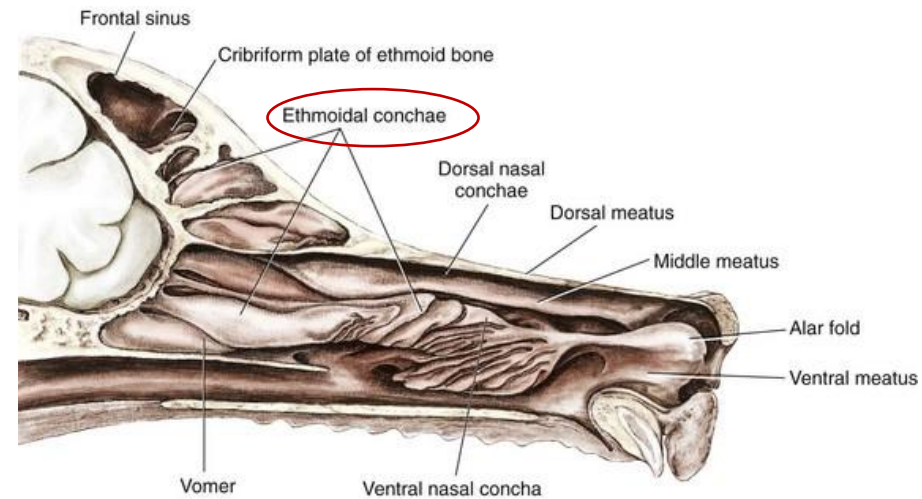


Fig. 1-29. Skull of a cat (medial aspect of sagittal section).



Fig. 1-30. Skull of a dog (medial aspect of sagittal section).



Fig. 1-31. Skull of a pig (medial aspect of sagittal section).

ORR (RHIN, NASUS)

ORRJÁRATOK (MEATUS NASI):

- orrkagylók alatt

1. MEATUS NASI DORSALIS

2. MEATUS NASI MEDIUS

3. MEATUS NASI VENTRALIS

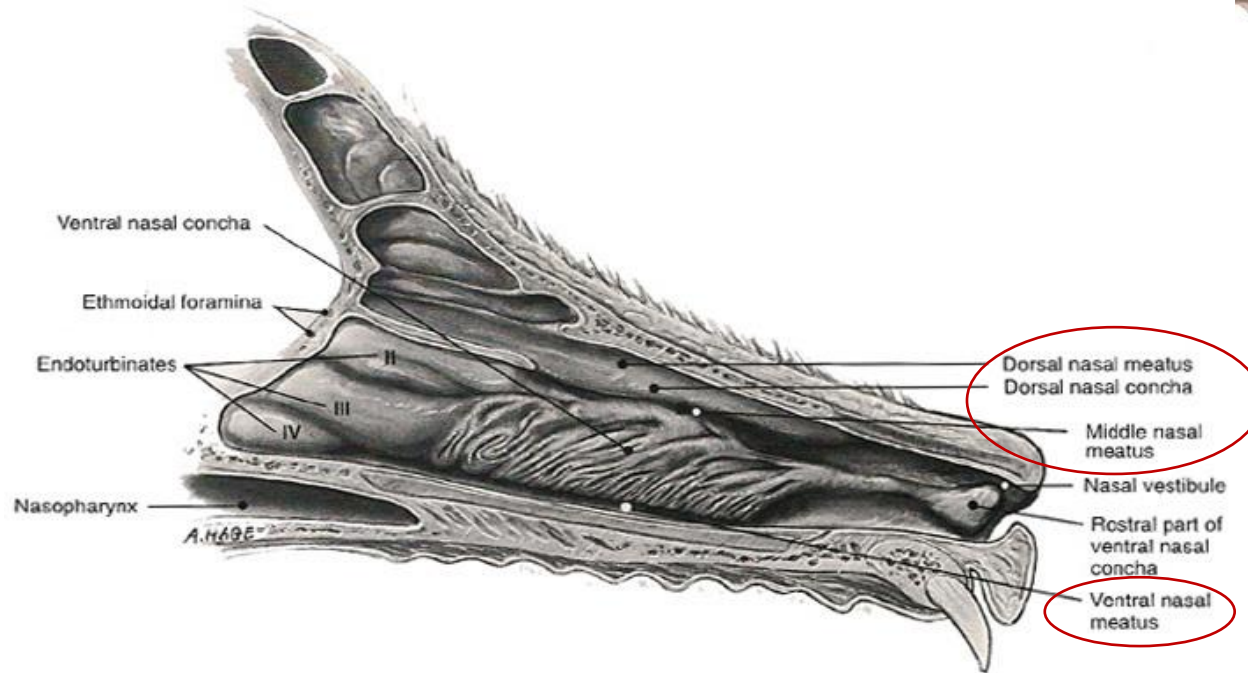
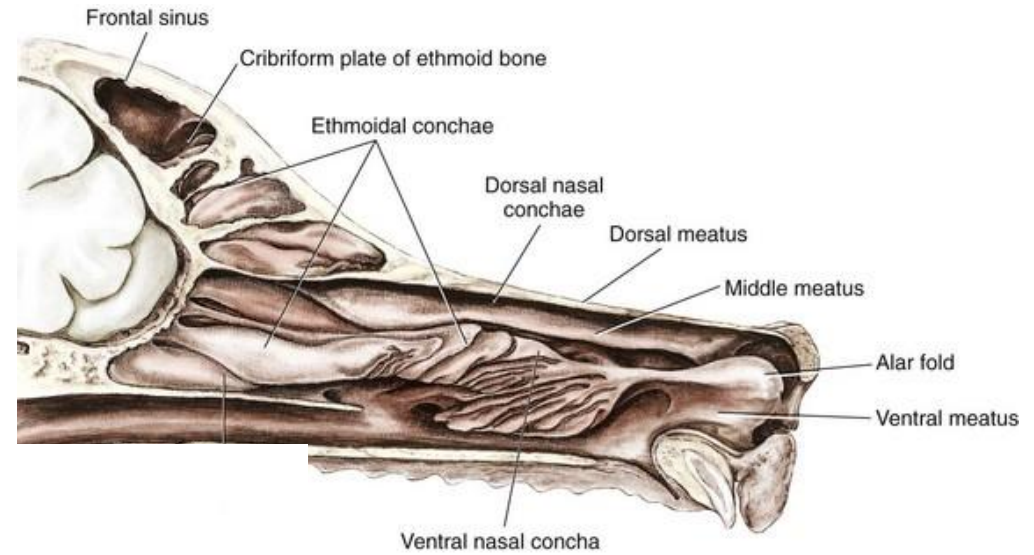
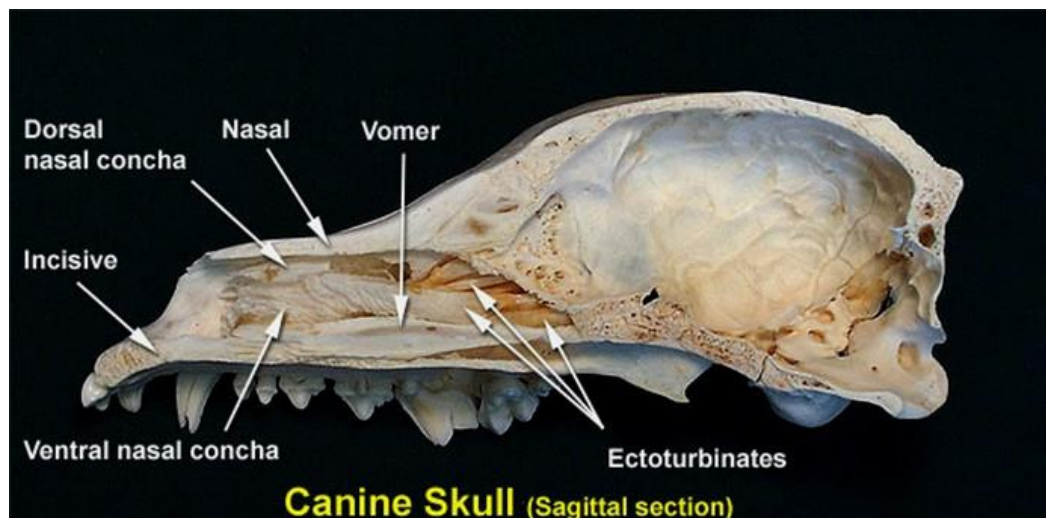
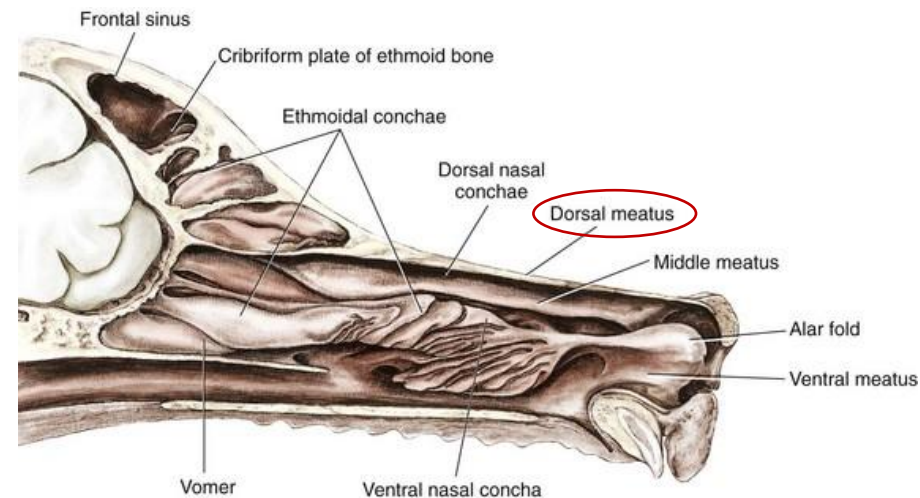


FIG. 1-87 The ventral nasal concha (parasagittal sectional view). The ventral nasal concha (formerly maxilloturbinate) is attached to the inner surface of the maxilla at the conchal crest. The concha continues rostrally into the nasal vestibule as a mucous-membrane-covered, knob-like structure. The ventral nasal concha is a separately formed bone distinct from the ethmoid bone.

ORR (RHIN, NASUS)

MEATUS NASI DORSALIS (felső vagy szaglójárat):

- orrüreg dorsalis fala és a felső orrkagyló között
- rostacsonton vakon végződik
- rostacsont caudalis szakaszát és vak végét szaglóhám borít – szaglójárat
- elülső vége a valódi orrnyílásban



- E Ethmoid
- F Frontal
- I Incisive
- M Maxilla
- Mt Maxilloturbinate
- N Nasal
- O Occipital
- Pl Palatine
- Pt Pterygoid
- S Sphenoid

- I Endoturbinete I
- II Endoturbinete II
- III Endoturbinete III
- IV Endoturbinete IV

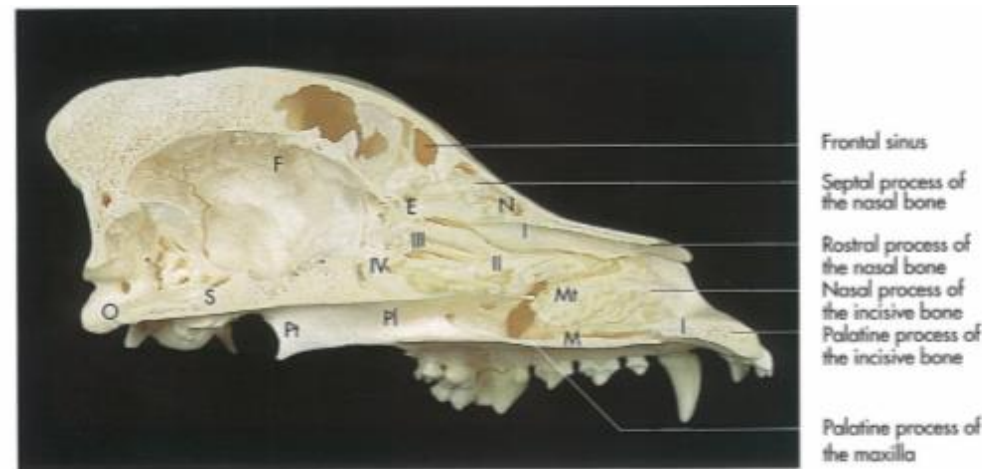
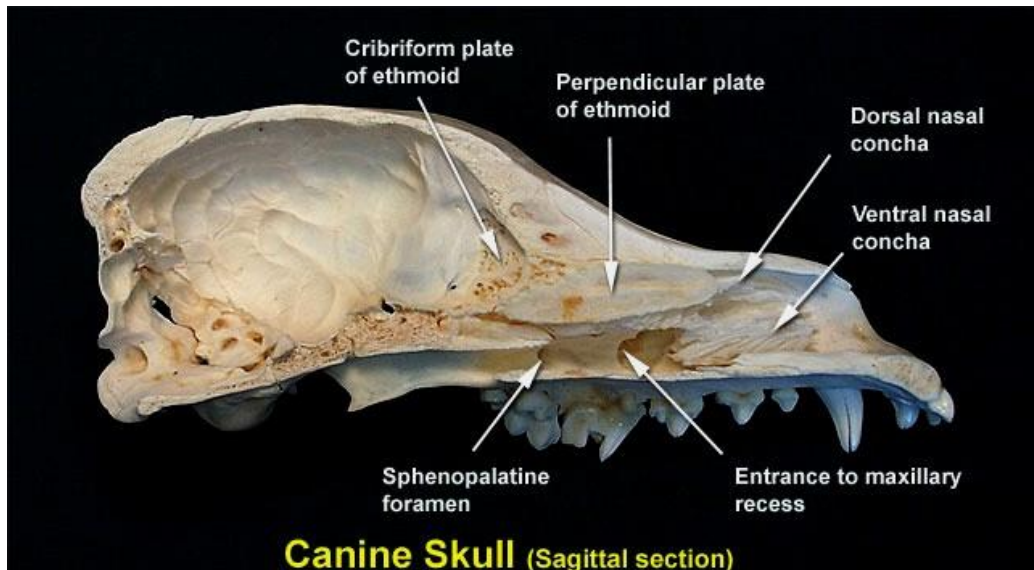
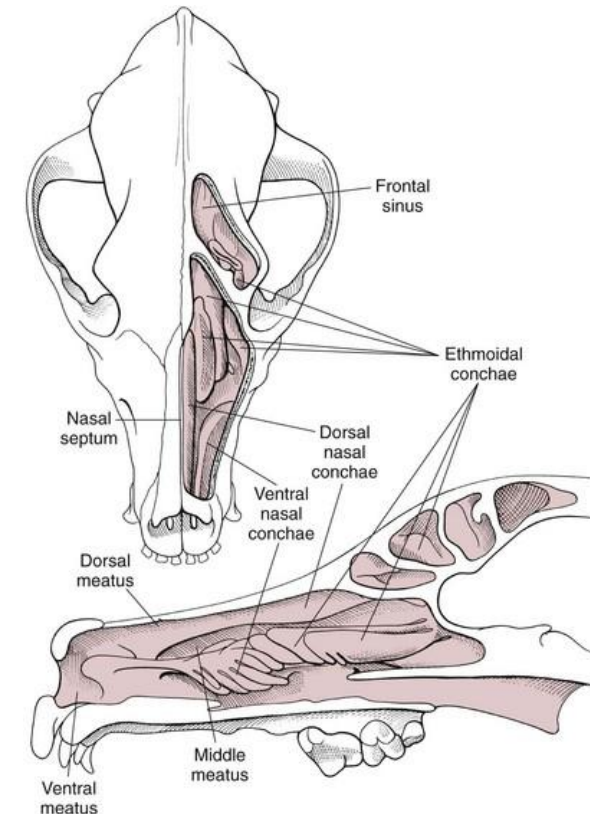
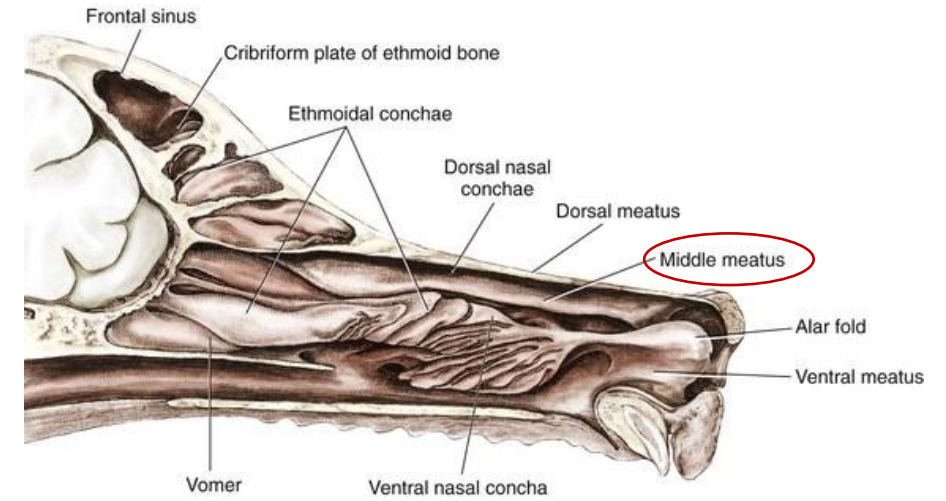


Fig. 1-30. Skull of a dog (medial aspect of sagittal section).

ORR (RHIN, NASUS)

MEATUS NASI MEDIUS (középső orrjárat):

- dorsalis és ventralis orrkagylók között
- Húsevőkben, kérődzőkben – dorsalis és ventralis szára van
- dorsalis szára a rostacsonton vakon végződik
- ventralis szára az alsó orrjáratához vezet
- hátsó szakaszán az aditus nasomaxillaris az orrmelléküregekbe lehet jutni – **Sinus járat**



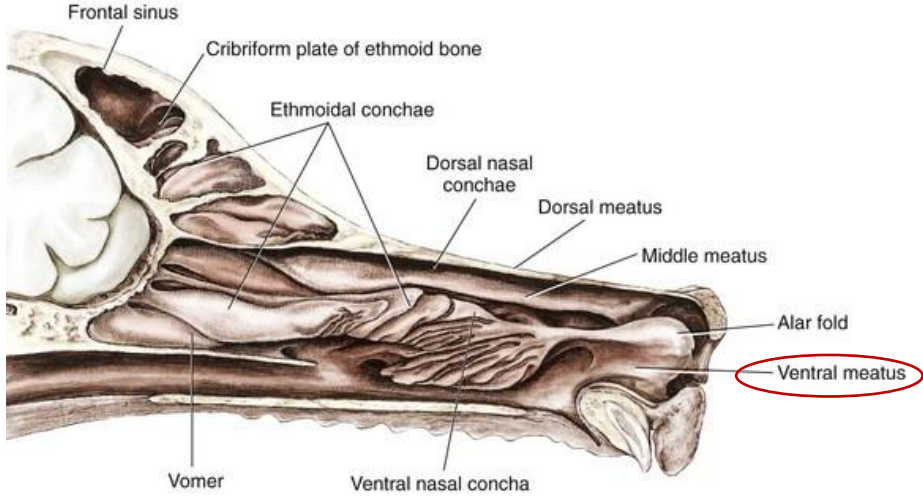
<https://slideplayer.com/slide/5379039/>

<https://veteriankey.com/surgery-of-the-upper-respiratory-system/>

ORR (RHIN, NASUS)

MEATUS NASI VENTRALIS (alsó orrjárat, légzőjárat):

- ventralis orrkagyló és az orrüreg alja között
- meatus nasopharyngeuson és a choanákön át a nasopharynxba vezet

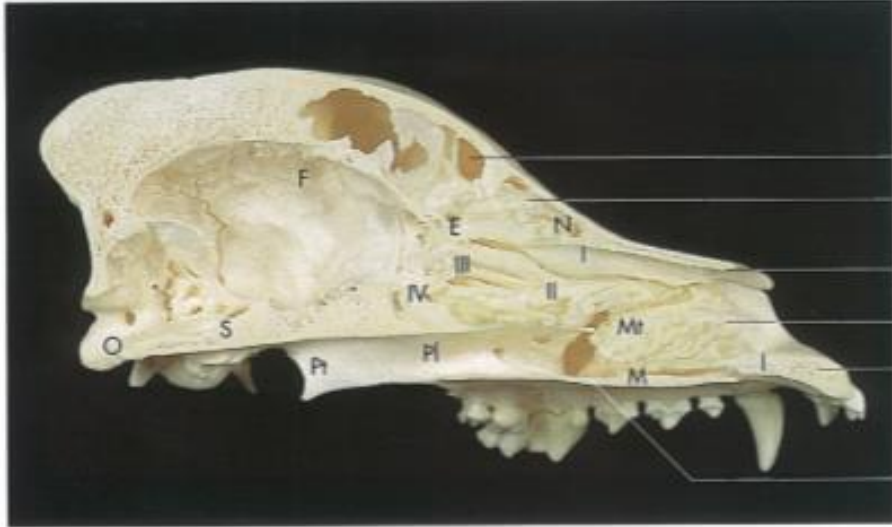


4.8 Medianschnitt durch den Kopf eines Pferdes

- | | | |
|--|--------------------------------------|---------------------------|
| 1 Sinus frontalis | 9 Plica recta | 18 Stylohyoideum |
| 2 Meatus nasi dorsalis | 10 Plica alaris | 19 Tuberculum comiculatum |
| 3 Concha nasalis dorsalis | 11 Plica basalis | 20 Plica vocalis |
| 4 Concha nasalis media | 12 harter Gaumen | 21 Ventriculus laryngis |
| 5 Concha nasalis ventralis | 13 Vomer | 22 Plica aryepiglottica |
| 6 Conchae ethmoidales mit Meatus ethmoidales | 14 Choane (Pfeil) | 23 Epiglottis |
| 7 Meatus nasi medius | 15 Pars nasalis pharyngis | 24 weicher Gaumen |
| 8 Meatus nasi ventralis | 16 Ostium pharyngeum tubae auditivae | |
| | 17 Luftsack | |

- E Ethmoid
- F Frontal
- I Incisive
- M Maxilla
- Mt Maxilloturbinate
- N Nasal
- O Occipital
- Pl Palatine
- Pt Pterygoid
- S Sphenoid

- I Endoturbinat I
- II Endoturbinat II
- III Endoturbinat III
- IV Endoturbinat IV



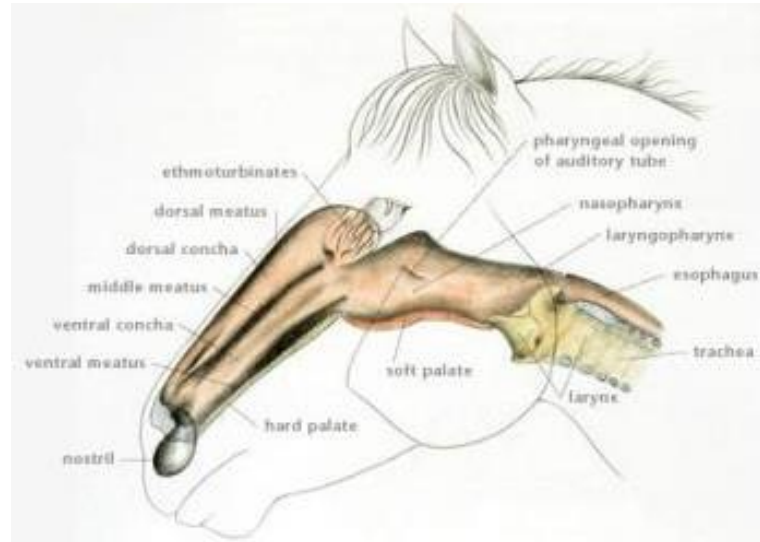
- Frontal sinus
- Septal process of the nasal bone
- Rostral process of the nasal bone
- Nasal process of the incisive bone
- Palatine process of the incisive bone
- Palatine process of the maxilla

Fig. 1-30. Skull of a dog (medial aspect of sagittal section).

ORR (RHIN, NASUS)

FUNDUS NASI:

- orrüreg alapja
- rostacsont ethmoturbinaléi alkotják



<https://www.merckvetmanual.com/respiratory-system/respiratory-diseases-of-horses/diseases-of-the-nasal-passages-in-horses>

Midline view of a split pony head, right side with the nasal septum removed

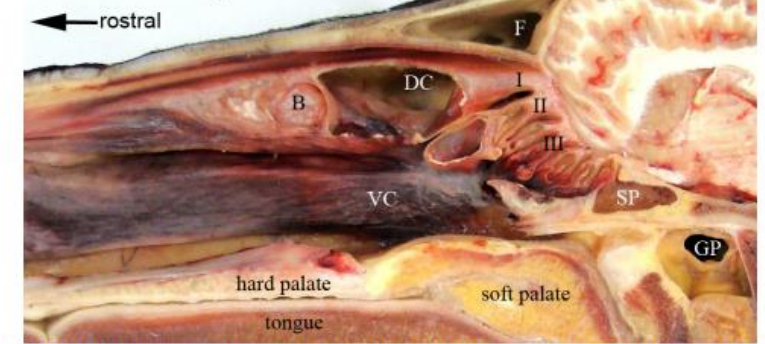
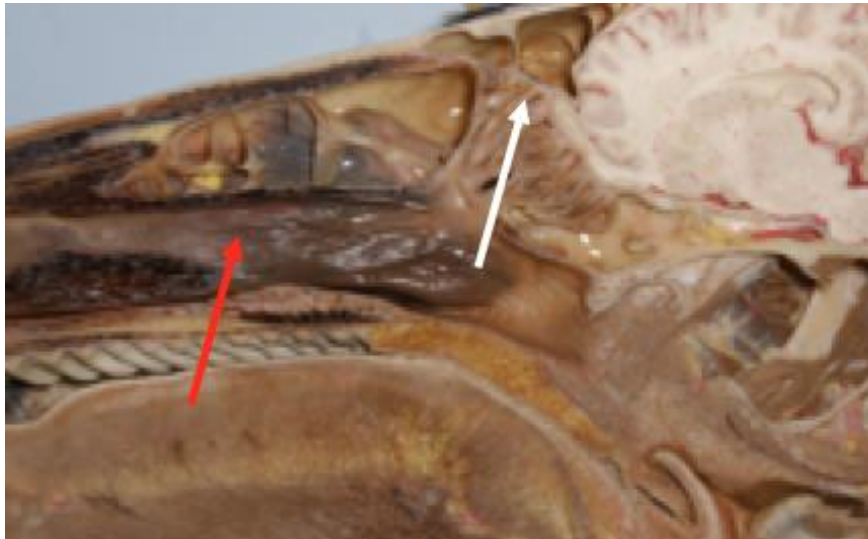


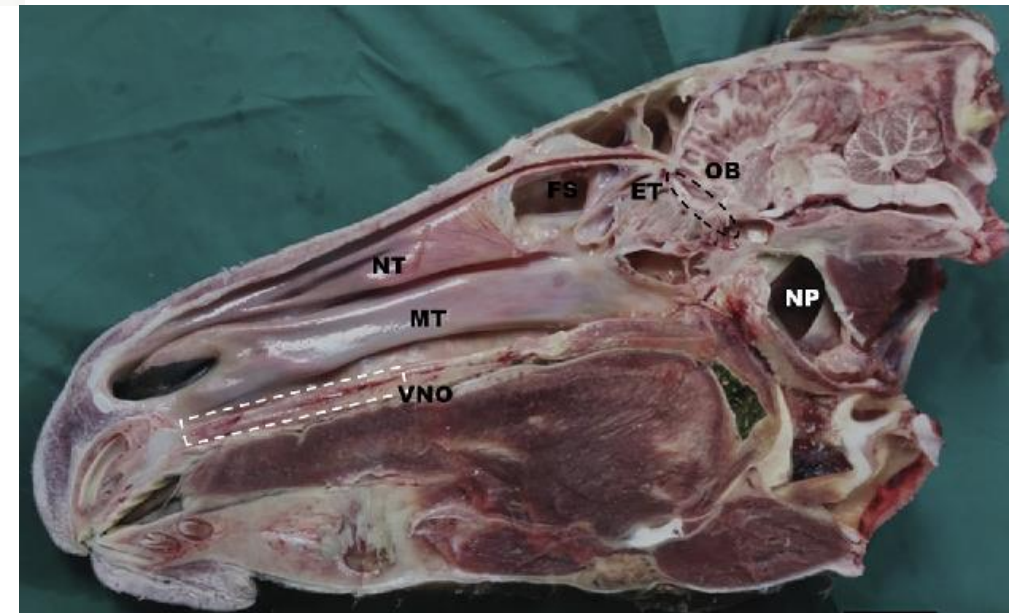
Figure 2. Split head of pony with windows cut into the dorsal concha and ethmoconcha II. I = ethmoconcha I (dorsal concha), II = ethmoconcha II (middle concha), III = ethmoconcha III, B = bulla in dorsal concha, DC = dorsal conchal sinus, F = frontal sinus, GP = guttural pouch, SP = sphenopalatine sinus, VC = ventral concha.

<http://www.equinedental.eu/uploads/documents/FOCUSonDENTISTRYPROCEEDINGS.pdf>



•1' Endoturbinates (Red) 2' Ectoturbinates (white)

<https://www.memorangapp.com/flashcards/39973/Anatomy+Bovine%2C+ruminant+and+horse+skull/>



ET: ethmoturbinate

<https://www.sciencedirect.com/science/article/abs/pii/S0040816616300076>

ORRNYÍLÁSOK (NARES)

- az orrüreg az orrnyílásokon át közlekedik a külvilággal
- két oldalról a külső és belső orrszárny (orrcimpa, ala nasi medialis et lateralis) határolja

ORRSZÁRNYAK:

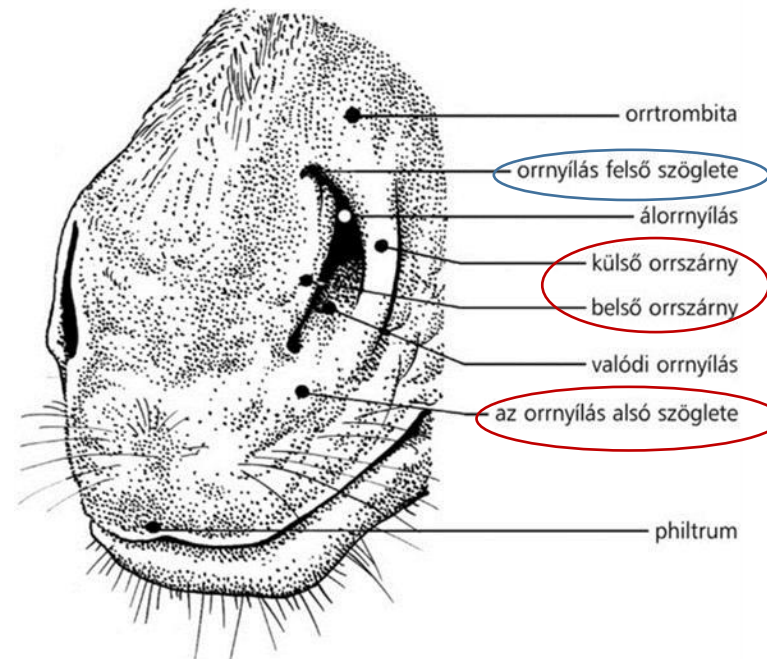
- az orrszárnyak dorsalis és ventralis szögletben (angulus nasi dorsalis et ventralis) találkoznak
- váza – orrporcok
- lóban nincs porcos váza



<https://www.alamy.com/stock-photo/horse-nose-nostrils.html>



<https://pixabay.com/de/photos/search/nostrils/>



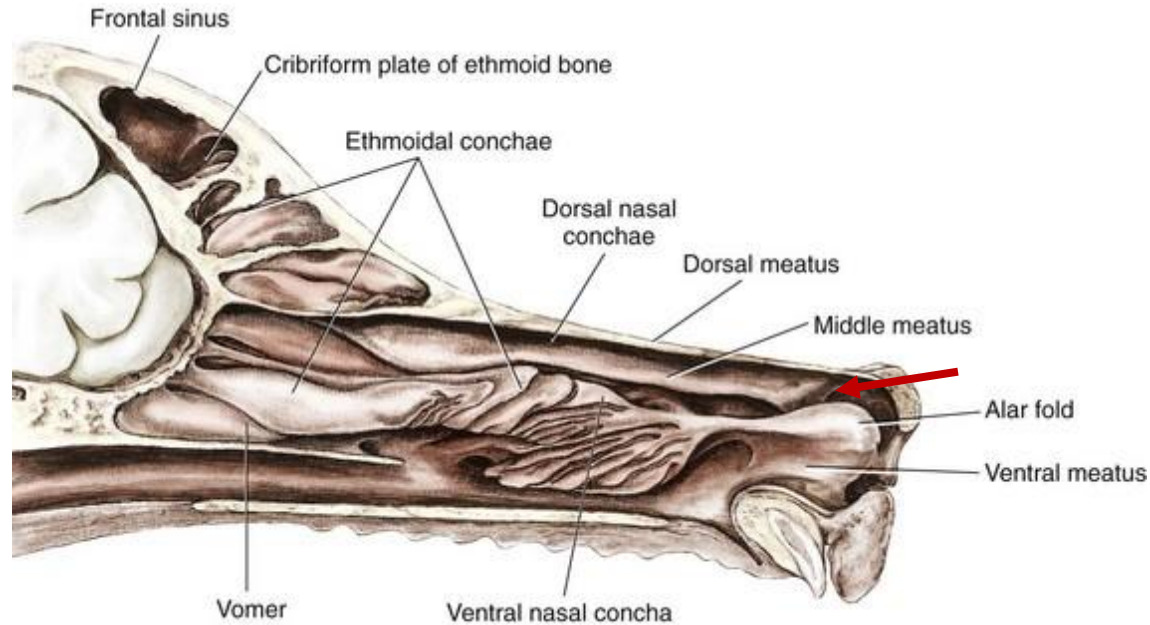
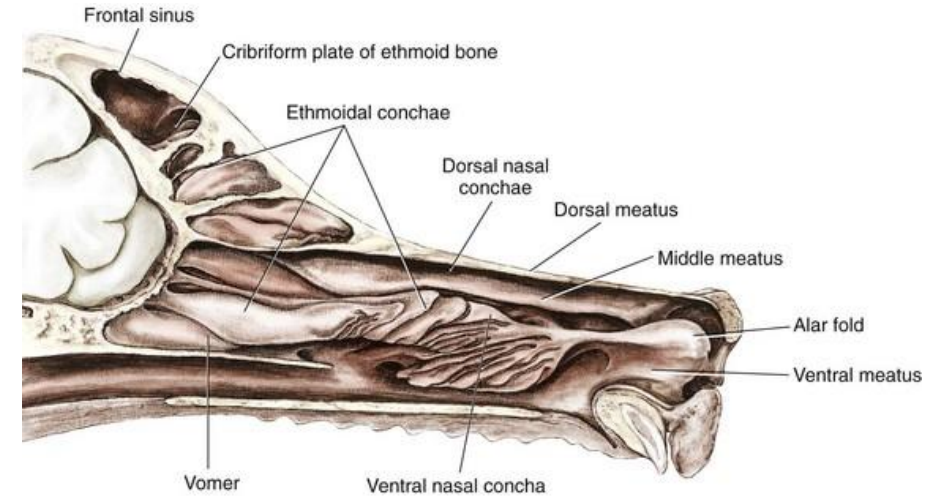
ORR (RHIN, NASUS)

ORRÜREG NYÁLKAHÁRTYÁJA:

- redőket képez

PLICA RECTA:

- a dorsalis orrkagylóhoz kapcsolódik
- lóban – az eredésénél egy dorsalis és ventralis szárra válik



4.8 Medianschnitt durch den Kopf eines Pferdes

- | | | |
|--|--------------------------------------|----------------------------|
| 1 Sinus frontalis | 9 Plica recta | 18 Stylohyoideum |
| 2 Meatus nasi dorsalis | 10 Plica aralis | 19 Tuberculum corniculatum |
| 3 Concha nasalis dorsalis | 11 Plica basalis | 20 Plica vocalis |
| 4 Concha nasalis media | 12 harter Gaumen | 21 Ventriculus laryngis |
| 5 Concha nasalis ventralis | 13 Vomer | 22 Plica aryepiglottica |
| 6 Conchae ethmoidales mit Meatus ethmoidales | 14 Choane (Pfeil) | 23 Epiglottis |
| 7 Meatus nasi medius | 15 Pars nasalis pharyngis | 24 weicher Gaumen |
| 8 Meatus nasi ventralis | 16 Ostium pharyngeum tubae auditivae | |
| | 17 Luftsack | |

ORR (RHIN, NASUS)

ORRÜREG NYÁLKAHÁRTYÁJA:

PLICA ALARIS (SZÁRNYREDŐ):

- ventralis orrkagylótól dorsalisán
- szárnyredő fölött – ál – orrnyílás – orrtrombitába (diverticulum nasi) vezet
- szárnyredők alatt – valódi orrnyílás – légzőjáratba folytatódik

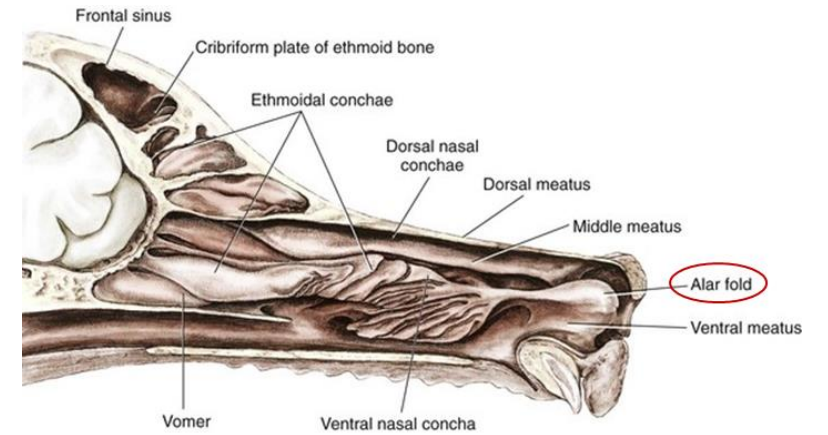


Fig. 8-10. Paramedian section of the head of a dog, medial aspect (courtesy of PD Dr. J. Maierl, Munich).



4.8 Medianschnitt durch den Kopf eines Pferdes

- | | | |
|--|--------------------------------------|----------------------------|
| 1 Sinus frontalis | 9 Plica recta | 18 Stylohyoideum |
| 2 Meatus nasi dorsalis | 10 Plica alaris (circled in red) | 19 Tuberculum corniculatum |
| 3 Concha nasalis dorsalis | 11 Plica basalis | 20 Plica vocalis |
| 4 Concha nasalis media | 12 harter Gaumen | 21 Ventriculus laryngis |
| 5 Concha nasalis ventralis | 13 Vomer | 22 Plica aryepiglottica |
| 6 Conchae ethmoidales mit Meatus ethmoidales | 14 Choane (Pfeil) | 23 Epiglottis |
| 7 Meatus nasi medius | 15 Pars nasalis pharyngis | 24 weicher Gaumen |
| 8 Meatus nasi ventralis | 16 Ostium pharyngeum tubae auditivae | |
| | 17 Luftsack | |

ORR (RHIN, NASUS)

ORRÜREG NYÁLKAHÁRTYÁJA:

PLICA BASALIS:

- lóban ventralis orrkagylótól rostral felé
- Ca. – Bo. - Su. – ventralisan a concha nasalis ventralistól
 - rostralisan a plica alarissal kapcsolódik



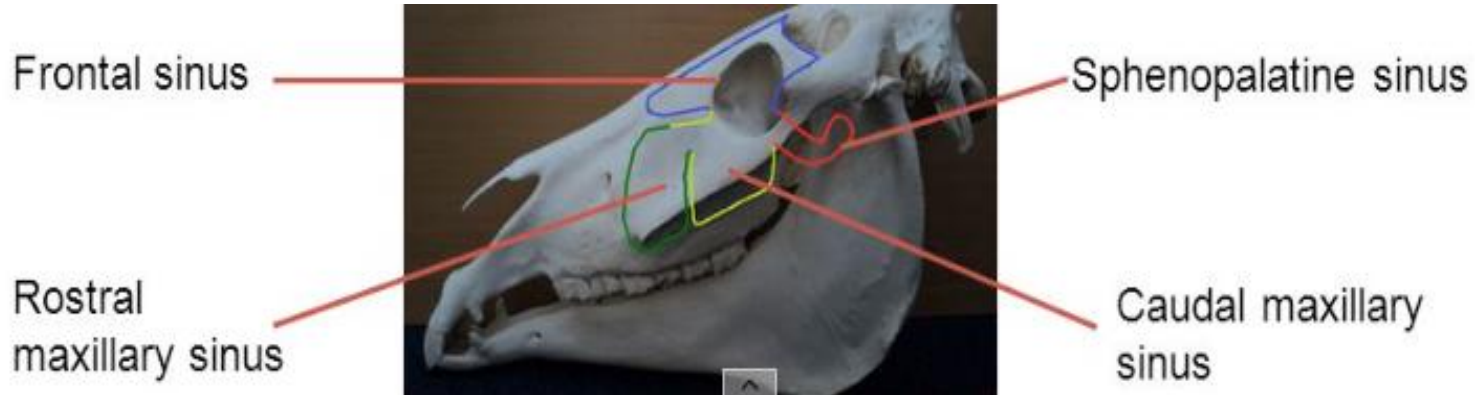
4.8 Medianschnitt durch den Kopf eines Pferdes

- | | | |
|--|--------------------------------------|----------------------------|
| 1 Sinus frontalis | 9 Plica recta | 18 Stylohyoideum |
| 2 Meatus nasi dorsalis | 10 Plica alaris | 19 Tuberculum corniculatum |
| 3 Concha nasalis dorsalis | 11 Plica basalis | 20 Plica vocalis |
| 4 Concha nasalis media | 12 harter Gaumen | 21 Ventriculus laryngis |
| 5 Concha nasalis ventralis | 13 Vomer | 22 Plica aryepiglottica |
| 6 Conchae ethmoidales mit Meatus ethmoidales | 14 Choane (Pfeil) | 23 Epiglottis |
| 7 Meatus nasi medius | 15 Pars nasalis pharyngis | 24 weicher Gaumen |
| 8 Meatus nasi ventralis | 16 Ostium pharyngeum tubae auditivae | |
| | 17 Luftsack | |

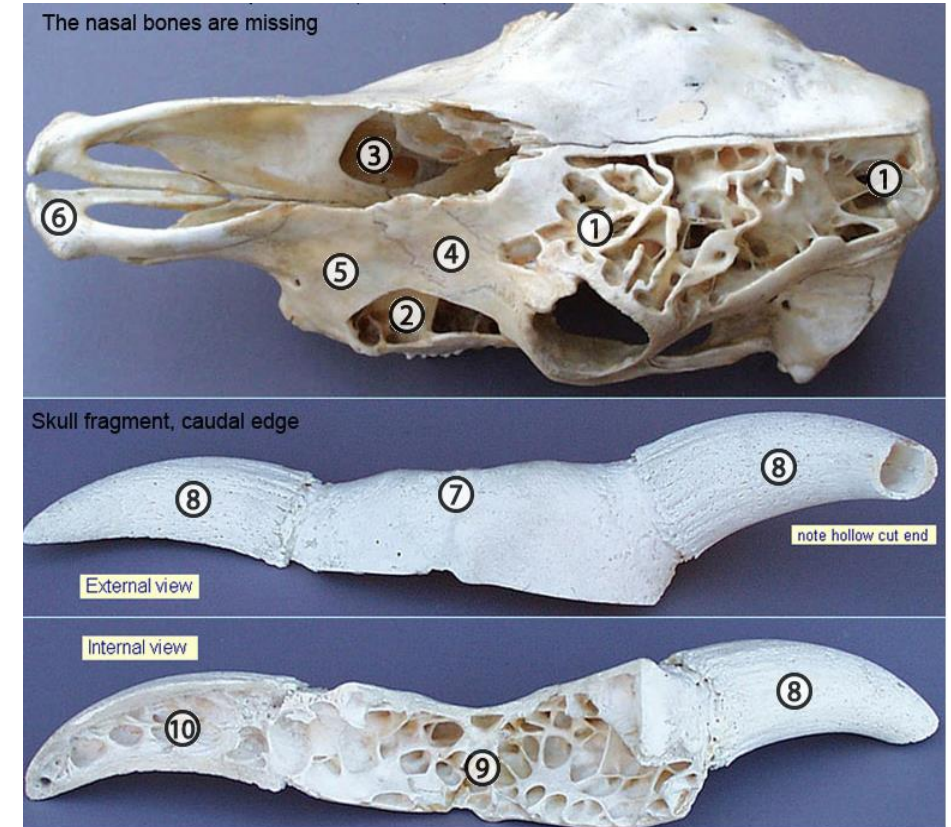
Fig. 8-10. Paramedian section of the head of a dog, medial aspect (courtesy of PD Dr. J. Maijerl, Munich).

ORRMELLÉKÜREGEK (SINUS PARANASALES)

- nyálkahártyával bélelt, levegővel telt üregek
- fiatal állatokban kevésbé fejlett
- a kor előrehaladtával megnagyobbodnak
- csökkentik a koponya súlyát
- *a pneumatizáció Bo.nál és Su-nál jelentős*



<https://slideplayer.com/slide/3862879/>

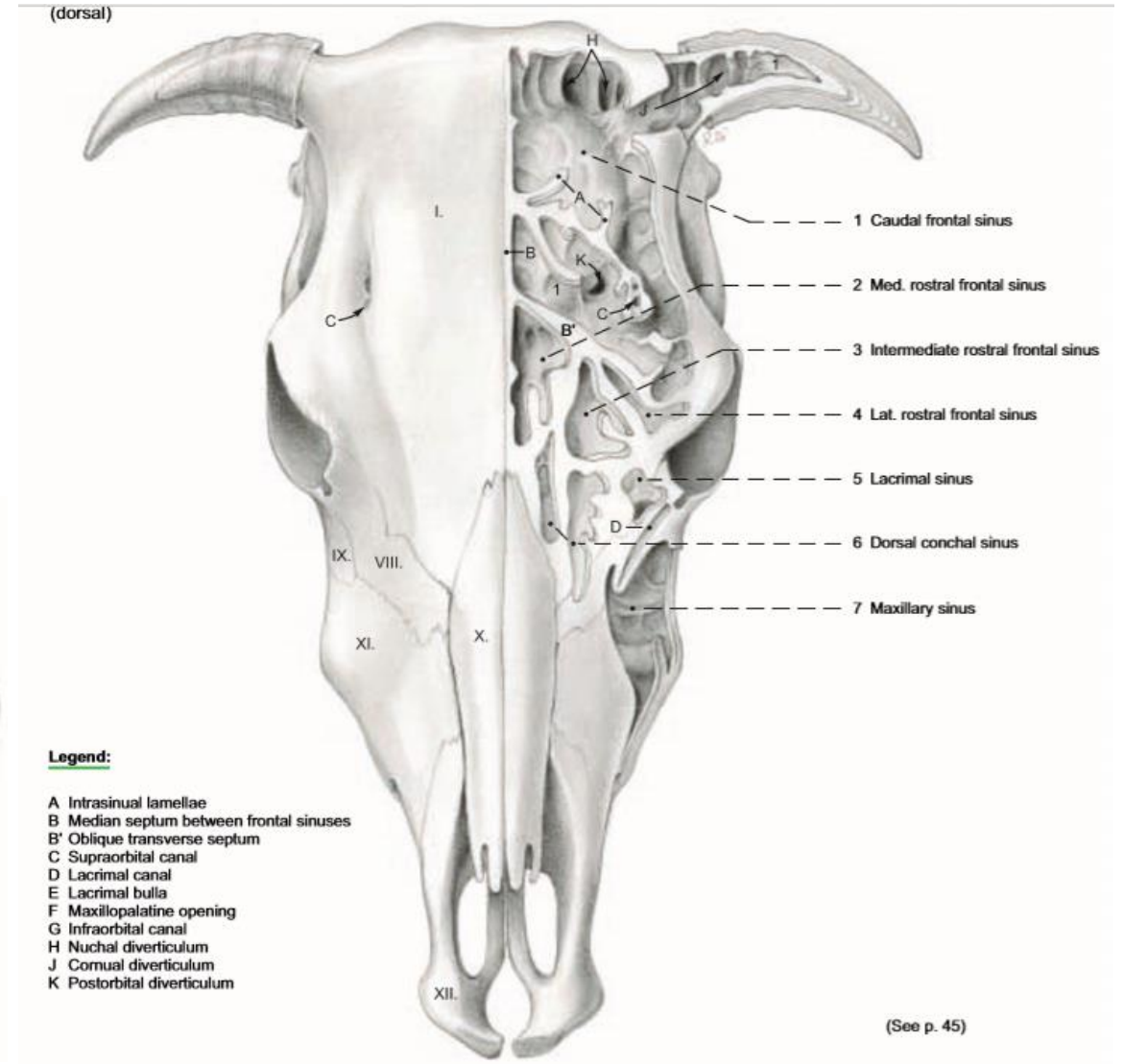
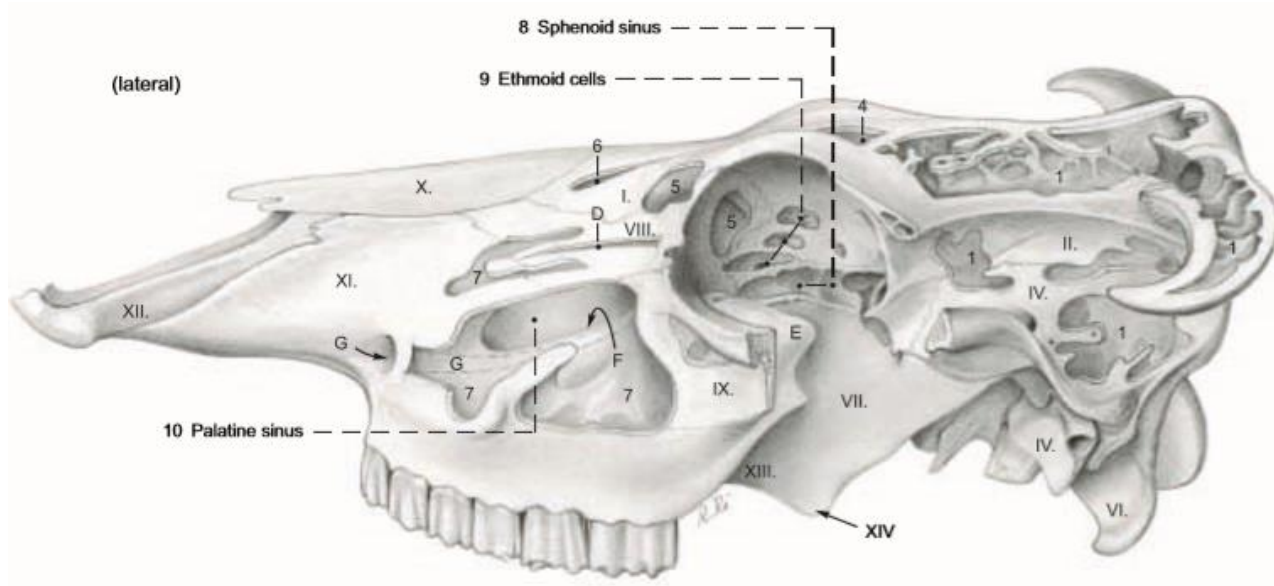


Bovine skull, dorsal views. 1, extensive frontal sinus; 2, maxillary sinus; 3, palatine sinus; 4, lacrimal bone; 5, maxilla; 6, incisive bone; 7, dorsal surface of skull; 8, cornual process; 9, frontal sinus; 10, extension of the frontal sinus into the cornual process.

<http://vanat.cvm.umn.edu/ungDissect/Lab18/lmg18-9.html>

ORRMELLÉKÜREGEK (SINUS PARANASALES)

1. SINUS MAXILLARIS
2. SINUS FRONTALIS
3. SINUS PALATINUS
4. SINUS SPHENOIDALIS
5. SINUS LACRIMALIS
6. *CELLULAE ETHMOIDALES – Su, Bo*



ORRMELLÉKÜREGEK (SINUS PARANASALES)

SINUS MAXILLARIS (állcsonti öböl):

- maxilla caudalis részében

LÓBAN:

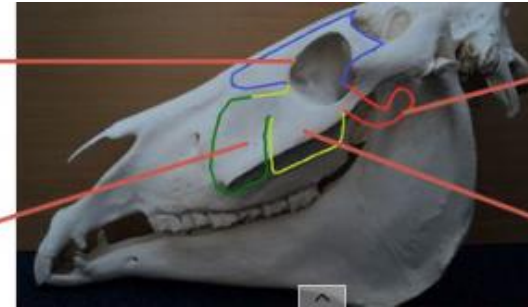
- septum sinuum maxillarium osztja egy sinus maxillaris rostralisra (seu conchomaxillaris) et caudalisra (seu Highmore)
- sinus maxillaris rostralis et caudalis a középső orrjáráttal közlekedik az apertura nasomaxillaris on át
- canalis infraorbitalis halad át

Frontal sinus

Sphenopalatine sinus

Rostral maxillary sinus

Caudal maxillary sinus



F Frontal
I Incisive
L Lacrimal
M Maxilla
N Nasal
Pl Palatine
Pt Pterygoid
Z Zygomatic

Infraorbital foramen

Interalveolar margin

Lateral alveolar border of the maxilla



Supraorbital foramen

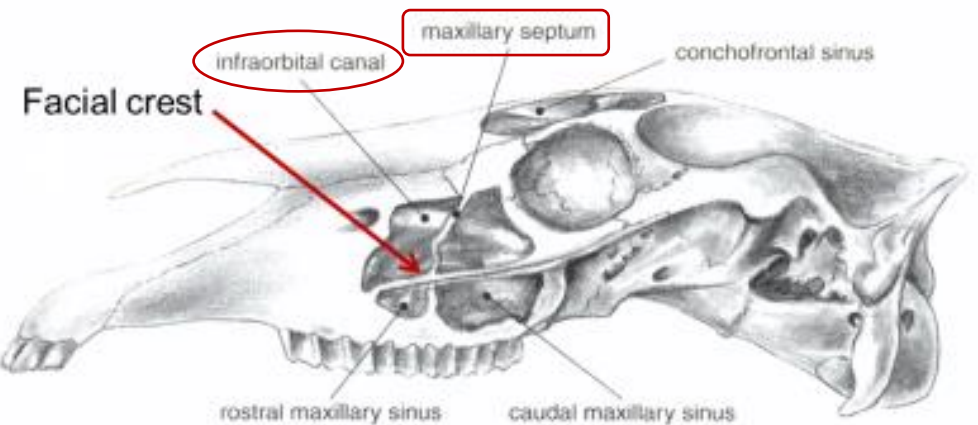
Frontal sinus

Rostral maxillary sinus

Caudal maxillary sinus

Pterygoid process of the basisphenoid bone

Facial crest



<https://www.studyblue.com/notes/n/paranasal-sinuses/deck/2449519>

Fig. 1-64. Frontal and maxillary sinuses of a horse (lateral aspect).

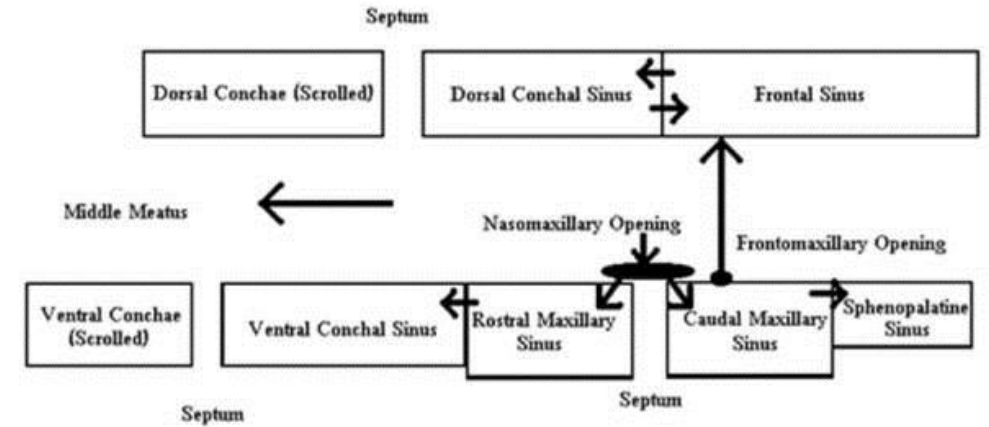
ORMELLÉKÜREGEK (SINUS PARANASALES)

SINUS MAXILLARIS (állcsonti öböl):

LÓBAN:

SINUS CONCHOMAXILLARIS

- sinus maxillaris rostralis elülső része egybeolvad az alsó orrkagyló (sinus conchae ventralis pars caudalis) hátsó részével



<https://studentvet.wordpress.com/2011/12/05/paranasal-sinuses-in-the-horse/>

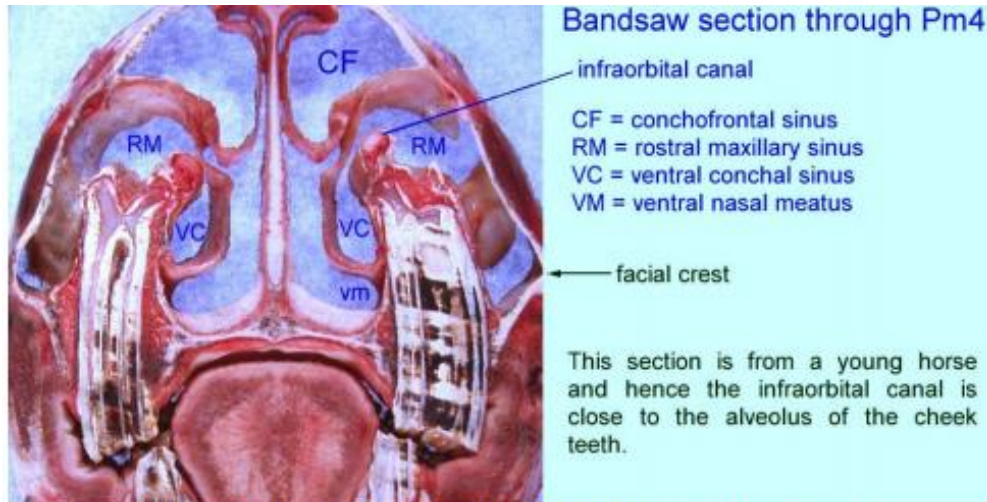
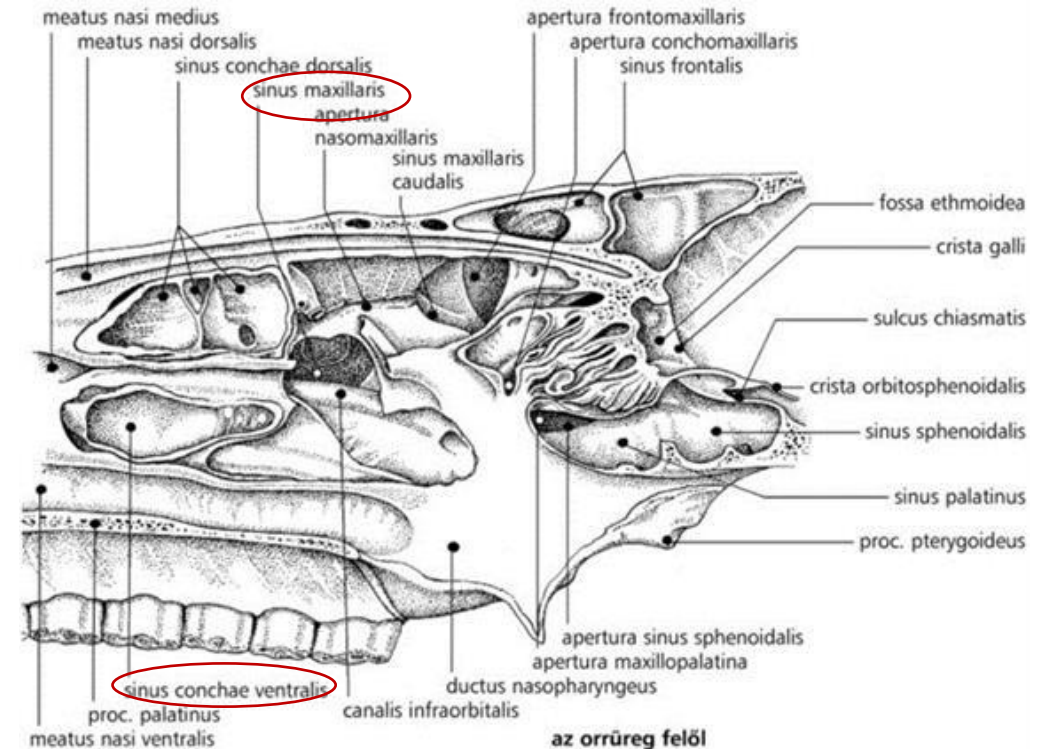


Figure 3. Bandsaw section through the rostral maxillary sinus.

<http://www.equinedental.eu/uploads/documents/FOCUSonDENTISTRYPROCEEDINGS.pdf>



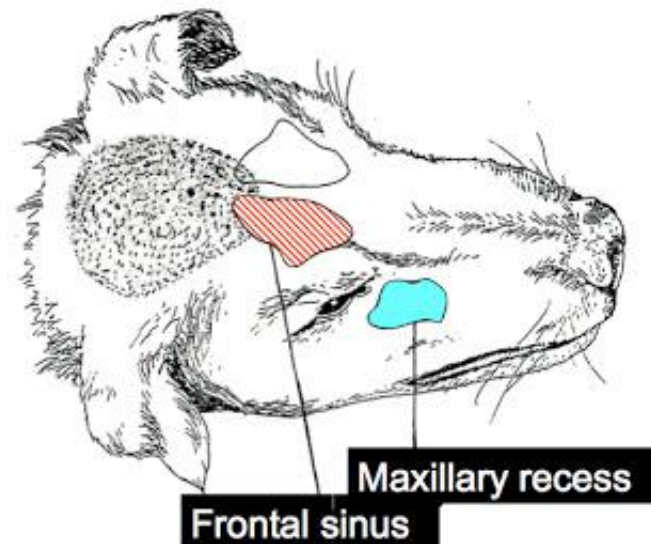
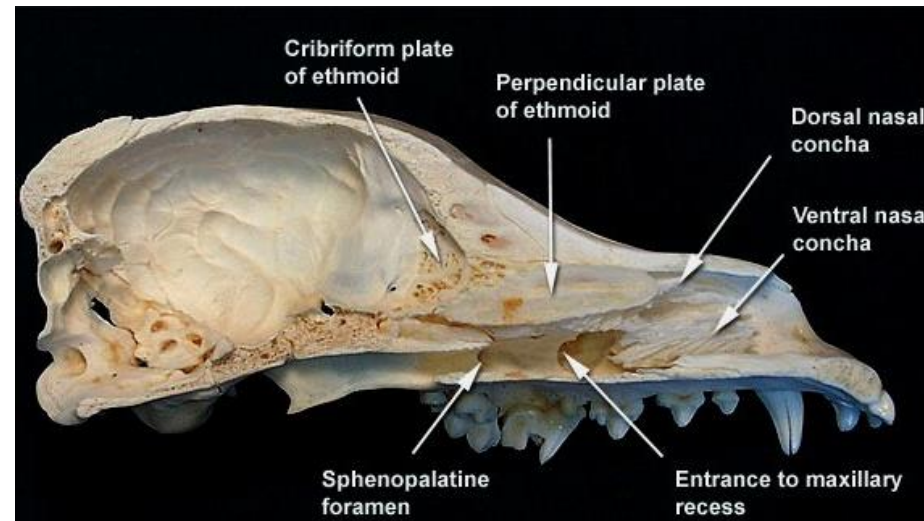
ORRMELLÉKÜREG (SINUS PARANASALES)

HÚSEVŐKBEN:

- Recessus maxillaris
- 3 – 6-ik zápfog magasságában

RECESSUS MAXILLARIS:

- gll. nasalis lateralis
- orrüreggel az apertura nasomaxillarison közlekedik
- macskában nincs



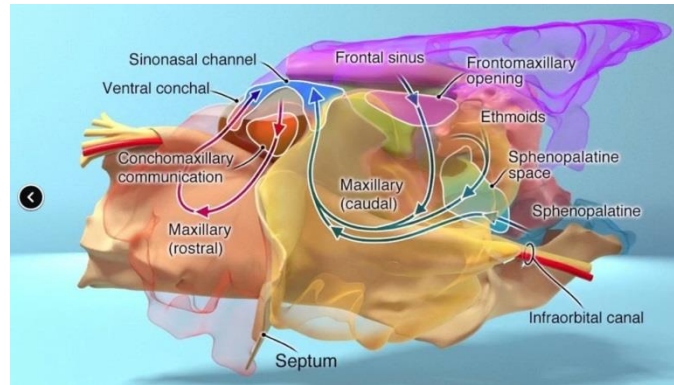
ORRMELLÉKÜREGEK (SINUS PARANASALES)

SINUS FRONTALIS (homloköböl):

- középső orrjáratba nyílik

LÓBAN

- felső orrkagylóval közlekedik - sinus conchofrontalis
- sinus maxillaris caudalissal az aditus frontomaxillarisson keresztül áll kapcsolatban



<https://vimeo.com/254730765>

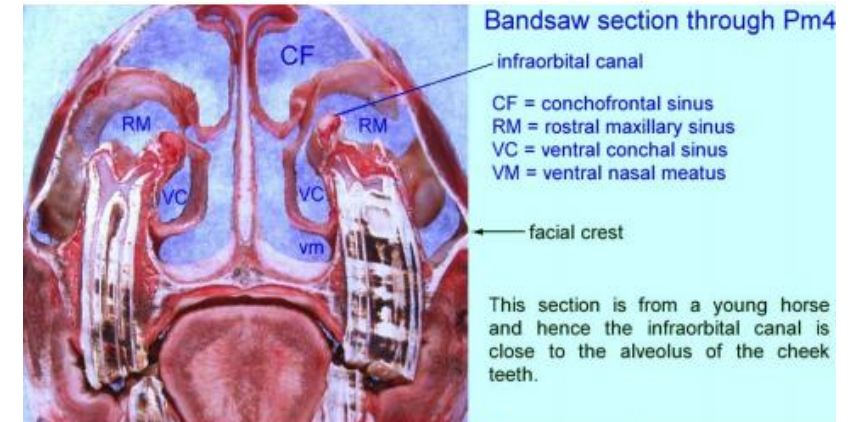


Figure 3. Bandsaw section through the rostral maxillary sinus.

<http://www.equinedental.eu/uploads/documents/FOCUSonDENTISTRYPROCEEDINGS.pdf>

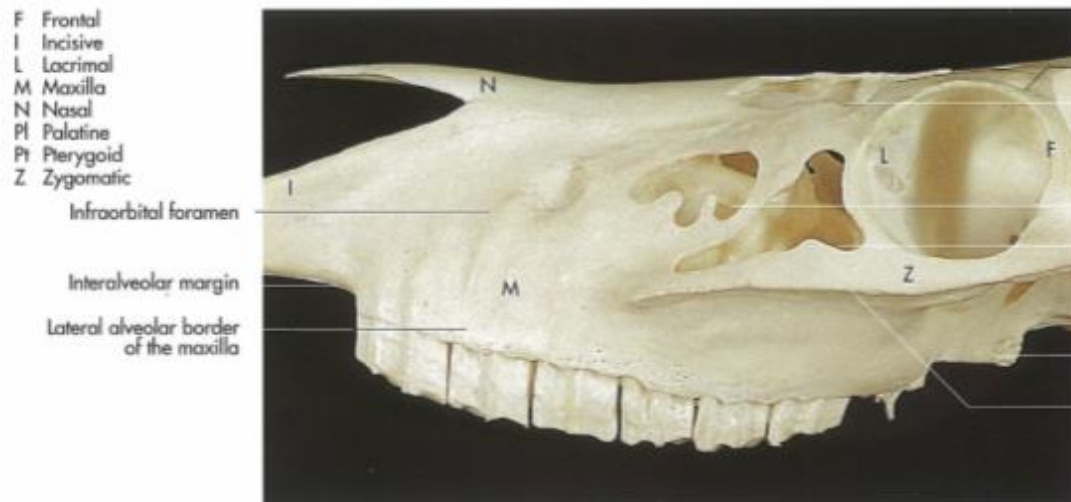


Fig. 1-64. Frontal and maxillary sinuses of a horse (lateral aspect).

F Frontal
L Lacrimal
M Maxilla
N Nasal
Z Zygomatic

Inner table of the frontal bone
Frontal sinus

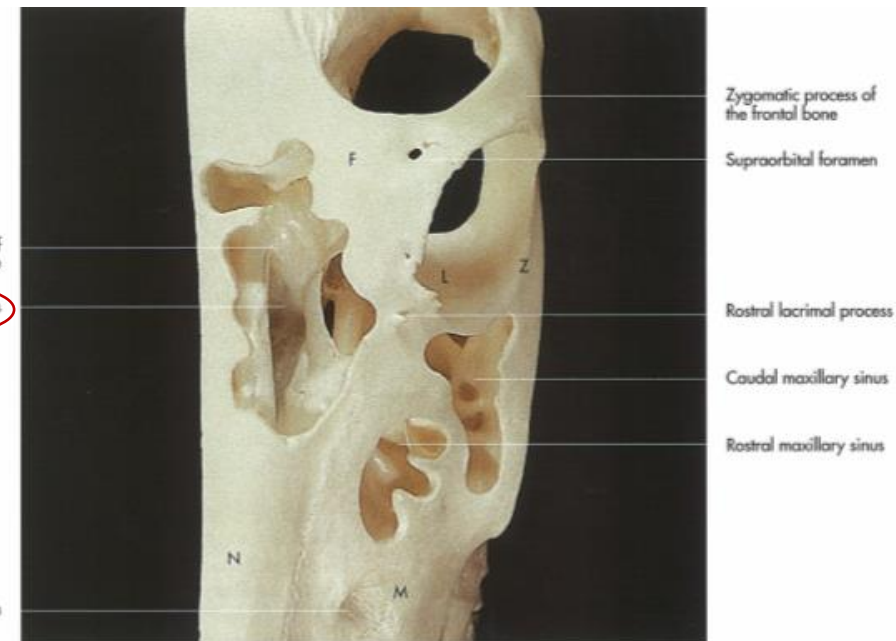


Fig. 1-65. Frontal and maxillary sinuses of a horse (dorsal aspect).

ORRMELLÉKÜREGEK (SINUS PARANASALES)

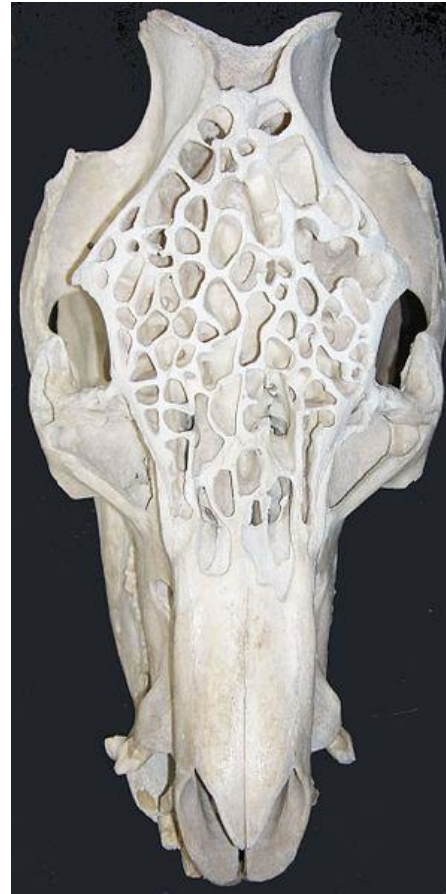
SINUS FRONTALIS:

SERTÉS, KÉRŐDZŐ

- terjedelmes

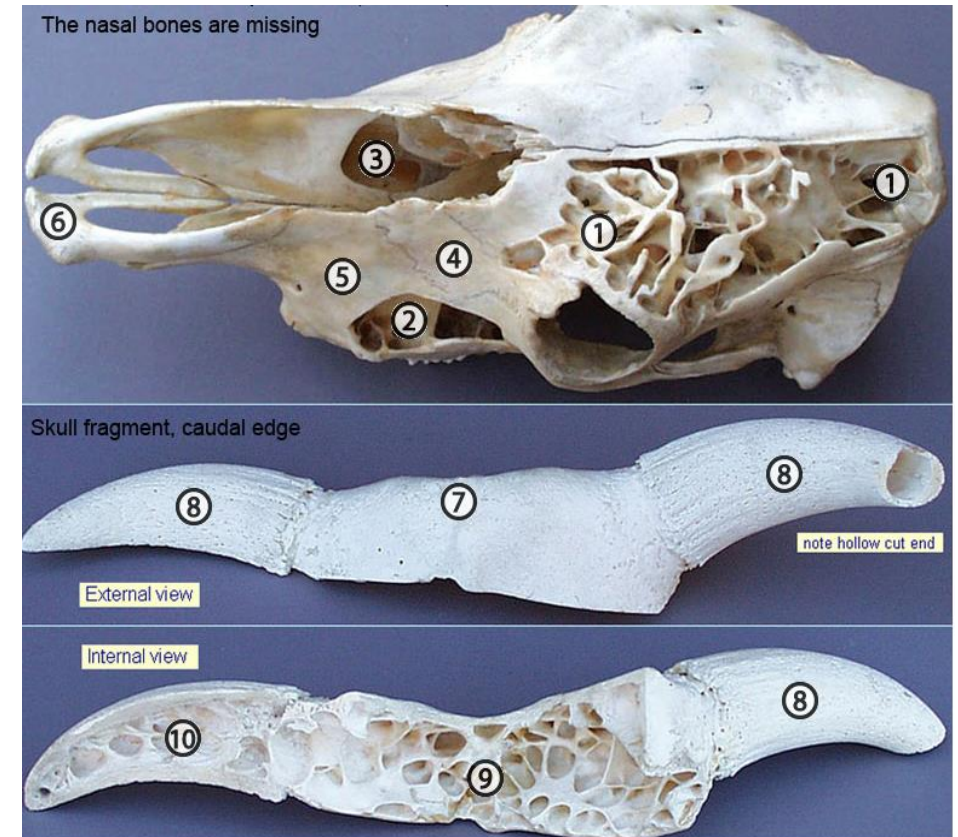
Beterjed:

- falcsontba
- nyakszirtcsontba
- halántékcsont pikkely részébe
- ékcsontról szemgödri szárnyába beterjed
- kérődzőnél – beterjed a proc. cornualis ossis frontalisba



Sinus frontalis pig

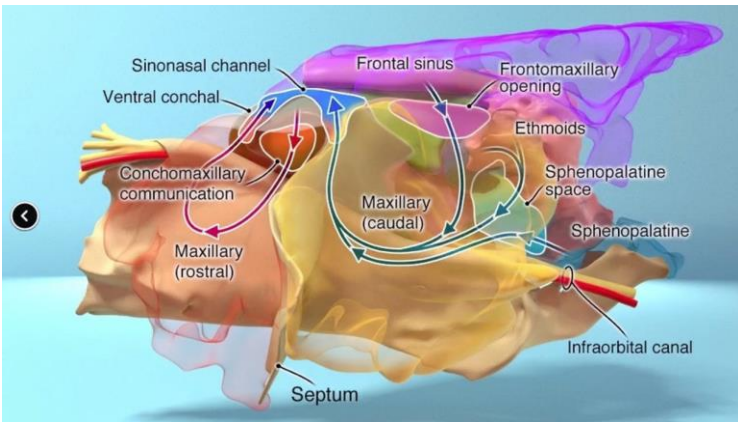
https://commons.wikimedia.org/wiki/File:Sinus_frontalis_pig.jpg



Bovine skull, dorsal views. 1, extensive frontal sinus; 2, maxillary sinus; 3, palatine sinus; 4, lacrimal bone; 5, maxilla; 6, incisive bone; 7, dorsal surface of skull; 8, cornual process; 9, frontal sinus; 10, extension of the frontal sinus into the cornual process.

<http://vanat.cvm.umn.edu/ungDissect/Lab18/Img18-9.html>

ORRMELLÉKÜREGEK (SINUS PARANASALES)



SINUS SPHENOPALATINUS:

LÓBAN:

- os palatinus, os sphenoidalis - sinus sphenopalatinus
- sinus maxillaris caudalissal áll kapcsolatban

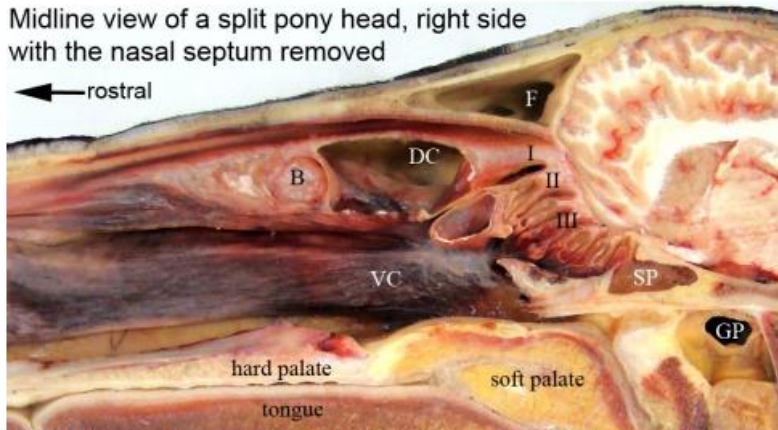
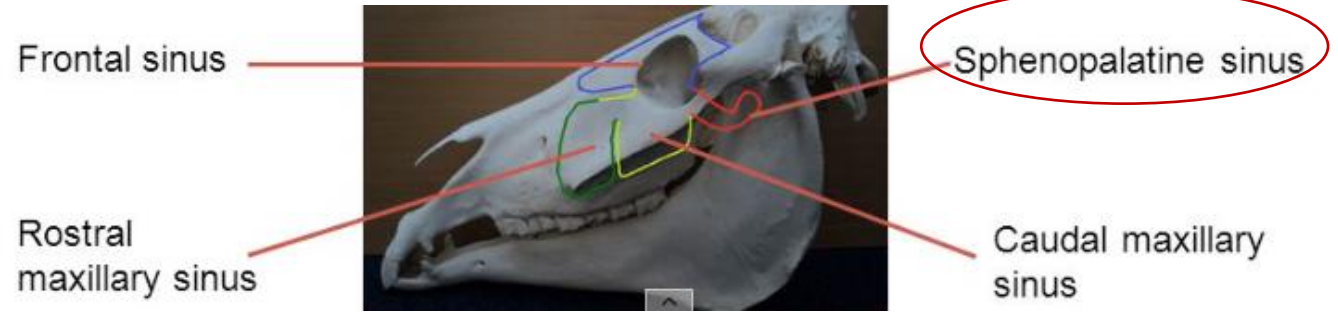


Figure 2. Split head of pony with windows cut into the dorsal concha and ethmoconcha II. I = ethmoconcha I (dorsal concha), II = ethmoconcha II (middle concha), III = ethmoconcha III, B = bulla in dorsal concha, DC = dorsal conchal sinus, F = frontal sinus, GP = guttural pouch, SP = sphenopalatine sinus, VC = ventral concha.

<http://www.equinedental.eu/uploads/documents/FOCUSonDENTISTRYPROCEEDINGS.pdf>

E Ethmoid
F Frontal
I Incisive
M Maxilla
Mt Maxilloturbinates
N Nasal
Pl Palatine

I Endoturbinates I
II Endoturbinates II
III Endoturbinates III

Rostral process of the nasal bone
Nasoincisive notch

Nasal process of the incisive bone
Palatine process of the incisive bone

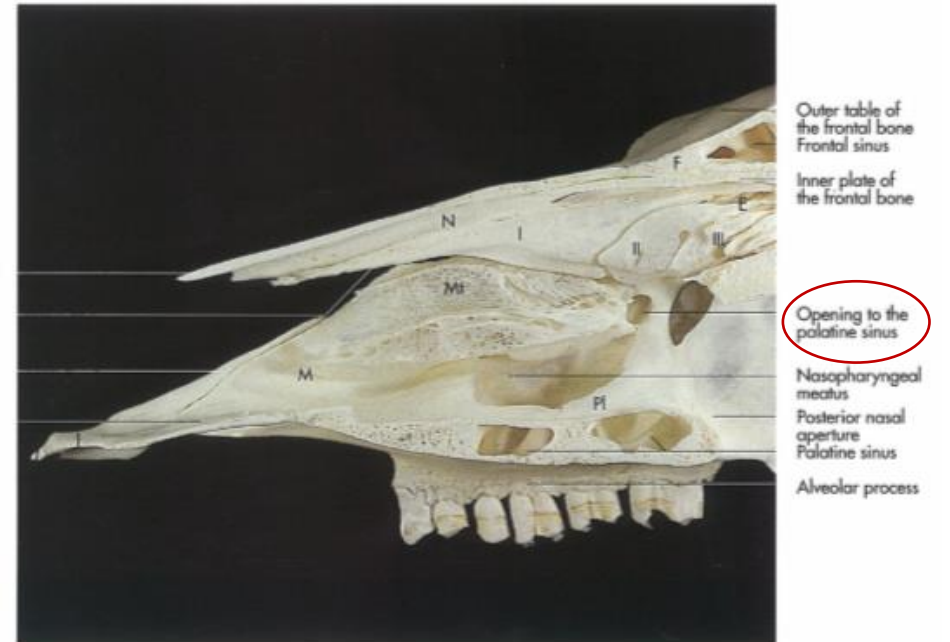


Fig. 1-32. Bones of the facial part of an equine skull (medial aspect of sagittal section).

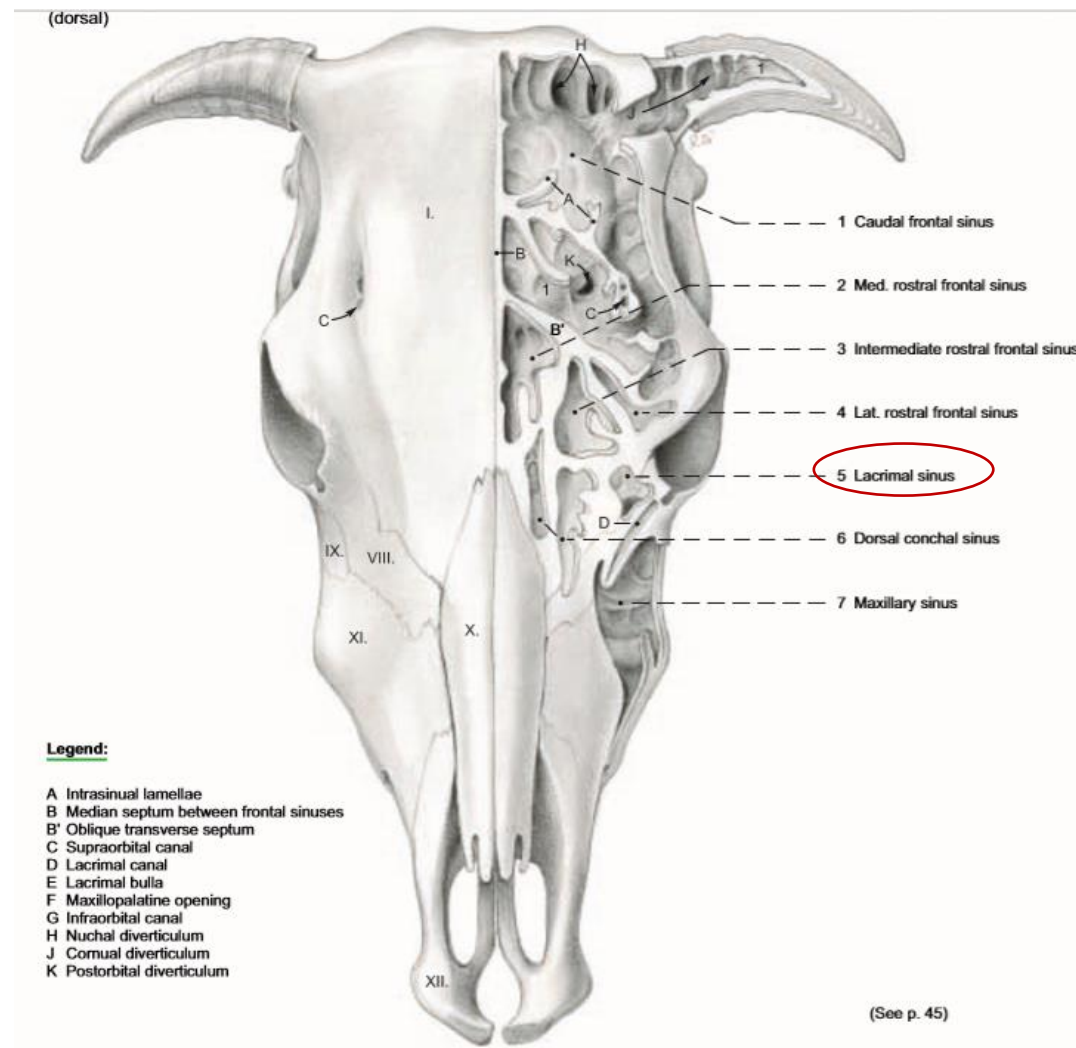
NASENHÖHLEN (SINUS PARANASALES)

SINUS LACRIMALIS (TRÄNENBEINHÖHLE):

- sertésben, kérődzőben
- homlokcsont, os lacrimale, felső orrkagyló között

kérődzőben:

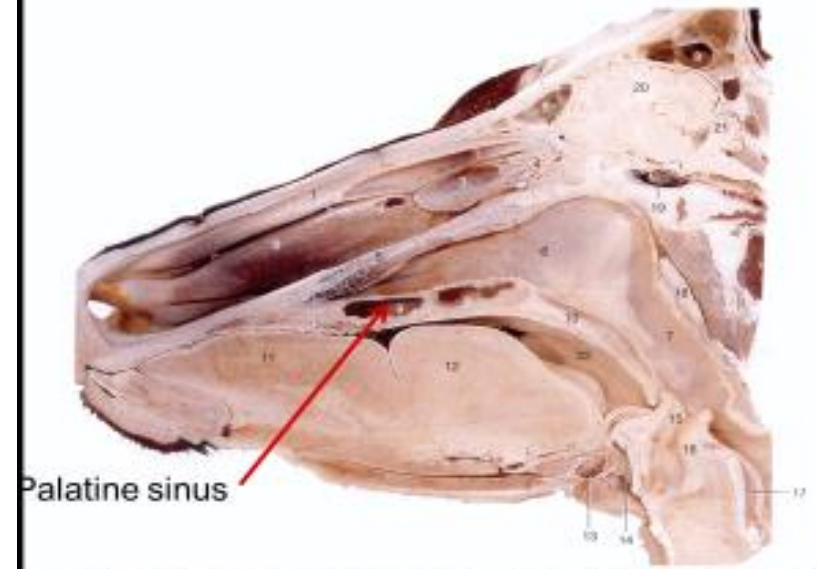
- caudodorsalisan apertura maxillolacrimalis
- apertura nasolacrimalis a sinus lacrimalisba vezet



ORRMELLÉKÜREGEK (SINUS PARANASALES)

SINUS PALATINUS (szájpadcsonti öböl):

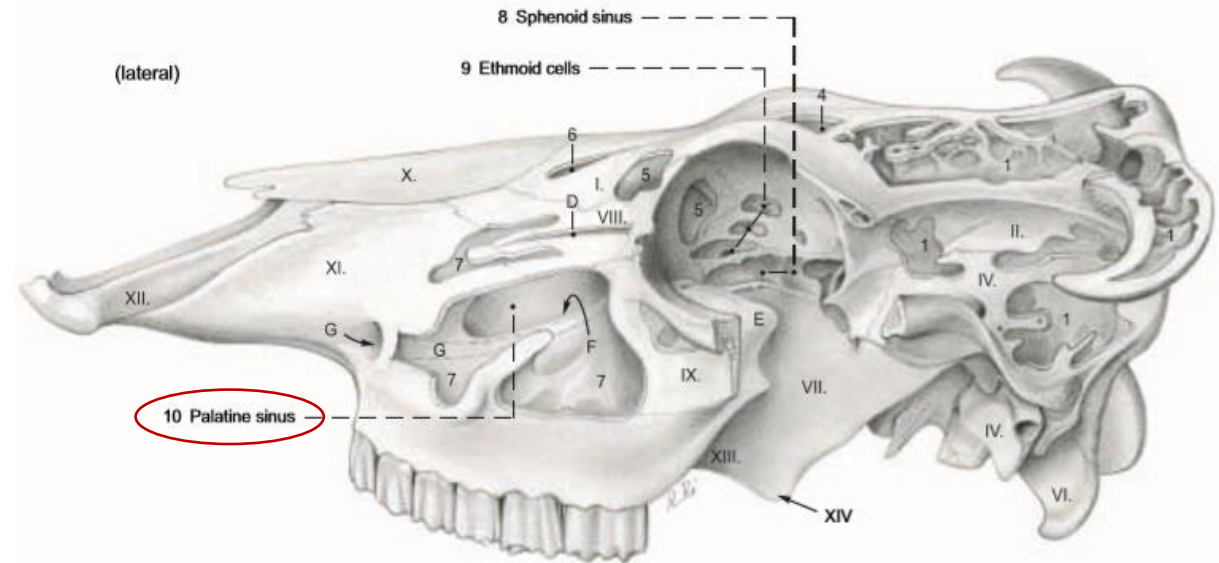
- húsevőkben, sertésben hiányzik
- kérődzőben - lamina horizontalis palatini és proc. palatinus maxillae
- septum interpalatinum
- apertura maxillopalatinán át közlekedik az állcsonti üreggel
- közlekedik az orrüreggel, könnycsonti üreggel



Palatine sinus

Figure 25-9 Parasagittal section of the head. 1, Dorsal nasal concha; 2, ventral nasal concha; 3, middle nasal concha; 4, ethmoidal conchae; 5, vomer; 6, choana; 7, nasopharynx; 8, rostral frontal sinus; 9, caudal frontal sinus; 10, palatine sinus; 11, soft palate; 12, apex of tongue; 13, torus linguae; 14, basihyoid; 15, thyroid cartilage; 16, epiglottis; 17, arytenoid cartilage; 18, medial retropharyngeal lymph node; 19, venous plexus surrounding hypophysis; 20, cerebrum; 21, cerebellum; 22, entrance to tonsillar sinus.

<https://www.studyblue.com/notes/n/paranasal-sinuses/deck/2449519>



ORRMELLÉKÜREGEK (SINUS PARANASALES)

SINUS PALATINUS (szájpadcsonyi öböl):

LÓBAN:

- pars perpendicularis palatiniben
- apertura maxillopalatinan közlekedik az állcsonti öböllel

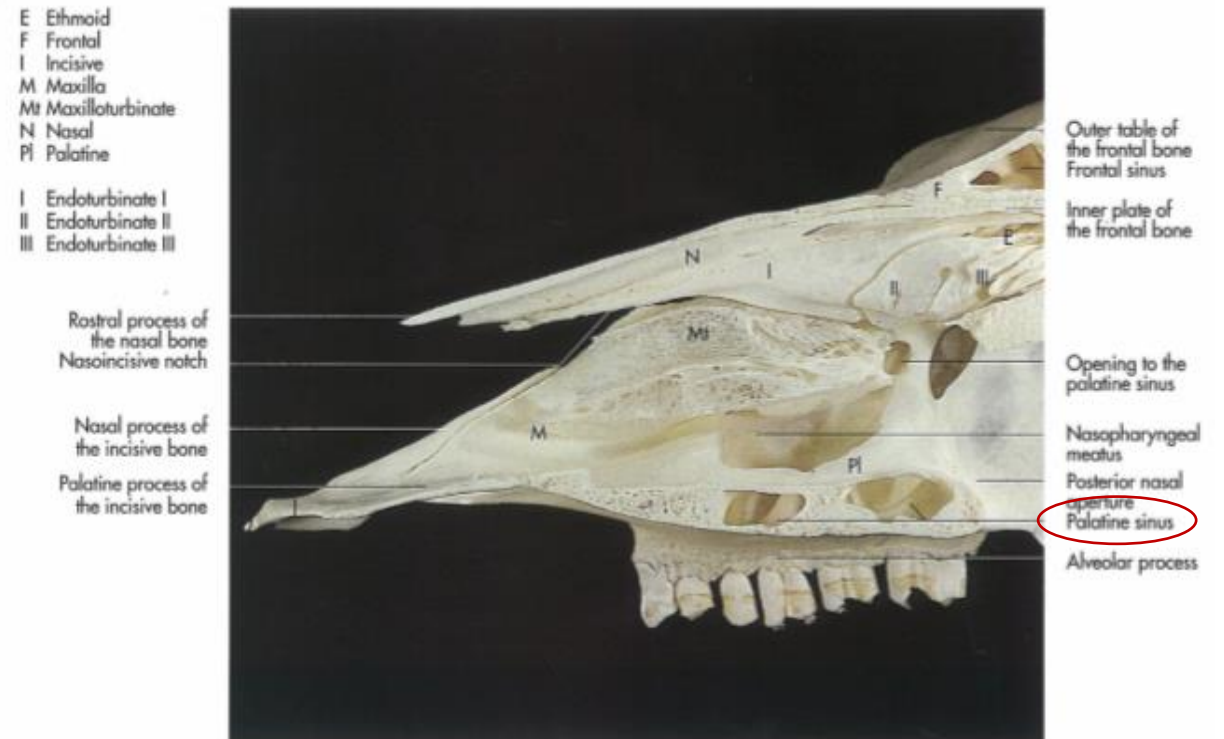


Fig. 1-32. Bones of the facial part of an equine skull (medial aspect of sagittal section).

ORRMELLÉKÜREGEK (SINUS PARANASALES)

SINUS SPHENOIDALIS (ékcsoni öböl):

- Ca, kis kérődzőkben hiányzik

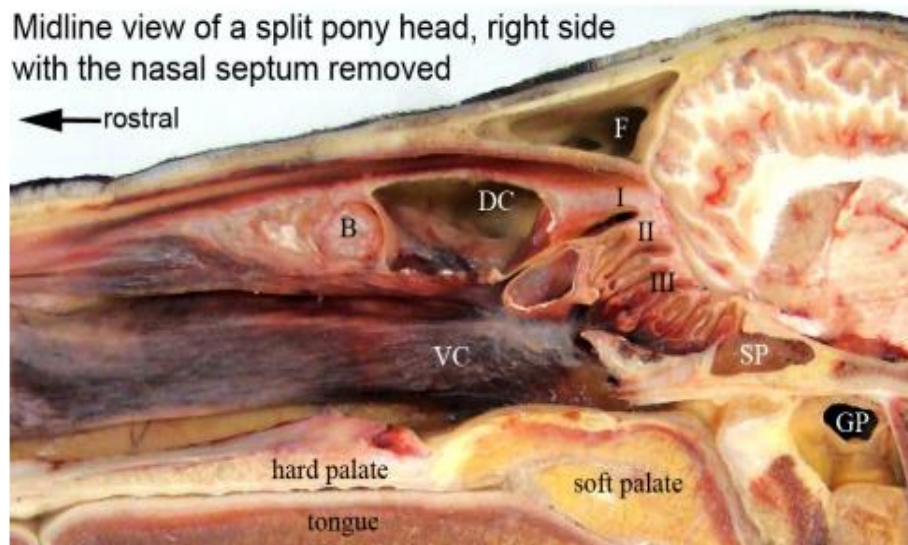


Figure 2. Split head of pony with windows cut into the dorsal concha and ethmoconcha II. I = ethmoconcha I (dorsal concha), II = ethmoconcha II (middle concha), III = ethmoconcha III, B = bulla in dorsal concha, DC = dorsal conchal sinus, F = frontal sinus, GP = guttural pouch, SP = sphenopalatine sinus, VC = ventral concha.

<http://www.equinedental.eu/uploads/documents/FOCUSonDENTISTRYPROCEEDINGS.pdf>

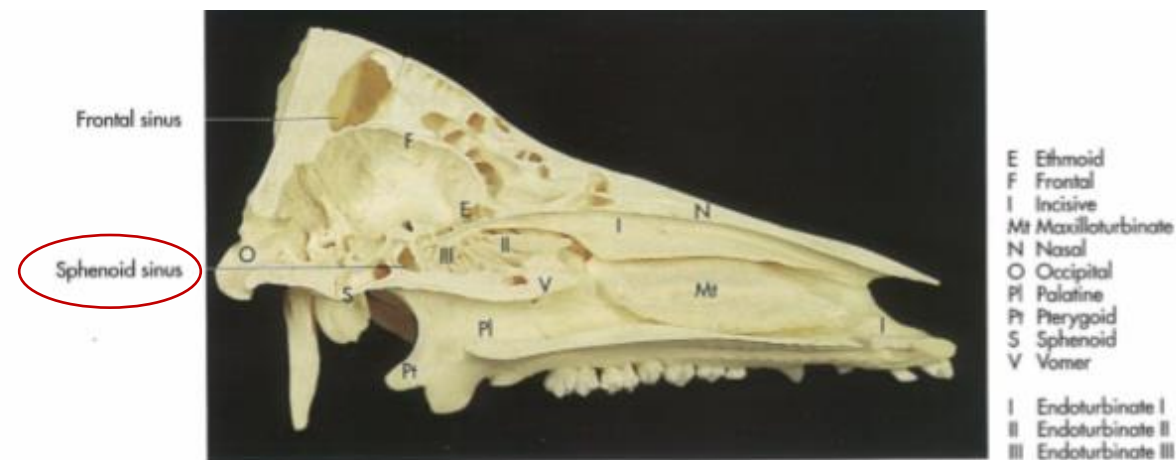
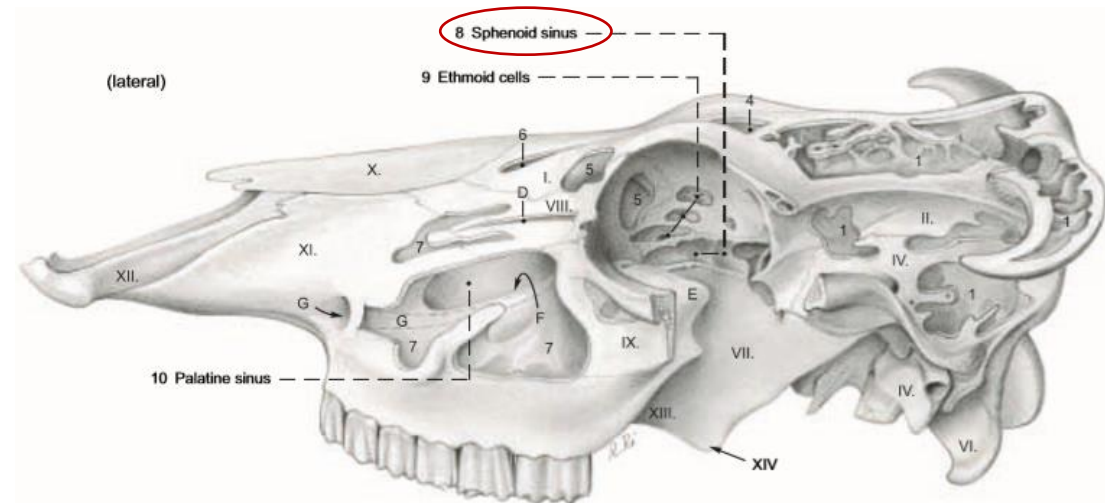


Fig. 1-31. Skull of a pig (medial aspect of sagittal section).

ORRMELLÉKÜREGEK (SINUS PARANASALES)

SINUS SPHENOIDALIS (ékcsonti öböl):

LÓBAN:

- septum sinuum sphenoidalium - jobb és bal üregre osztja a sinust
- apertura palatosphenoidalis
- a sinus palatinussal egységes üreg - sinus sphenopalatinus

Midline view of a split pony head, right side with the nasal septum removed

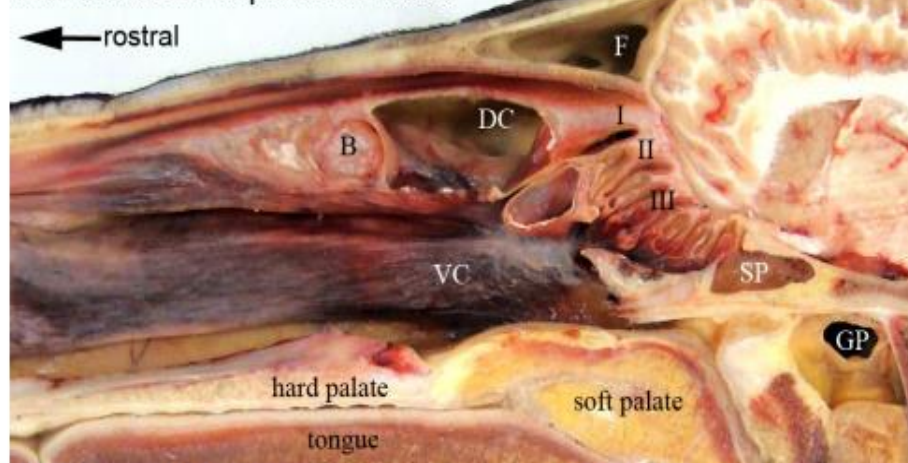


Figure 2. Split head of pony with windows cut into the dorsal concha and ethmoconcha II. I = ethmoconcha I (dorsal concha), II = ethmoconcha II (middle concha), III = ethmoconcha III, B = bulla in dorsal concha, DC = dorsal conchal sinus, F = frontal sinus, GP = guttural pouch, SP = sphenopalatine sinus, VC = ventral concha.

<http://www.equinedental.eu/uploads/documents/FOCUSonDENTISTRYPROCEEDINGS.pdf>

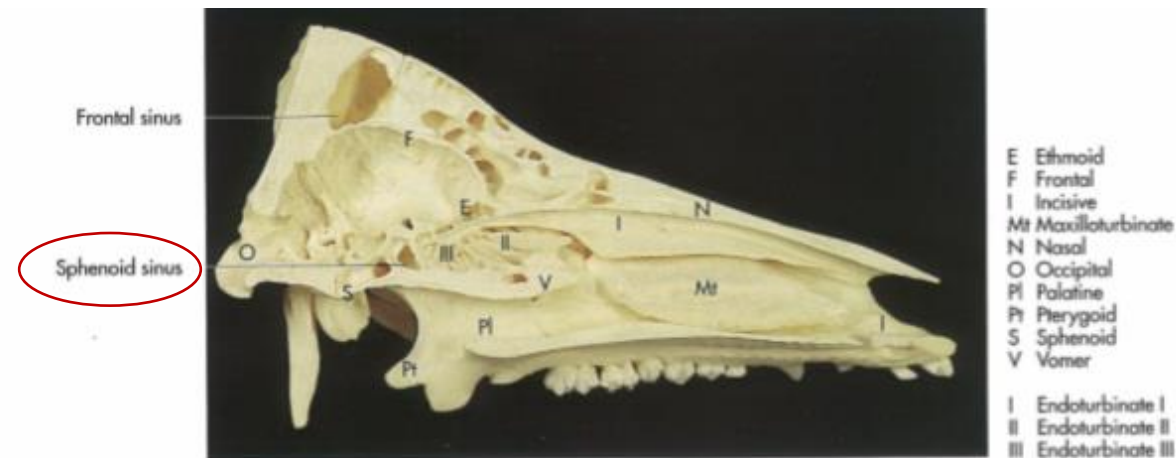
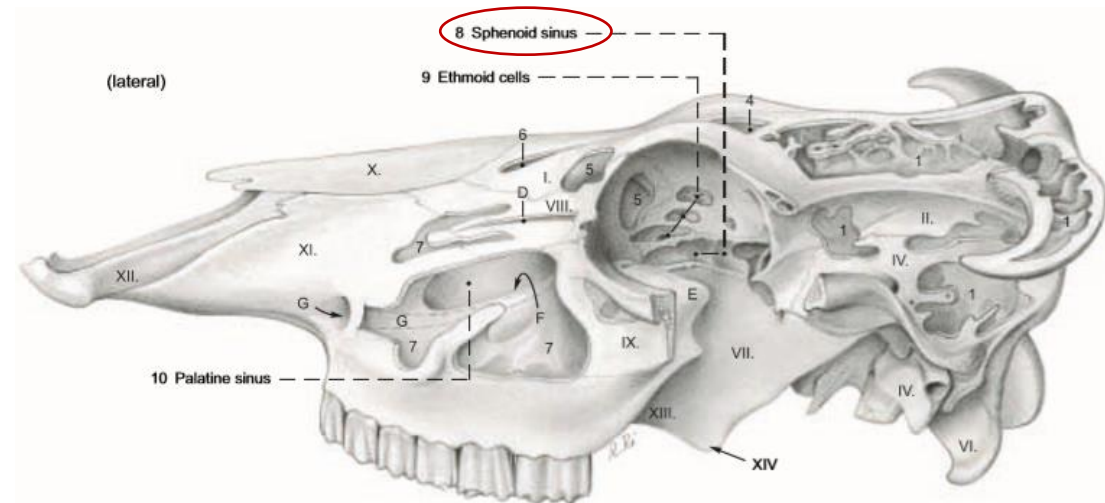


Fig. 1-31. Skull of a pig (medial aspect of sagittal section).

GÉGE (LARYNX)

FELADATA:

- levegő továbbítása
- hangképzés
- alsó légutak bejáratának védelme

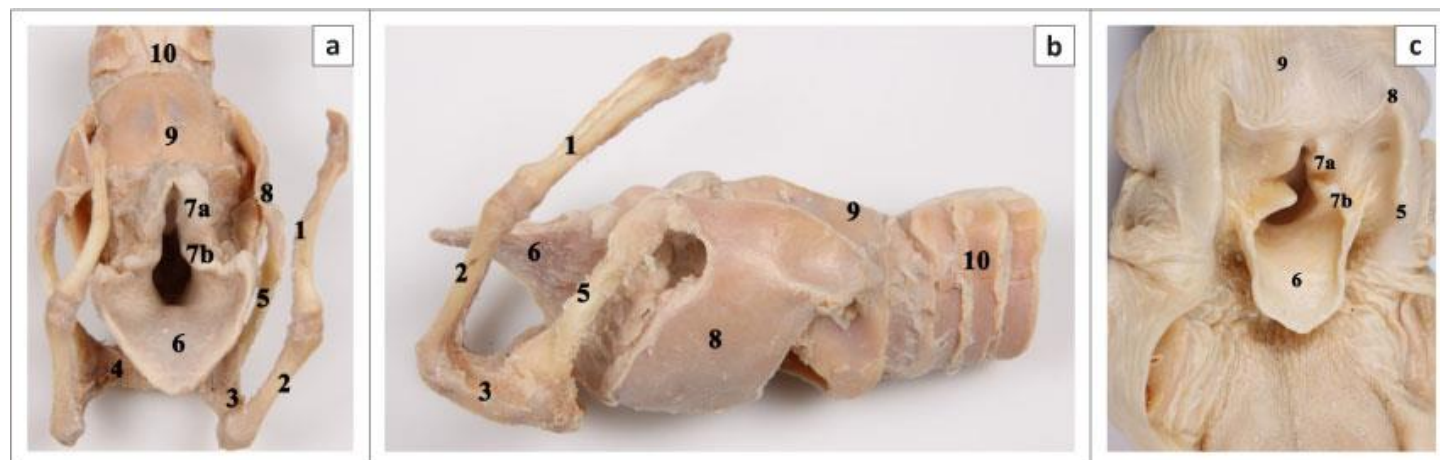
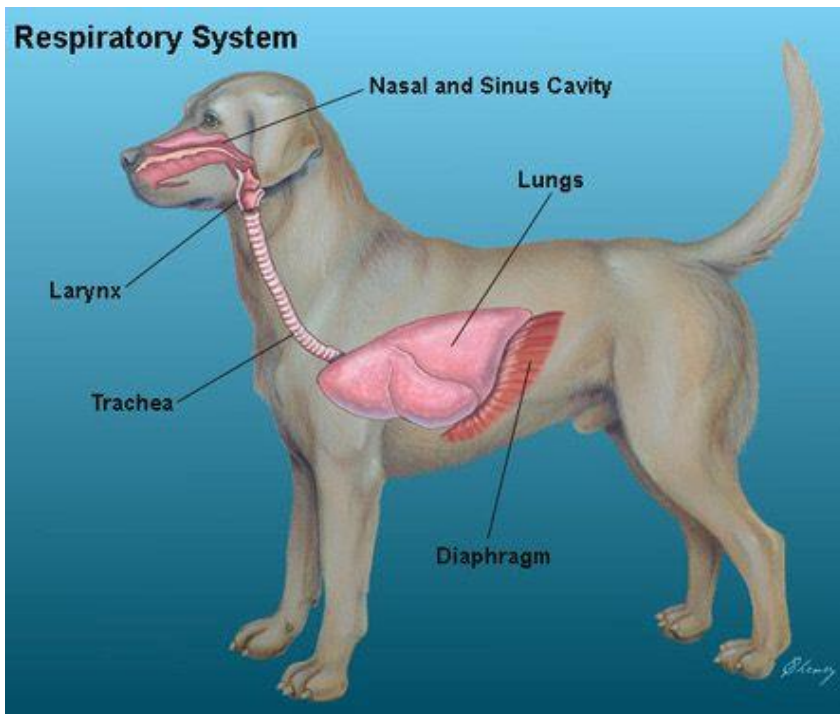
External acoustic
meatus
Styloid process
Typanohyoid

Arytenoid cartilage

Stylohyoid
Cricoid cartilage
Thyroid cartilage



Fig. 8-13. Skull of a horse with hyoid bone and larynx.



Source: Photographs by M. Doom

Evident in these views are the, (1) stylohyoid, (2) epihyoid, (3) ceratohyoid, (4) basihyoid (5) thyrohyoid, (6) epiglottis, (7a) corniculate process of the arytenoid cartilage, (7b) cuneiform process of the arytenoid cartilage, (8) thyroid cartilage, (9) cricoid cartilage and (10) trachea.

FIGURE 1: Embalmed cadaver specimen of a canine larynx, depicted as, (a) rostro-dorsal view with the muscles removed, (b) lateral view after removal of the muscles and (c) rostro-dorsal view with the dorsal aspect of the oesophagus removed.

GÉGE (LARYNX)

FALA:

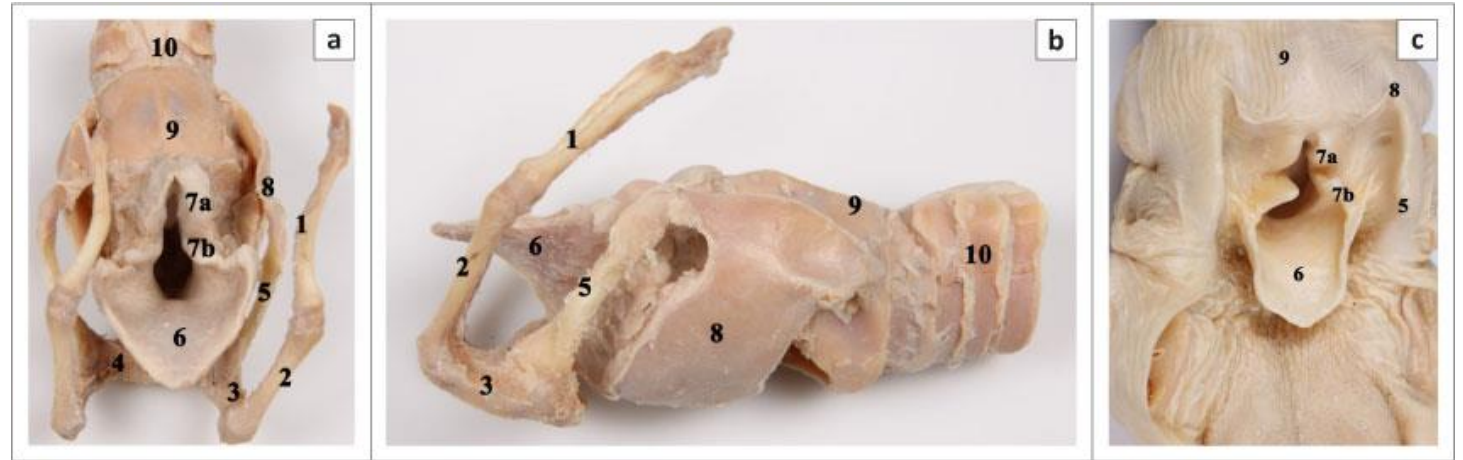
1. GÉGEPORCOK

2. SZALAGOK

3. GÉGE IZMOK

- rostralisan nyelvcsonttal

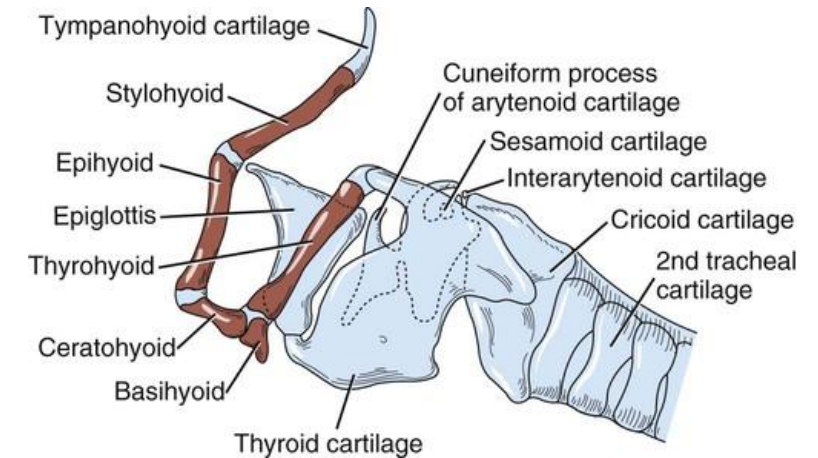
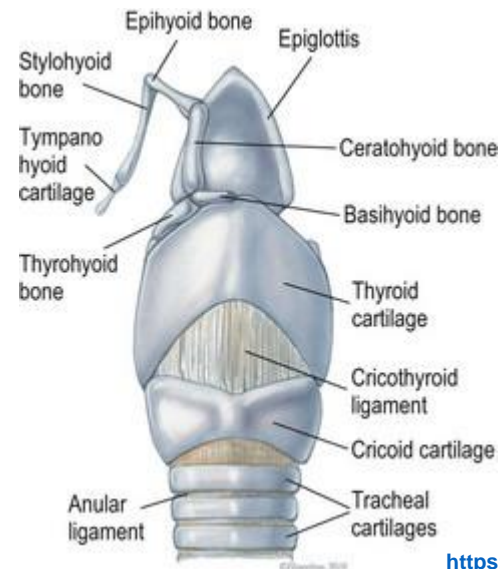
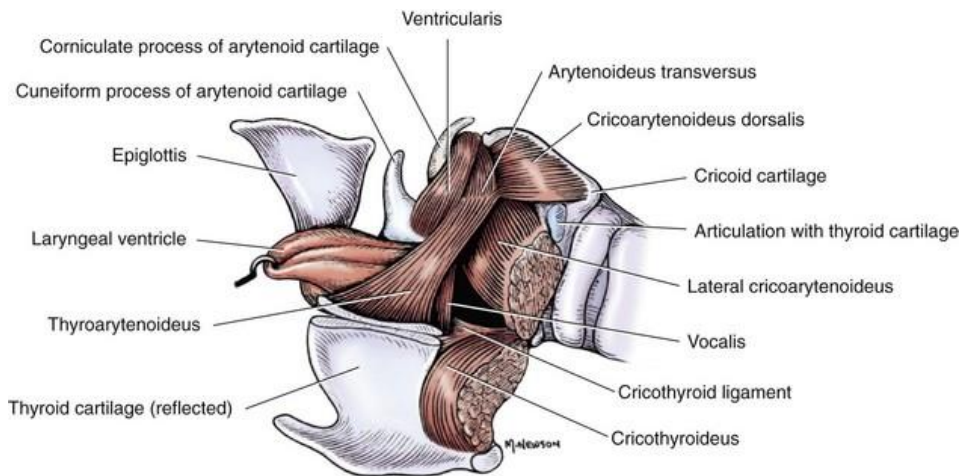
- caudalisan légcsővel áll kapcsolatban



Source: Photographs by M. Doom

Evident in these views are the, (1) stylohyoid, (2) epihyoid, (3) ceratohyoid, (4) basihyoid (5) thyrohyoid, (6) epiglottis, (7a) corniculate process of the arytenoid cartilage, (7b) cuneiform process of the arytenoid cartilage, (8) thyroid cartilage, (9) cricoid cartilage and (10) trachea.

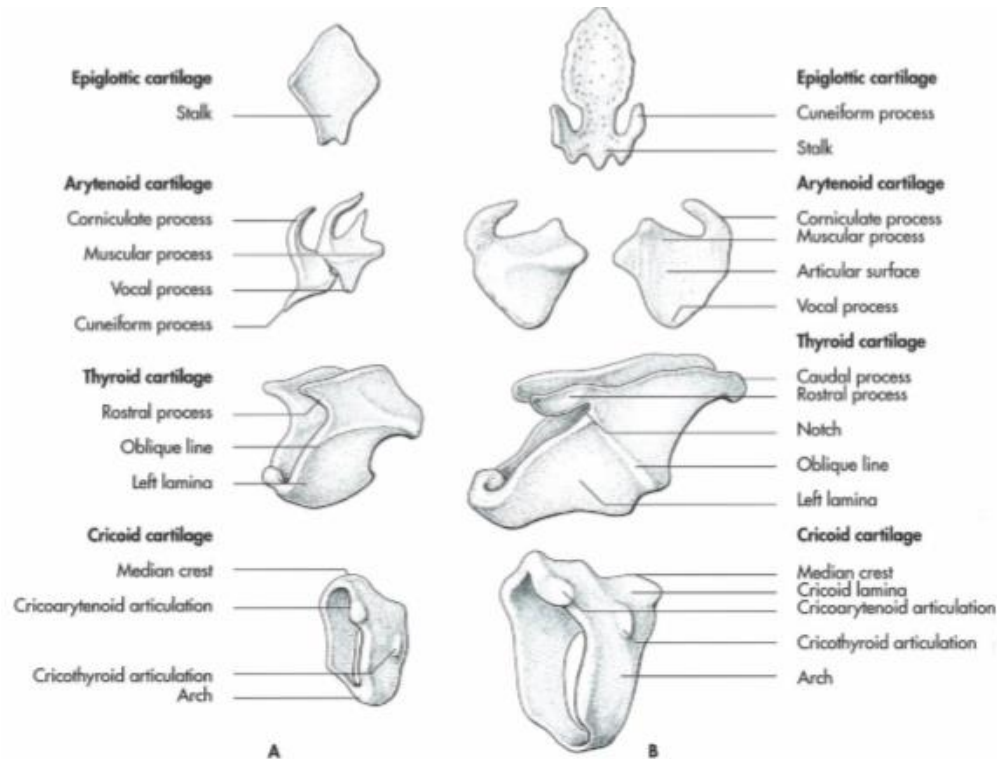
FIGURE 1: Embalmed cadaver specimen of a canine larynx, depicted as, (a) rostrodorsal view with the muscles removed, (b) lateral view after removal of the muscles and (c) rostrodorsal view with the dorsal aspect of the oesophagus removed.



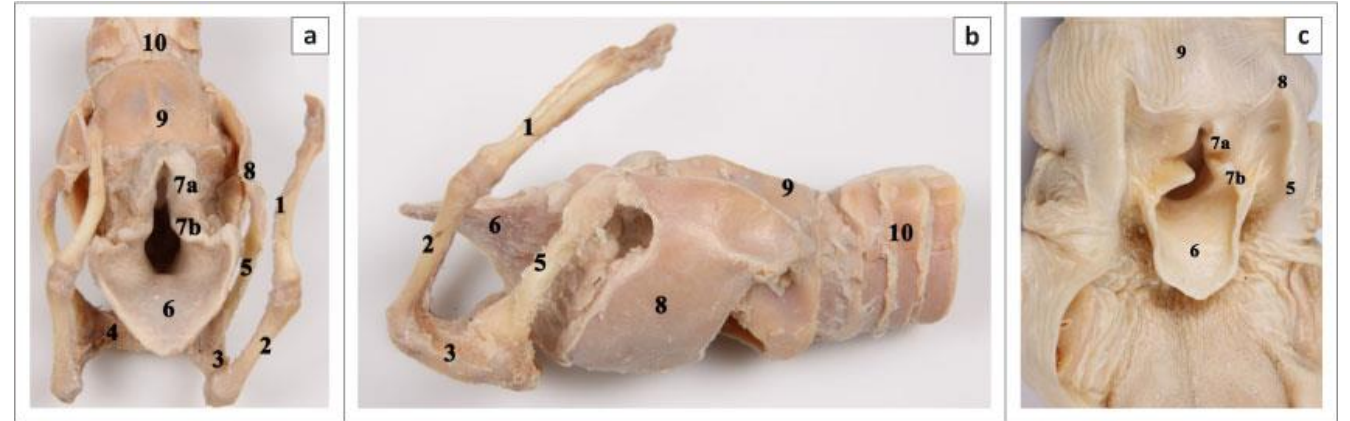
<https://veteriankey.com/larynx-2/>

GÉGEPORCOK (CARTILAGINES LARYNGIS)

- gége vázát alkotják
- páratlan porcok
- KIVÉVE: kannaporcok – páros porc



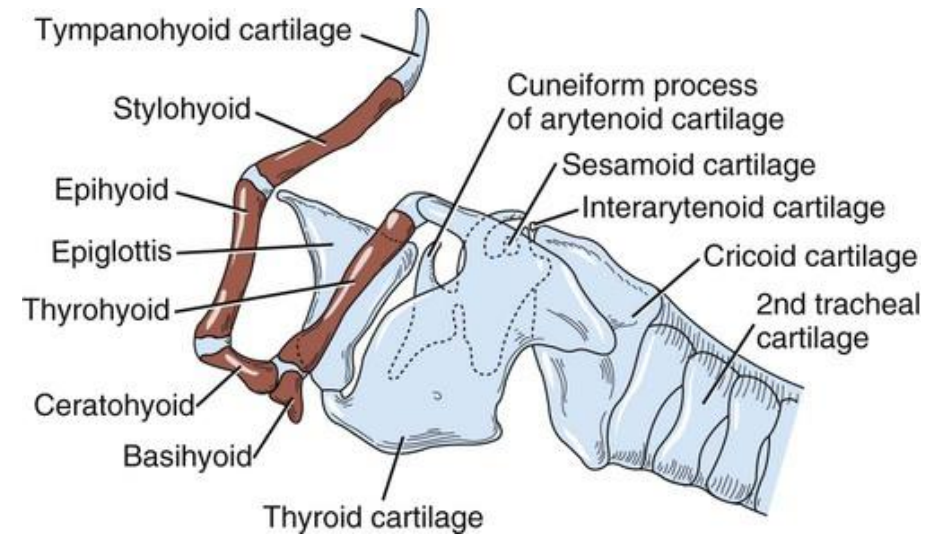
i. Laryngeal cartilages of the dog (A) and the horse (B), schematic.



Source: Photographs by M. Doom

Evident in these views are the, (1) stylohyoid, (2) epihyoid, (3) ceratohyoid, (4) basihyoid (5) thyrohyoid, (6) epiglottis, (7a) corniculate process of the arytenoid cartilage, (7b) cuneiform process of the arytenoid cartilage, (8) thyroid cartilage, (9) cricoid cartilage and (10) trachea.

FIGURE 1: Embalmed cadaver specimen of a canine larynx, depicted as, (a) rostradorsal view with the muscles removed, (b) lateral view after removal of the muscles and (c) rostradorsal view with the dorsal aspect of the oesophagus removed.



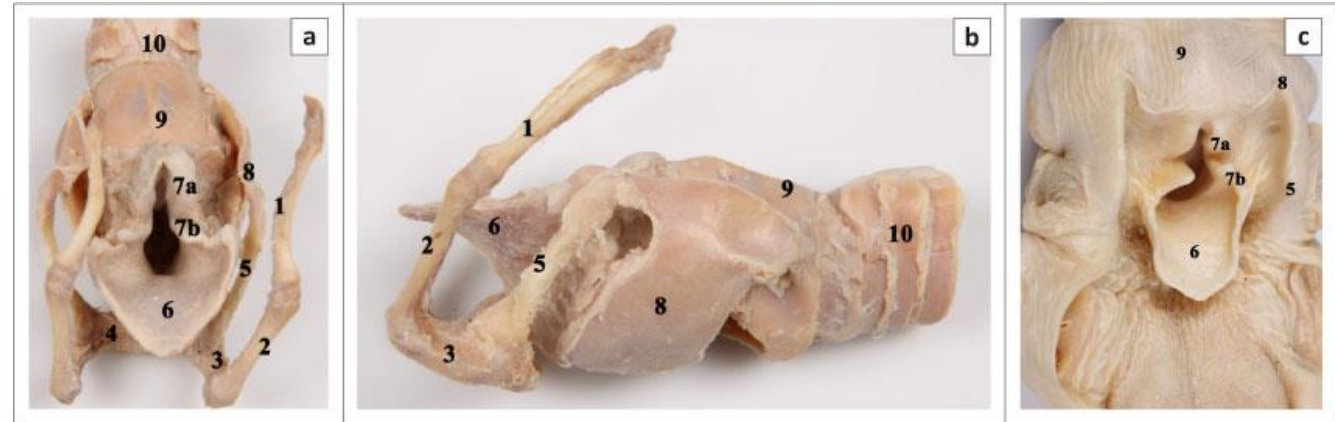
GÉGEPORCOK (CARTILAGINES LARYNGIS)

1. EPIGLOTTIS (gégefedő) - gégefedő porc (CARTILAGO EPIGLOTTICA)

2. CARTILAGO TYHORIDEA (pajzsporc)

3. CARTILAGO CRICOIDEA (gyűrűporc)

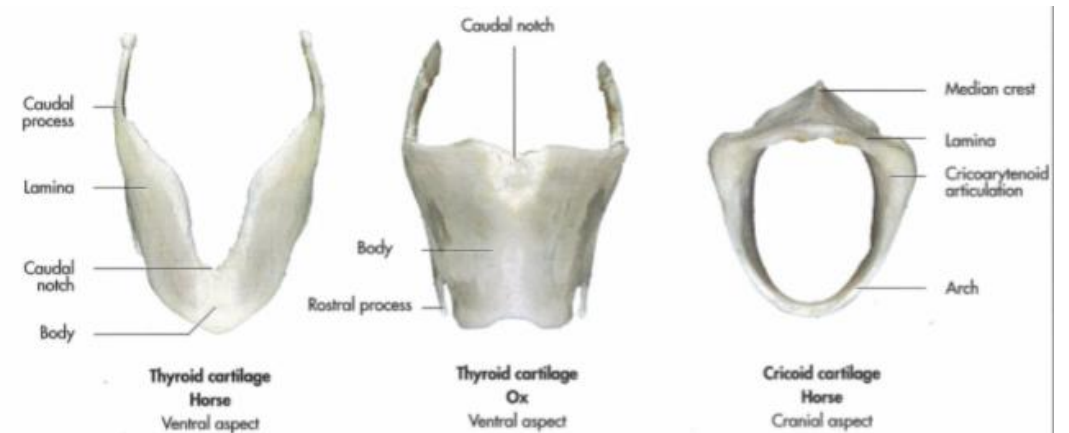
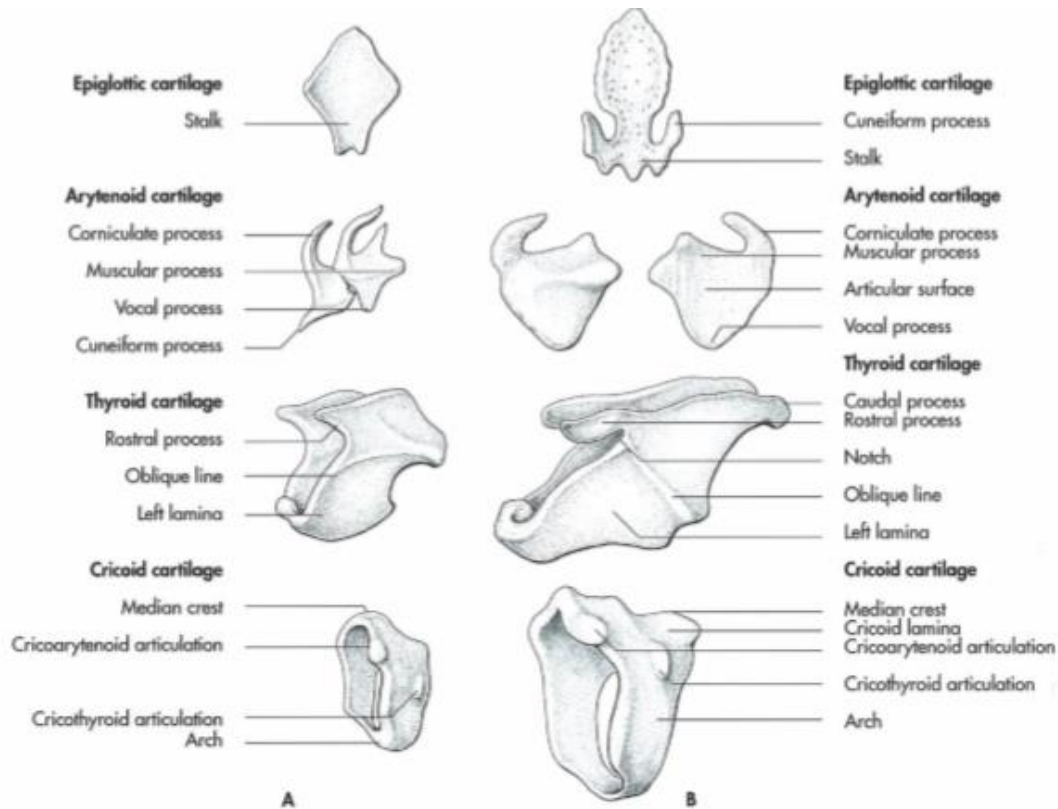
4. CARTILAGINES ARYTAENOIDEAE (kannaporc)



Source: Photographs by M. Doom

Evident in these views are the, (1) stylohyoid, (2) epihyoid, (3) ceratohyoid, (4) basihyoid (5) thyrohyoid, (6) epiglottis, (7a) corniculate process of the arytenoid cartilage, (7b) cuneiform process of the arytenoid cartilage, (8) thyroid cartilage, (9) cricoid cartilage and (10) trachea.

FIGURE 1: Embalmed cadaver specimen of a canine larynx, depicted as, (a) rostro-dorsal view with the muscles removed, (b) lateral view after removal of the muscles and (c) rostro-dorsal view with the dorsal aspect of the oesophagus removed.



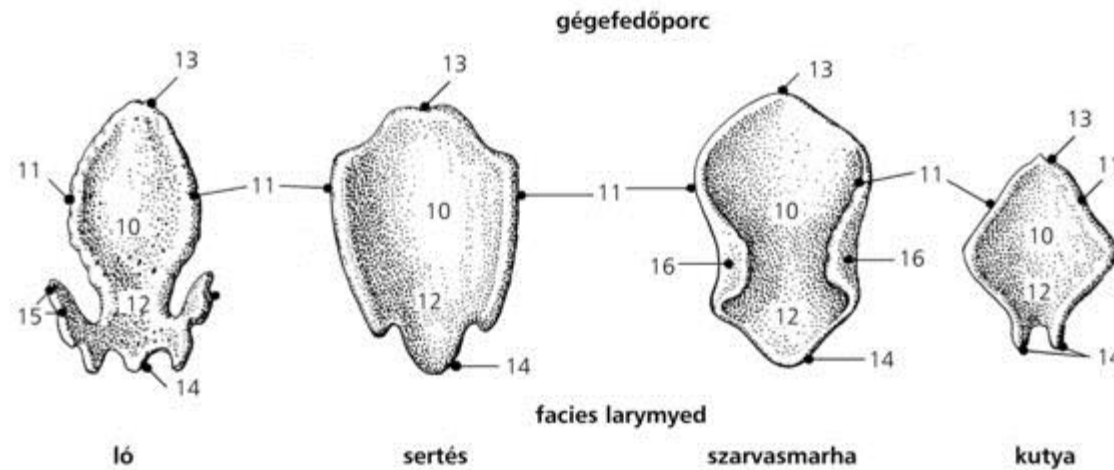
GÉGEPORCOK (CARTILAGINES LARYNGIS)

EPIGLOTTIS (GÉGEFEDŐ):

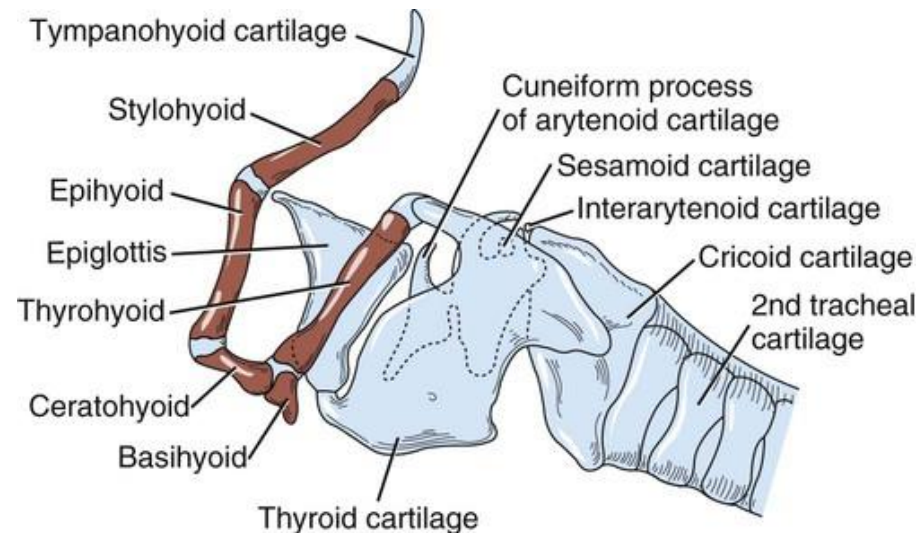
- cartilago epiglottica
- elasztikus porc
- nyeléskor a gégebemenetet elzárja

RÉSZEI:

- NYÉL (PETIOLUS) – pajzsporhoz rögzül
- BASIS
- APEX
- LAMINA
- FACIES LINGUALIS
- FACIES LARYNGEA
- MARGINES LATERALES



1. basis cartilaginis arytaenoideae, 2. proc. vocalis, 3. facies lateralis, 4. proc. muscularis, 5. proc. articularis, 6. facies medialis, 7. facies dorsalis, 8. proc. corniculatus, 9. proc. cuneiformis, 10. facies laryngea, 11. margines laterales, 12. basis, 13. apex, 14. petiolus epidorsalis, 15. proc. cuneiformis, 16. facies lingualis

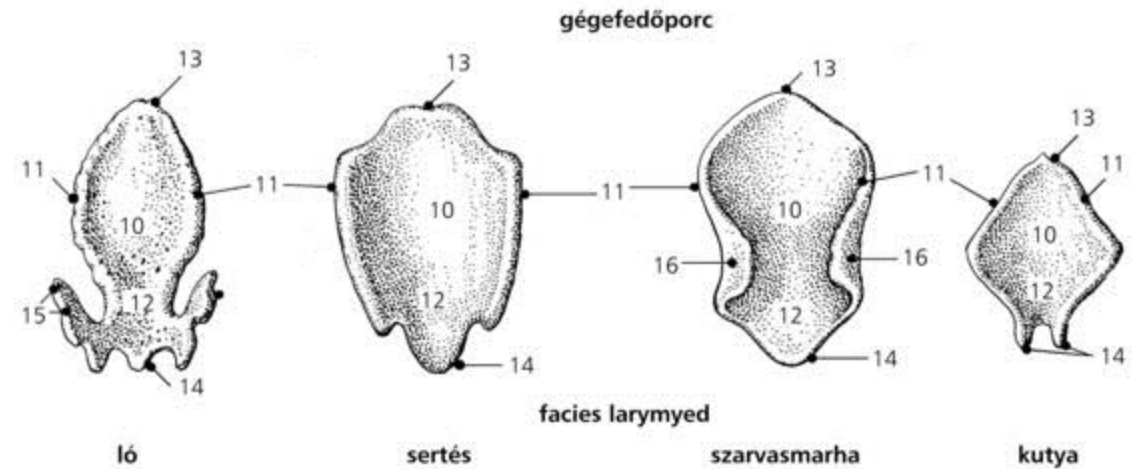


GÉGEPORCOK (CARTILAGINES LARYNGIS)

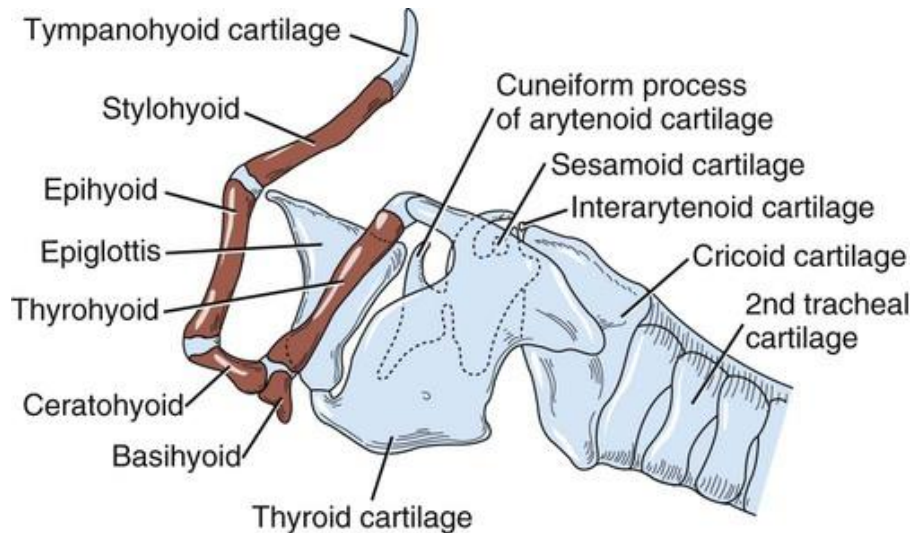
EPIGLOTTIS (GÉGEFEDŐ):

PETIOLUS:

- lig. hyoepiglotticum – nyelvcsonthoz
- lig. thyroepiglotticum - pajzsporchoz



1. basis cartilaginis arytaenoideae, 2. proc. vocalis, 3. facies lateralis, 4. proc. muscularis, 5. proc. articularis, 6. facies medialis, 7. facies dorsalis, 8. proc. corniculatus, 9. proc. cuneiformis, 10. facies laryngea, 11. margines laterales, 12. basis, 13. apex, 14. petiolus epidorsalis, 15. proc. cuneiformis, 16. facies lingualis



GÉGEPORCOK (CARTILAGINES LARYNGIS)

EPIGLOTTIS:

felső, szabad széle csúcsban végződik:

1. kutyában
2. macskában
3. lóban

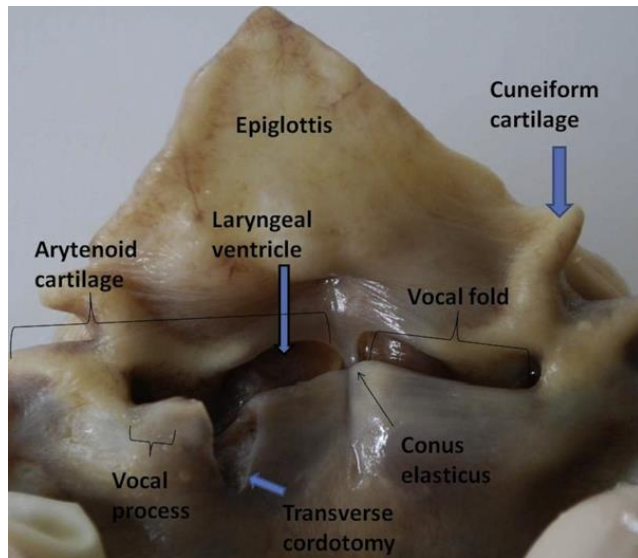
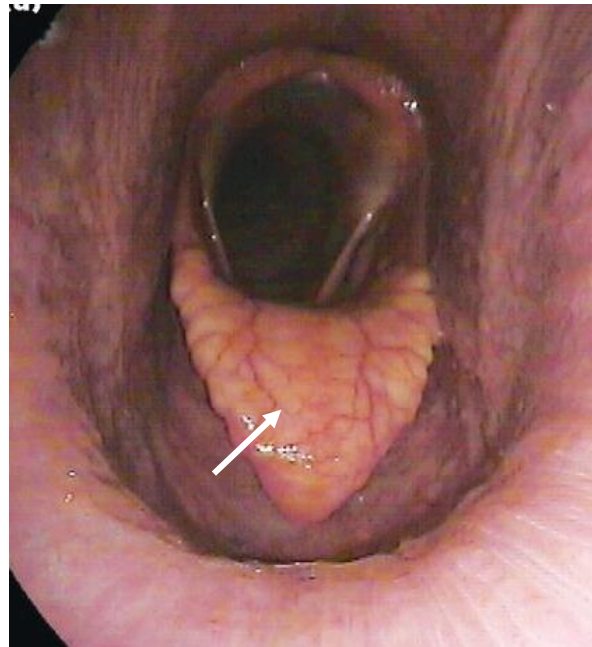


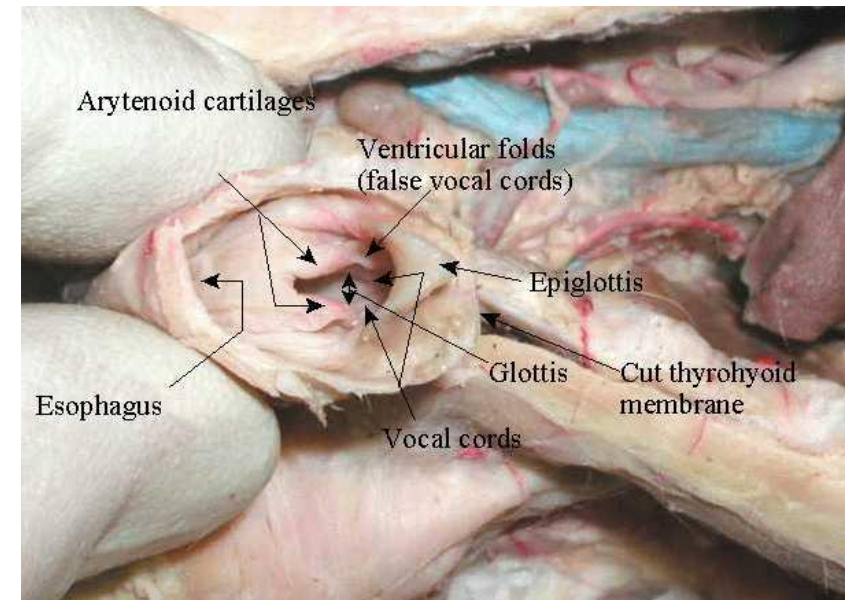
Fig. 1. Autopic laryngeal specimen from an autopsy from a normal dog, dorsal aspect. The regional anatomy and the site of the cordotomy have been highlighted on the specimen.

<https://www.sciencedirect.com/science/article/pii/S0034528810000299>



Eq

<https://inpractice.bmj.com/content/37/8/415>



Fe

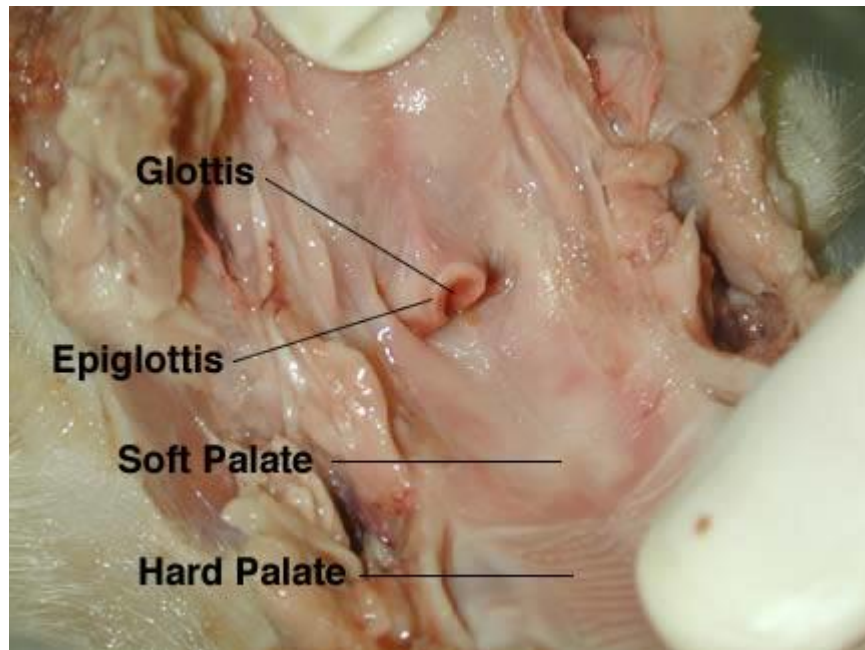
<https://fankhauserblog.wordpress.com/1993/04/08/organs-of-respiration-in-the-cat/>

GÉGEPORCOK (CARTILAGINES LARYNGIS)

EPIGLOTTIS:

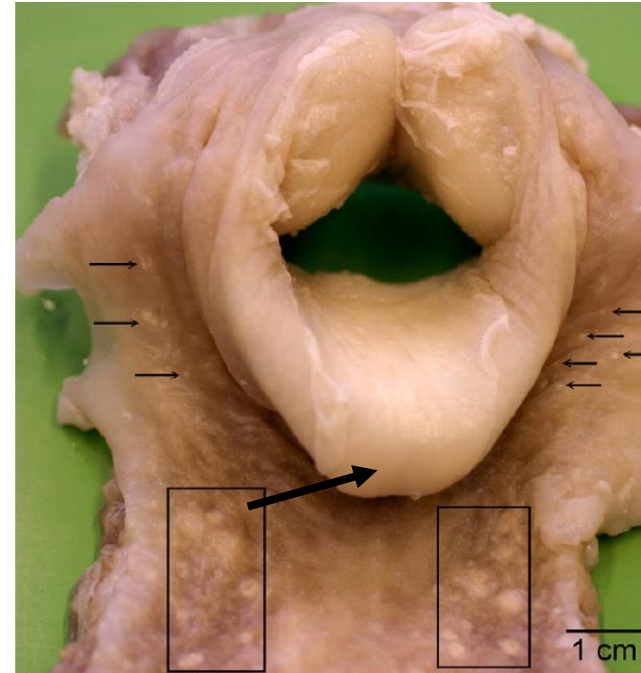
felső, szabad széle lekerekített:

1. kérődzőben
2. sertésben



Su

<https://projects.ncsu.edu/cals/course/zo250/lab1-dissection.html>



Bo

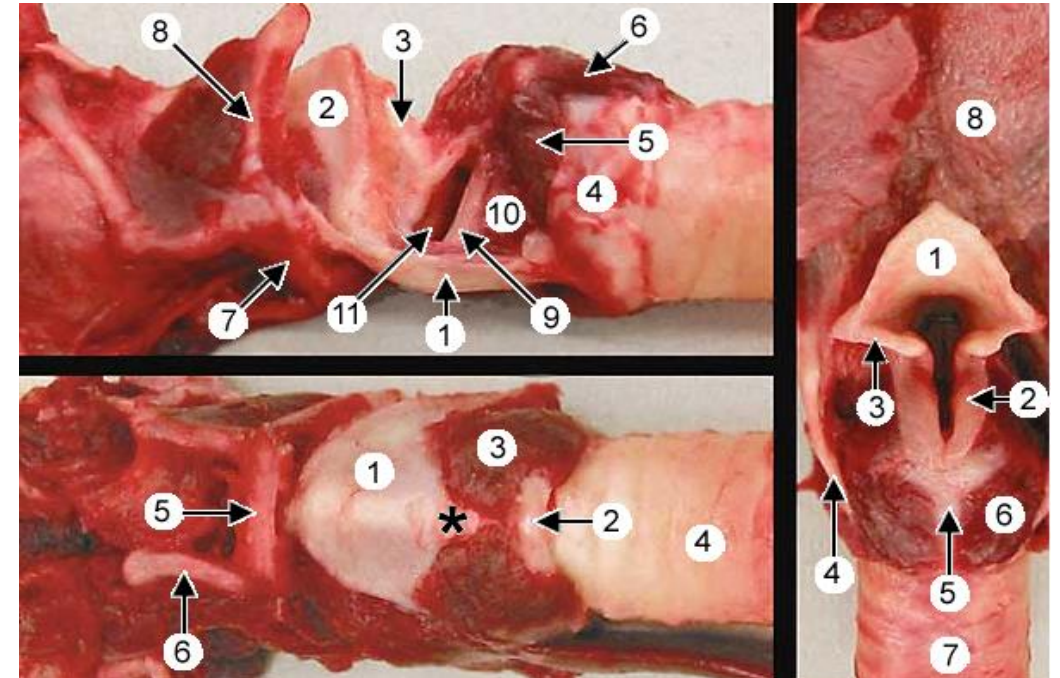
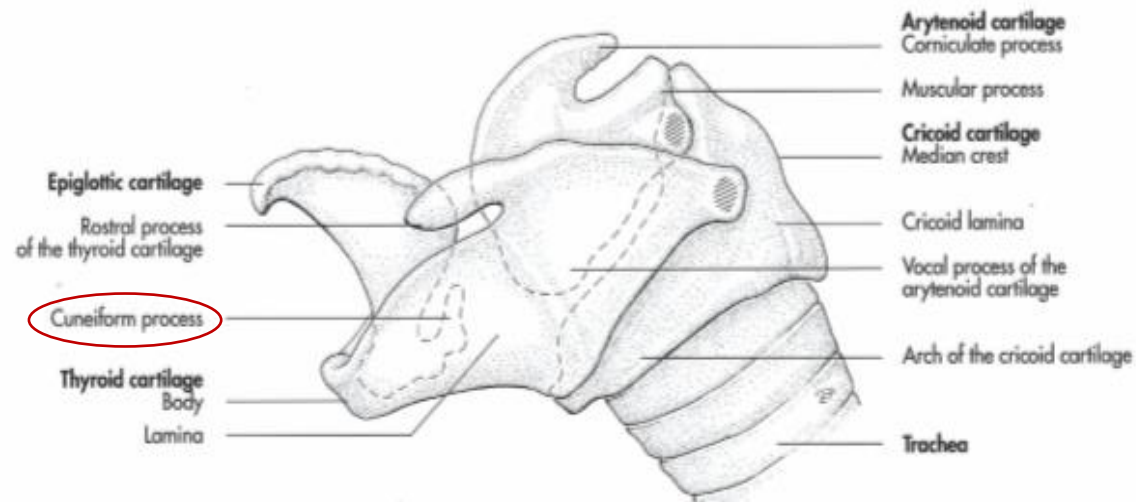
Fig. 1. Macroscopic view of the entrance to the bovine larynx showing a number of white coloured subepithelial lymphoid nodules at the base of the epiglottis (arrows) after fixation in 2% acetic acid for 24 h. Notice some tonsillar follicles belonging to the lingual tonsil (boxes) located at the root of the tongue.

[https://www.semanticscholar.org/paper/Larynx-associated-lymphoid-tissue-\(LALT\)-in-young-Casteleyn-Simoens/867a7e076dc52bccfb2660efc1482ba763fbcdf4/figure/0](https://www.semanticscholar.org/paper/Larynx-associated-lymphoid-tissue-(LALT)-in-young-Casteleyn-Simoens/867a7e076dc52bccfb2660efc1482ba763fbcdf4/figure/0)

GÉGEPORCOK (CARTILAGINES LARYNGIS)

PROCESSUS CUNEIFORMIS:

- lóban
- petiolustól kétoldalt
- páros porc
- plica aryepiglotticában



Three views of the larynx (fresh tissue). *Right:* epiglottic cartilage (1), arytenoid cartilages (2), aryepiglottic fold (3), thyroid cartilage (4), cricoid cartilage (5), cricoarytenoideus dorsalis m. (6), trachea (7), and root of the tongue (8).

Left top: The left side of the larynx has been removed. Identify: thyroid cartilage (1), epiglottic cartilage (2), arytenoid cartilage (3), cricoid cartilage (4), cricoarytenoideus lateralis m. (5), cricoarytenoideus dorsalis m. (6), basihyoid bone (7), and thyrohyoid bone (8). Notice the vocal ligament (9) and vocalis m. (10) of the vocal fold (covering mucosa removed). The laryngeal ventricle (11) is just rostral to the vocal fold.

Left bottom: thyroid cartilage (1), cricoid cartilage (2), cricothyroid ligament (asterisk), cricothyroideus m. (3), trachea (4), basihyoid bone (5), and ceratohyoid bone (6).

GÉGEPORCOK (CARTILAGINES LARYNGIS)

CARTILAGO THYORIDEA (pajzsporoc):

- gége ventralis és oldal falát képezi
- hyalin porc

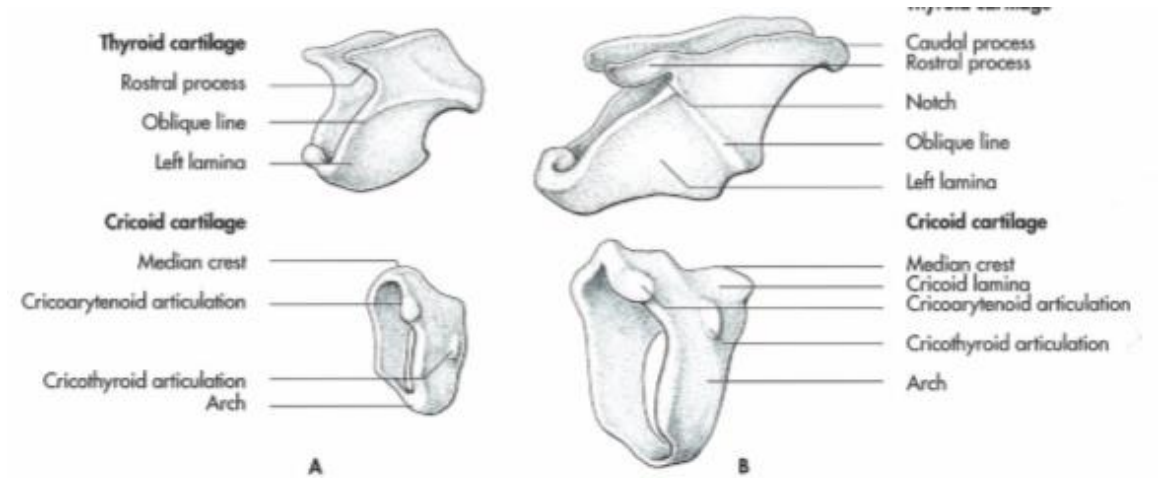
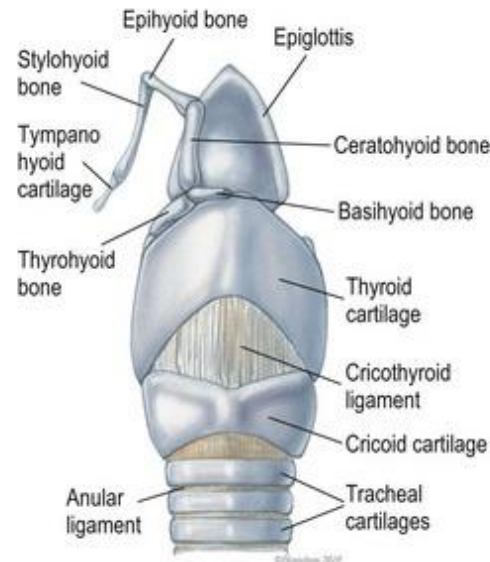
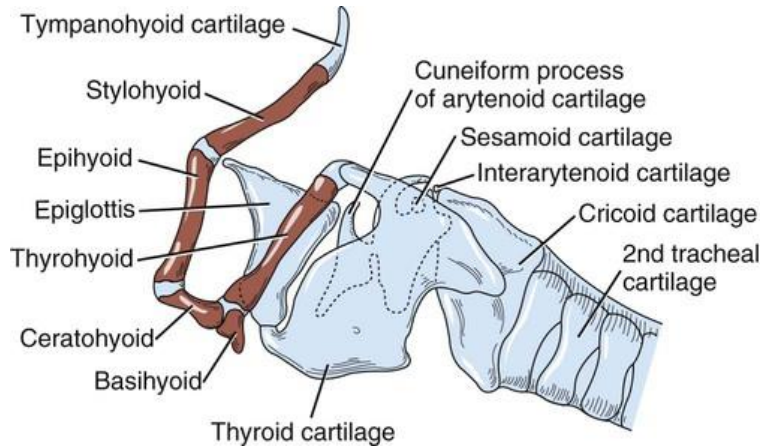
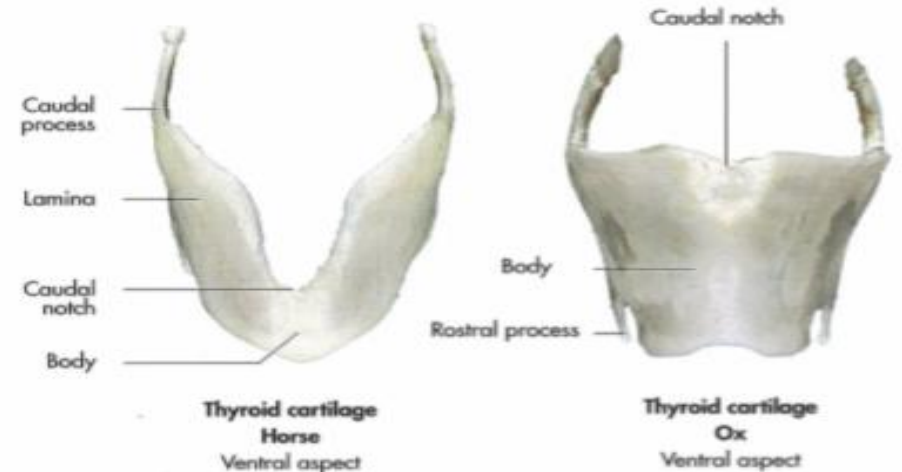


Fig. 1. Laryngeal cartilages of the dog (A) and the horse (B), schematic.

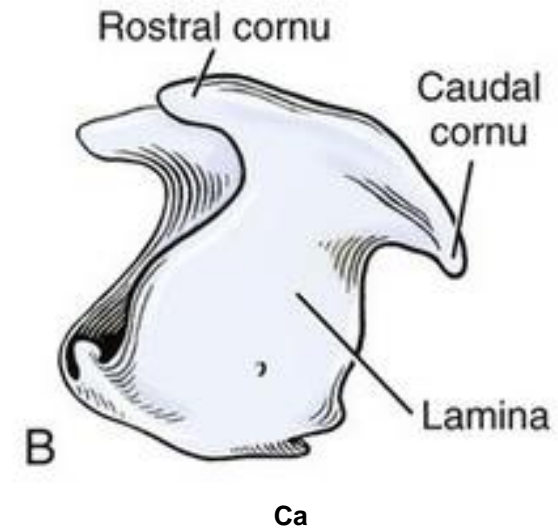
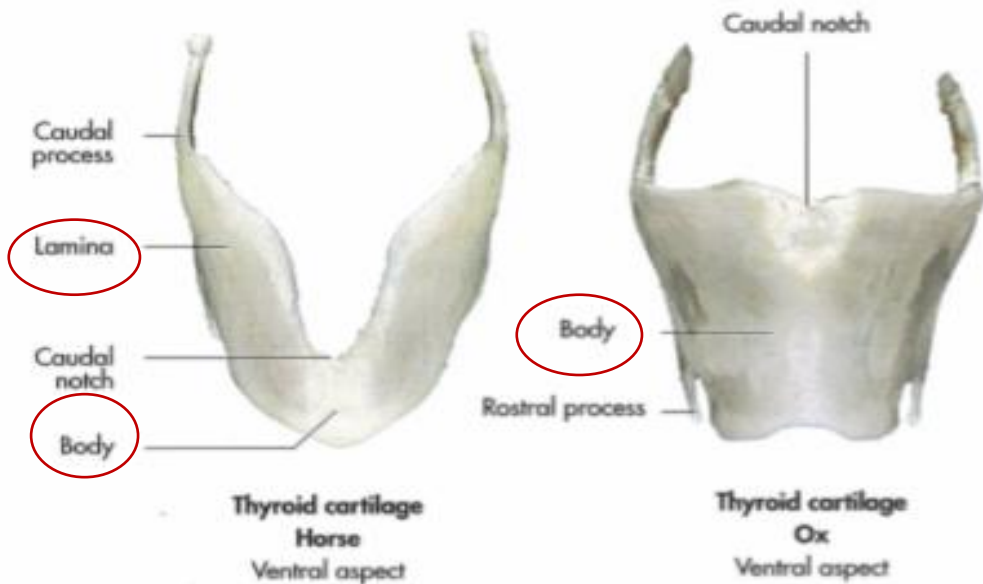
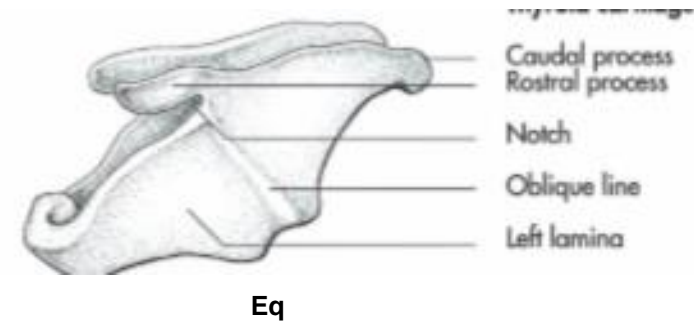
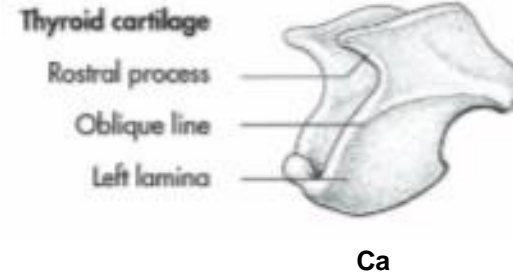


GÉGEPORCOK (CARTILAGINES LARYNGIS)

CARTILAGO TYHORIDEA:

RÉSZEI:

1. CORPUS THYROIDEUM
2. LAMINA DEXTRA
3. LAMINA SINISTRA

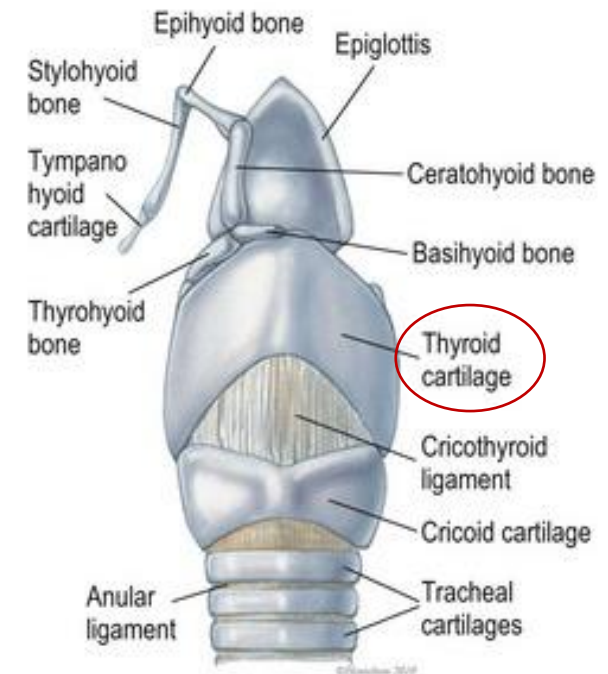
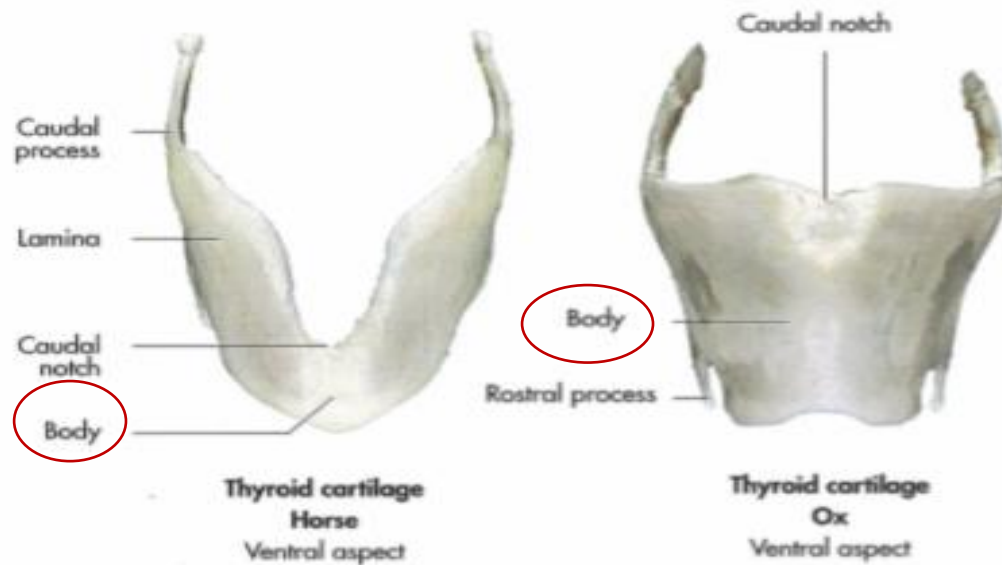


GÉGEPORCOK (CARTILAGINES LARYNGIS)

CARTILAGO TYHORIDEA:

CORPUS THYROIDEUM:

- rövid
- kérődzőben, kutyaiban, idősebb sertésben előredomborodik – *prominentia laryngea*



GÉGEPORCOK (CARTILAGINES LARYNGIS)

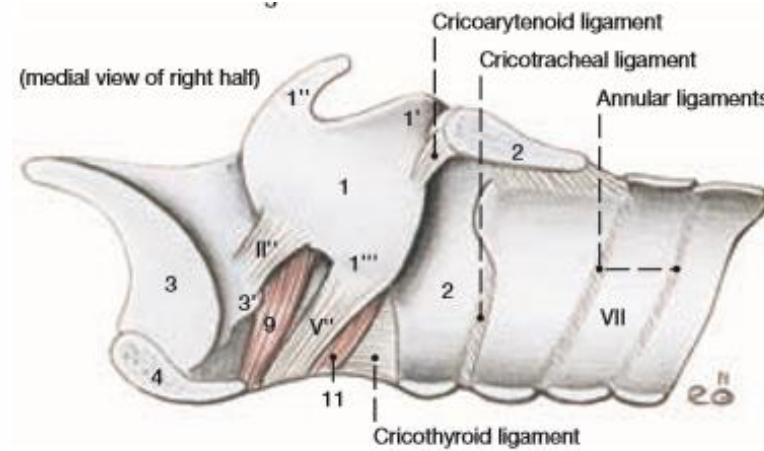
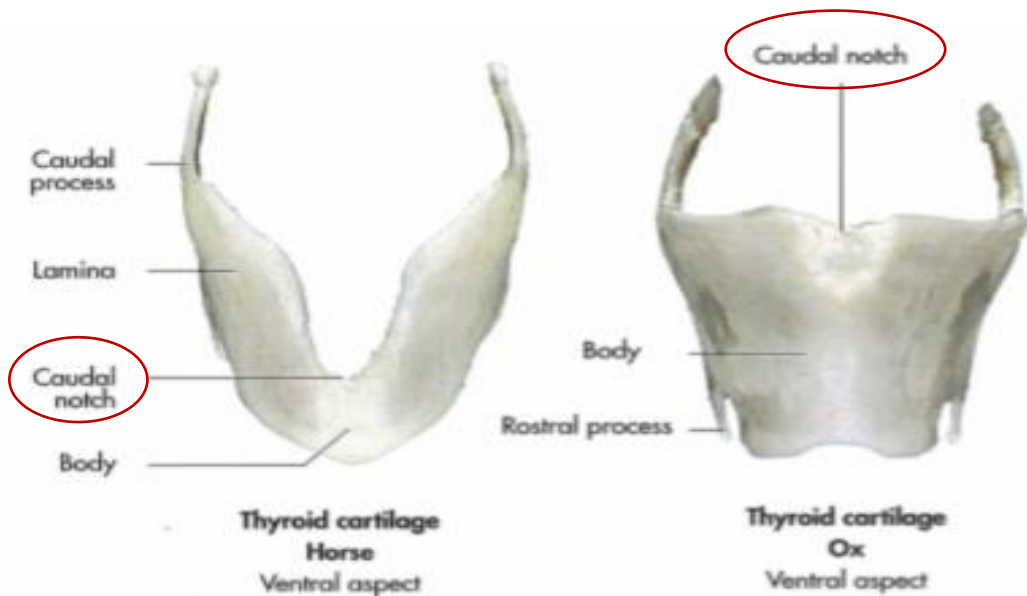
CARTILAGO TYHORIDEA:

CORPUS THYROIDEUM:

1. incisura thyroidea rostralis

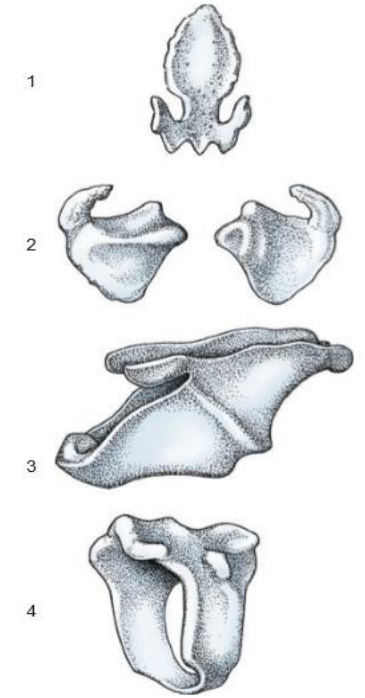
2. incisura thyroidea caudalis:

- lóban mély – operatív beavatkozás helye



3. Epiglottis

4. Cartilago thyroidea



1. Epiglottic cartilage
2. Arytenoid cartilage
3. Thyroid cartilage
4. Cricoid cartilage

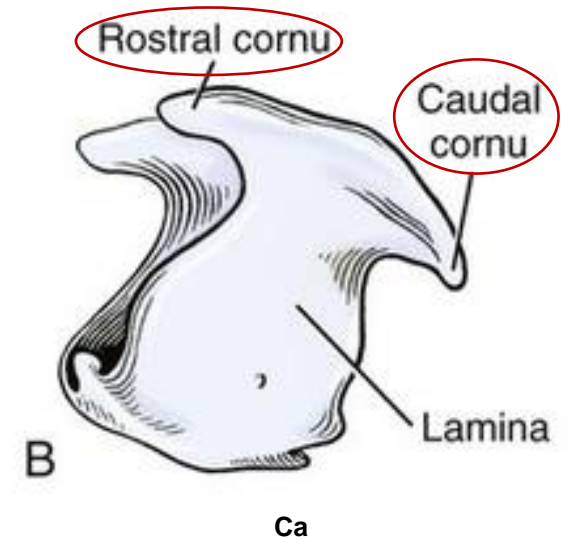
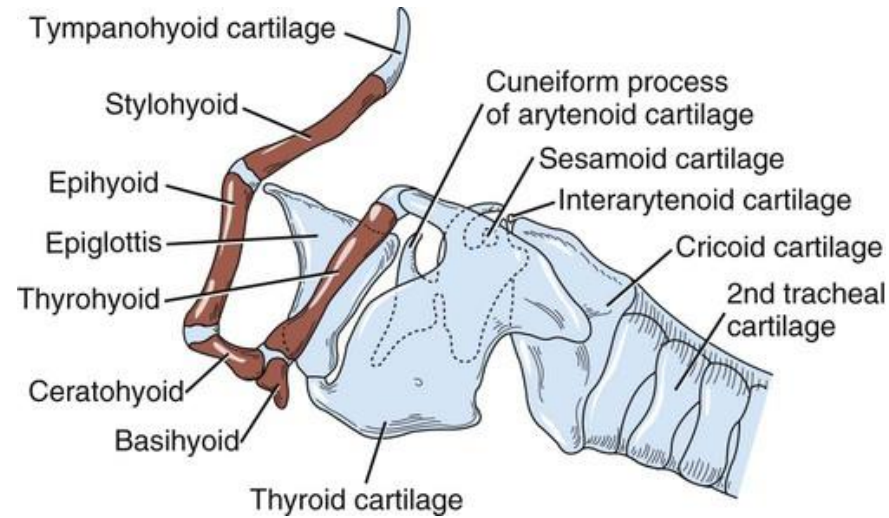
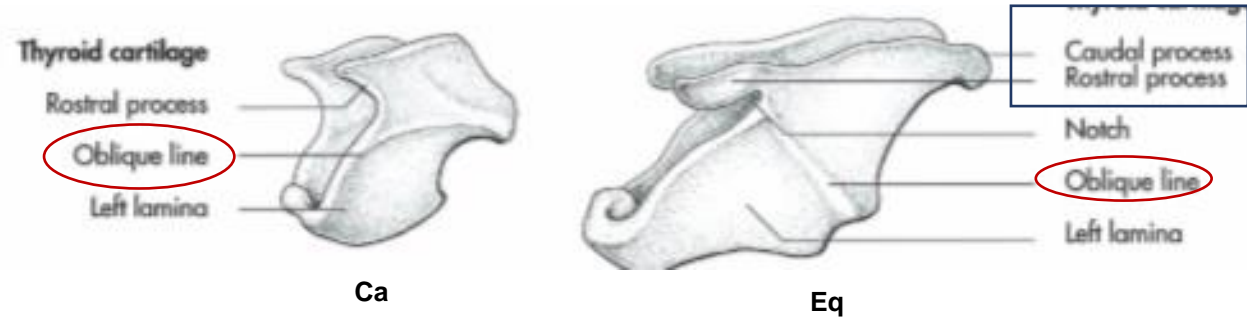
GÉGEPORCOK (CARTILAGINES LARYNGIS)

CARTILAGO TYHORIDEA:

1. Lamina dextra
2. Lamina sinistra

Részei:

- a) linea obliqua
- b) cornu caudale - gyűrűporccal ízesül
- c) cornu rostrale – nyelvcsonttal ízesül



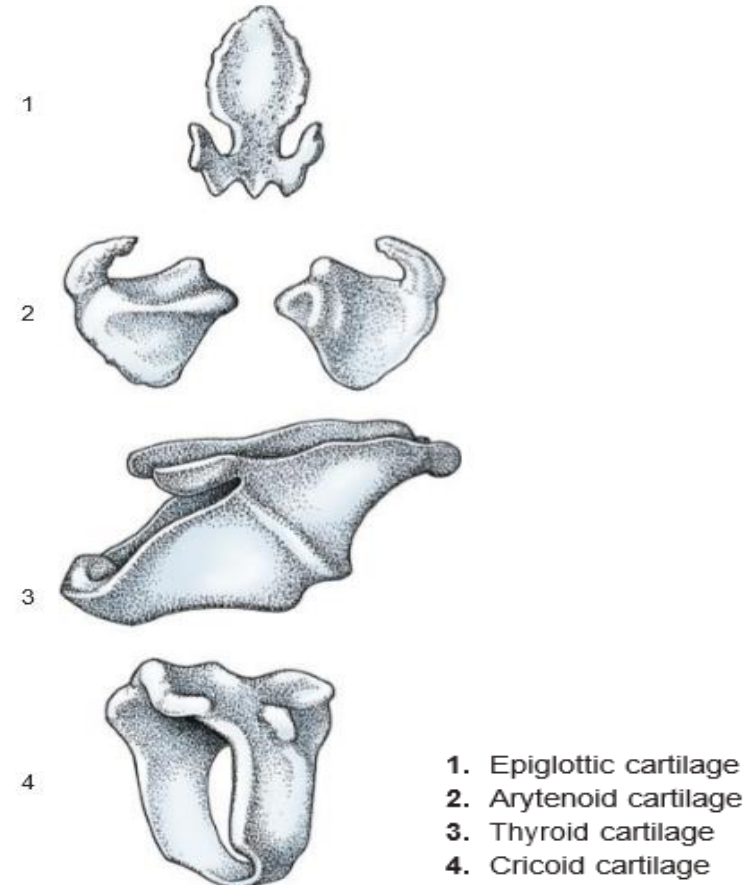
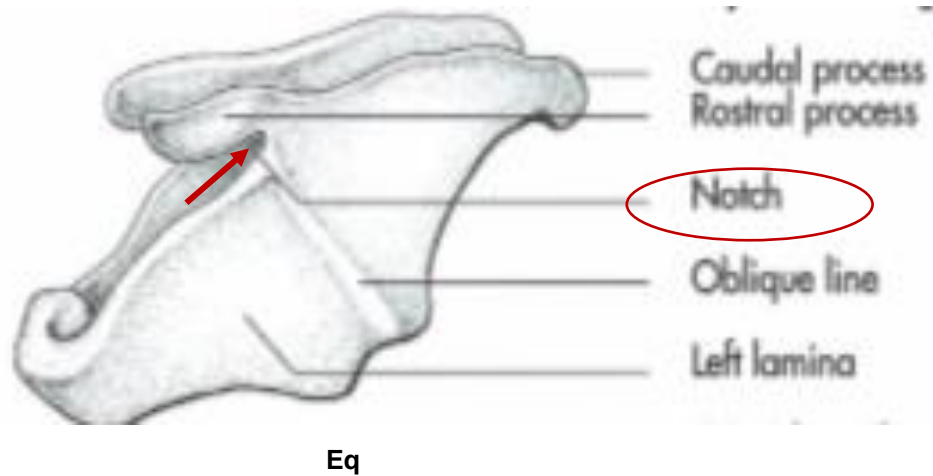
KEHLKOPFKNORPEL (CARTILAGINES LARYNGIS)

CARTILAGO TYHORIDEA:

FISSURA THYROIDEA:

LÓBAN:

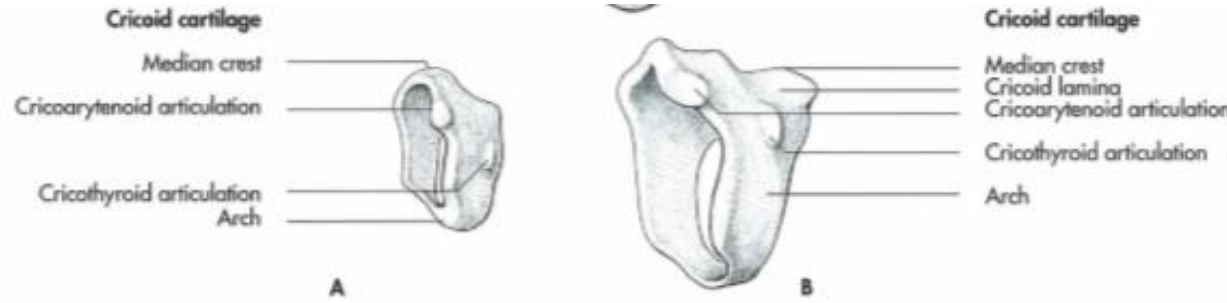
- cornu rostrale és a laminák között



GÉGEPORCOK (CARTILAGINES LARYNGIS)

CARTILAGO CRICOIDEA (gyűrűporc):

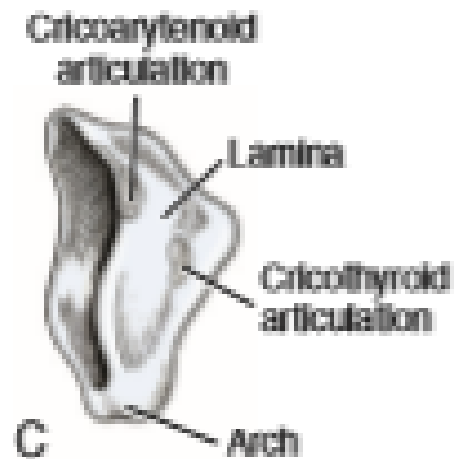
- pajzsporc alatt
- hyalin porc
- pecsétgyűrű alakú



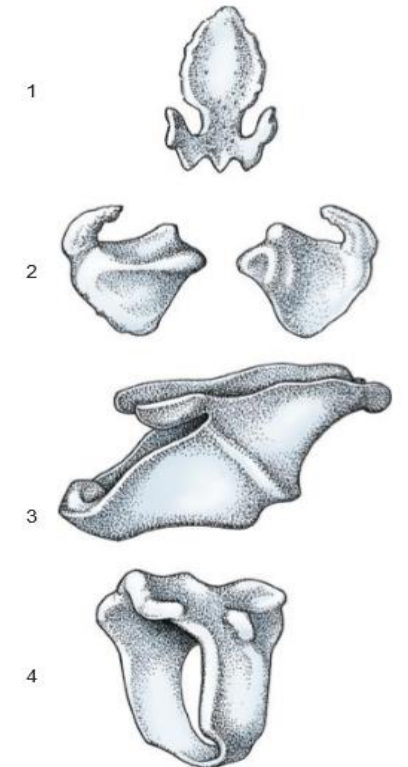
k. Laryngeal cartilages of the dog (A) and the horse (B), schematic.



Cricoid cartilage
Horse
Cranial aspect



Ca



1. Epiglottic cartilage
2. Arytenoid cartilage
3. Thyroid cartilage
4. Cricoid cartilage

GÉGEPORCOK (CARTILAGINES LARYNGIS)

CARTILAGO CRICOIDEA:

1. lamina cartilaginis cricoideae

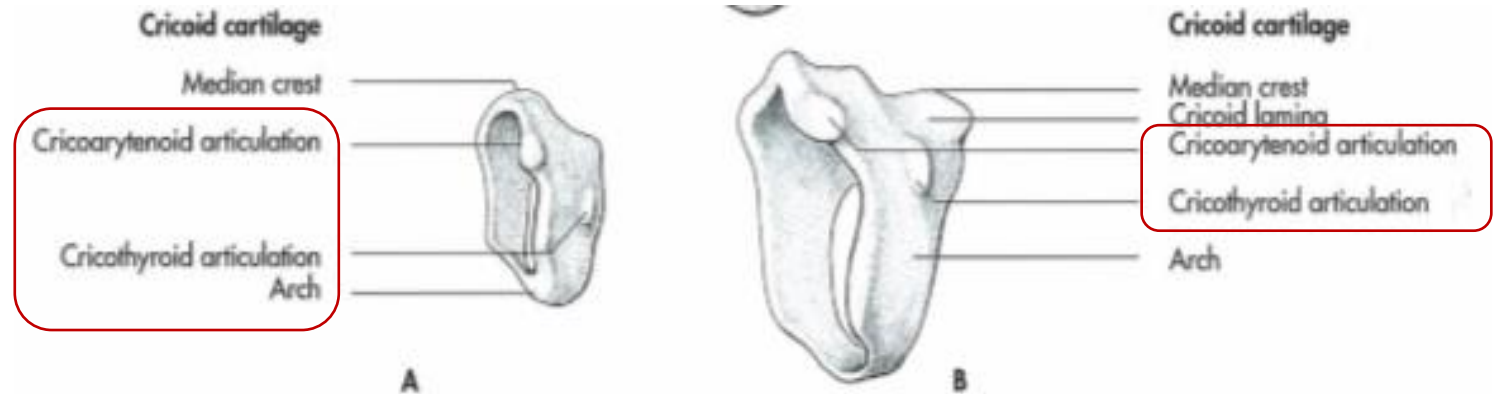
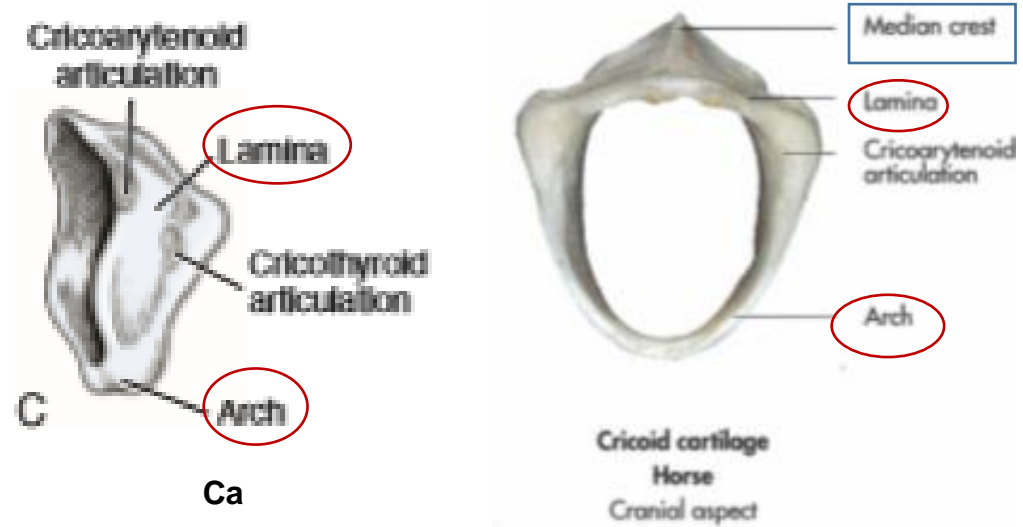
- dorsalis rész

a. crista mediana

b. facies articularis arytaenoidea

2. arcus cartilaginis cricoideae

a. facies articularis thyroidea



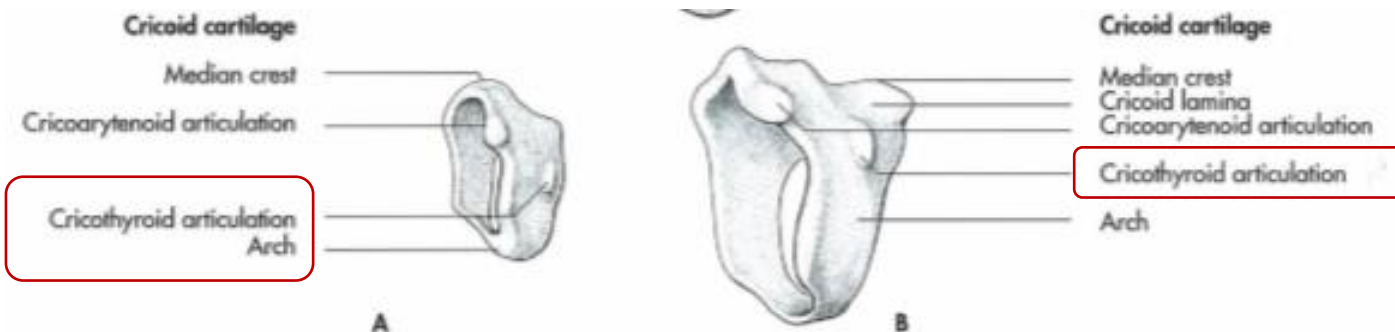
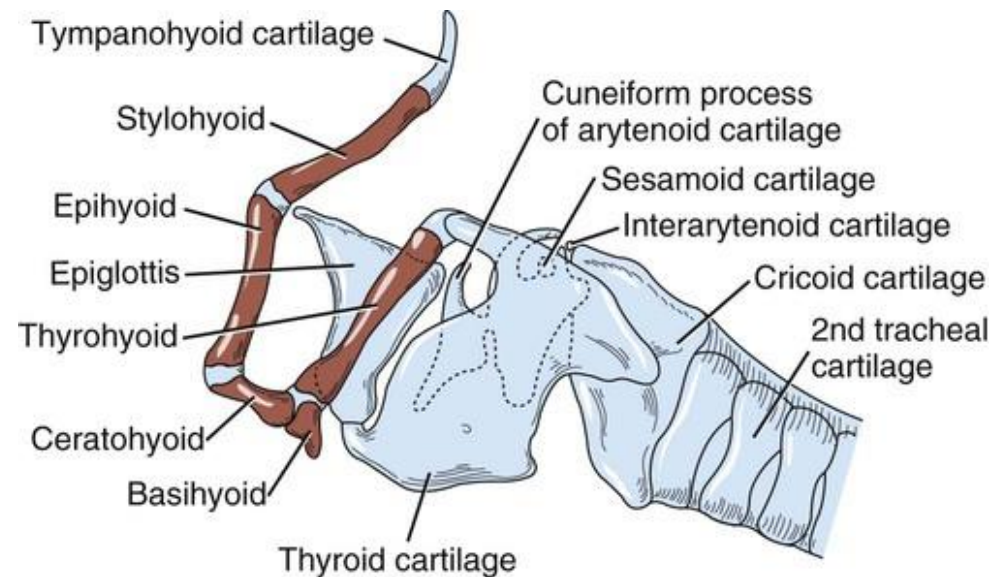
1. Laryngeal cartilages of the dog (A) and the horse (B), schematic.

GÉGEPORCOK (CARTILAGINES LARYNGIS)

CARTILAGO CRICOIDEA:

FACIES ARTICULARIS THYROIDEA:

- lamina cartilaginis cricoideae és arcus cartilaginis cricoideae között
- pajzsporc cornu caudáléjával ízesül

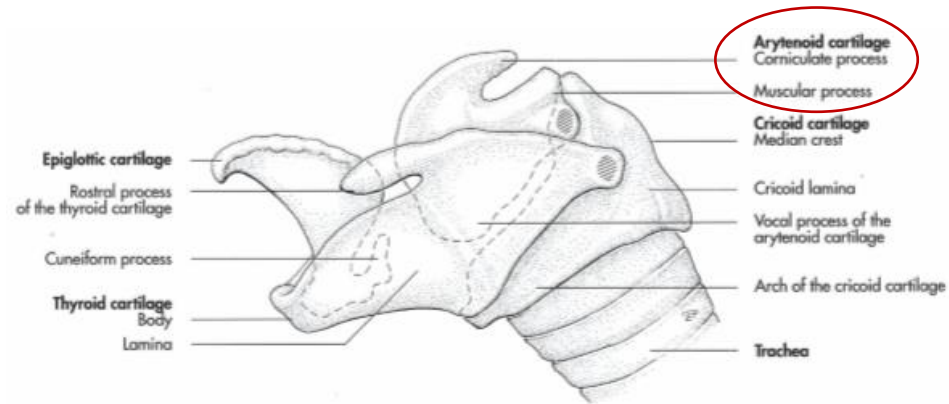


i. Laryngeal cartilages of the dog (A) and the horse (B), schematic.

GÉGEPORCOK (CARTILAGINES LARYNGIS)

CARTILAGINIS ARYTAENOIDEAE (kannaporc):

- páros
- hyalin porc
- háromszög alakú



Laryngeal cartilages of the horse, schematic.



FIGURE 8-13 Laryngeal cartilages disarticulated. **A**, Epiglottis, dorsal aspect. **B**, Thyroid cartilage, lateral aspect. **C**, Cricoid cartilage, lateral aspect. **D**, Left arytenoid cartilage, lateral aspect. **E**, Left arytenoid cartilage, medial aspect. **F**, Interarytenoid cartilage. **G**, Sesamoid cartilage, dorsal aspect.

GÉGEPORCOK (CARTILAGINES LARYNGIS)

CARTILAGINIS ARYTAENOIDEAE:

1. rostradorsalis vég:

- processus corniculatus (szarvnyúlvány)

2. Processus corniculatus:

- dorsalis irányba tekint
- kutyában különálló porc – cartilago corniculata (Santorini)

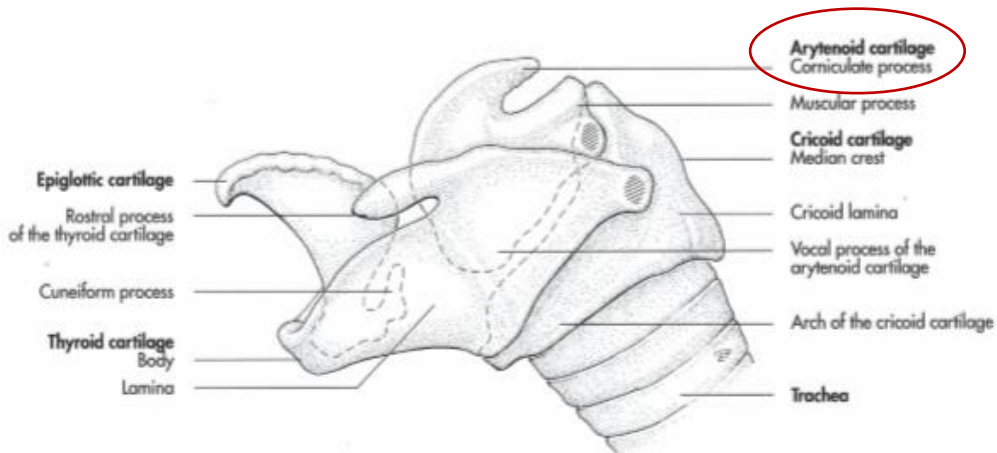


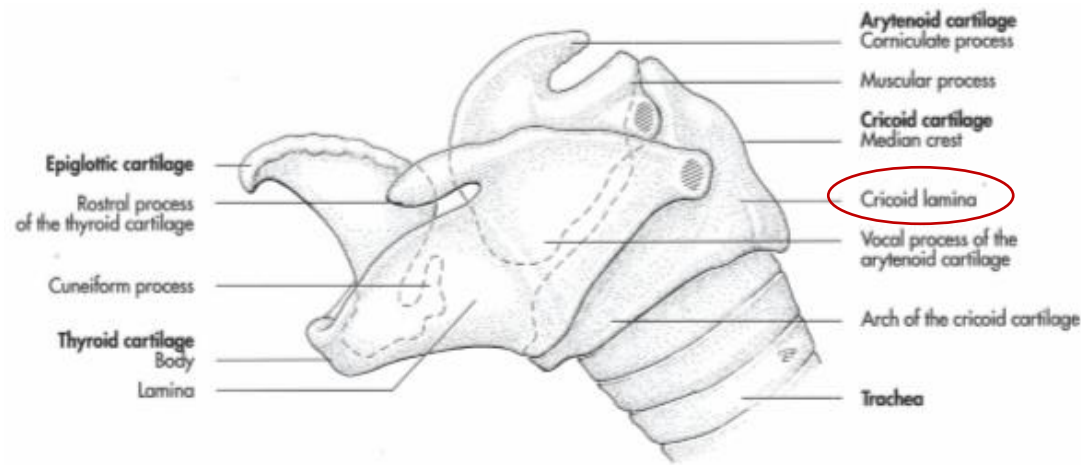
FIGURE 8-13 Laryngeal cartilages disarticulated. A, Epiglottis, dorsal aspect. B, Thyroid cartilage, lateral aspect. C, Cricoid cartilage, lateral aspect. D, Left arytenoid cartilage, lateral aspect. E, Left arytenoid cartilage, medial aspect. F, Interarytenoid cartilage. G, Sesamoid cartilage, dorsal aspect.

GÉGEPORCOK (CARTILAGINES LARYNGIS)

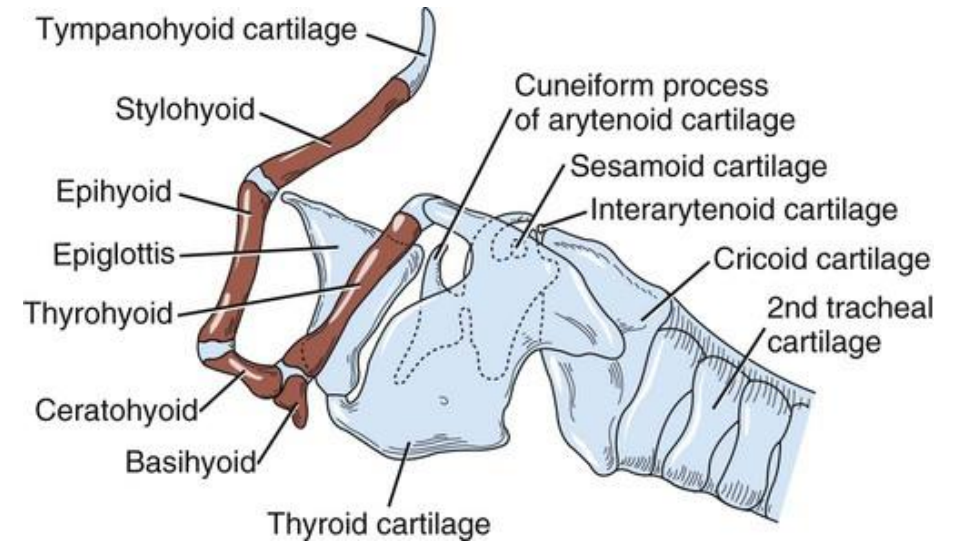
CARTILAGINIS ARYTAENOIDEAE:

3. caudalis vég:

- lamina cartilagini cricoideae-vel ízesül



. Laryngeal cartilages of the horse, schematic.

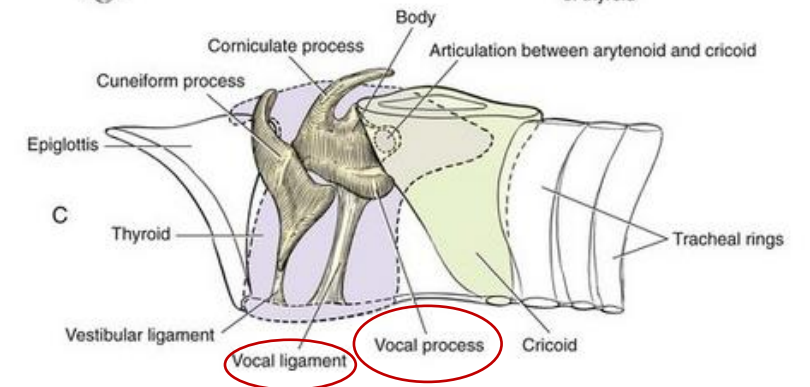
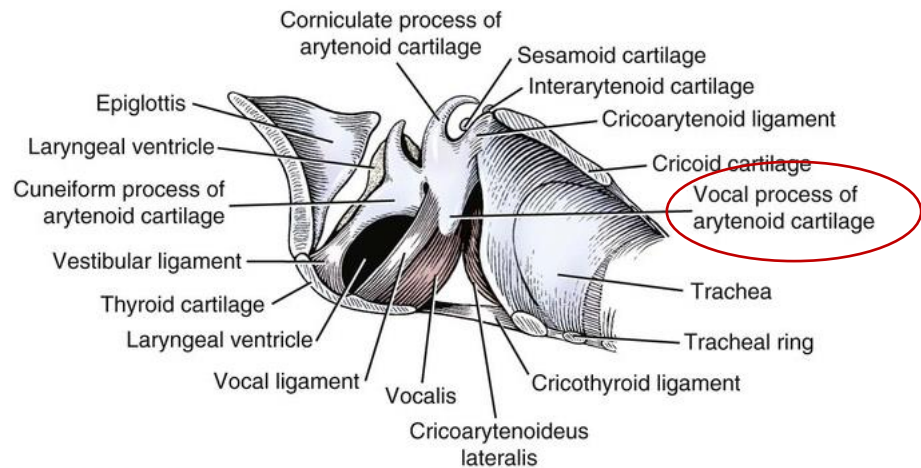
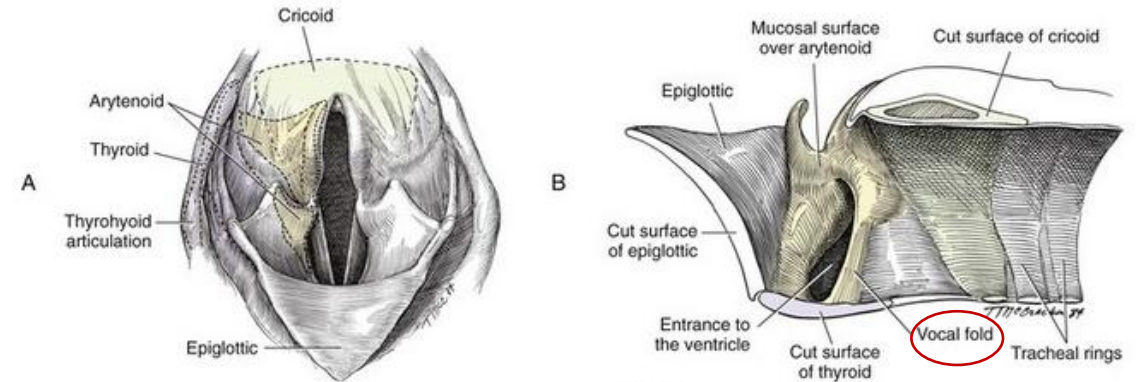


GÉGEPORCOK (CARTILAGINES LARYNGIS)

CARTILAGINIS ARYTAENOIDEAE:

4. Ventralis vég:

- processus vocalis - lig. vocale eredése

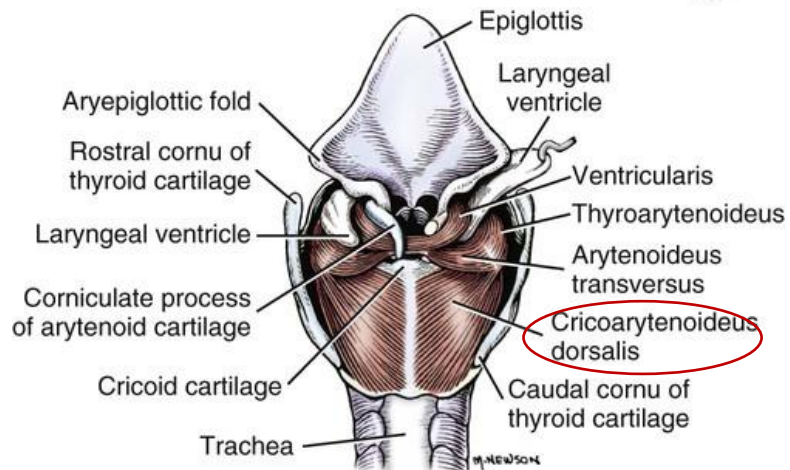
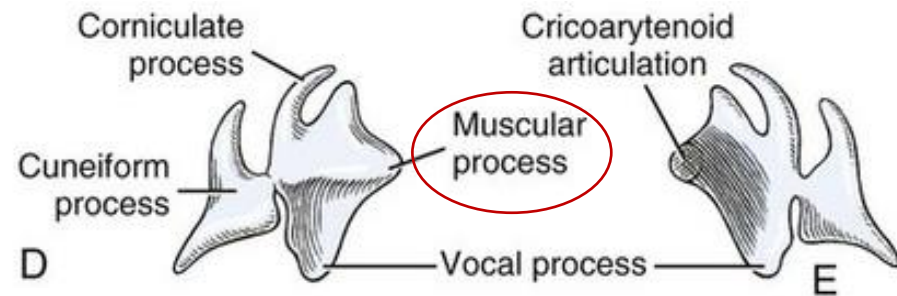
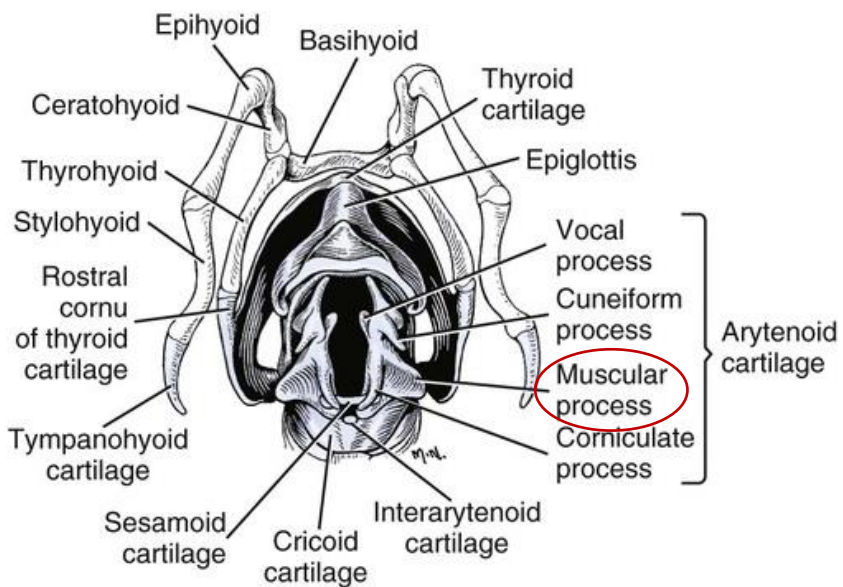


GÉGEPORCOK (CARTILAGINES LARYNGIS)

CARTILAGINIS ARYTAENOIDEAE:

5. Processus muscularis:

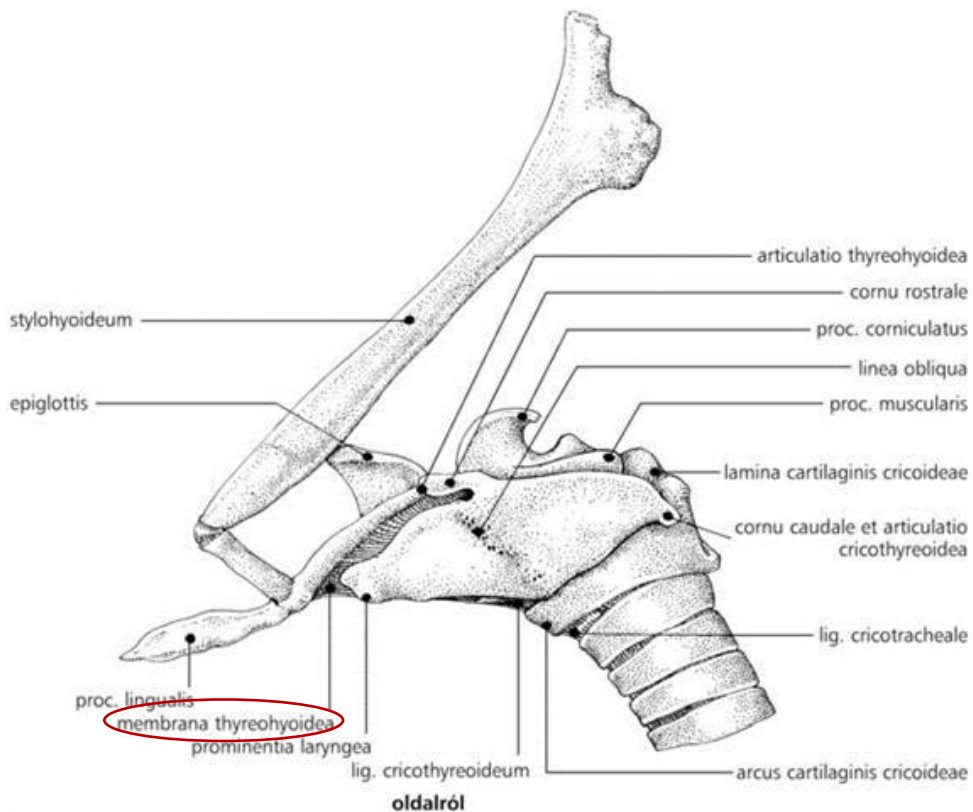
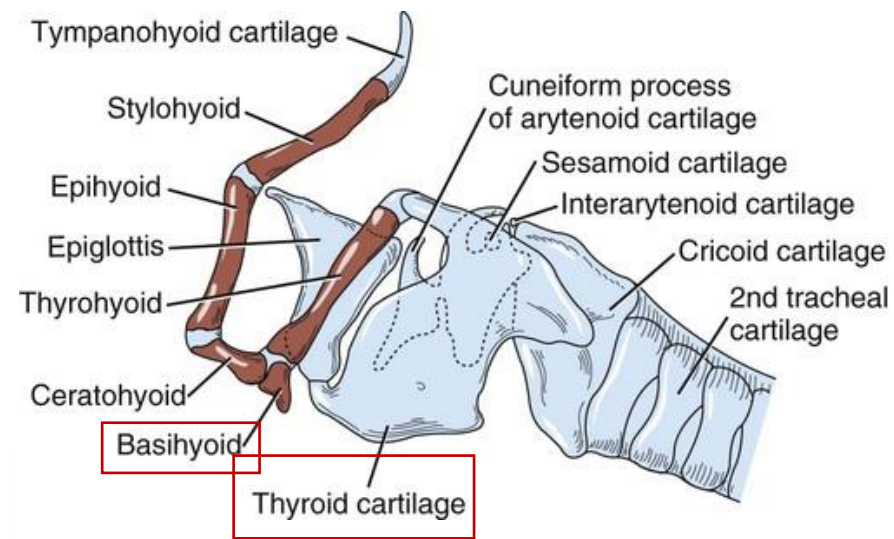
- dorsalisan
- lateral fele mutat
- m. cricoarythenoideus dorsalis tapadása



A GÉGE ÖSSZEKÖTTÉÉSEI

MEMBRANA THYROHYOIDEA

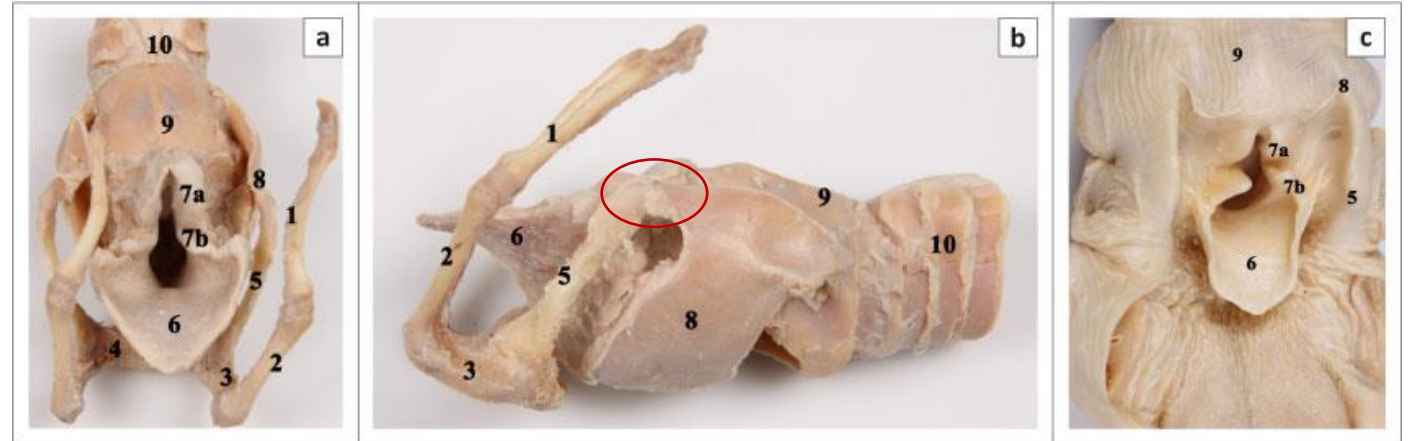
- lamina cartilaginis thyroideae
- basohyoideum között
- húsevőknél synchondrosis



A GÉGE ÖSSZEKÖTTETÉSEI

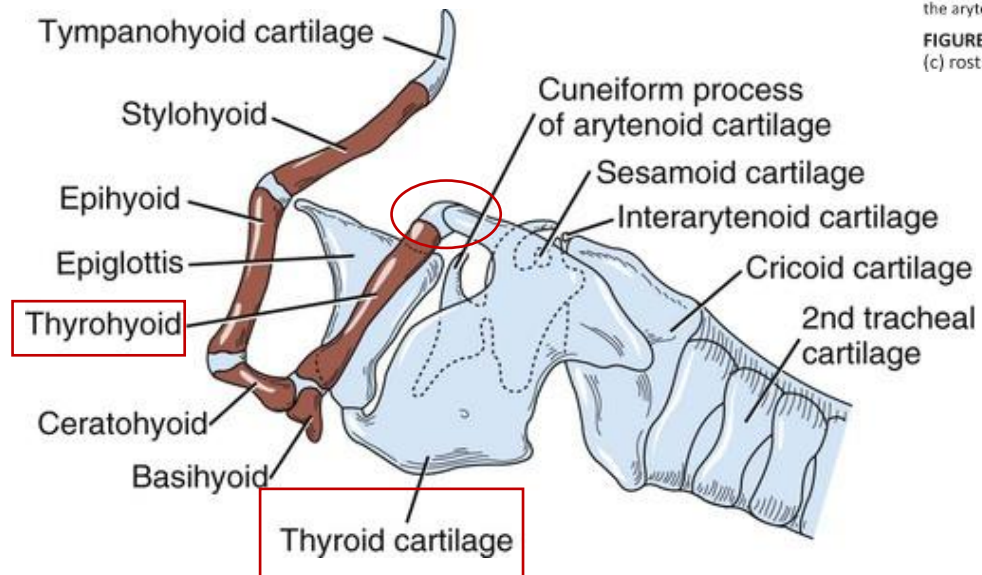
ARTICULATIO THYROHYOIDEA:

- cornu rostrale (cartilago thyroidea)
- thyrohyoideum között



Source: Photographs by M. Doom
Evident in these views are the, (1) stylohyoid, (2) epihyoid, (3) ceratohyoid, (4) basihyoid (5) thyrohyoid, (6) epiglottis, (7a) corniculate process of the arytenoid cartilage, (7b) cuneiform process of the arytenoid cartilage, (8) thyroid cartilage, (9) cricoid cartilage and (10) trachea.

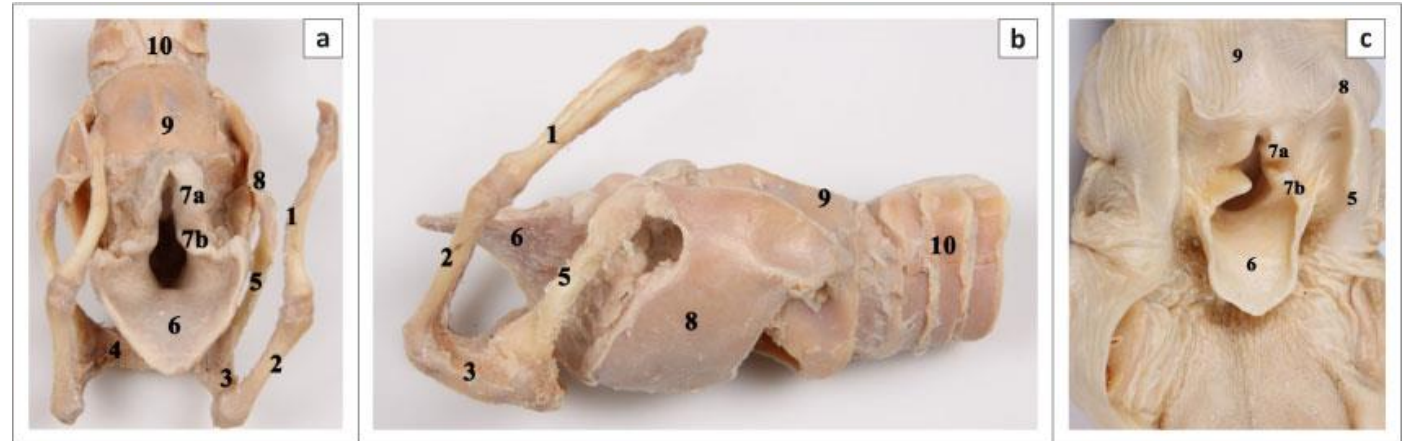
FIGURE 1: Embalmed cadaver specimen of a canine larynx, depicted as, (a) rostradorsal view with the muscles removed, (b) lateral view after removal of the muscles and (c) rostradorsal view with the dorsal aspect of the oesophagus removed.



A GÉGE ÖSSZEKÖTTETÉSEI

LIGAMENTUM THYROEPIGLOTTICUM:

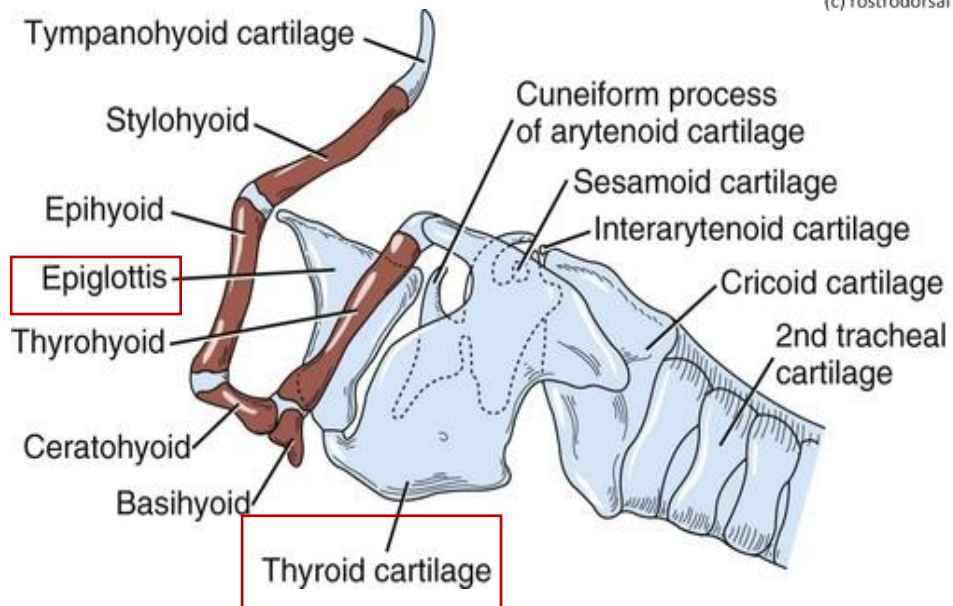
- epiglottis basisa és a pajzsporc elülső széle között



Source: Photographs by M. Doom

Evident in these views are the, (1) stylohyoid, (2) epihyoid, (3) ceratohyoid, (4) basihyoid (5) thyrohyoid, (6) epiglottis, (7a) corniculate process of the arytenoid cartilage, (7b) cuneiform process of the arytenoid cartilage, (8) thyroid cartilage, (9) cricoid cartilage and (10) trachea.

FIGURE 1: Embalmed cadaver specimen of a canine larynx, depicted as, (a) rostradorsal view with the muscles removed, (b) lateral view after removal of the muscles and (c) rostradorsal view with the dorsal aspect of the oesophagus removed.



A GÉGE ÖSSZEKÖTTETÉSEI

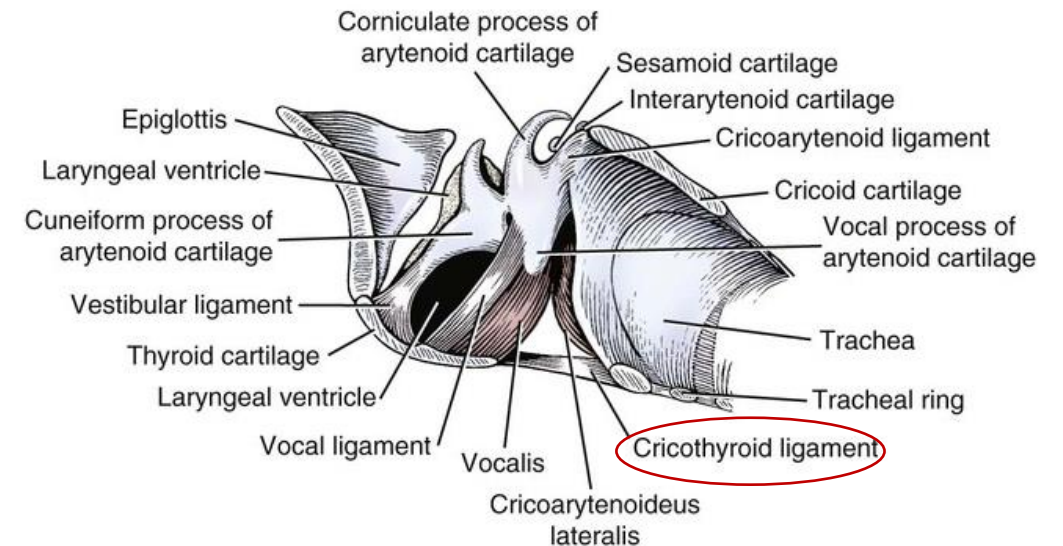
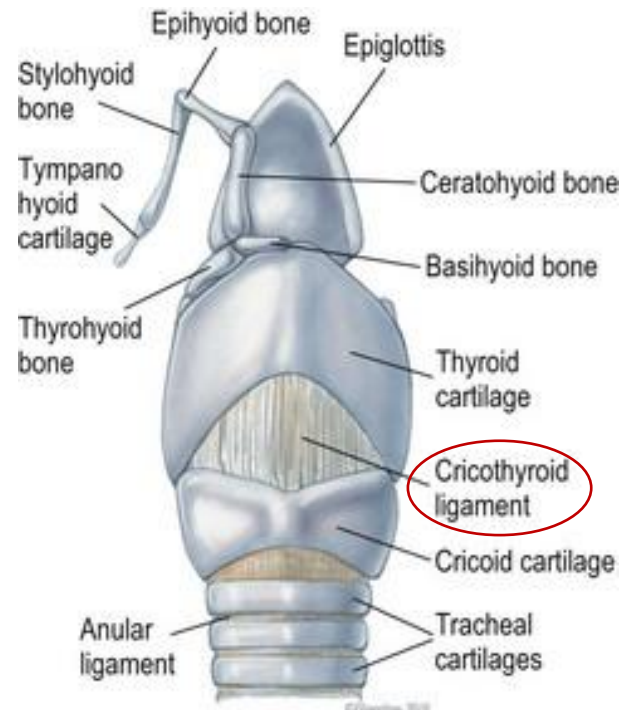
LIGAMENTUM CRICOTHYROIDEUM:

- a pajzsporc és a gyűrűporc között

LÓBAN:

- vastag

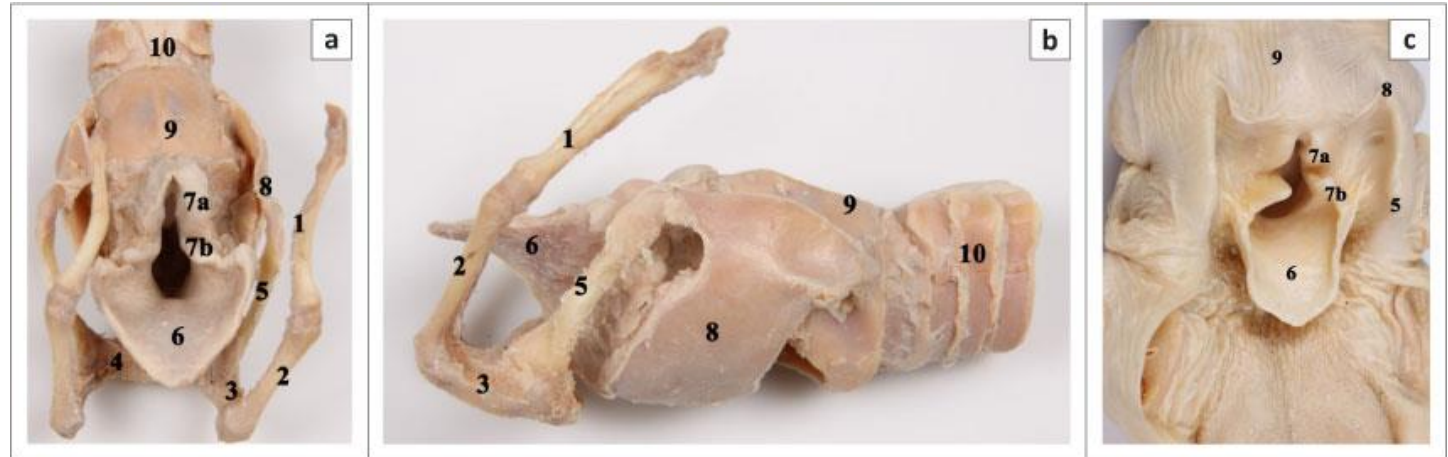
- membrana cricothyroideum- áthidalja az incisura thyroidea caudalist – átvágásával a gége üregébe juthatunk



A GÉGE ÖSSZEKÖTTETÉSEI

LIGAMENTUM HYOEPIGLOTTICUM:

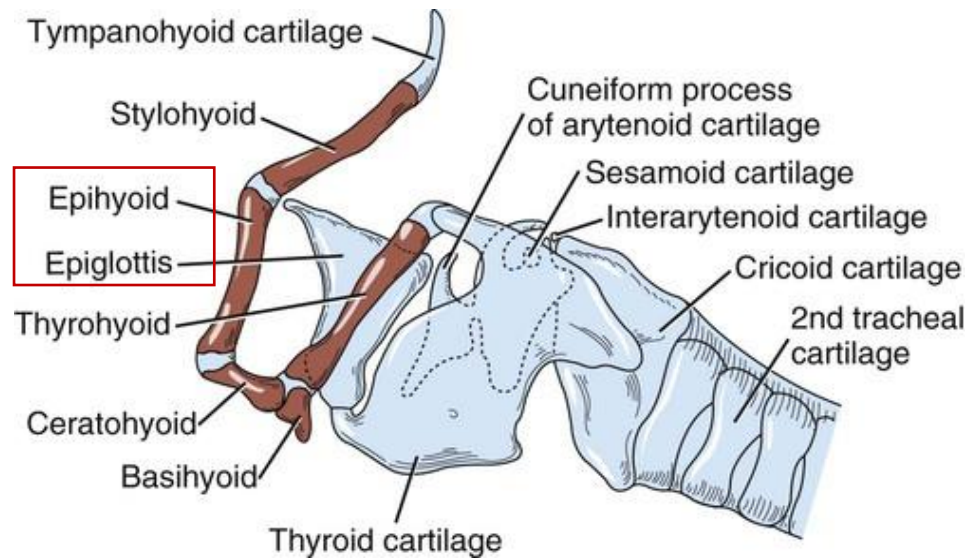
- m. hyoepiglotticussal együtt halad
- epiglottis basisát köti össze a nyelvcsonttal



Source: Photographs by M. Doom

Evident in these views are the, (1) stylohyoid, (2) epihyoid, (3) ceratohyoid, (4) basihyoid (5) thyrohyoid, (6) epiglottis, (7a) corniculate process of the arytenoid cartilage, (7b) cuneiform process of the arytenoid cartilage, (8) thyroid cartilage, (9) cricoid cartilage and (10) trachea.

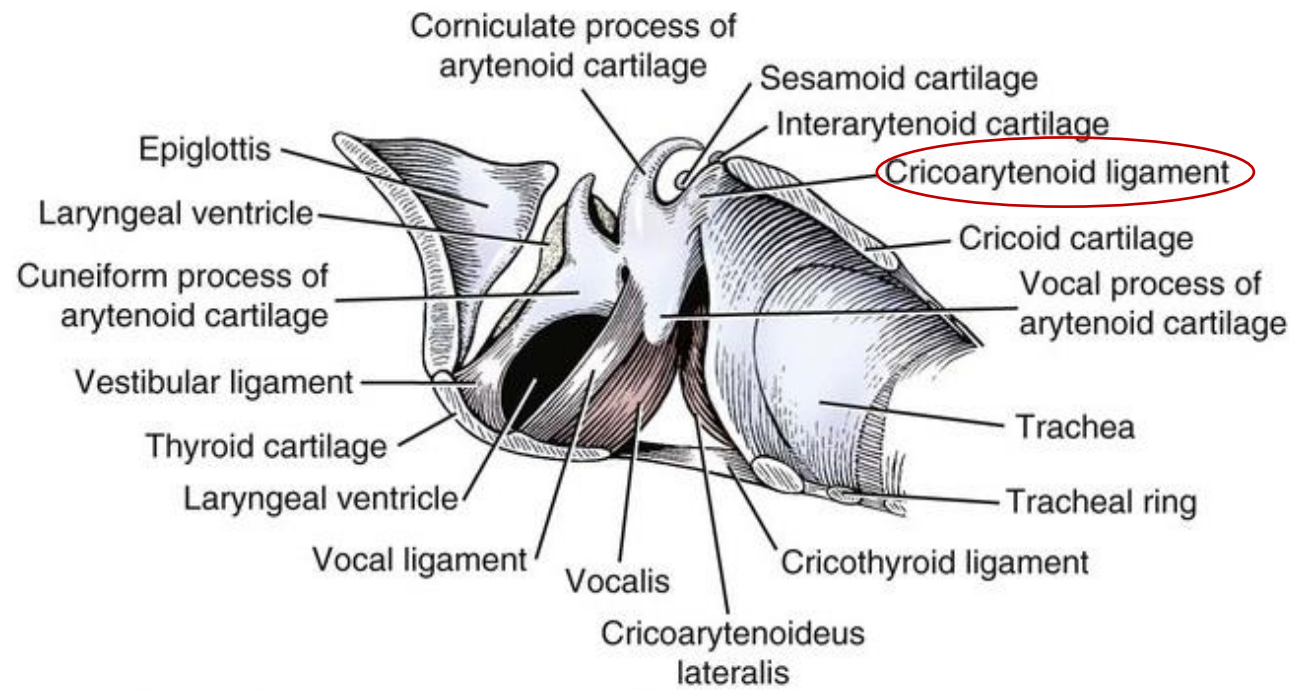
FIGURE 1: Embalmed cadaver specimen of a canine larynx, depicted as, (a) rostradorsal view with the muscles removed, (b) lateral view after removal of the muscles and (c) rostradorsal view with the dorsal aspect of the oesophagus removed.



A GÉGE ÖSSZEKÖTTETÉSEI

LIGAMENTUM CRICOARYTENOIDEUM DORSALE:

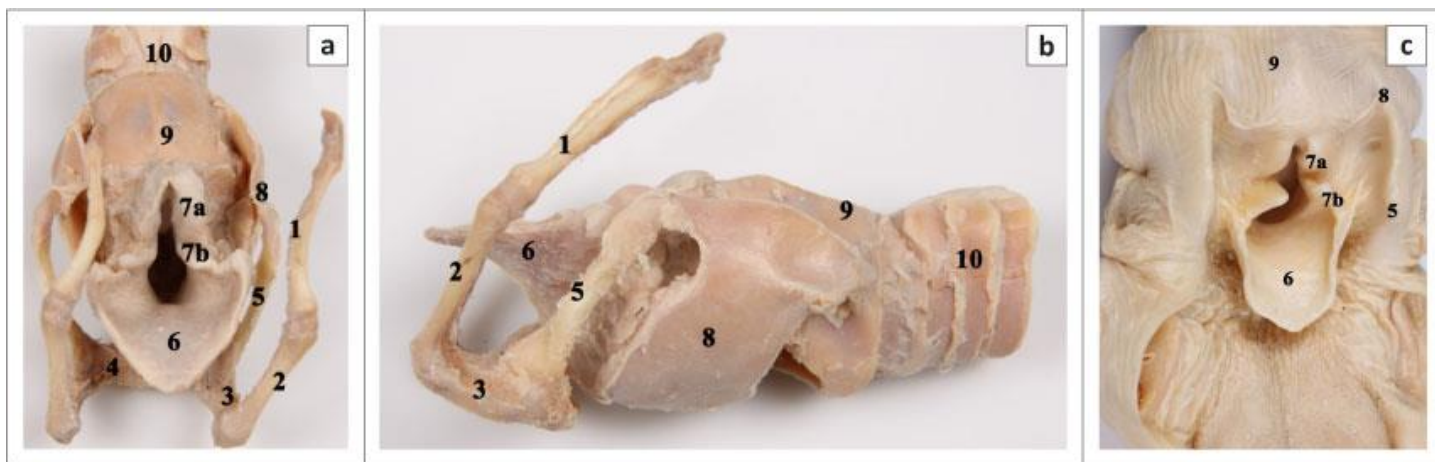
- lamina cartilaginis cricoideae és a kannaporc belső felülete között



A GÉGE ÖSSZEKÖTTETÉSEI

LIGAMENTUM ARYTAENOIDEUM TRANSVERSUM:

- két kannaporcot kapcsolja össze
- benne lencseporcok (cartilago interarythenoideum) vannak beágyazva



Source: Photographs by M. Doom

Evident in these views are the, (1) stylohyoid, (2) epihyoid, (3) ceratohyoid, (4) basihyoid (5) thyrohyoid, (6) epiglottis, (7a) corniculate process of the arytenoid cartilage, (7b) cuneiform process of the arytenoid cartilage, (8) thyroid cartilage, (9) cricoid cartilage and (10) trachea.

FIGURE 1: Embalmed cadaver specimen of a canine larynx, depicted as, (a) rostradorsal view with the muscles removed, (b) lateral view after removal of the muscles and (c) rostradorsal view with the dorsal aspect of the oesophagus removed.

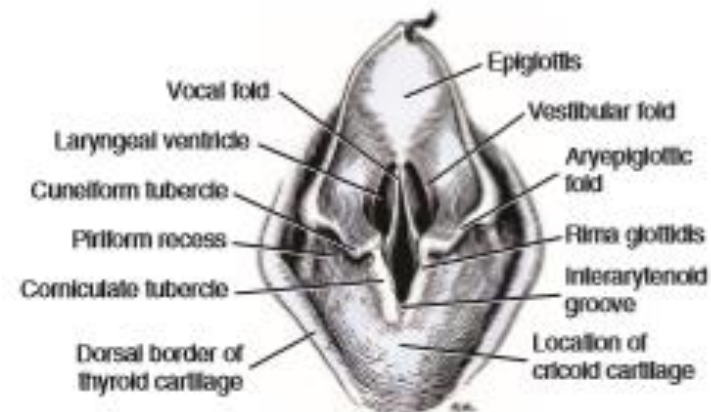


FIGURE 8-15 Dorsal aspect of larynx, showing vocal and vestibular folds.

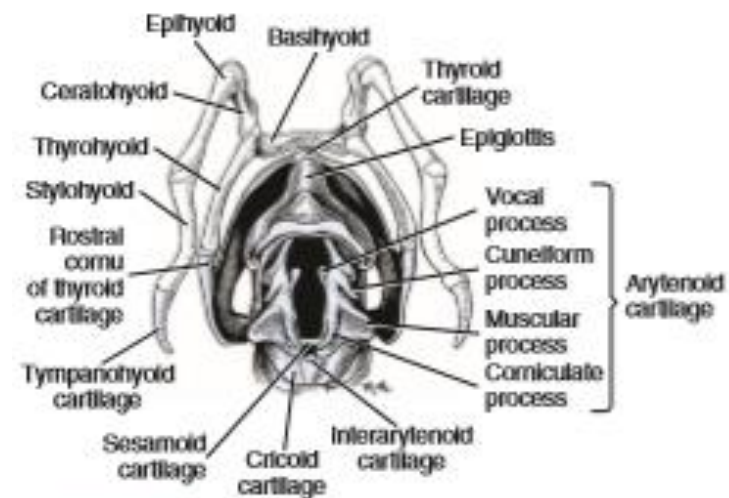
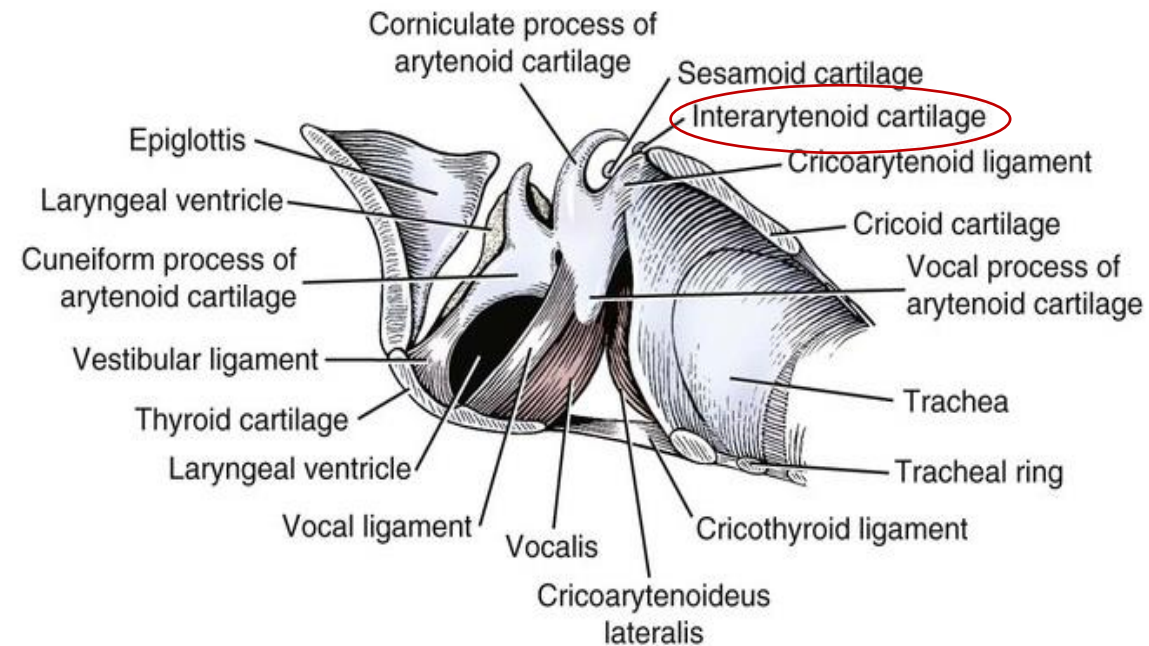


FIGURE 8-16 Laryngeal cartilages and hyoid apparatus, dorsal aspect.

A GÉGE ÖSSZEKÖTTETÉSEI

CARTILAGO INTERARYTENOIDEUM:

- két kannaporc között
- lig. arythenoideum transversumban
- kutyában, sertésben



A GÉGE ÖSSZEKÖTTETÉSEI

MEMBRANA FIBROELATICA LARYNGIS:

- cavum laryngis nyálkahártya borítása

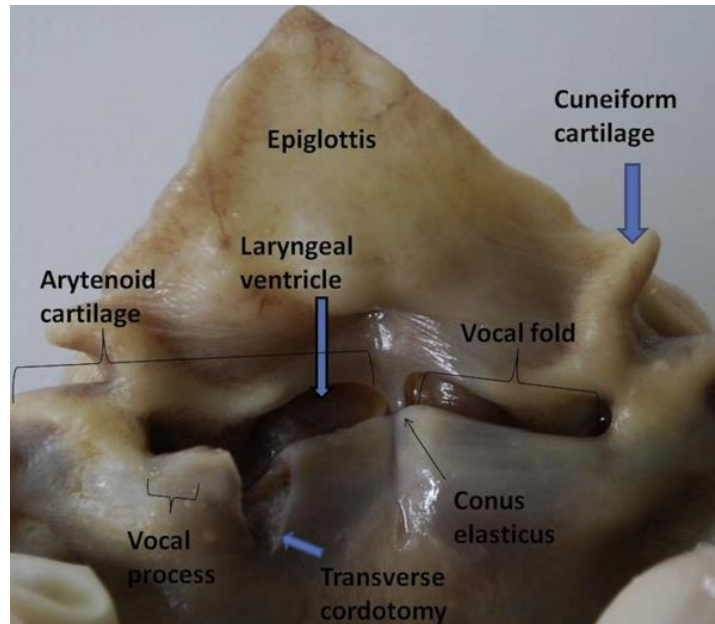
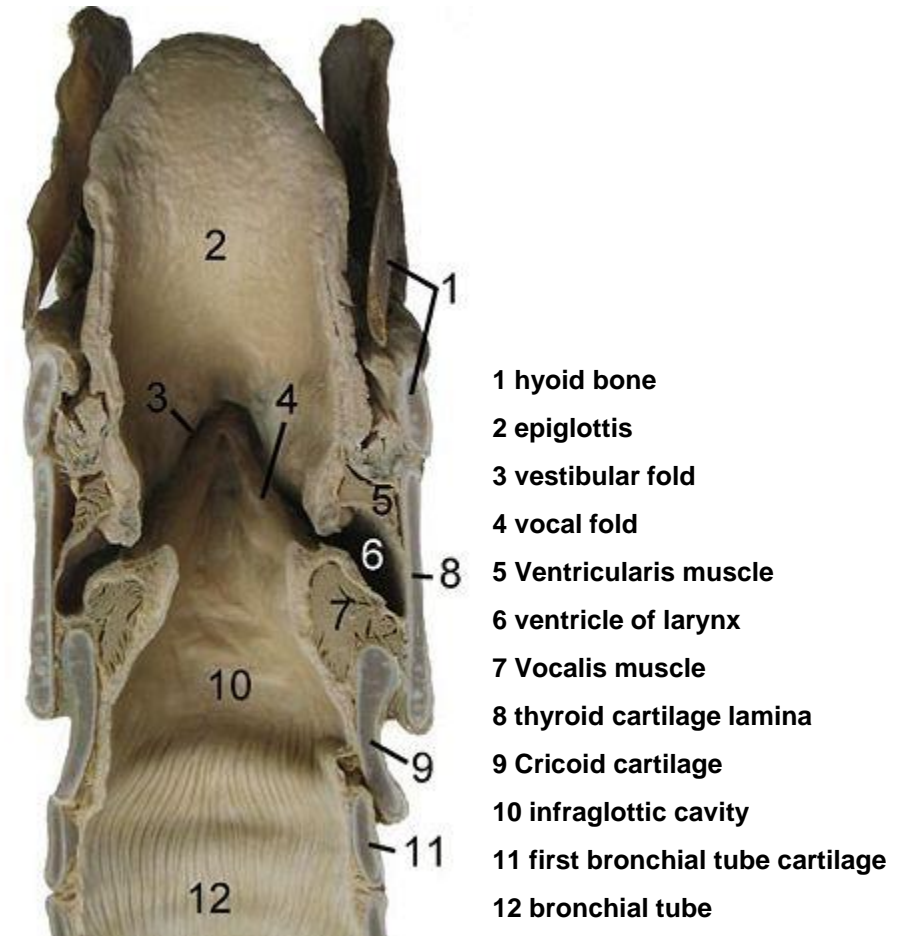


Fig. 1. Autopic laryngeal specimen from an autopsy from a normal dog, dorsal aspect. The regional anatomy and the site of the cordotomy have been highlighted on the specimen.

<https://www.sciencedirect.com/science/article/pii/S0034528810000299>



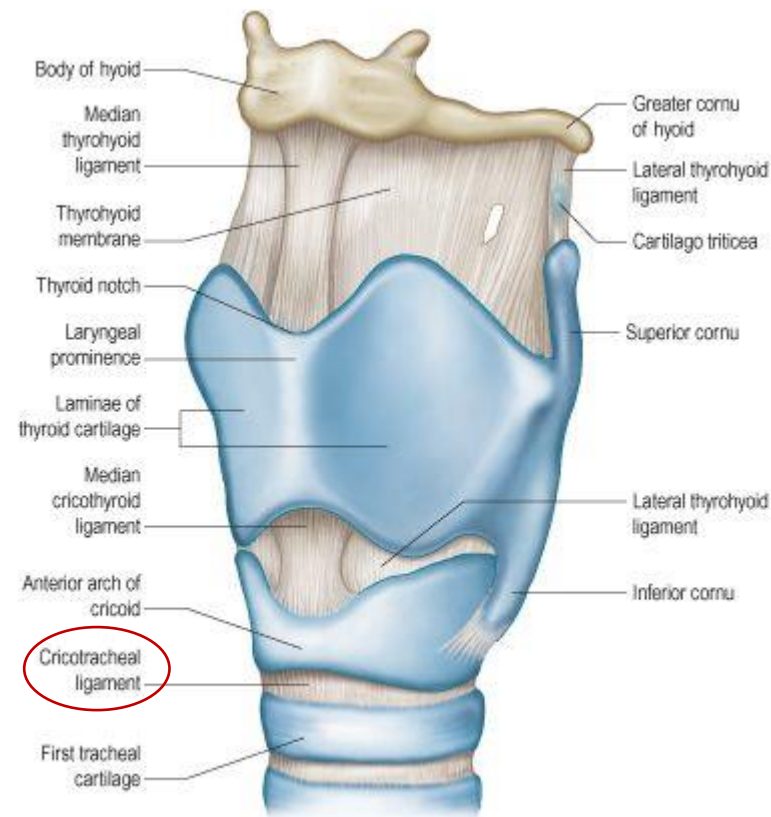
Cut through the larynx of a horse

https://en.wikipedia.org/wiki/Infraglottic_cavity

A GÉGE ÖSSZEKÖTTETÉSEI

LIGAMENTUM CROCOTRACHEALE

- arcus cartilaginis cricoideae és az első trachea porc között



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<http://www.rock-cafe.info/suggest/laryngeal-prominence-location-6c6172796e6765616c.html>

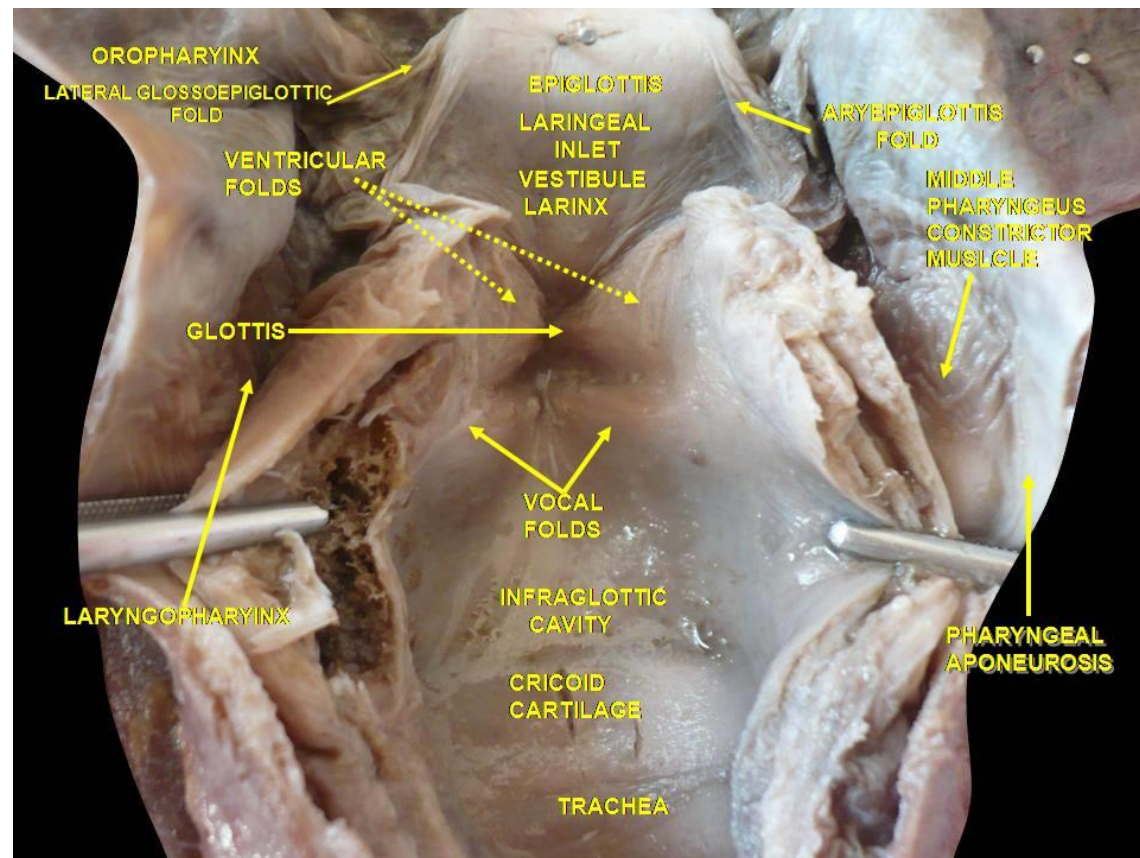
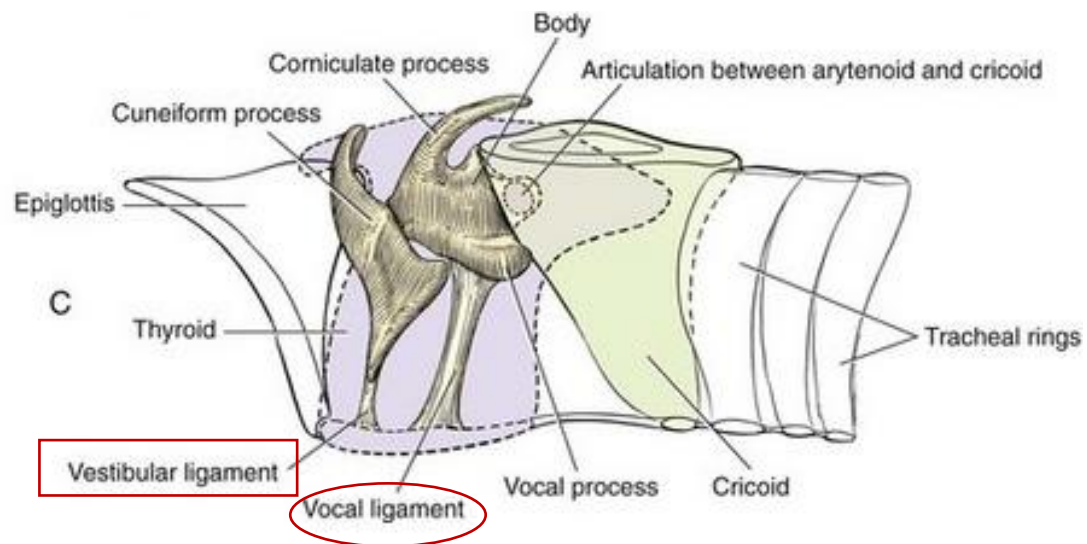
A GÉGE ÖSSZEKÖTTETÉSEI

BESLŐ SZALAGOK:

- cavum laryngisben

1. LIGAMENTUM VESTIBULARE

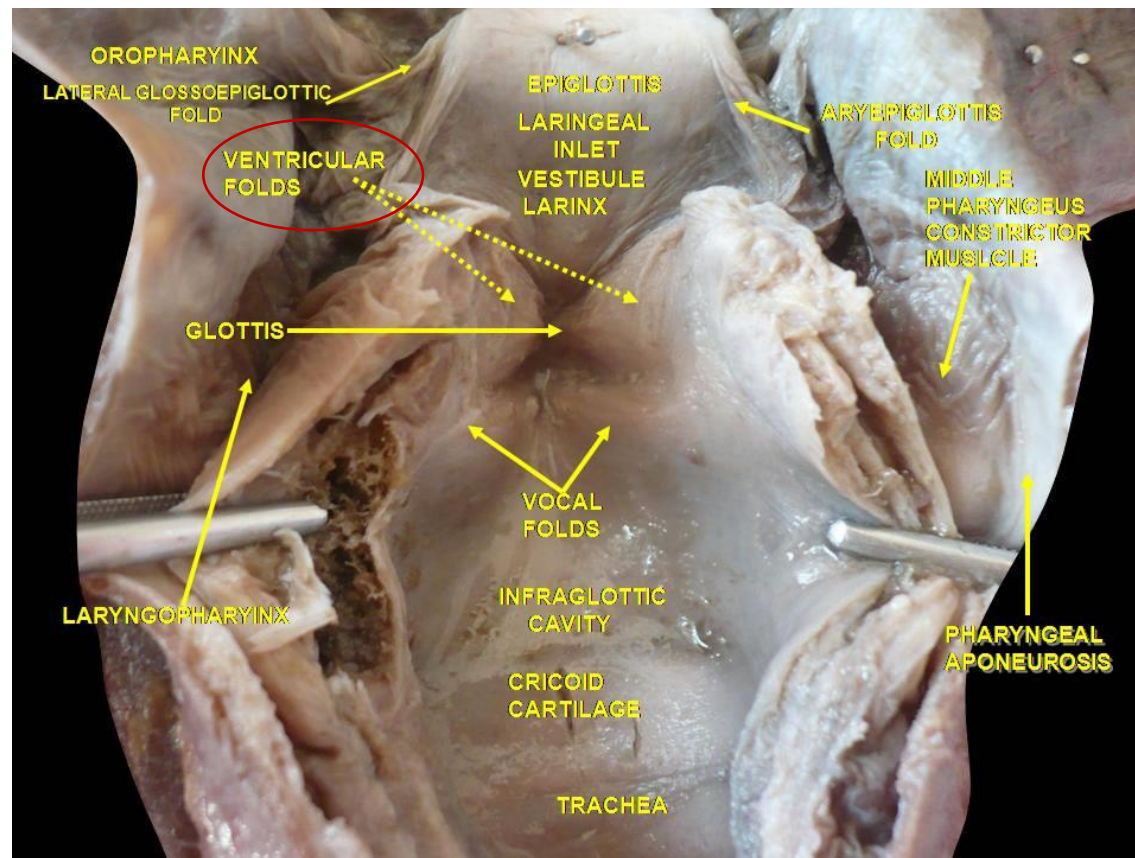
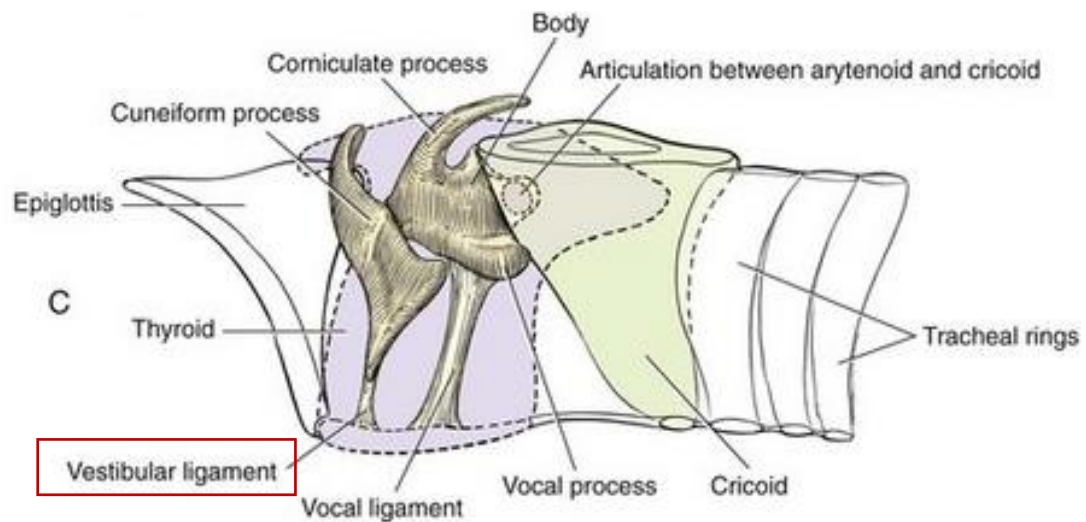
2. LIGAMENTUM VOCALE



A GÉGE ÖSSZEKÖTTETÉSEI

LIGAMENTUM VESTIBULARE (seu ventriculare, áhangszalag):

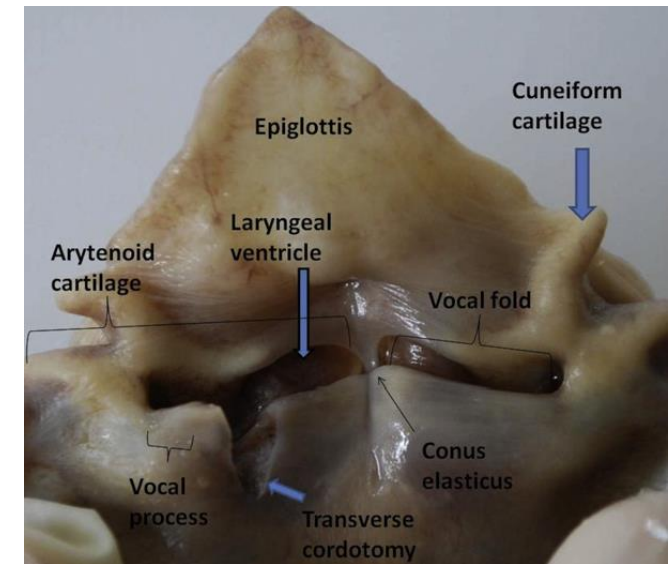
- rostralisán
- macskában hiányzik
- plica vestibularis képzése



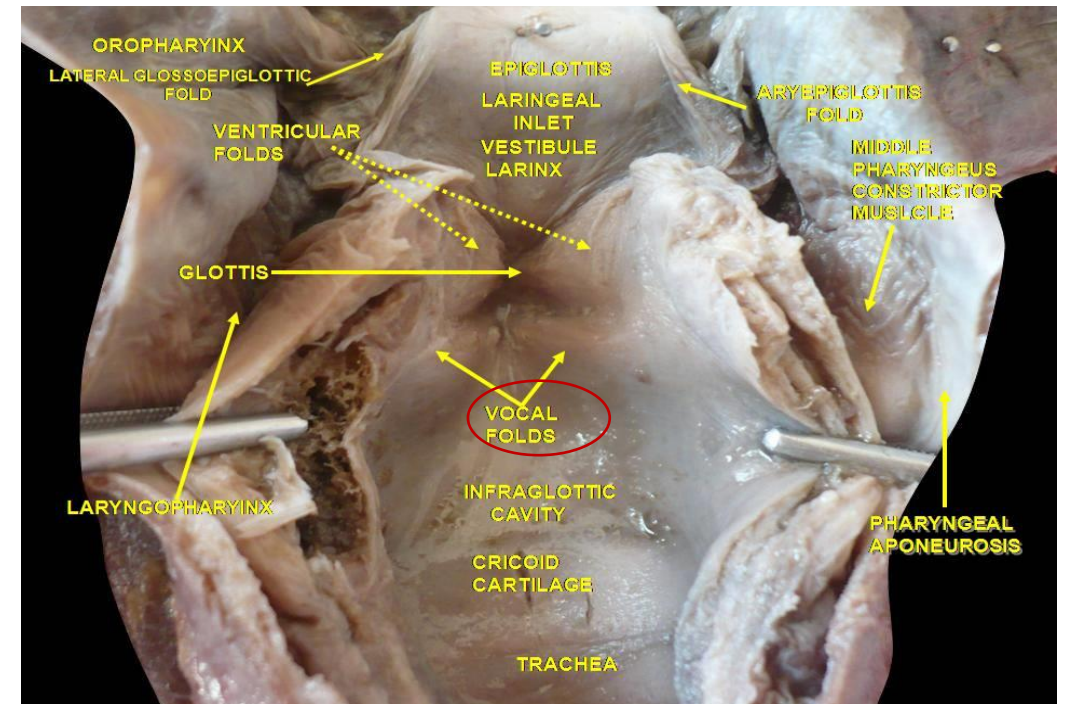
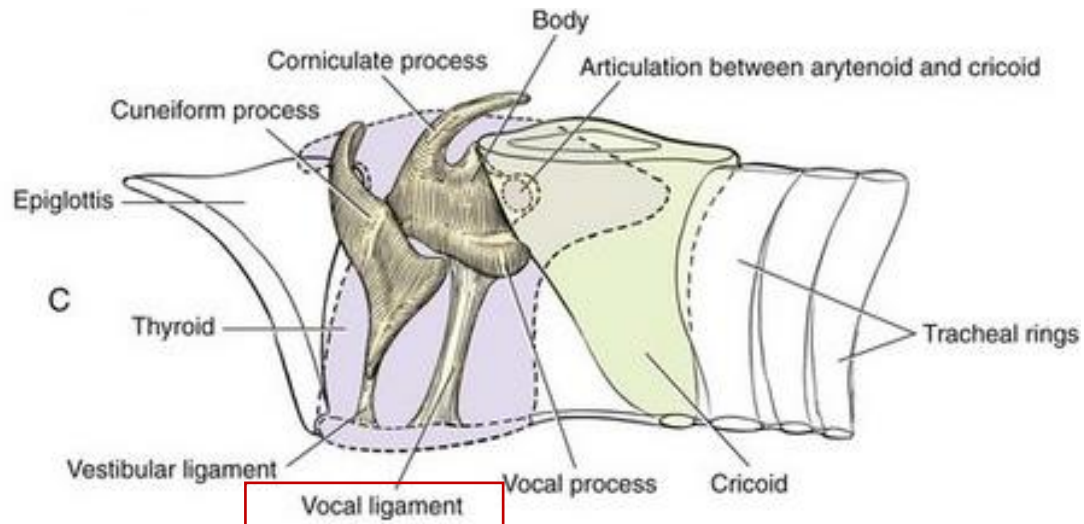
A GÉGE ÖSSZEKÖTTETÉSEI

LIGAMENTUM VOCALE (HANGSZALAG):

- caudalisan
- proc. vocalis és corpus thyroideum között
- plica vocalis képzése



<https://www.sciencedirect.com/science/article/pii/S0034528810000299>

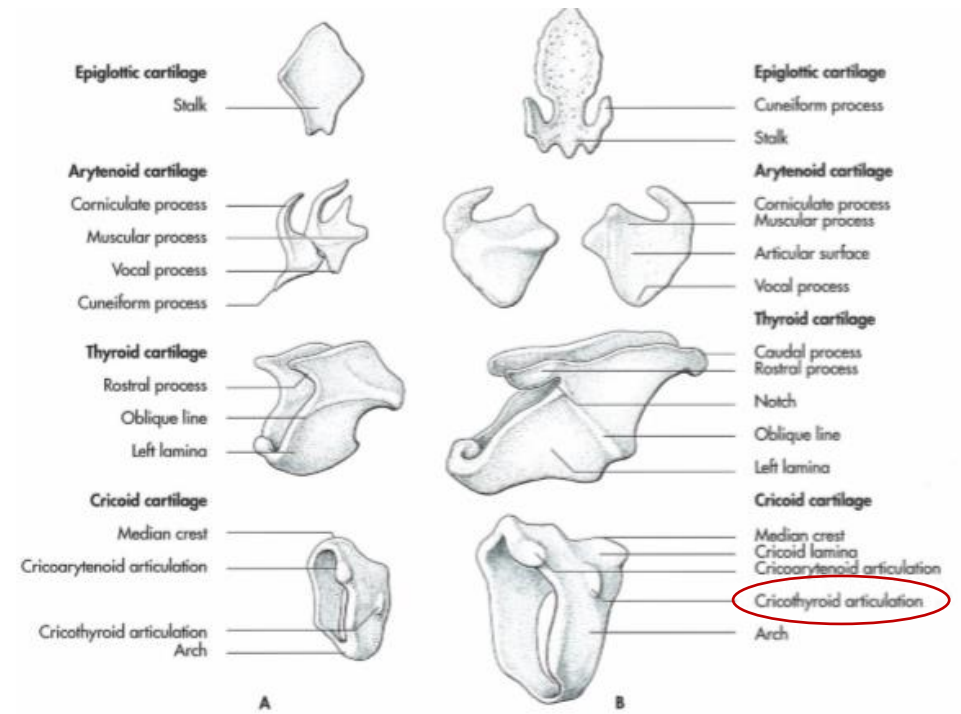


http://www.wikiwand.com/en/Laryngeal_vestibule

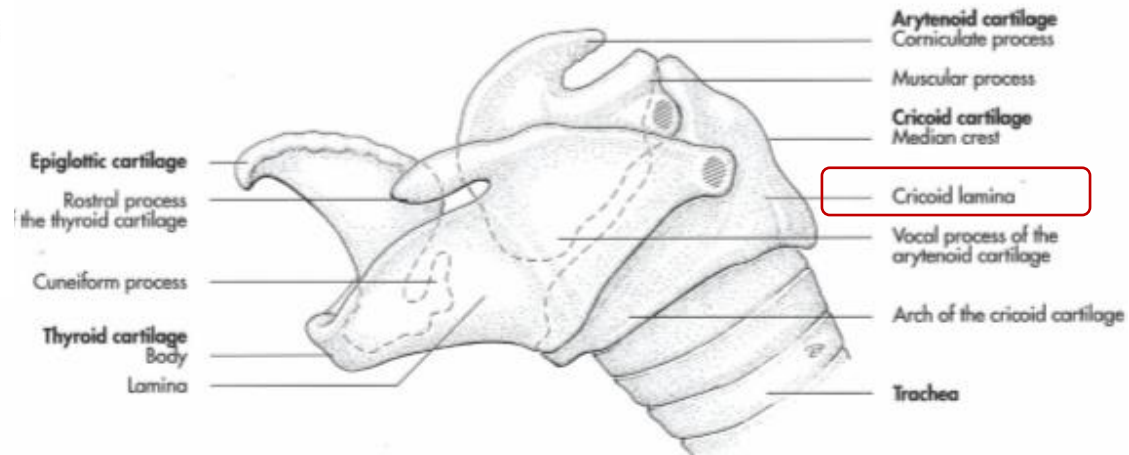
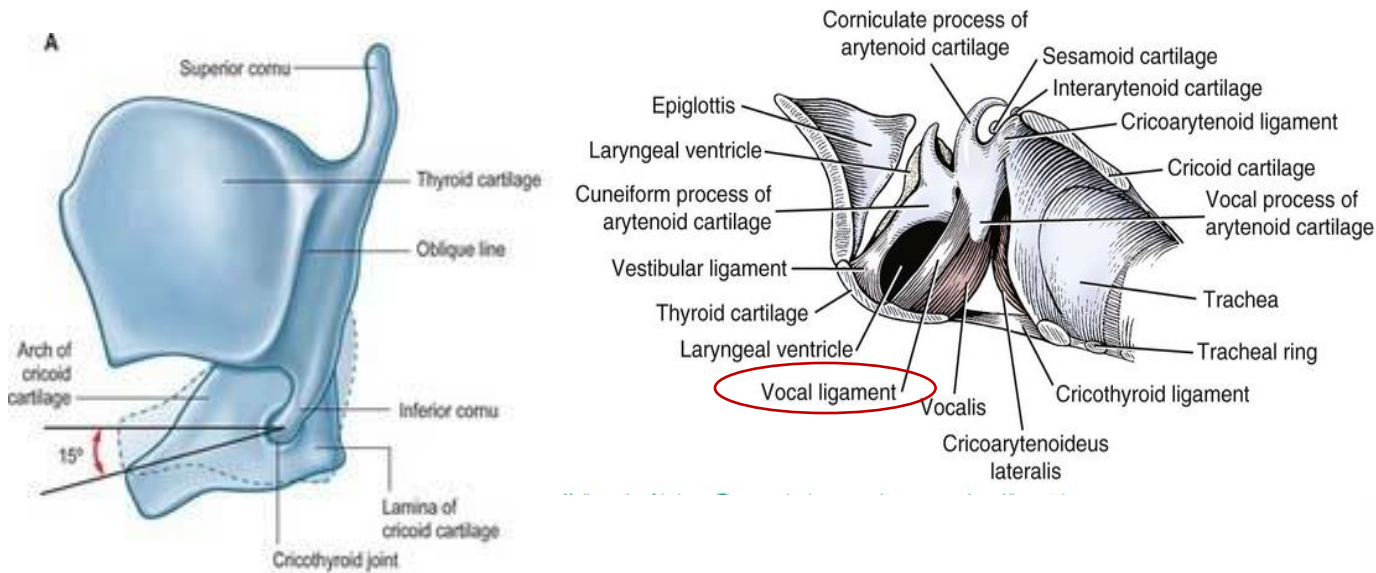
A GÉGE ÖSSZEKÖTTETÉSEI

ARTICULATIO CRICOTHYROIDEA:

- **kérődzőben syndesmosis**
- **lamina cartilaginis cricoideae és a cornu caudale között**
- **ízület előremozdulásakor a hangszalagok megfeszülnek**



Laryngeal cartilages of the dog (A) and the horse (B), schematic.

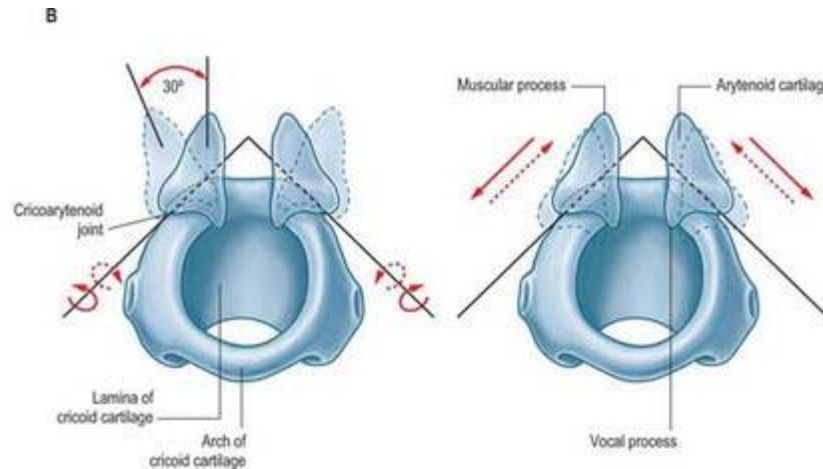
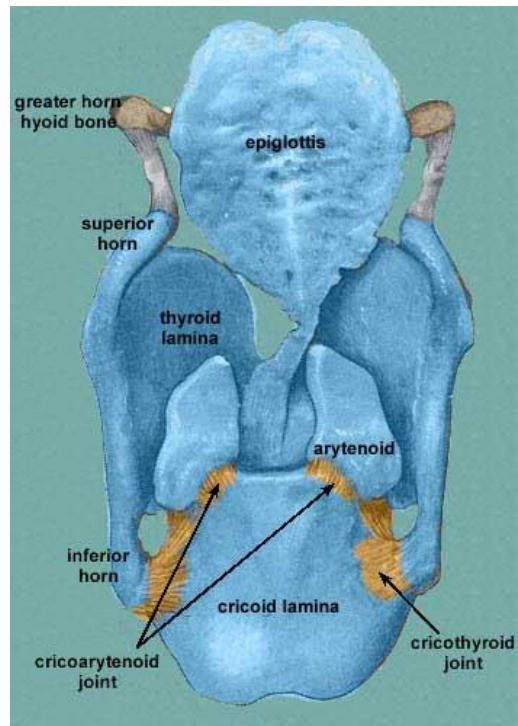


A GÉGE ÖSSZEKÖTTETÉSEI

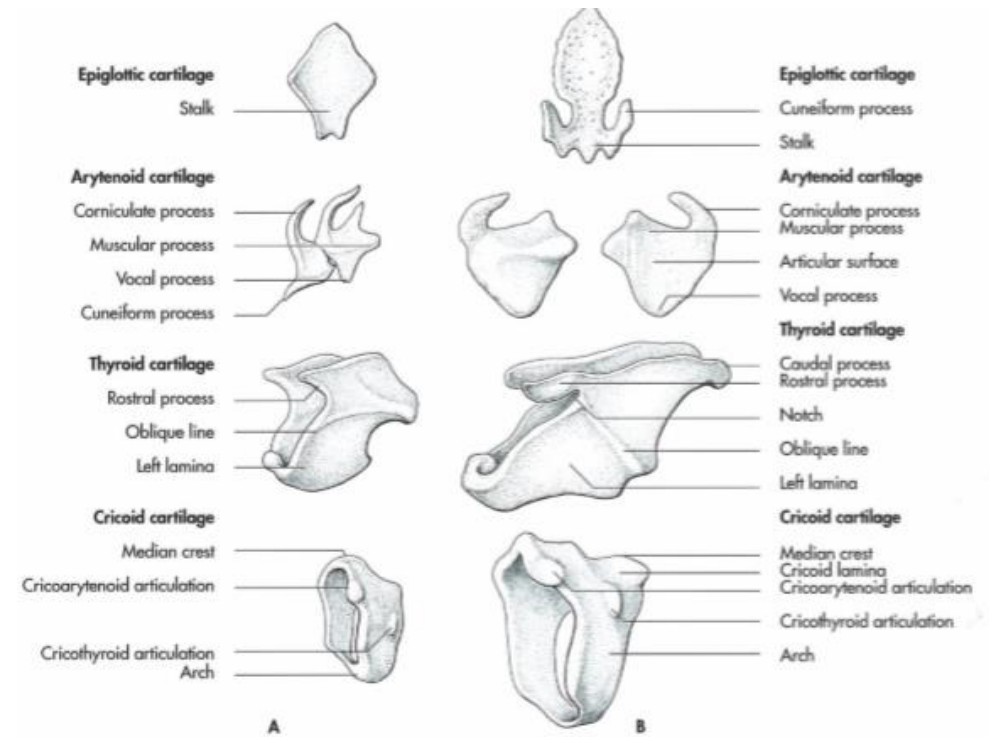
ARTICULATIO CRICOARYTENOIDEA:

- gyűrűporc és kannaporc között

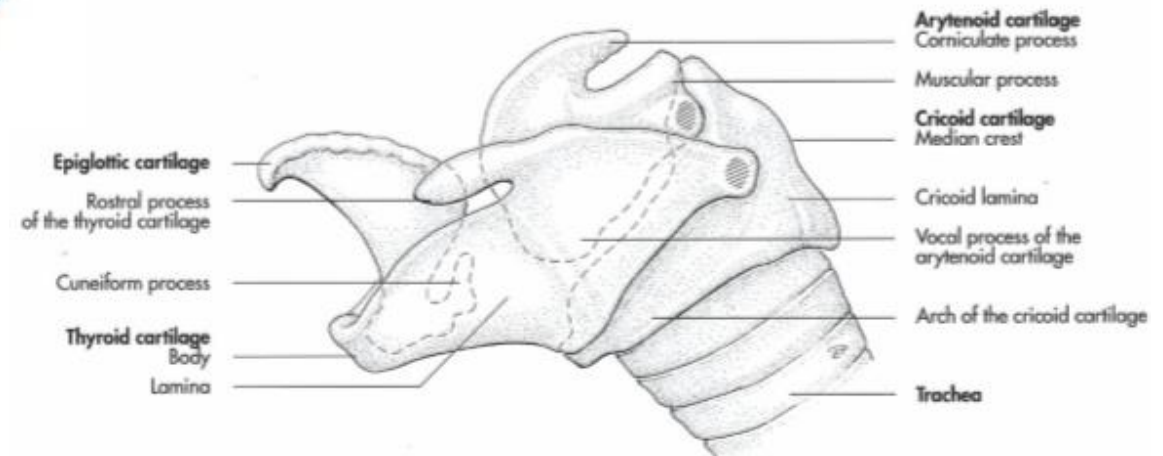
1. dorsoventrális szánmozgás
2. hangszalagok közelítése
3. hangszalagok távolítása



<https://clinicalgate.com/larynx/>



Laryngeal cartilages of the dog (A) and the horse (B), schematic.



GÉGE IZMAI (MM. LARYNGIS)

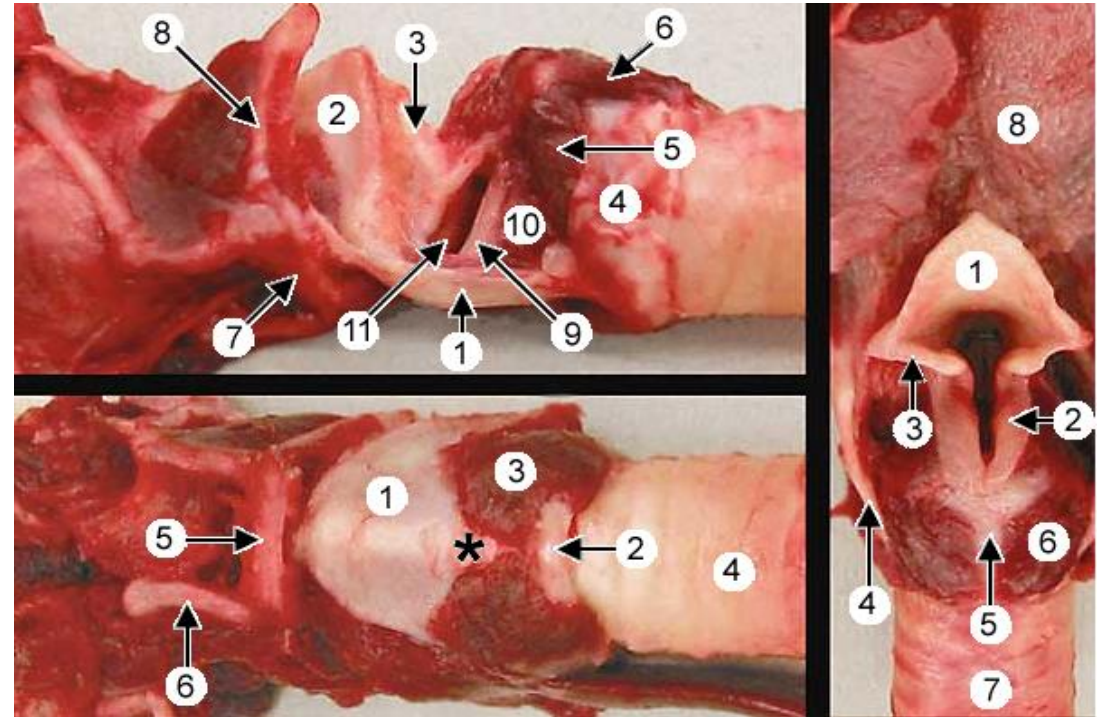
1. GÉGÉT MOZGATÓ IZMOK:

- szegycsontról
- garat faláról
- nyelvcsontról a gégéhez térő izmok
- egész gégét mozgatják

GÉGE IZMAI (MM. LARYNGIS)

2. GÉGE SAJÁT IZMAI

- gége porcokon erednek és tapadnak
- gége egyes porcait mozgatják
- gége üregét tágítják, szűkítik
- belső szalagokat feszítik vagy lazítják



Three views of the larynx (fresh tissue). *Right:* epiglottic cartilage (1), arytenoid cartilages (2), aryepiglottic fold (3), thyroid cartilage (4), cricoid cartilage (5), cricoarytenoideus dorsalis m. (6), trachea (7), and root of the tongue (8).

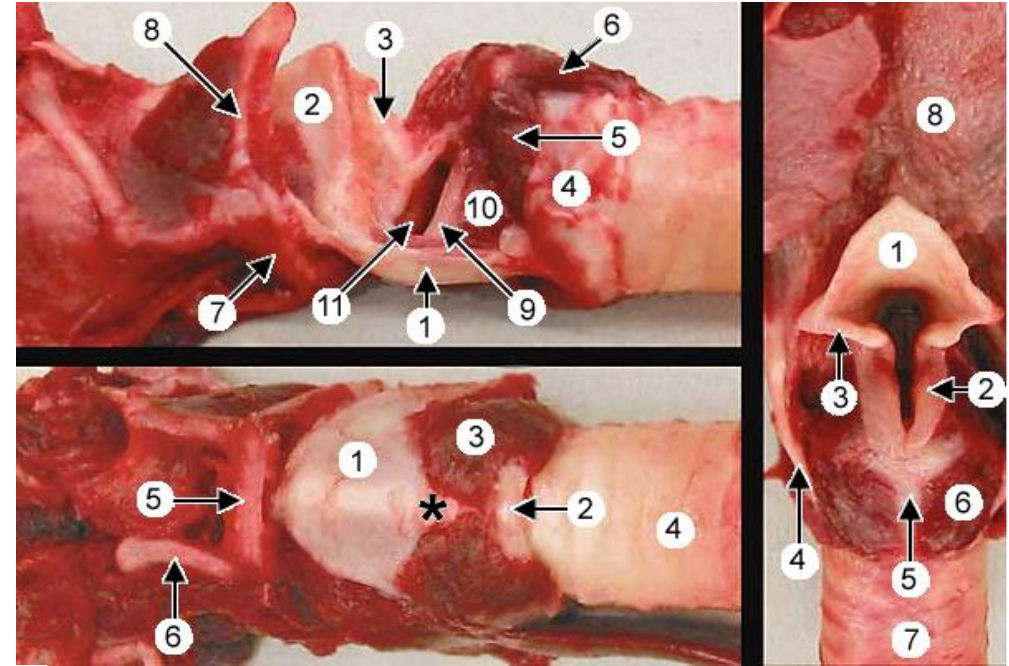
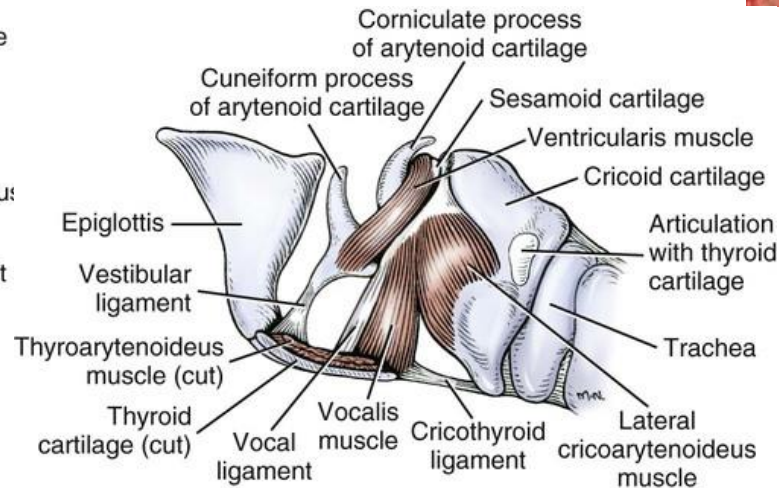
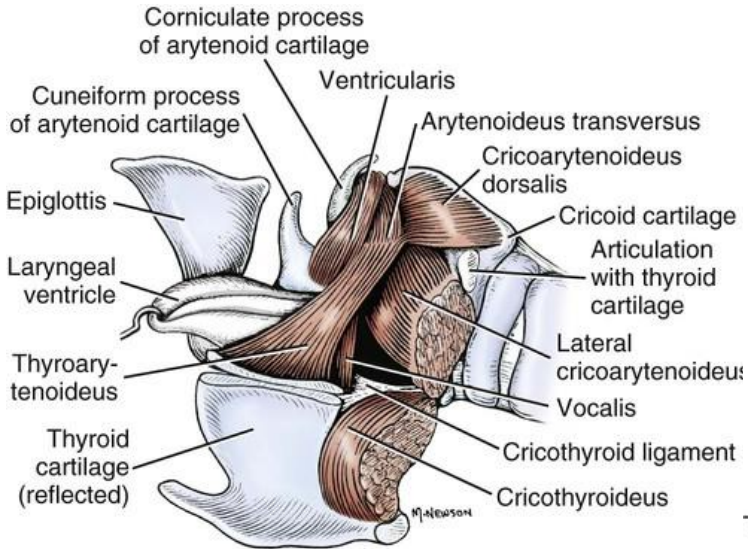
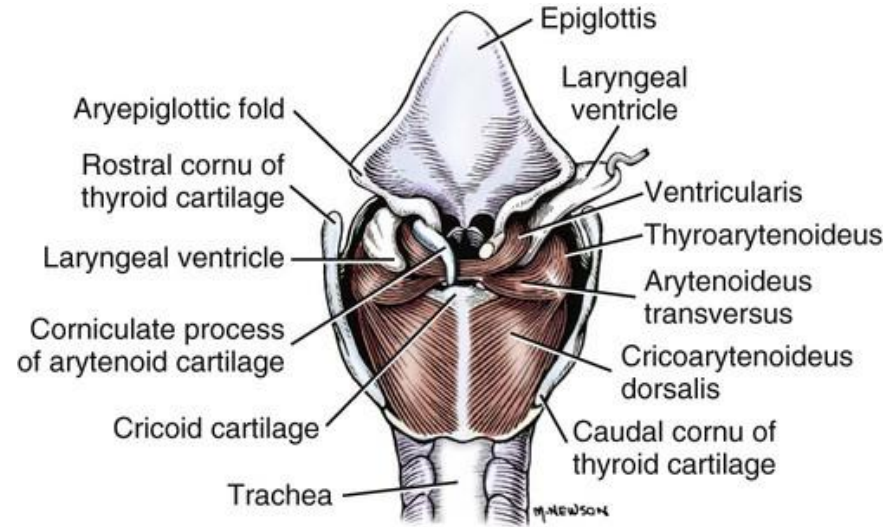
Left top: The left side of the larynx has been removed. Identify: thyroid cartilage (1), epiglottic cartilage (2), arytenoid cartilage (3), cricoid cartilage (4), cricoarytenoideus lateralis m. (5), cricoarytenoideus dorsalis m. (6), basihyoid bone (7), and thyrohyoid bone (8). Notice the vocal ligament (9) and vocalis m. (10) of the vocal fold (covering mucosa removed). The laryngeal ventricle (11) is just rostral to the vocal fold.

Left bottom: thyroid cartilage (1), cricoid cartilage (2), cricothyroid ligament (asterisk), cricothyroideus m. (3), trachea (4), basihyoid bone (5), and ceratohyoid bone (6).

GÉGE IZMAI (MM. LARYNGIS)

GÉGE SAJÁT IZMAI:

1. *M. cricothyroideus*
2. *M. cricoarytenoideus dorsalis*
3. *M. cricoarytenoideus lateralis*
4. *M. arytenoideus transversus*
5. *M. thyroarytaenoideus*



Three views of the larynx (fresh tissue). *Right*: epiglottic cartilage (1), arytenoid cartilages (2), aryepiglottic fold (3), thyroid cartilage (4), cricoid cartilage (5), cricoarytenoideus dorsalis m. (6), trachea (7), and root of the tongue (8).

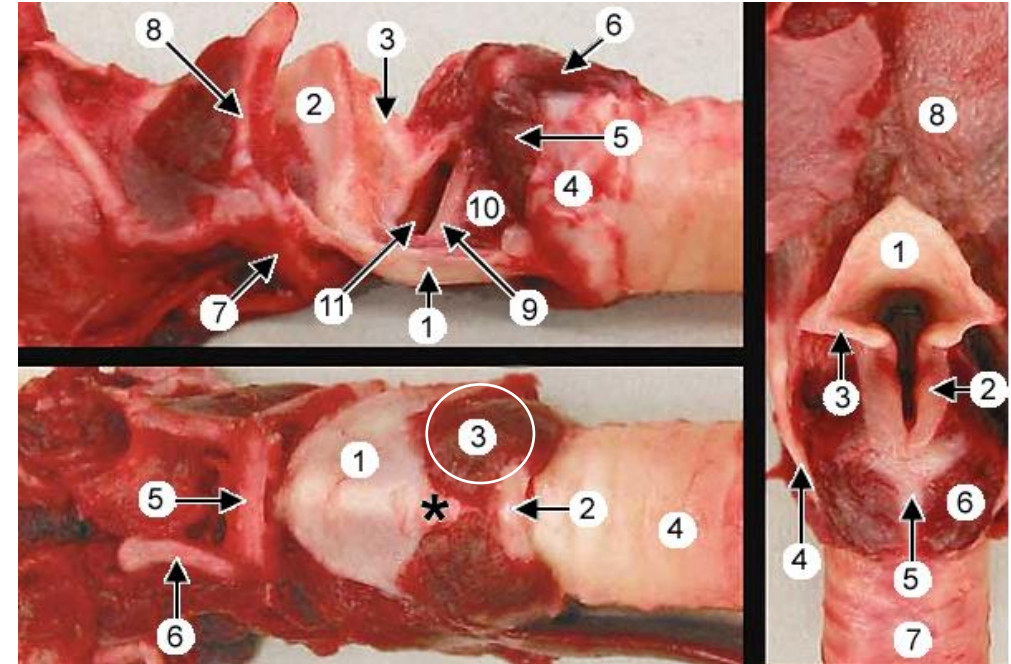
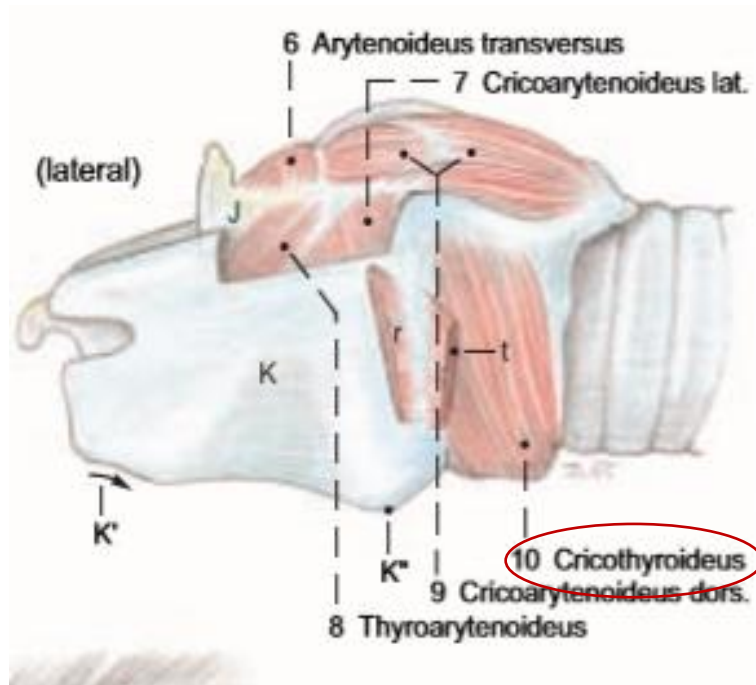
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Left bottom: thyroid cartilage (1), cricoid cartilage (2), cricothyroid ligament (asterisk), cricothyroideus m. (3), trachea (4), basihyoid bone (5), and ceratohyoid bone (6).

GÉGE SAJÁT IZMAI

M. CRICOTHYROIDEUS:

- pajzsporc belső felszíne és aarcus cartilaginis cricoideae között
- **ventralisan**
- hangszalagok feszítése
- **beidegzése: n. laryngeus cranialis**



Three views of the larynx (fresh tissue). *Right:* epiglottic cartilage (1), arytenoid cartilages (2), aryepiglottic fold (3), thyroid cartilage (4), cricoid cartilage (5), cricoarytenoideus dorsalis m. (6), trachea (7), and root of the tongue (8).

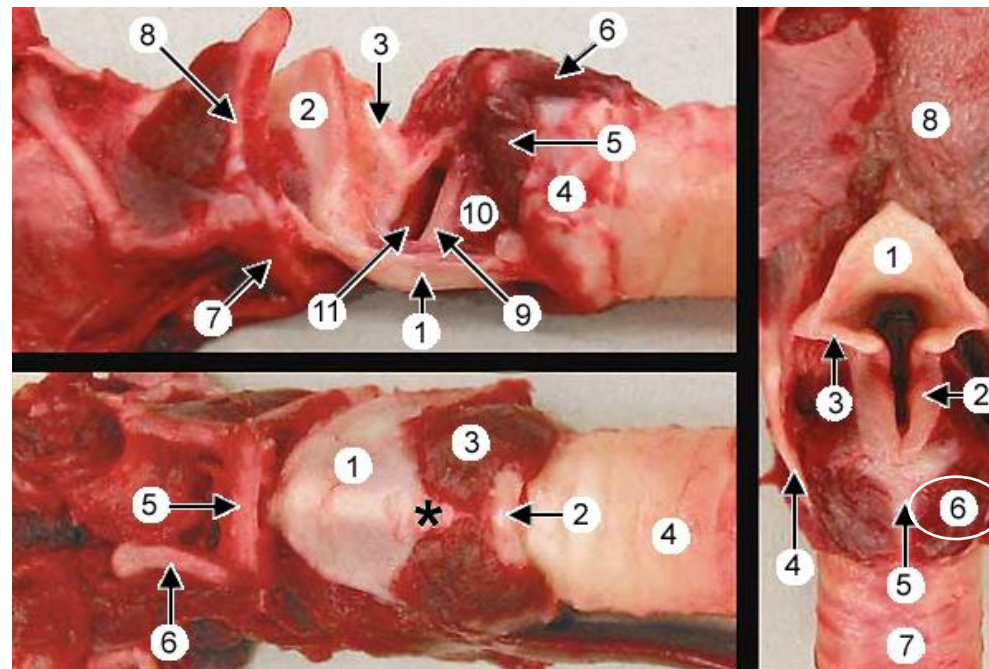
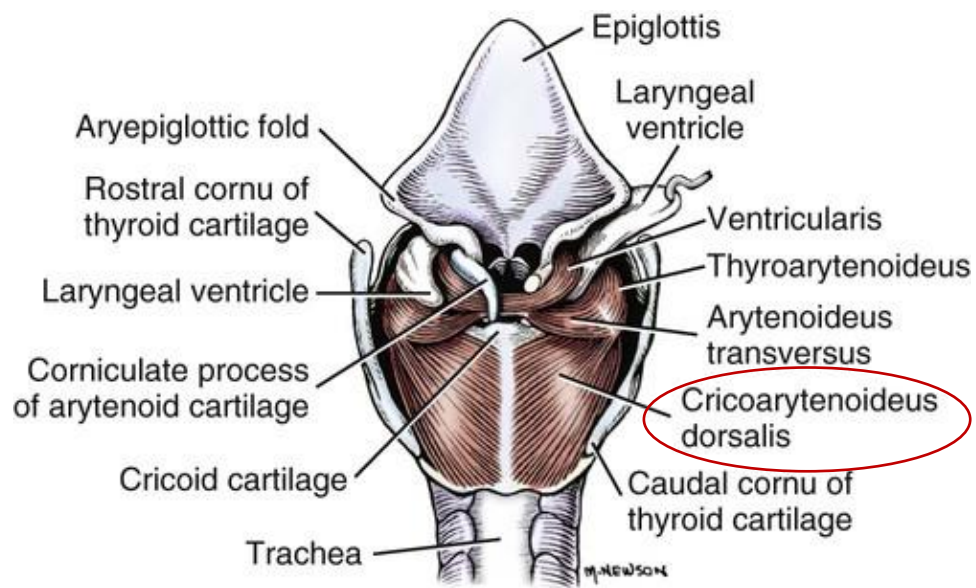
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Left bottom: thyroid cartilage (1), cricoid cartilage (2), cricothyroid ligament (asterisk), cricothyroideus m. (3), trachea (4), basihyoid bone (5), and ceratohyoid bone (6).

GÉGE SAJÁT IZMAI

M. CRICOARYTAENOIDEUS DORSALIS:

- eredés: lamina cartilaginis cricoidea, crista mediana
- tapadás: rostralisan porc. muscularison (kannaporc)
- funkció: hangrés tágítása
- lóban bénulása hörgősséget okoz
- beidegzés: n. laryngeus caudalis seu recurrens



Three views of the larynx (fresh tissue). *Right:* epiglottic cartilage (1), arytenoid cartilages (2), aryepiglottic fold (3), thyroid cartilage (4), cricoid cartilage (5), cricoarytenoideus dorsalis m. (6), trachea (7), and root of the tongue (8).

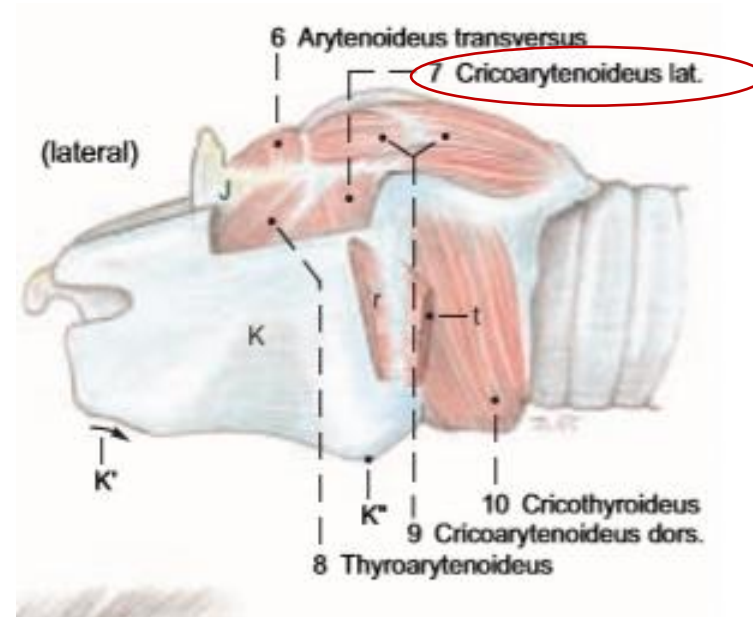
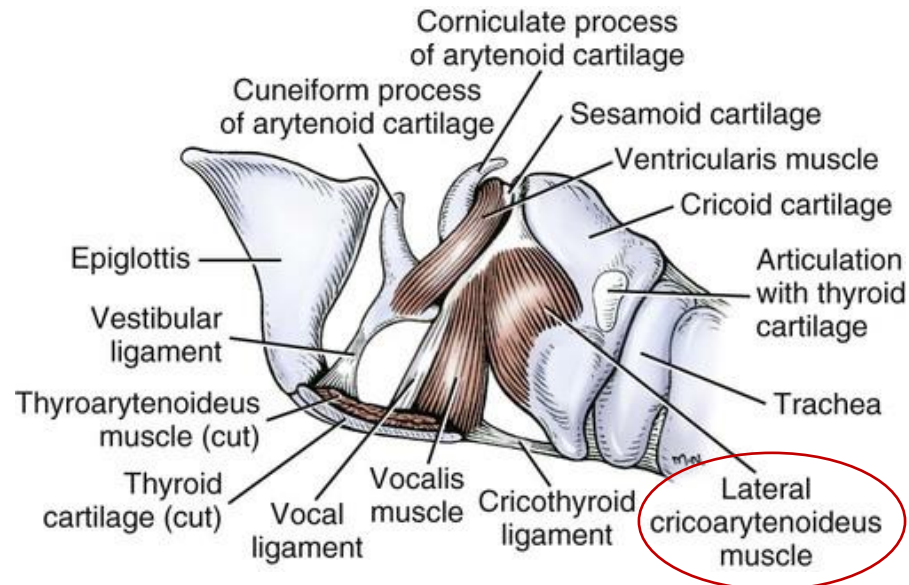
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Left bottom: thyroid cartilage (1), cricoid cartilage (2), cricothyroid ligament (asterisk), cricothyroideus m. (3), trachea (4), basihyoid bone (5), and ceratohyoid bone (6).

GÉGE SAJÁT IZMAI

M. CRICOARYTAENOIDEUS LATERALIS:

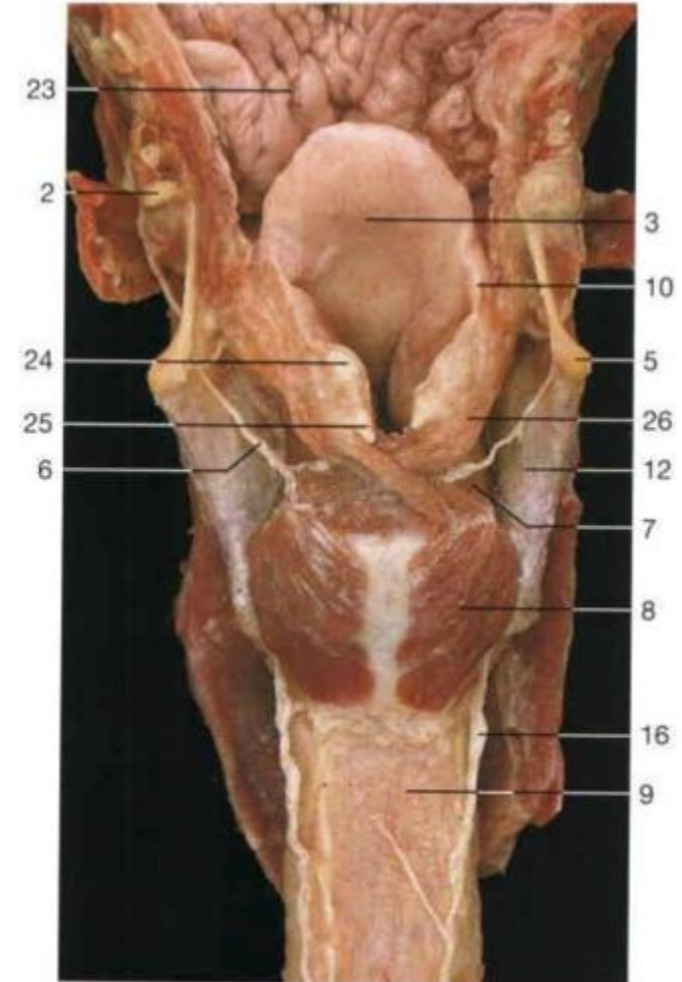
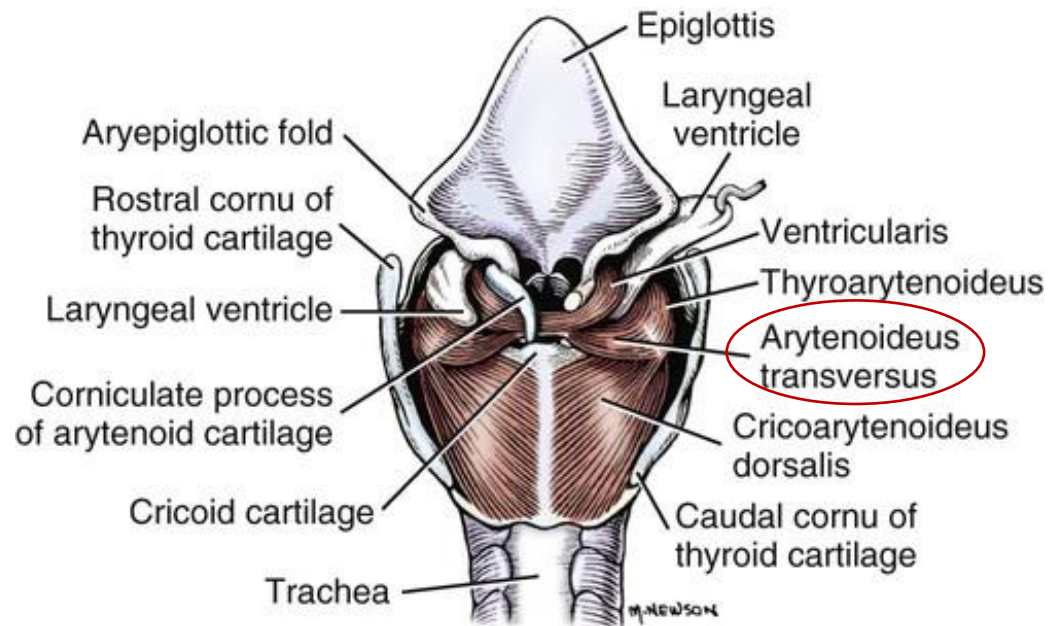
- eredés: arcus cartilaginis cricoideae
- tapadás: porc. muscularis (kannaporc)
- funkció: hangrés szűkítése
- beidegzés: n. laryngeus caudalis seu recurrens



GÉGE SAJÁT IZMAI

M. ARYTAENOIDEUS TRANSVERSUS:

- eredés: proc. muscularis (kannaporc)
- tapadás: porc. muscularis (kannaporc)
- funkció: hangrés szűkítése
- beidegzés: n. laryngeus caudalis seu recurrens



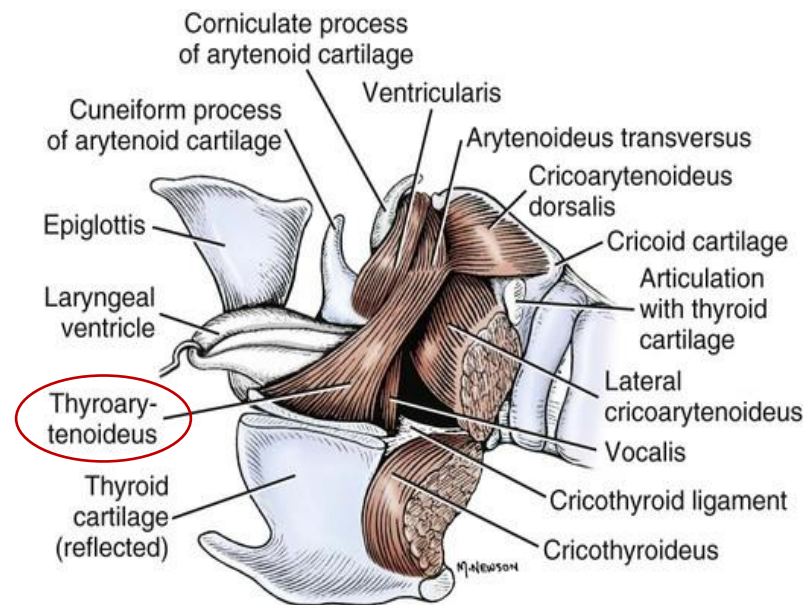
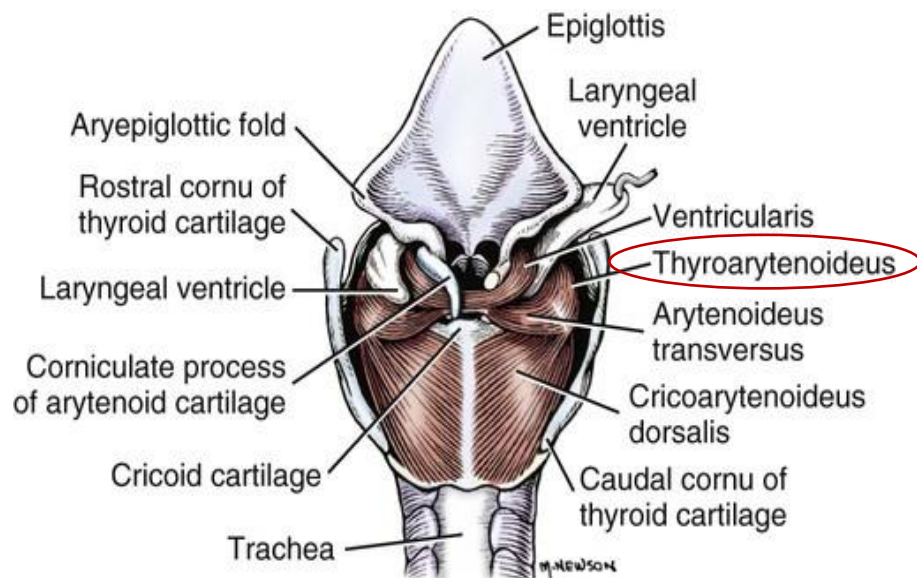
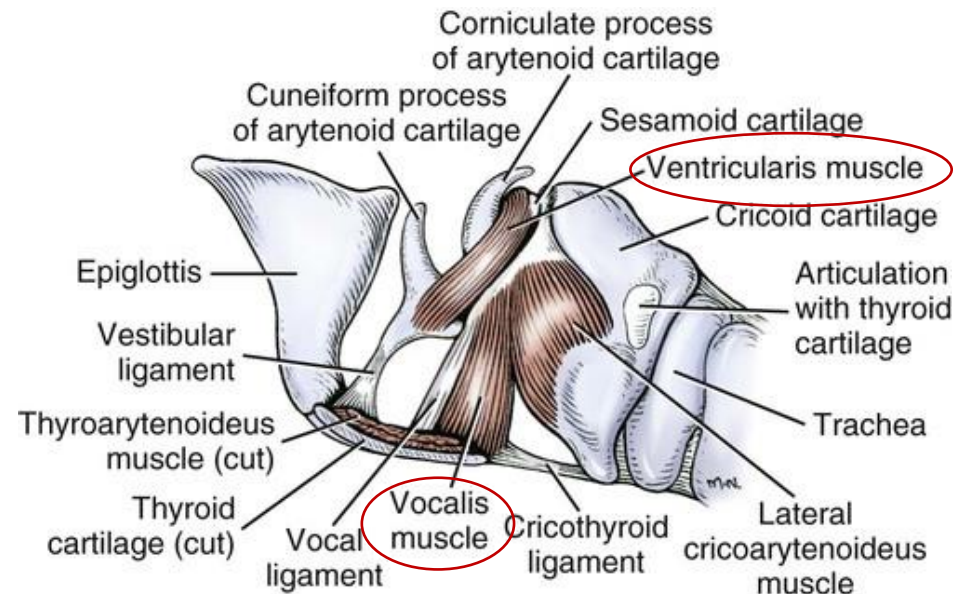
Laryngeal muscles and larynx
(posterior aspect).

7. M. arythaenoideus transversus

GÉGE SAJÁT IZMAI

M. THYROARYTAENOIDEUS:

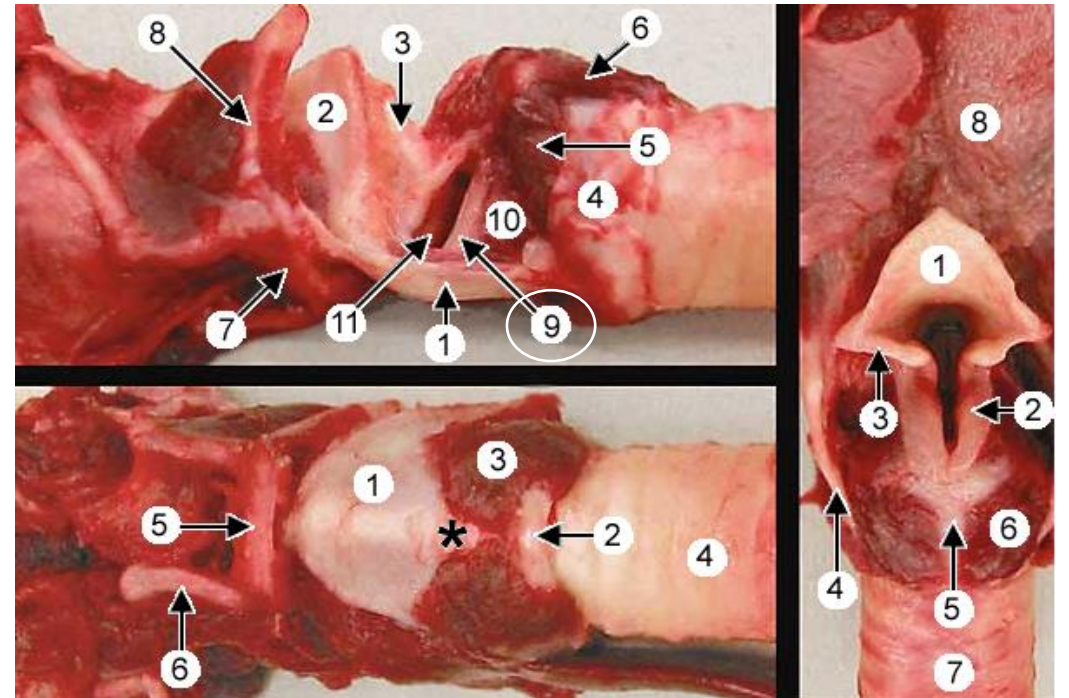
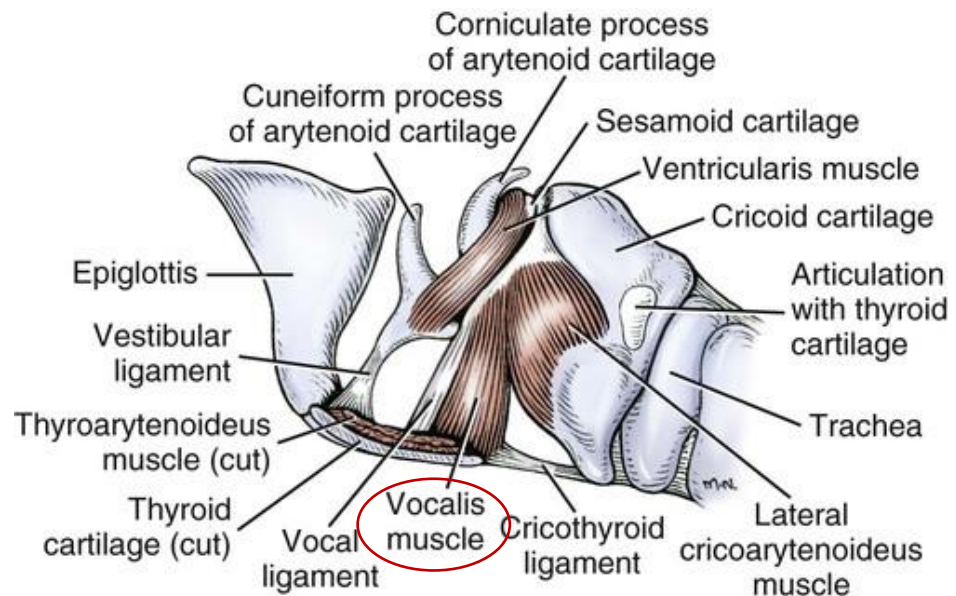
- eredés: epiglottis basisa, pajzsporc belső felszíne
- tapadás: porc. muscularis és proc. vocalis (kannaporc)
- Ca, E_q – m. ventricularisra és m. vocalisra válik
- beidegzés: n. laryngeus caudalis seu recurrens



GÉGE SAJÁT IZMAI

M. VOCALIS:

- plica vocalis alatt
- hangszalag feszítése
- hangrés szűkítése
- beidegzés: n laryngeus caudalis seu recurrens



Three views of the larynx (fresh tissue). *Right:* epiglottic cartilage (1), arytenoid cartilages (2), aryepiglottic fold (3), thyroid cartilage (4), cricoid cartilage (5), cricoarytenoideus dorsalis m. (6), trachea (7), and root of the tongue (8).

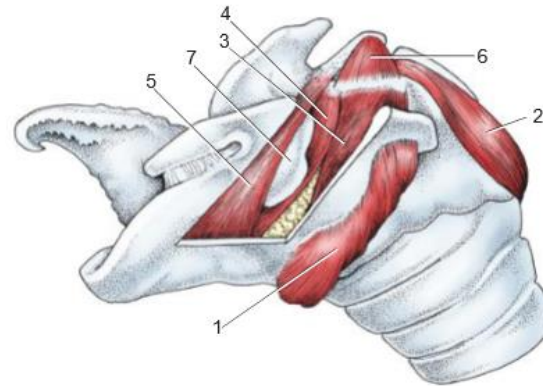
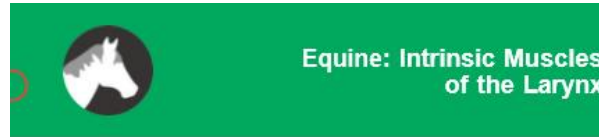
Left top: The left side of the larynx has been removed. Identify: thyroid cartilage (1), epiglottic cartilage (2), arytenoid cartilage (3), cricoid cartilage (4), cricoarytenoideus lateralis m. (5), cricoarytenoideus dorsalis m. (6), basihyoid bone (7), and thyrohyoid bone (8). Notice the vocal ligament (9) and vocalis m. (10) of the vocal fold (covering mucosa removed). The laryngeal ventricle (11) is just rostral to the vocal fold.

Left bottom: thyroid cartilage (1), cricoid cartilage (2), cricothyroid ligament (asterisk), cricothyroideus m. (3), trachea (4), basihyoid bone (5), and ceratohyoid bone (6).

GÉGE SAJÁT IZMAI

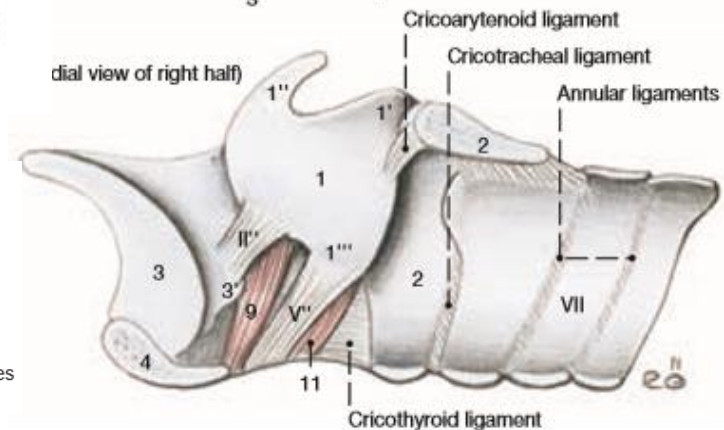
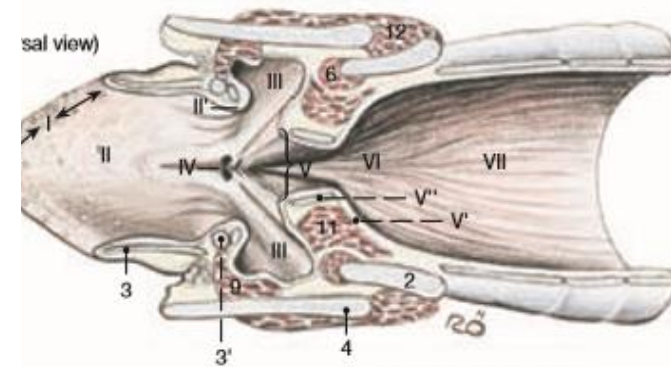
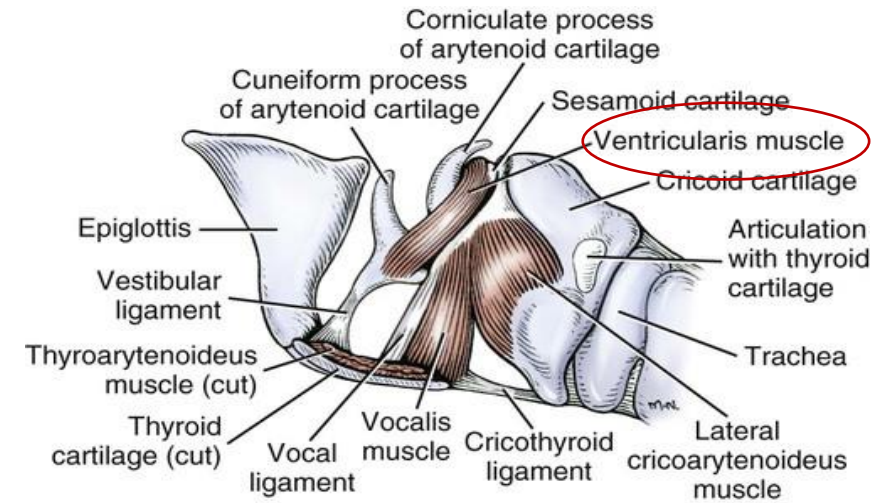
M. VENTRICULARIS:

- proc. muscularison tapad
- plica vestibularis
- hangszalag feszítése
- hangrés szűkítése
- n. laryngeus caudalis seu recurrens



1. Cricothyroideus
2. Cricoarytenoideus dorsalis
3. Cricoarytenoideus lateralis
4. Vocalis
5. Ventricularis (4 + 5 = thyroarytenoideus)
6. Arytenoideus transversus
7. Laryngeal ventricle

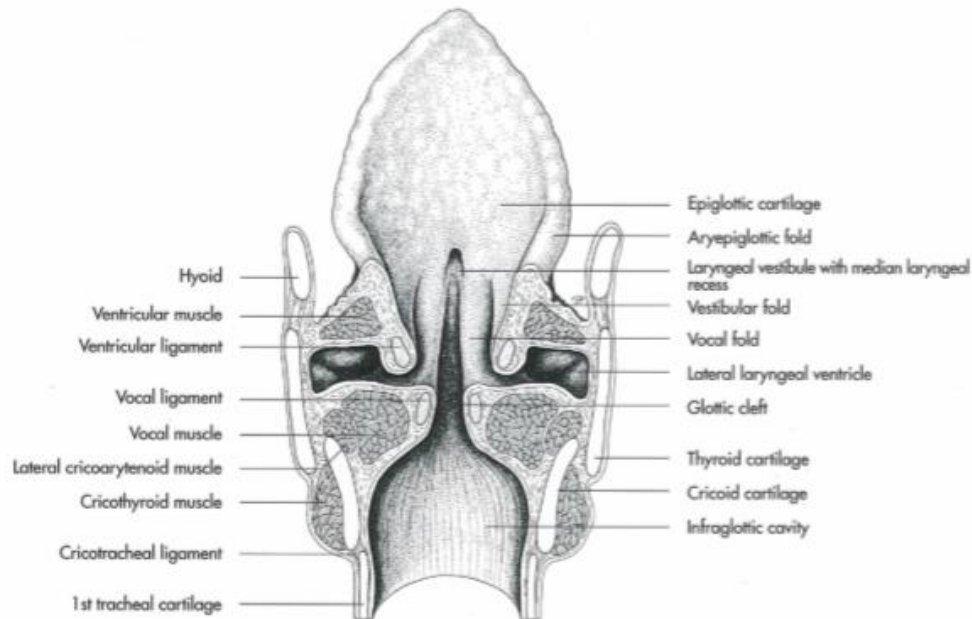
Note: Caudal (recurrent) laryngeal branch of the vagus nerve supplies 2, 3, 4, 5, and 6.



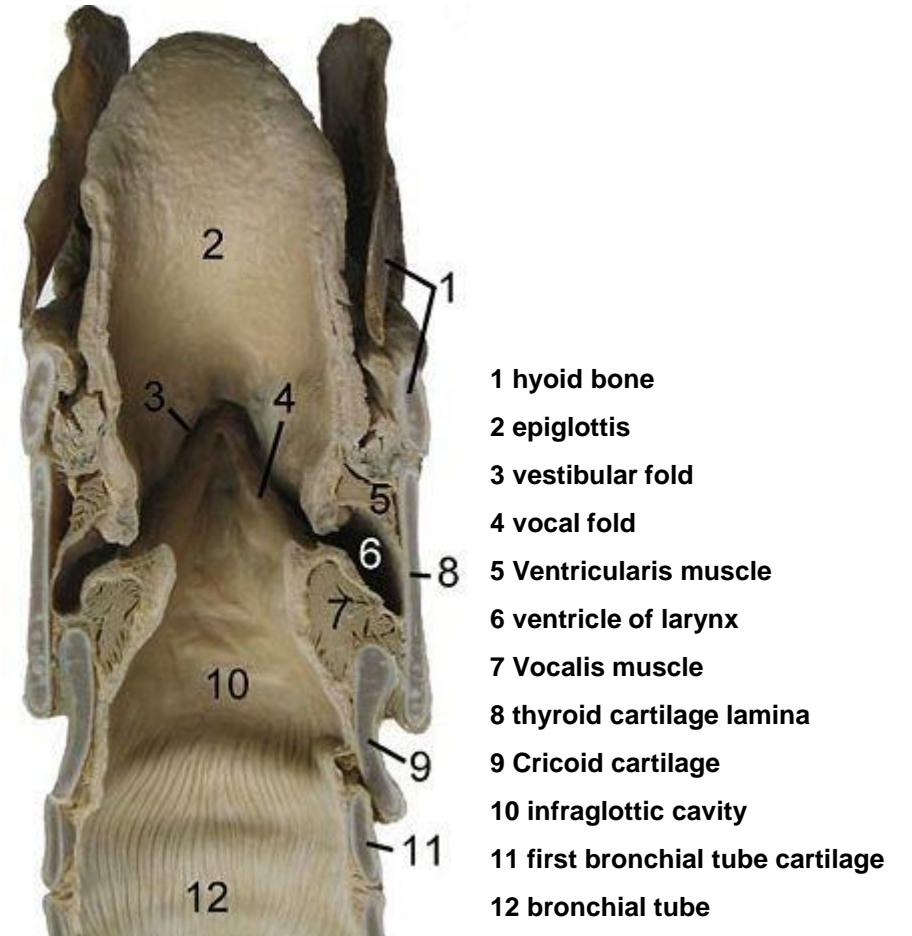
9. M. ventricularis
V''' Lig. Vocale
11. M. vocalis
Eq

GÉGE ÜREGE (CAVUM LARYNGIS)

1. GÉGE BEMENET (ADITUS LARYNGIS)
2. GÉGE TORNÁC (VESTIBULUM LARYNGIS)
3. VENTRICULUS LARYNGIS
4. HANGRÉS (RIMA GLOTTIDIS)
5. CAVUM INFRAGLOTTICUM



Dorsal section of the larynx of the horse, schematic (Budras and Röck, 1994).



Cut through the larynx of a horse

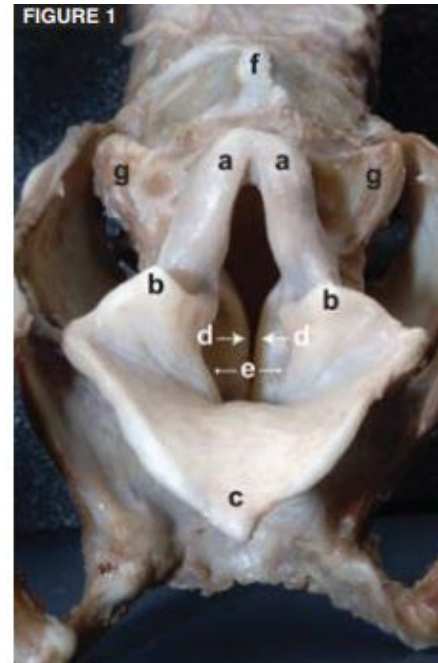
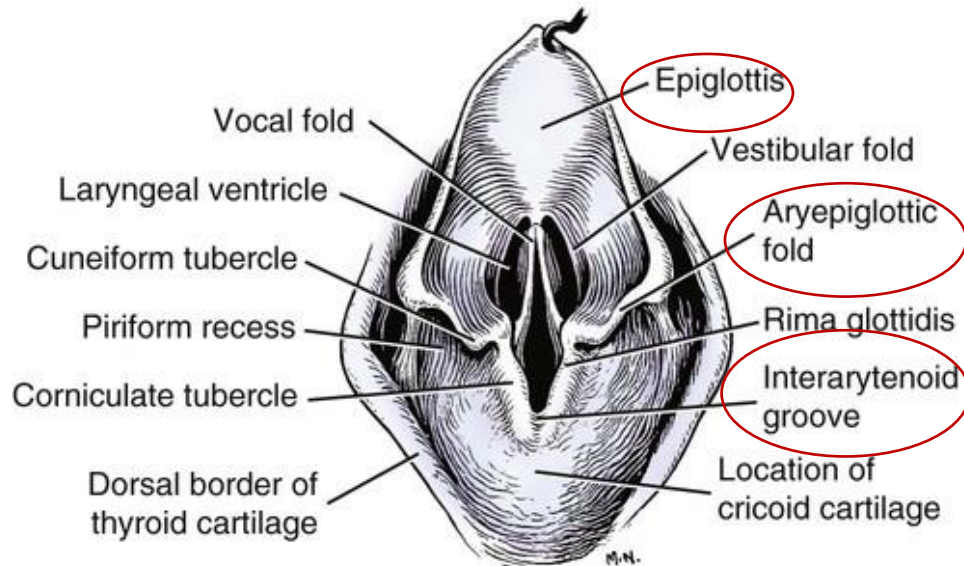
https://en.wikipedia.org/wiki/Infraglottic_cavity

GÉGE ÜREGE (CAVUM LARYNGIS)

GÉGE BEMENET (ADITUS LARYNGIS):

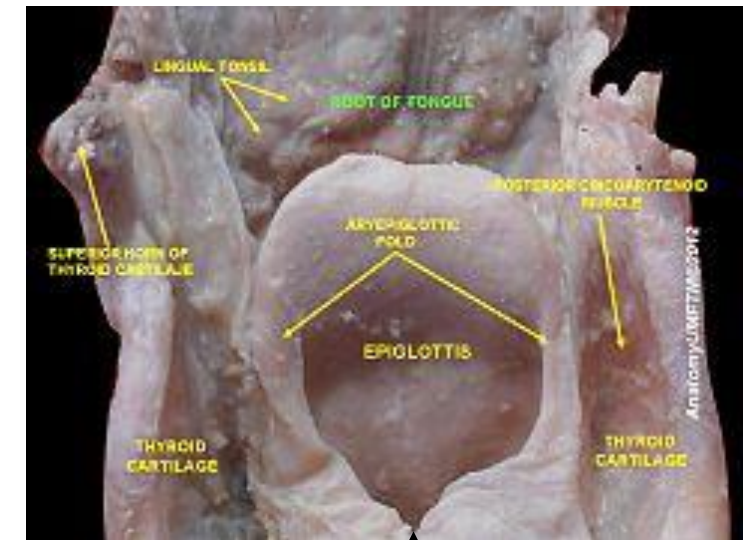
határolja:

- epiglottis
- plica aryepiglottica
- cartilago arytenoidea
- incisura interarytenoidale



Cranial view of a dissected canine larynx. (a) Corniculate process of arytenoid cartilage, (b) cuneiform process of arytenoid cartilage, (c) epiglottis, (d) vocal fold, (e) laryngeal ventricles, (f) cricoid cartilage, (g) muscular process of arytenoid cartilage.

<https://pdfs.semanticscholar.org/4d47/797134dc9b9c6da02501b417e7d76c4413cd.pdf>



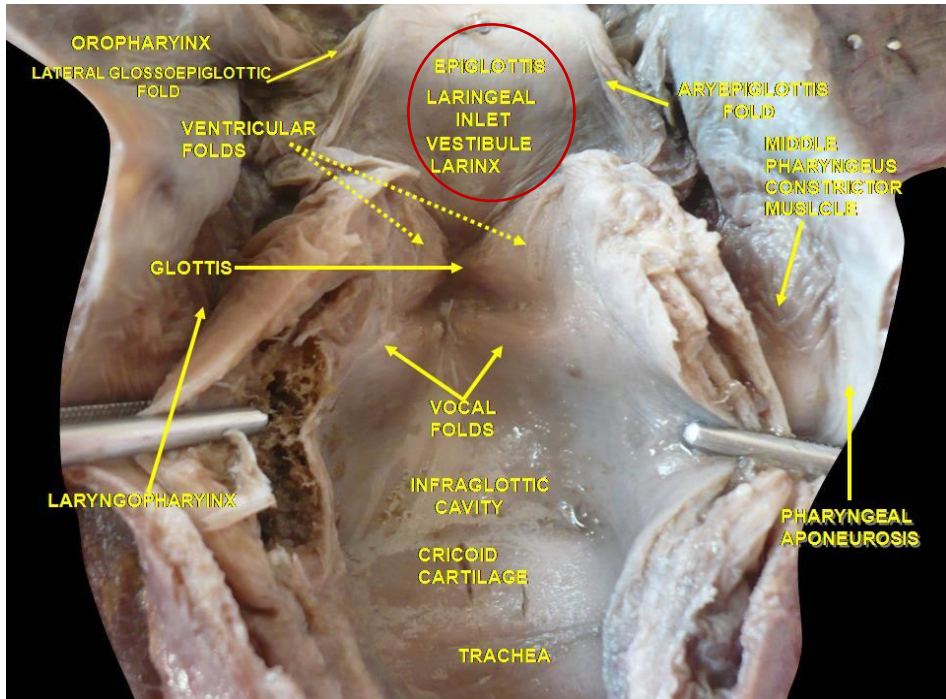
Incisura
interarytenoidale

http://www.wikiwand.com/en/Advanced_and_retracted_tongue_root

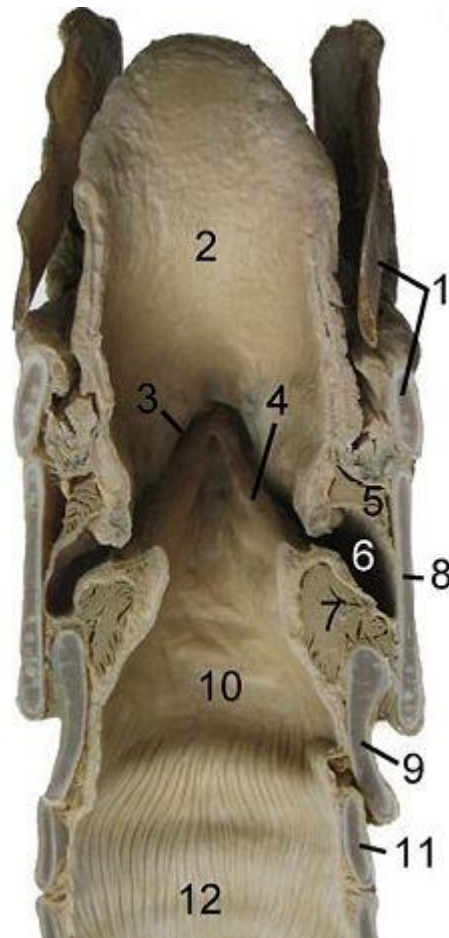
GÉGE ÜREGE (CAVUM LARYNGIS)

GÉGETORNÁC (VESTIBULUM LARYNGIS):

- aditus laryngis-sel kezdődik
- plica vestibularis az alsó határa

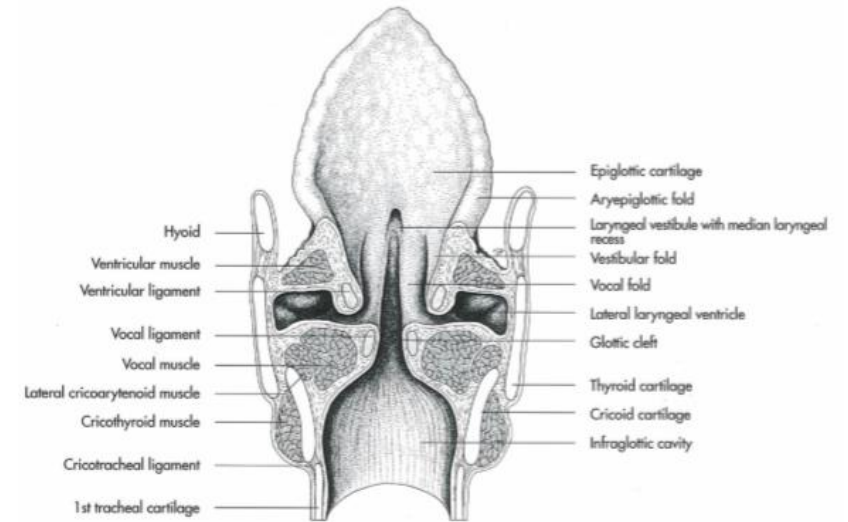


http://www.wikiwand.com/en/Laryngeal_vestibule



Cut through the larynx of a horse

- 1 hyoid bone
- 2 epiglottis
- 3 vestibular fold
- 4 vocal fold
- 5 Ventricularis muscle
- 6 ventricle of larynx
- 7 Vocalis muscle
- 8 thyroid cartilage lamina
- 9 Cricoid cartilage
- 10 infraglottic cavity
- 11 first bronchial tube cartilage
- 12 bronchial tube



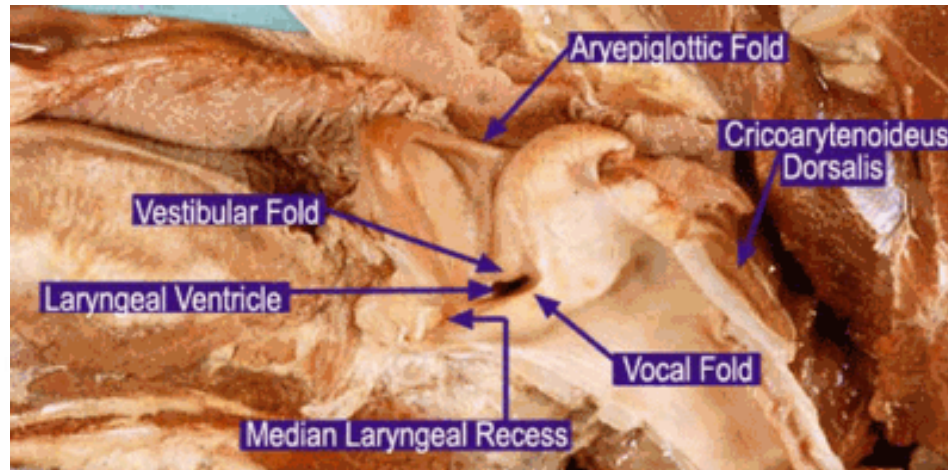
https://en.wikipedia.org/wiki/Infraglottic_cavity

GÉGE ÜREGE (CAVUM LARYNGIS)

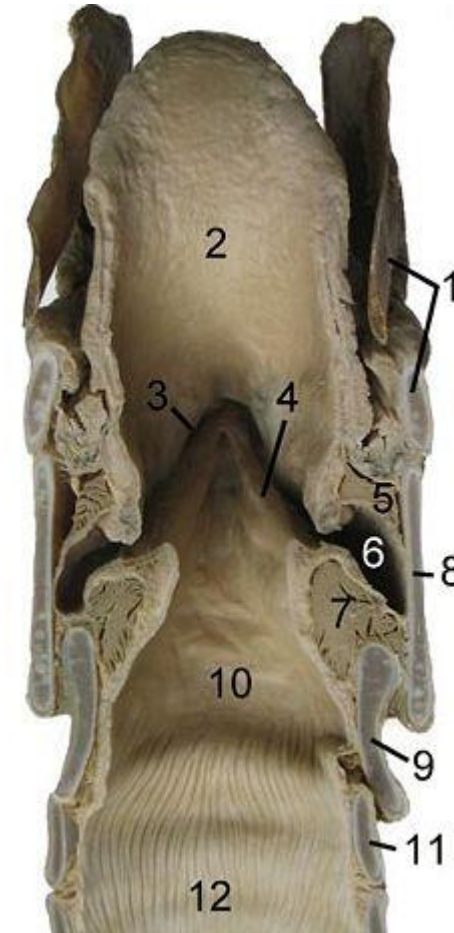
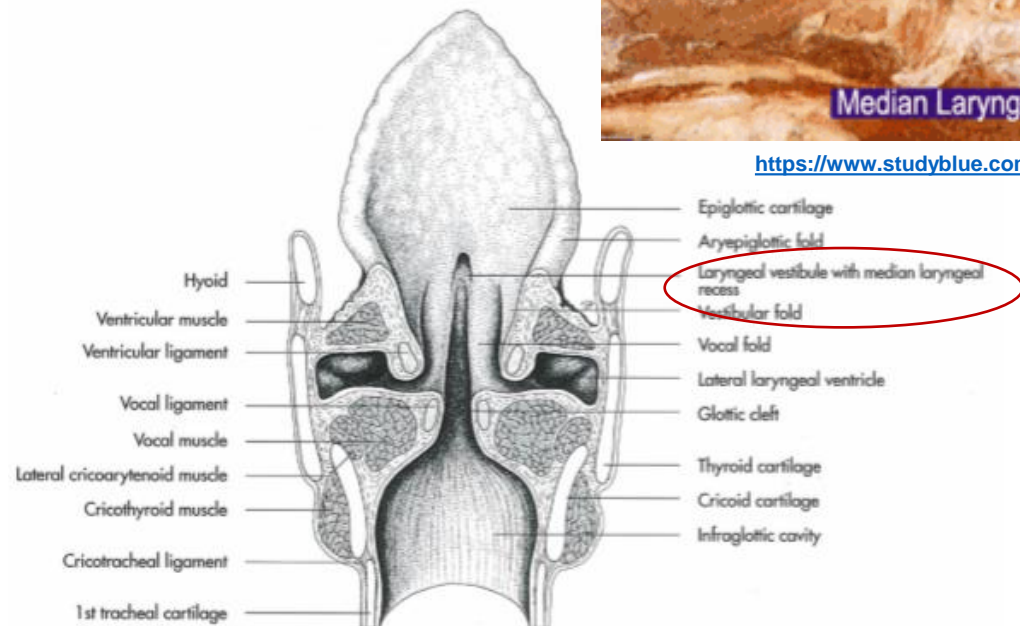
GÉGETORNÁC (VESTIBULUM LARYNGIS):

RECESSUS LARYNGIS MEDIANUS:

- középső gégetasak
- Su, Eq
- Ca, Bo – hiányzik



<https://www.studyblue.com/notes/n/horse-anatomy/deck/5406902>



- 1 hyoid bone
- 2 epiglottis
- 3 vestibular fold
- 4 vocal fold
- 5 Ventricularis muscle
- 6 ventricle of larynx
- 7 Vocalis muscle
- 8 thyroid cartilage lamina
- 9 Cricoid cartilage
- 10 infraglottic cavity
- 11 first bronchial tube cartilage
- 12 bronchial tube

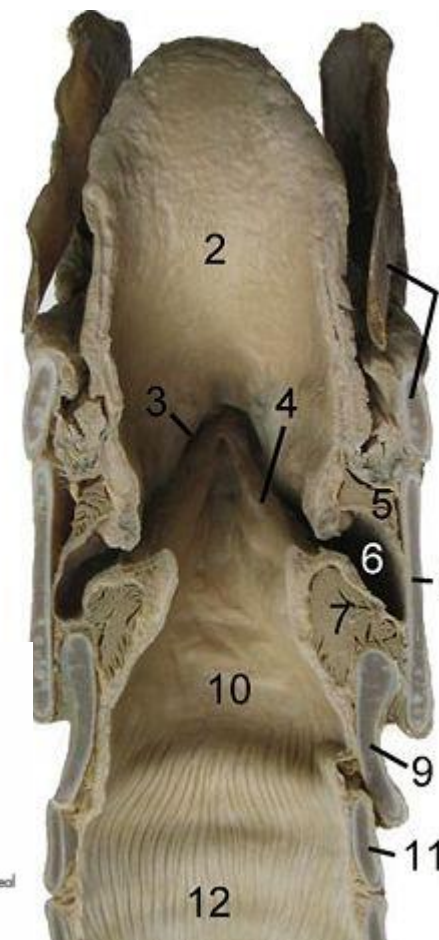
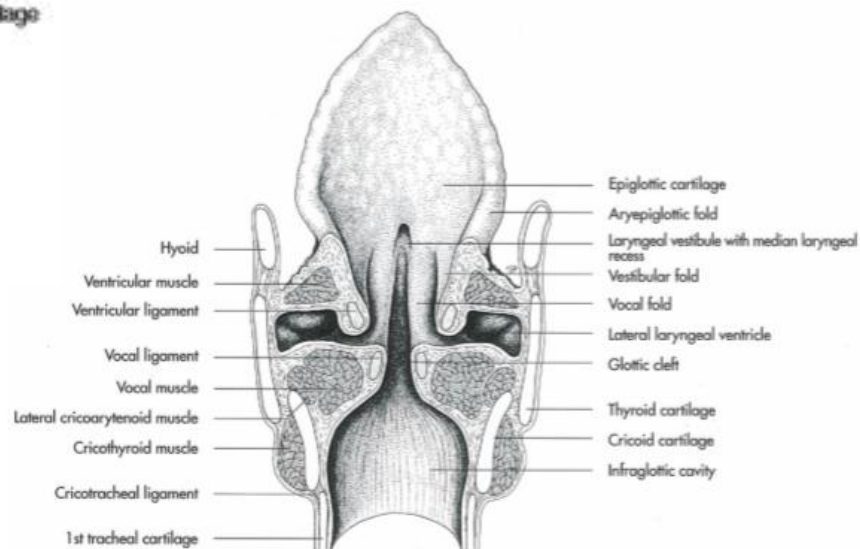
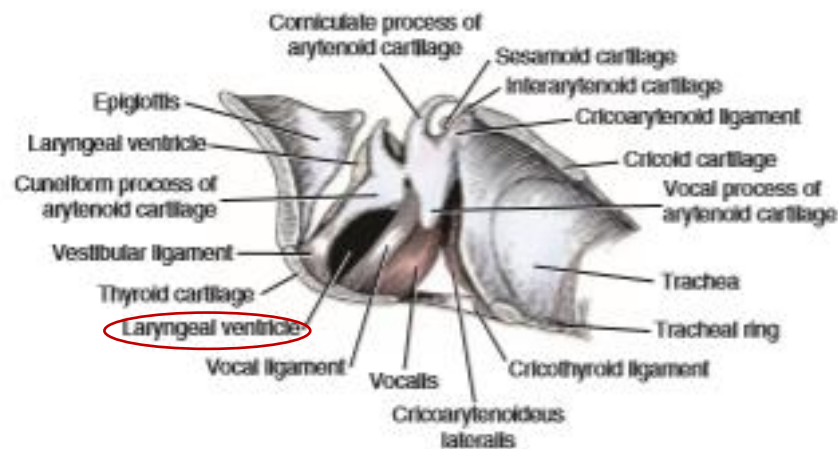
Cut through the larynx of a horse

https://en.wikipedia.org/wiki/Infraglottic_cavity

GÉGE ÜREGE (CAVUM LARYNGIS)

GLOTTIS (CAVUM LARYNGIS INTERMEDIUM):

- középső gégeúr
- caudalisan a vestibulum laryngishez csatlakozik
- plica vocalis caudalis széléig húzódik
- Ca, Su, Eq – ventriculi laryngis (lateralis gégetasak)



- 1 hyoid bone
- 2 epiglottis
- 3 vestibular fold
- 4 vocal fold
- 5 Ventricularis muscle
- 6 ventricle of larynx
- 7 Vocalis muscle
- 8 thyroid cartilage lamina
- 9 Cricoid cartilage
- 10 infraglottic cavity
- 11 first bronchial tube cartilage
- 12 bronchial tube

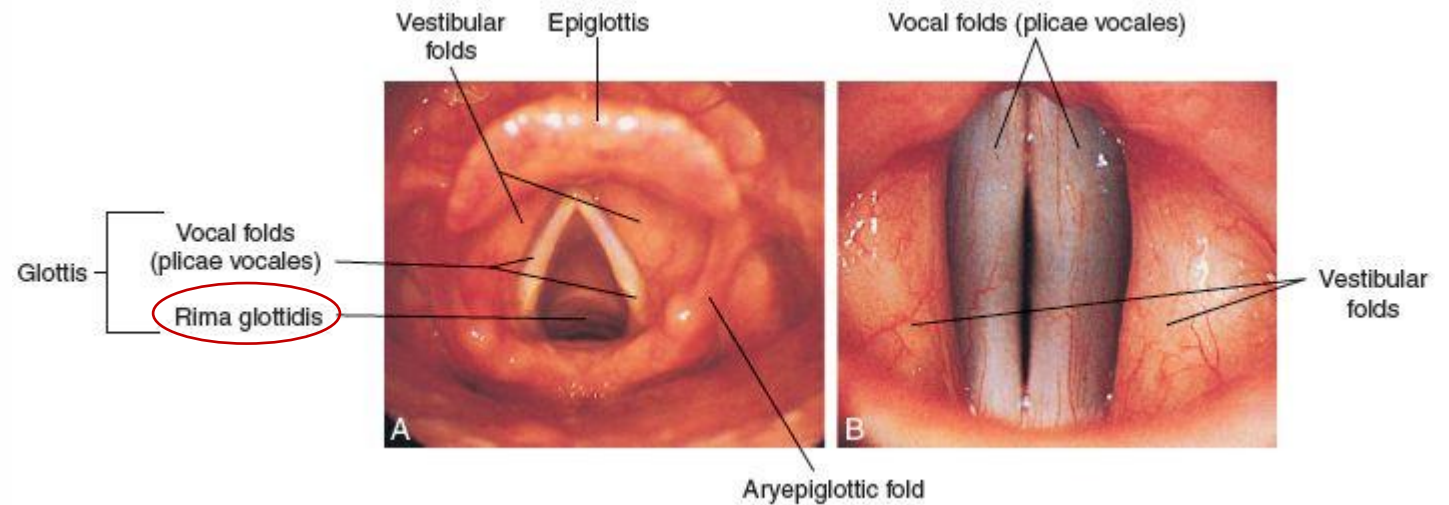
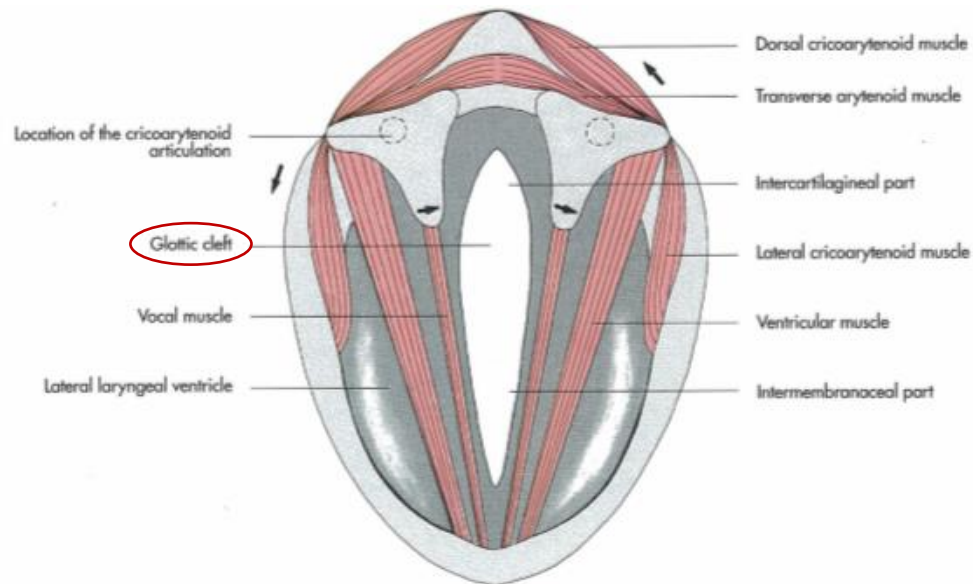
Cut through the larynx of a horse

https://en.wikipedia.org/wiki/Infraglottic_cavity

GÉGE ÜREGE (CAVUM LARYNGIS)

RIMA GLOTTIDIS (HANGRÉS):

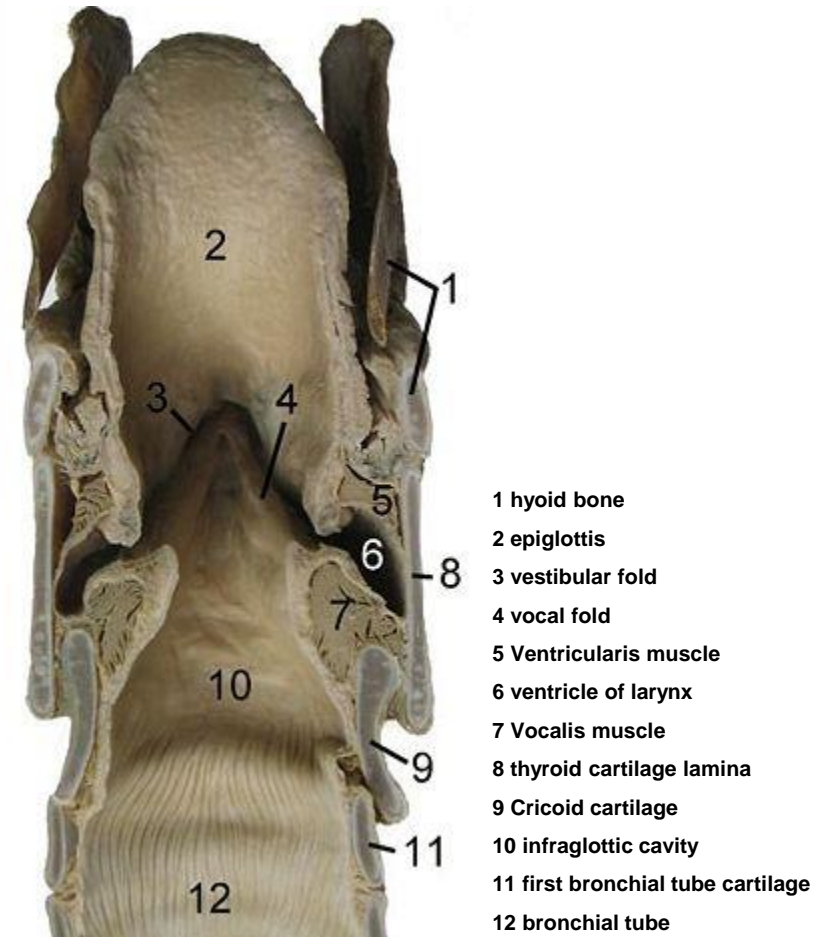
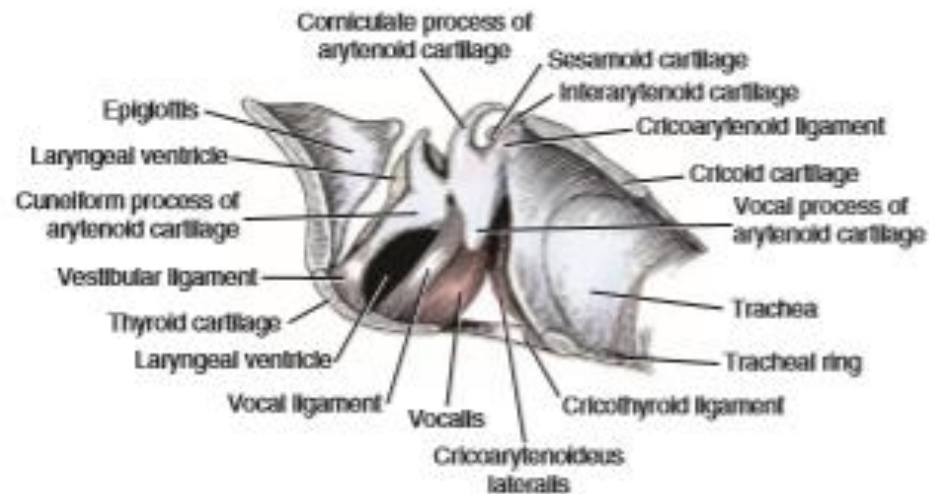
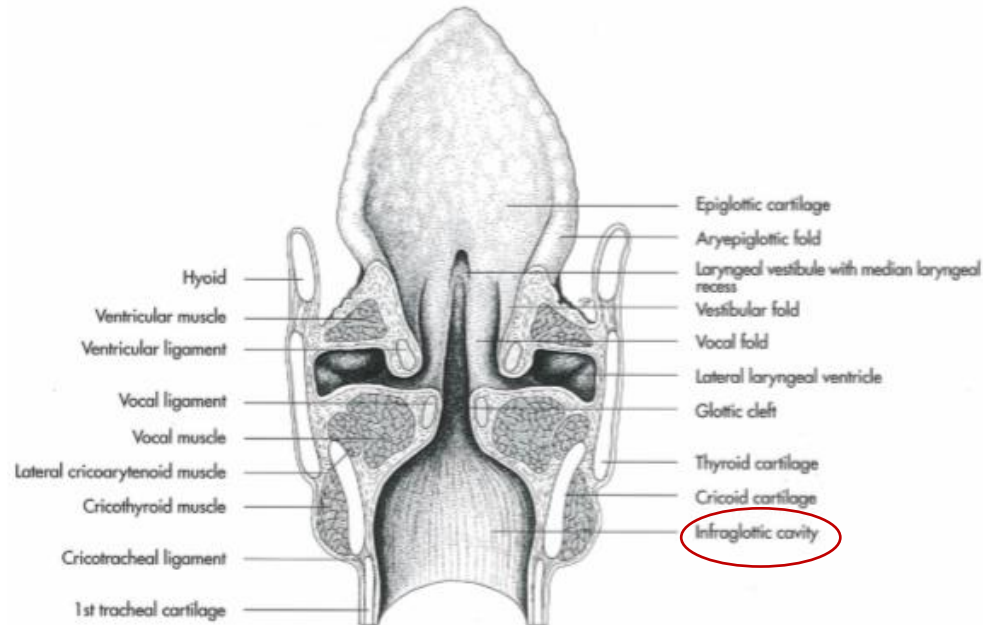
- HANGKÉPZÉS
- plica vocalesek között
- ventralis része - pars intermembranacea plica vocalesek között
- dorsalis rész – két kannaporc között – pars intercartilagineae



GÉGE ÜREGE (CAVUM LARYNGIS)

CAVUM INFRAGLOTTICUM:

- rima glottidistól caudalisan
- tracheába folytatódik



Cut through the larynx of a horse

https://en.wikipedia.org/wiki/Infraglottic_cavity

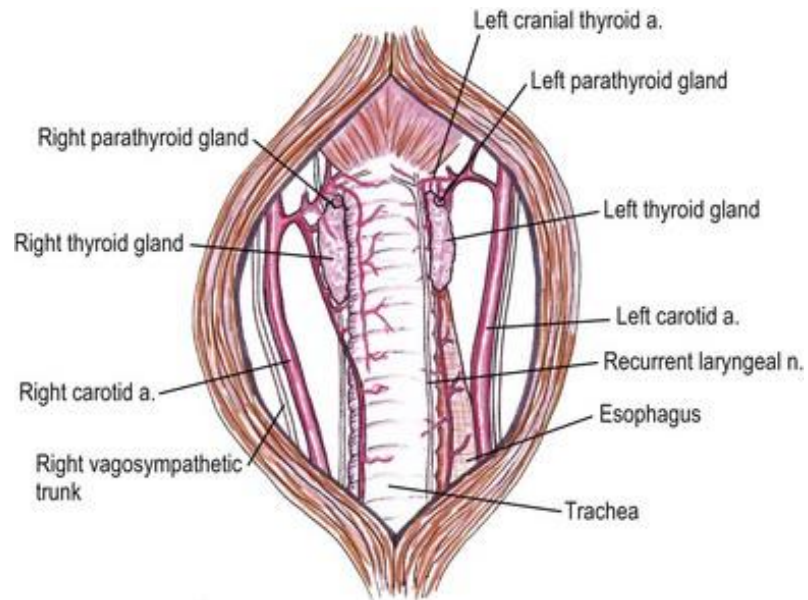
A GÉGE VÉRELLÁTÁSA

A. thyroidea cranialis:

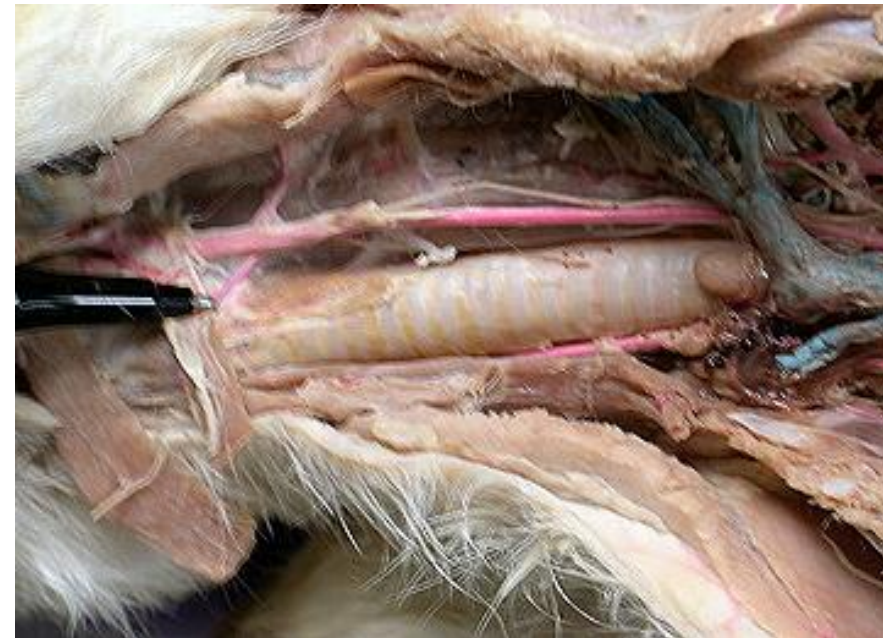
a. Ramus laryngeus

b. Rr. musculares

- fissura thyroideán cavum laryngisbe lép



<https://veteriankey.com/thyroid-and-parathyroid/>

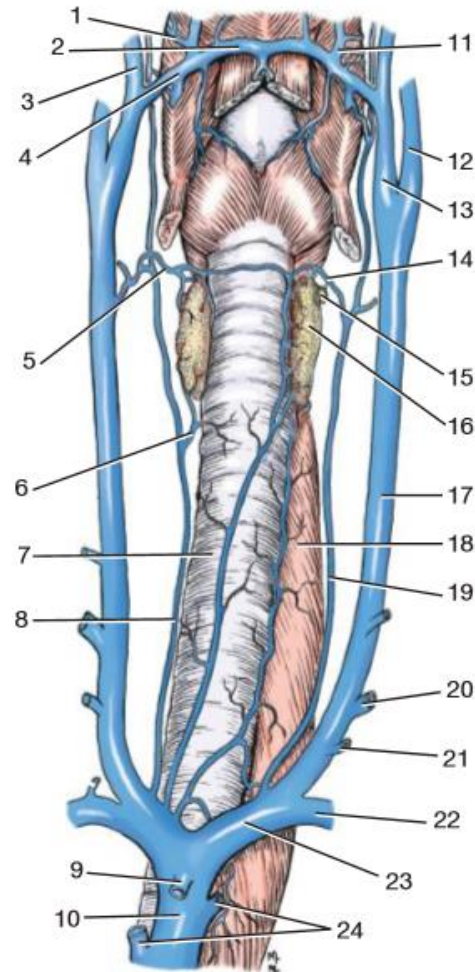


The cranial thyroid artery is the first medial branch of the common carotid artery that we will study. It serves the thyroid gland. I left the picture on the left in for orientation.

<http://faculty.ccri.edu/wjohnson/lab5new2/cranialthy.htm>

A GÉGE VÉRELLÁTÁSA

- v. laryngea cranialis
- v. lingofacialis ágai
- v. laryngea impar
- v. jugularis ext. et int.



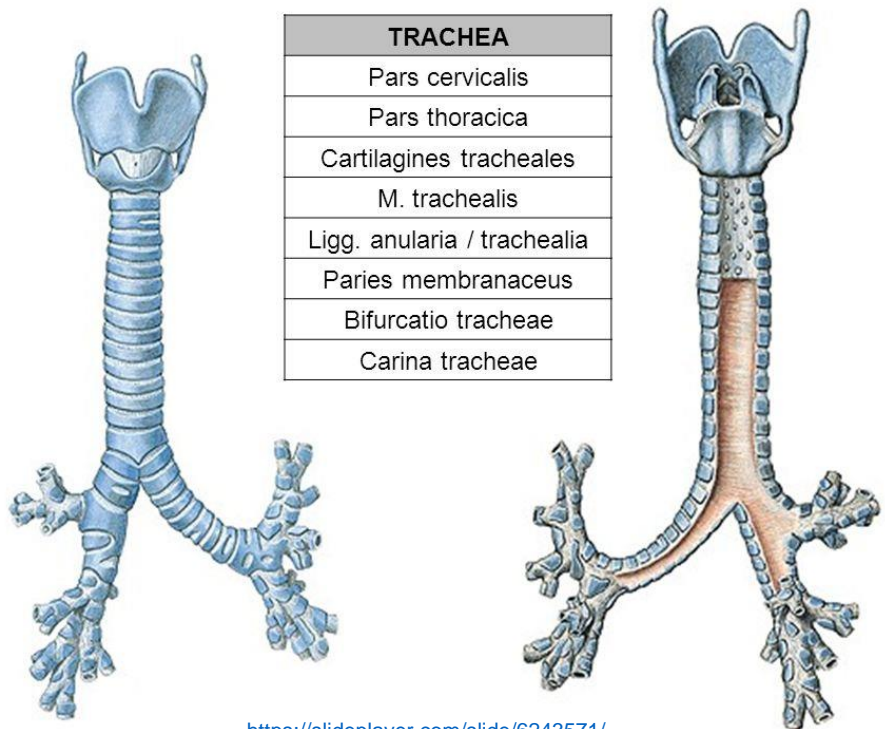
1. Pharyngeal branch
2. Hyoid venous arch
3. Facial
4. Lingual
5. Cranial thyroid
6. Middle thyroid
7. Trachea
8. Right internal jugular
9. Internal thoracic trunk
10. Cranial vena cava
11. Lingual
12. Maxillary
13. Linguofacial
14. Cranial thyroid
15. Parathyroid gland
16. Thyroid gland
17. External jugular
18. Esophagus
19. Left internal jugular
20. Superficial cervical
21. Cephalic
22. Subclavian
23. Brachiocephalic
24. Costocervical veins

Note: Ventral aspect.

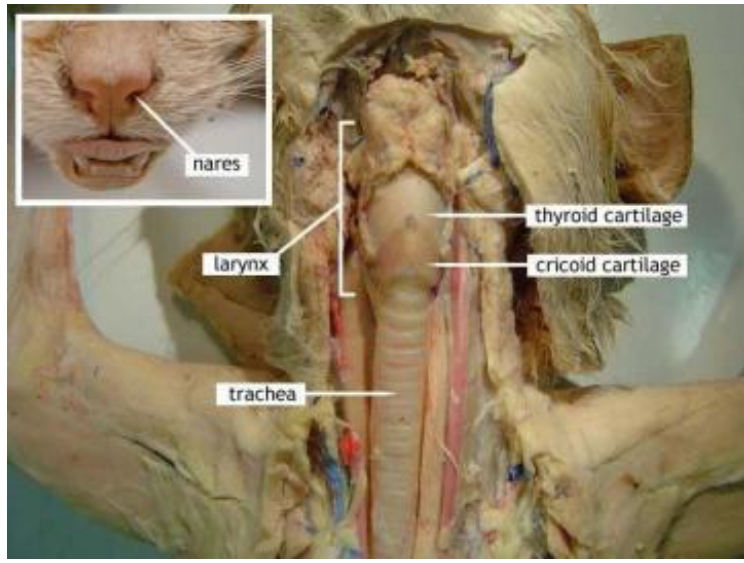
LÉGCSŐ (TRACHEA)

részei:

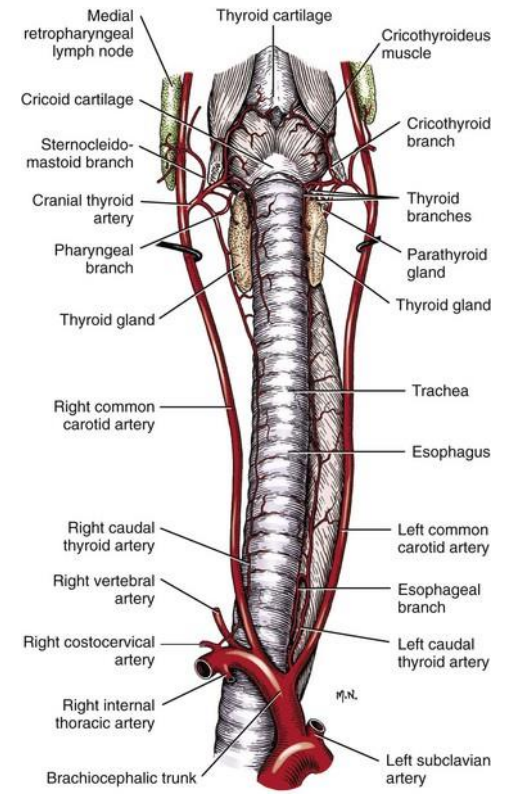
1. hyalin porcok (cartilagine tracheales)
2. ligg. anularia
3. paries membranaceus (dorsalis fala) - m. trachealis



<https://slideplayer.com/slide/6243571/>



<https://www.studyblue.com/notes/n/thorax-viscera-organs-vessels/deck/3625574>



<https://veteriankey.com/trachea-and-bronchi/>

LÉGCSŐ (TRACHEA)

- trachea porcok alakja állatfajonként eltérő

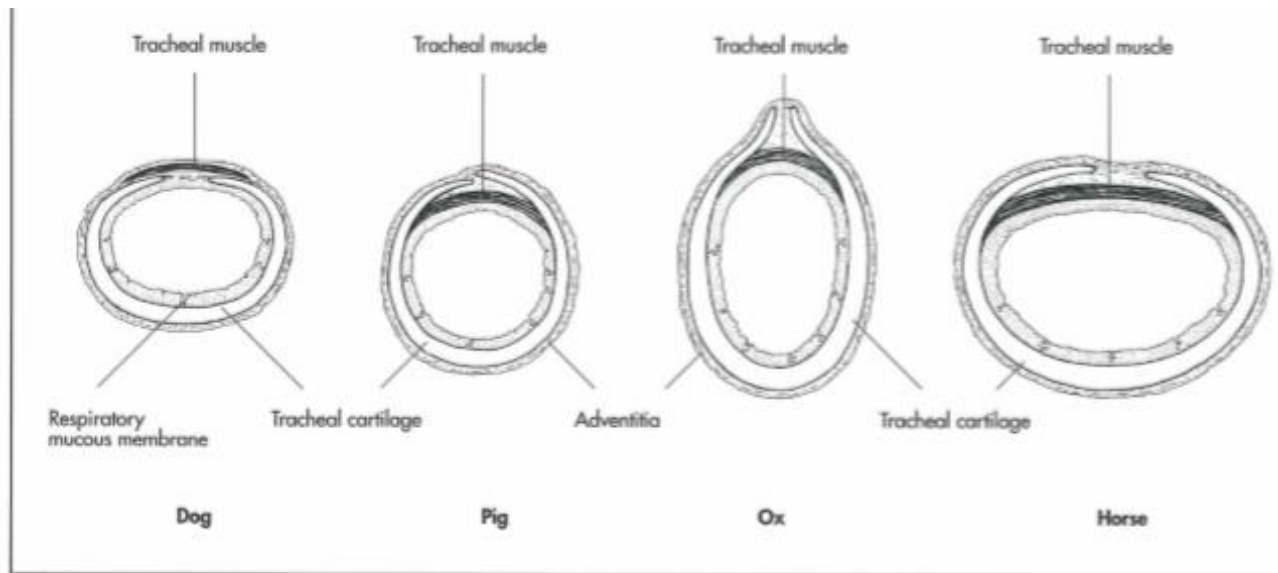
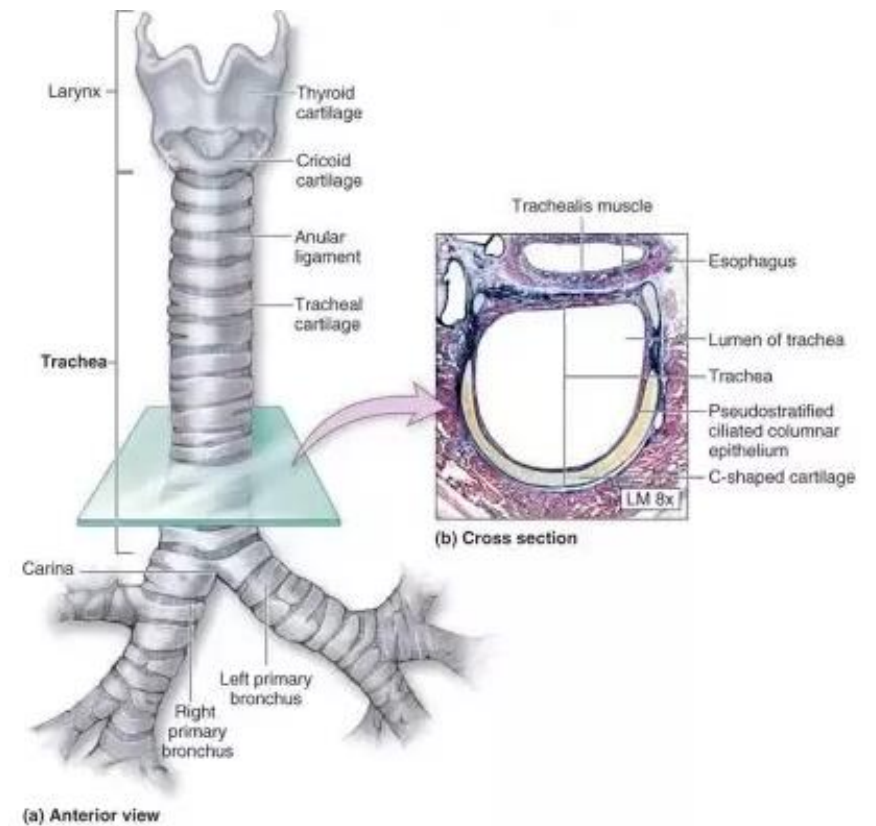


Fig. 8-25. Transverse section of the trachea of the different domestic species, schematic.



LÉGCSŐ (TRACHEA)

trachea porcok száma:

ló: 48 – 60

marha: 48 – 60

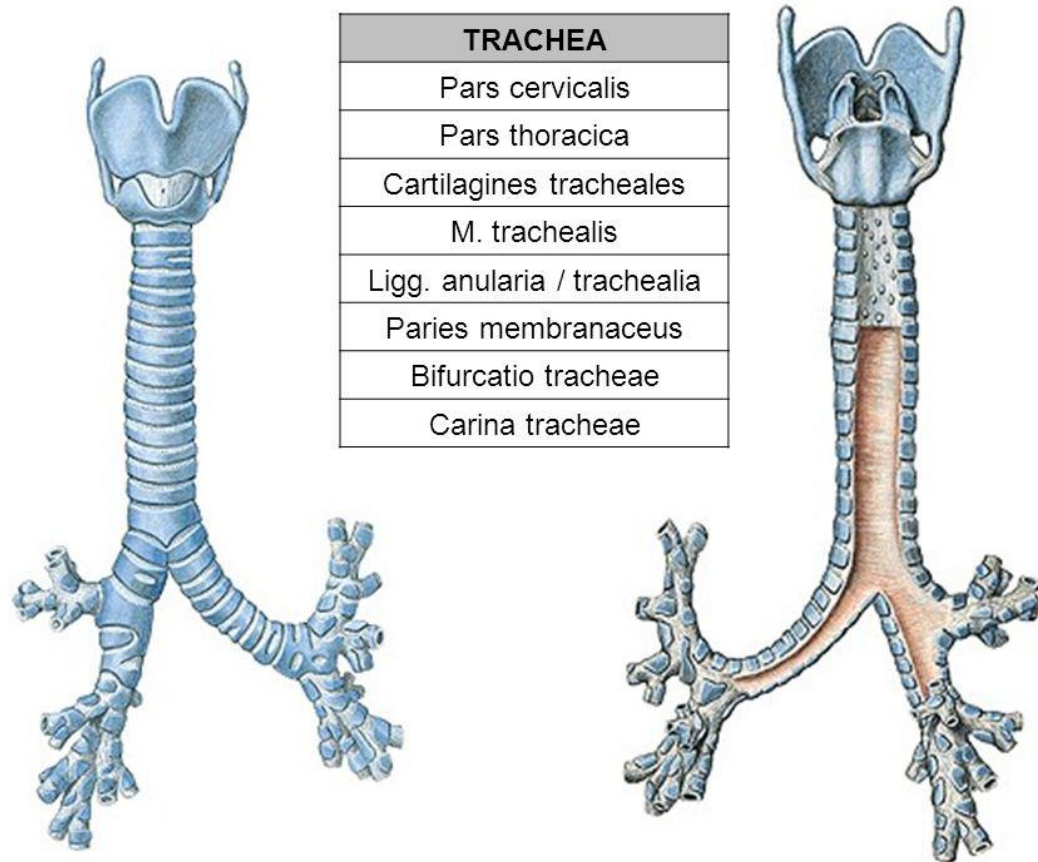
juh: 48 - 60

kecske: 48 – 60

setés: 29 – 36

kutya: 42 – 46

macska: 38 - 43



LÉGCSŐ (TRACHEA)

Paries membranaceus (dorsalis fal)

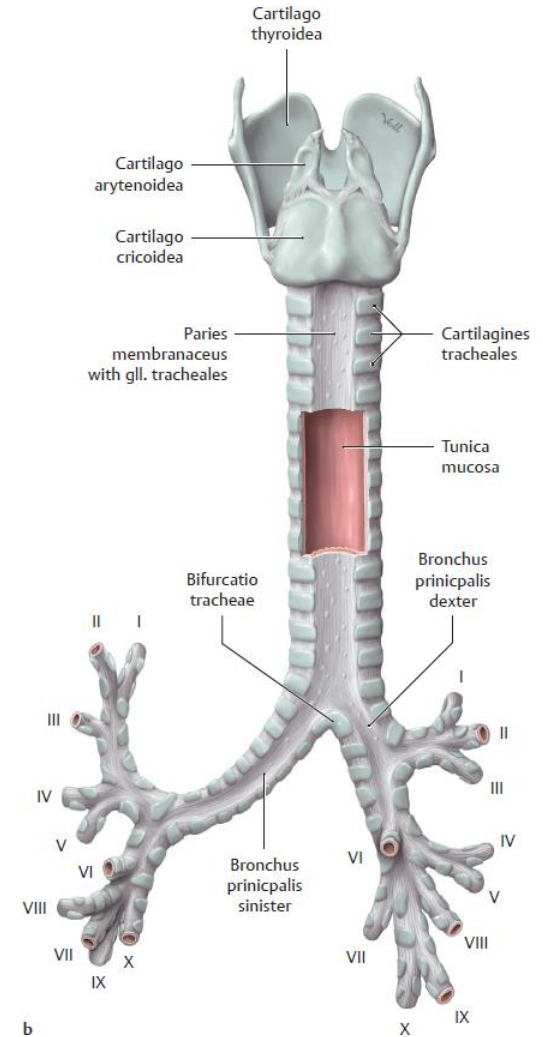
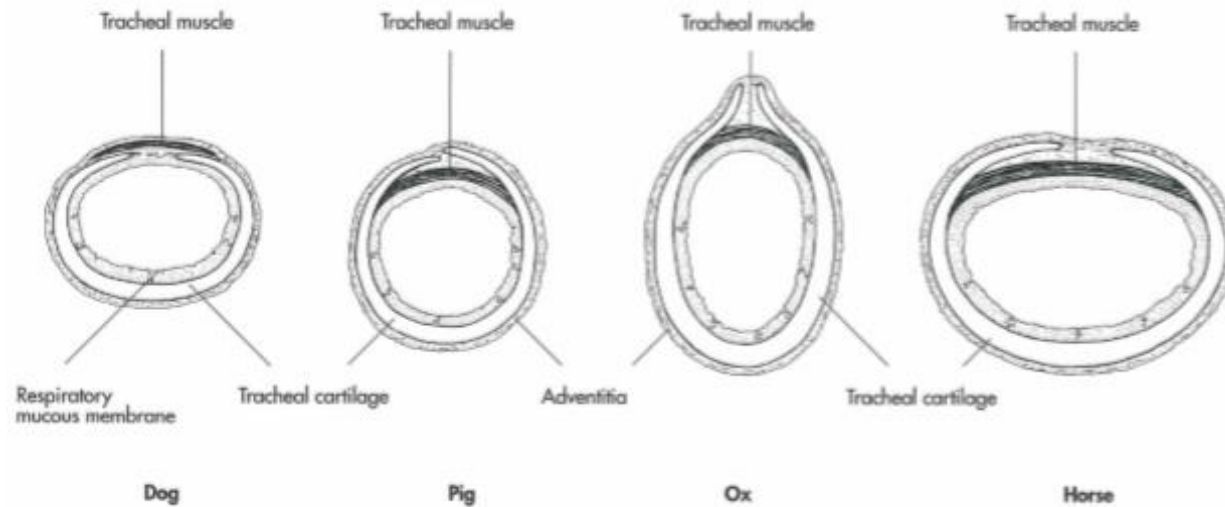
MUSCULUS TRACEALIS:

- Su, Bo, Eq - tunica submucosában

- Ca – a trachea porcokon



<https://hu.pinterest.com/maidahzahid/res-tract/>



<https://basicmedicalkey.com/organs-of-the-respiratory-system-and-their-neurovasculature/>

LÉGCSŐ (TRACHEA)

1. NYAKI SZAKASZ (PARS CERVICALIS):

- mm. longus colli és capitis előtt

ventralisan fedi:

a) mm. sternohyoidei

b) mm. strenothyroidei

c) mm. omohyoidei

d) mm. sternomandibulares

e) mm. brachiocephalici

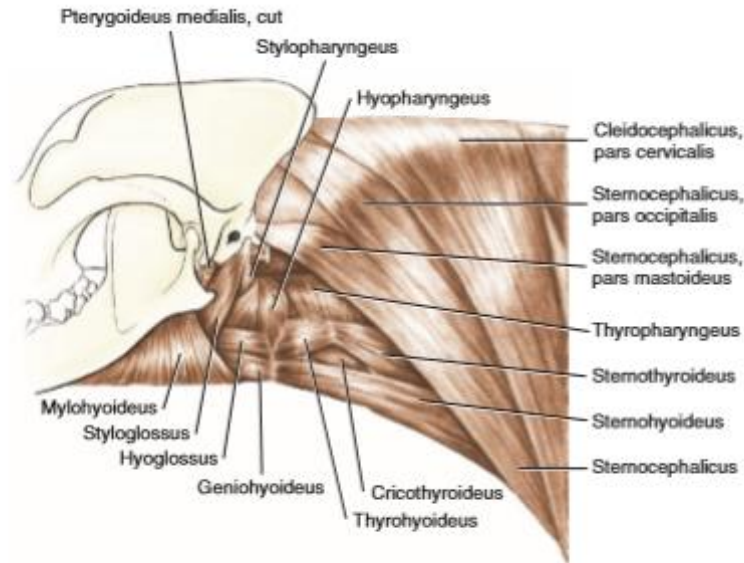
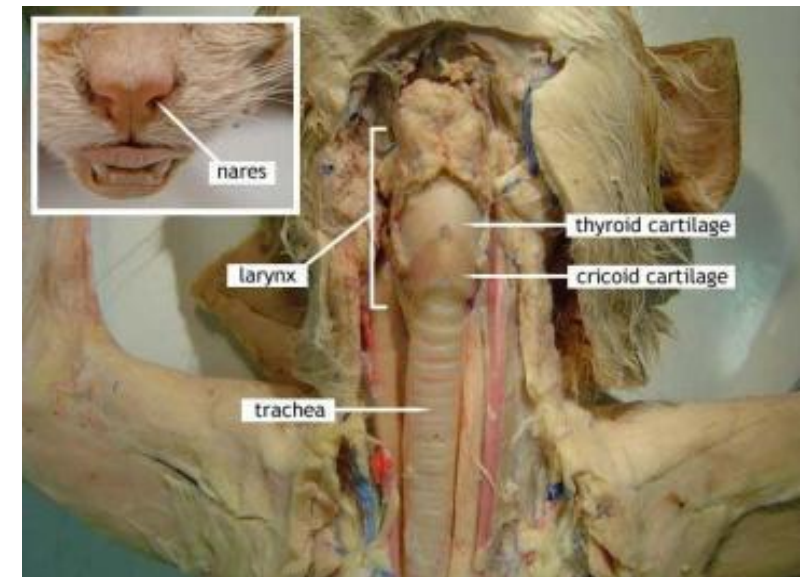
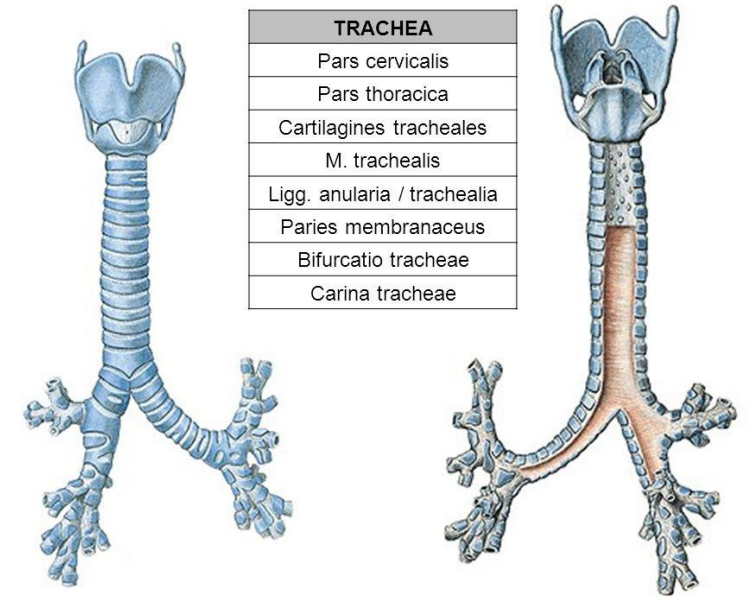
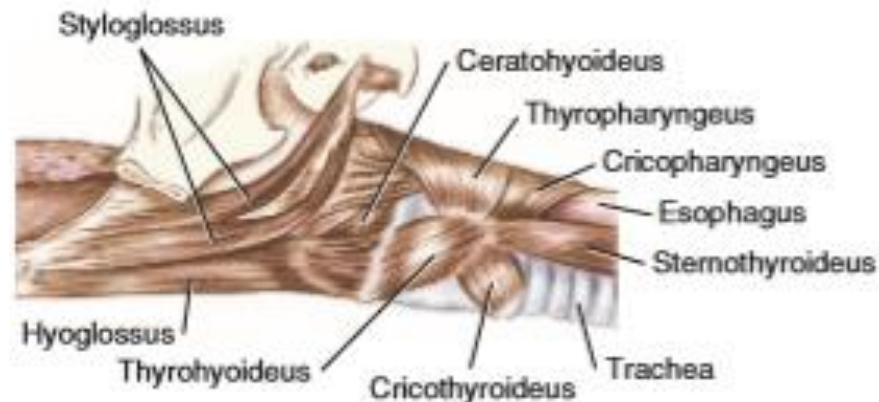


FIGURE 6-21 The hyoid muscles and muscles of the neck, lateral aspect. (Stylohyoideus and digastricus removed.)



LÉGCSŐ (TRACHEA)

1. NYAKI SZAKASZ:

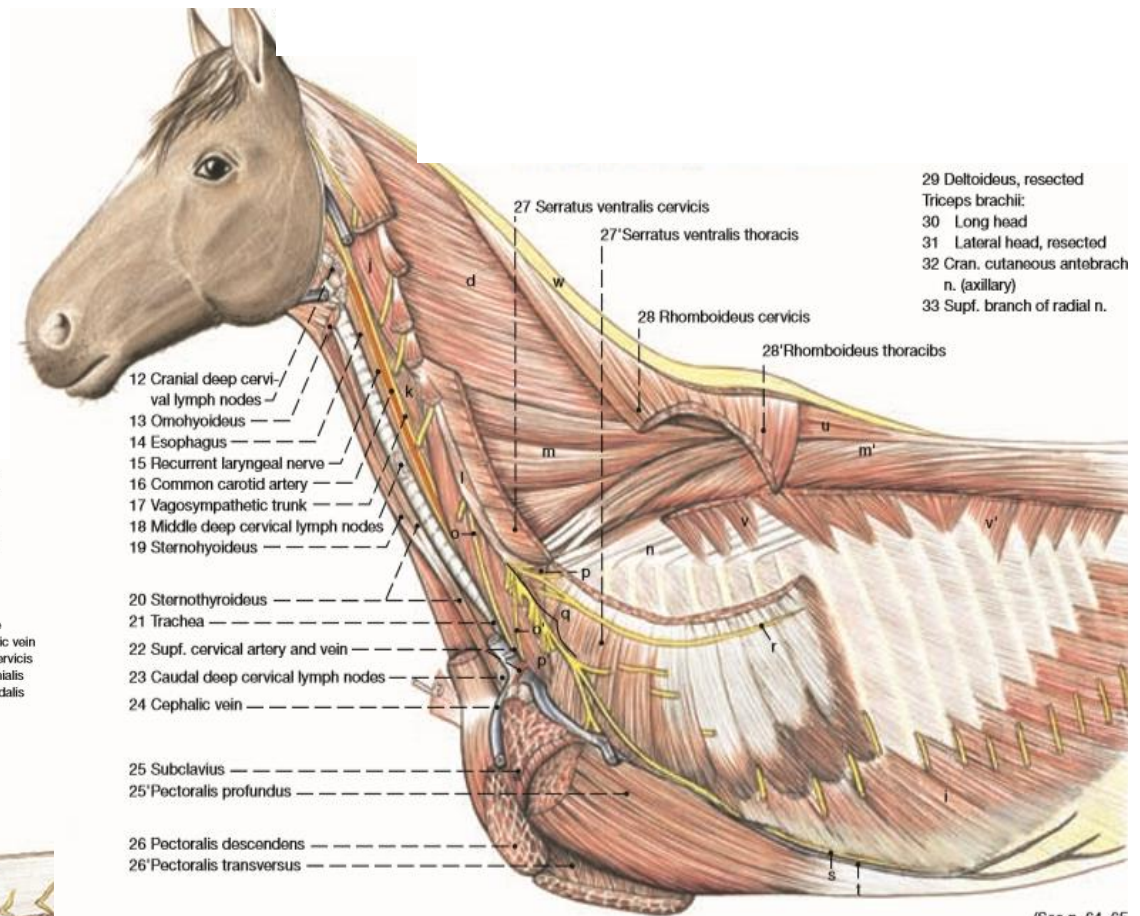
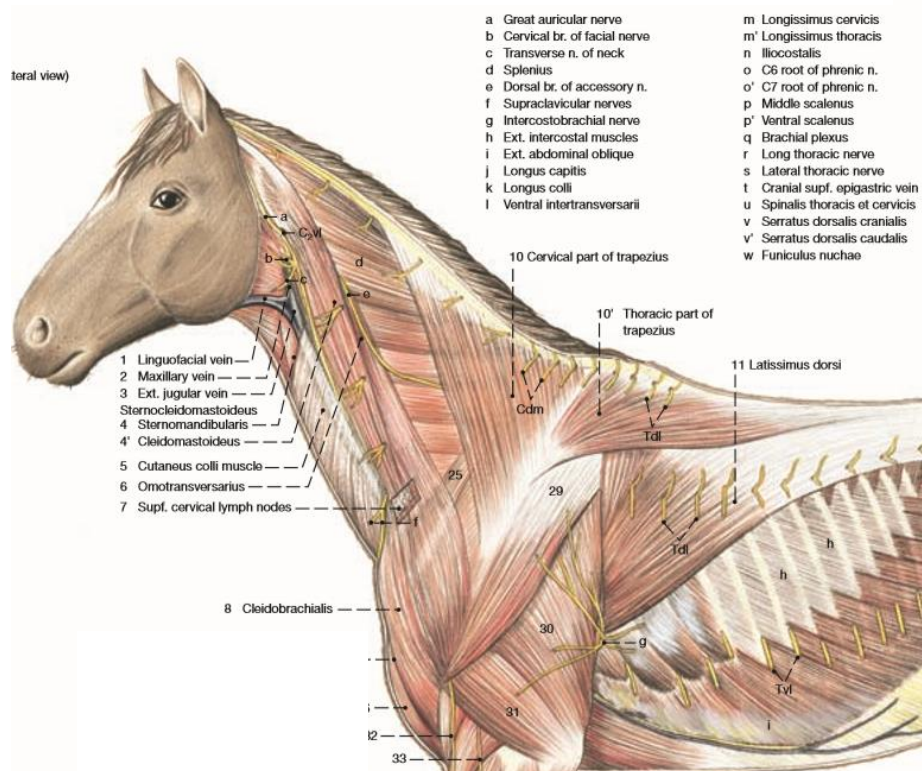
együtt halad:

a. a. carotis comm. - dorsolateralisan

b. truncus vagosympaticus - dorsolateralisan

c. v. jugualris ext. (kivétel Eq, kecske)

d. oesophagus alatt, majd a 3 – 6 nyakcsigolya síkjában annak jobb oldalán



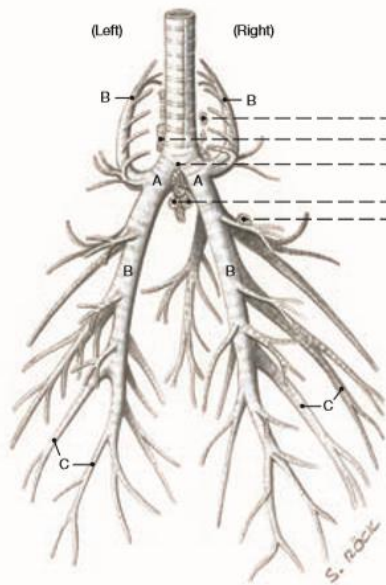
(See p. 64, 65)

LÉGCSŐ (TRACHEA)

2. MELLKASI SZAKASZ (PARS THORACICA):

- apertura thoracis cranialis - cavum thoracis
- nyelőcső alatt
- 5. bordaközben BIFURCATIO TRACHEAE

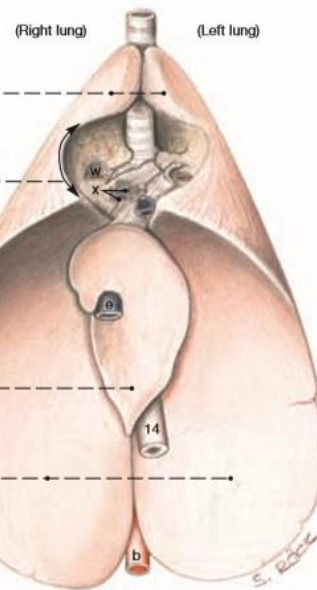
Bronchial Tree, dorsal view



- 18 Cranial lobes
- 19 Right tracheobronchial lymph nodes
- 20 Left tracheobronchial lymph nodes
- 21 Tracheal bifurcation
- 22 Cardiac notch
- 23 Middle tracheobronchial lymph nodes
- 24 Pulmonary lymph nodes

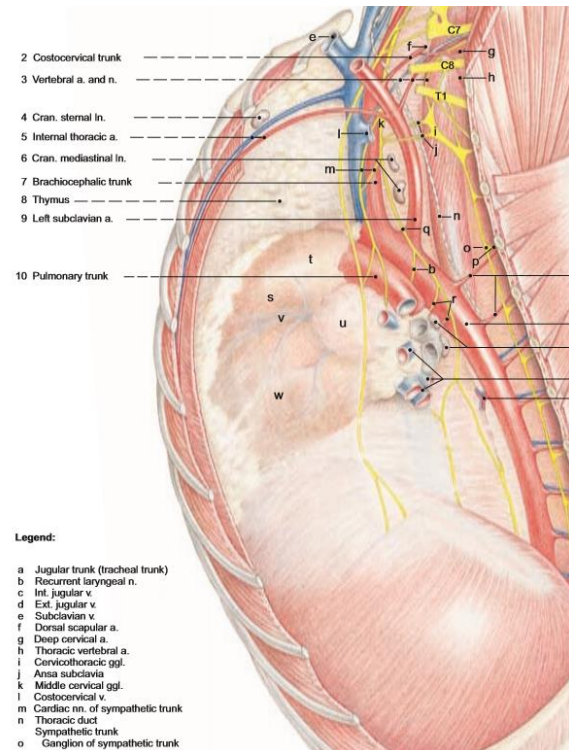
- A Principal bronchus
- B Lobar bronchus
- C Segmental bronchus
- a Retractor costae
- b Aorta
- c Right azygous vein
- d Dorsal and ventral vagal trunks
- e Caudal vena cava
- f Caval fold
- g Mediastinal recess
- h Phrenic nerve
- i Pericardiac pleura
- j Semispinalis capitis
- k Intercostal vessels

Lungs, ventral view



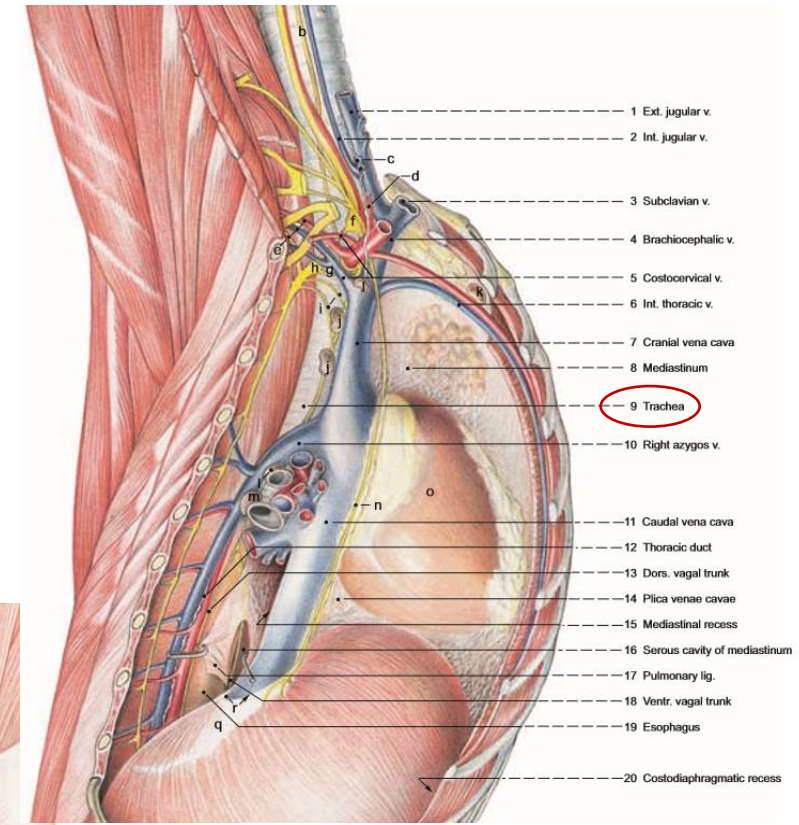
- 25 Accessory lobe
- 26 Caudal lobes

- l Bronchoesophageal vessels
- m Supreme intercostal vessels
- n Dorsal scapular vessels
- o Deep cervical vessels
- p Vertebral vessels and nerve
- q Common carotid a. and vagosympathetic trunk
- r Ext. jugular vein
- s Cephalic vein
- t Axillary vessels
- u Int. thoracic vessels
- v Transversus thoracis
- w Pulmonary artery
- x Pulmonary veins



Legend:

- a Jugular trunk (tracheal trunk)
- b Recurrent laryngeal n.
- c Int. jugular v.
- d Ext. jugular v.
- e Subclavian v.
- f Dorsal scapular a.
- g Deep cervical a.
- h Thoracic vertebral a.
- i Cervicothoracic v.
- j Ansa subclavia
- k Middle cervical v.
- l Costocervical v.
- m Cardiac nn. of sympathetic trunk
- n Thoracic duct
- o Sympathetic trunk
- p Ganglion of sympathetic trunk
- q Cervical sympathetic trunk



- 1 Ext. jugular v.
- 2 Int. jugular v.
- 3 Subclavian v.
- 4 Brachiocephalic v.
- 5 Costocervical v.
- 6 Int. thoracic v.
- 7 Cranial vena cava
- 8 Mediastinum
- 9 Trachea
- 10 Right azygos v.
- 11 Caudal vena cava
- 12 Thoracic duct
- 13 Dors. vagal trunk
- 14 Plica venae cavae
- 15 Mediastinal recess
- 16 Serous cavity of mediastinum
- 17 Pulmonary lig.
- 18 Ventr. vagal trunk
- 19 Esophagus
- 20 Costodiaphragmatic recess

- 11 Intercostal aa.
- 12 Descending aorta
- 13 Left tracheobronchial lymph nodes
- 14 Pulmonary veins
- 15 Bronchoesophageal a. + v.

LÉGCSŐ (TRACHEA)

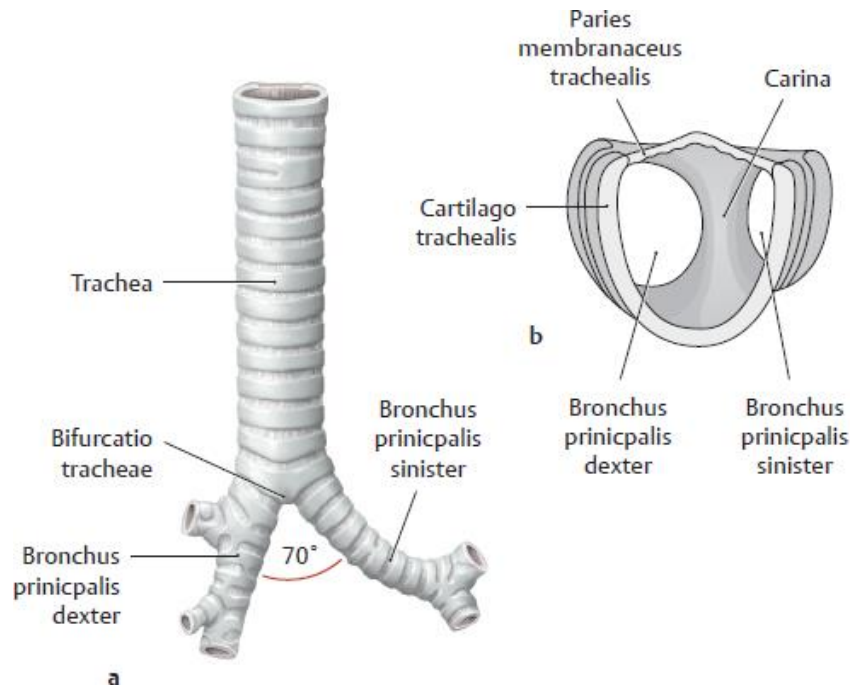
2. MELLKASI SZAKASZ (PARS THORACICA):

BIFURCATIO TRACHEAE:

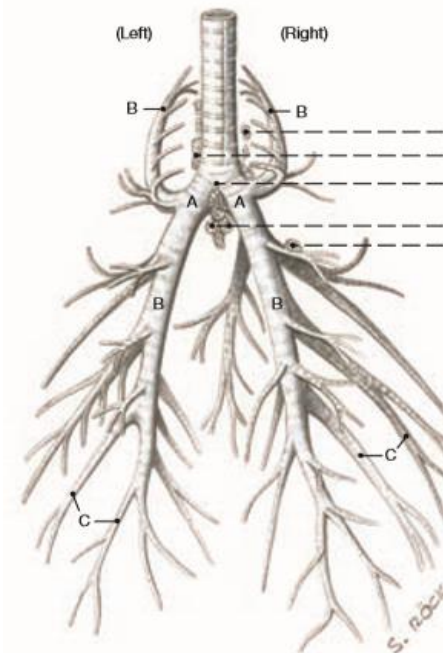
1. BRONCHUS PRINCIPALIS DEXTER

2. BRONCHUS PRINCIPALIS SINISTER

- húsevőkben két főhörgő nyílása között **CARINA TRACHEAE** (taraj)
- jobb főhörgő tágabb, rövidebb



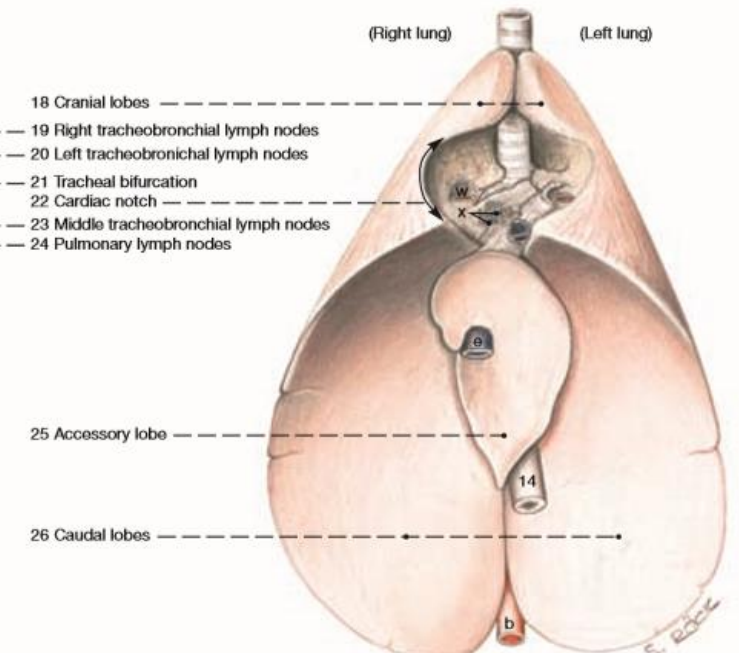
Bronchial Tree, dorsal view



- A Principal bronchus
- B Lobar bronchus
- C Segmental bronchus
- a Retractor costae
- b Aorta
- c Right azygous vein
- d Dorsal and ventral vagal trunks

- e Caudal vena cava
- f Caval fold
- g Mediastinal recess
- h Phrenic nerve
- i Pericardiac pleura
- j Semispinalis capitis
- k Intercostal vessels

Lungs, ventral view



- 18 Cranial lobes
- 19 Right tracheobronchial lymph nodes
- 20 Left tracheobronchial lymph nodes
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- 22 Cardiac notch
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- 24 Pulmonary lymph nodes

- 25 Accessory lobe
- 26 Caudal lobes

- l Bronchoesophageal vessels
- m Supreme intercostal vessels
- n Dorsal scapular vessels
- o Deep cervical vessels
- p Vertebral vessels and nerve
- q Common carotid a. and vagosympathetic trunk

- r Ext. jugular vein
- s Cephalic vein
- t Axillary vessels
- u Int. thoracic vessels
- v Transversus thoracis
- w Pulmonary artery
- x Pulmonary veins

LÉGCSŐ (TRACHEA)

2. MELLKASI SZAKASZ:

- Bo., Su. – jobb oldalon a tracheából a főhörgők elágazódása előtt - **Bronchus trachealis**
- **Bronchus trachealis - lobus cranialis dexter**

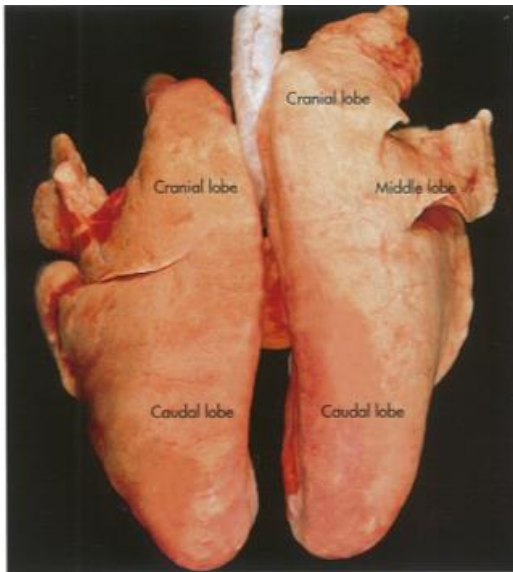


Fig. 8-31. Lungs of a pig, dorsal aspect (courtesy of PD Dr. J. Maierl, Munich).

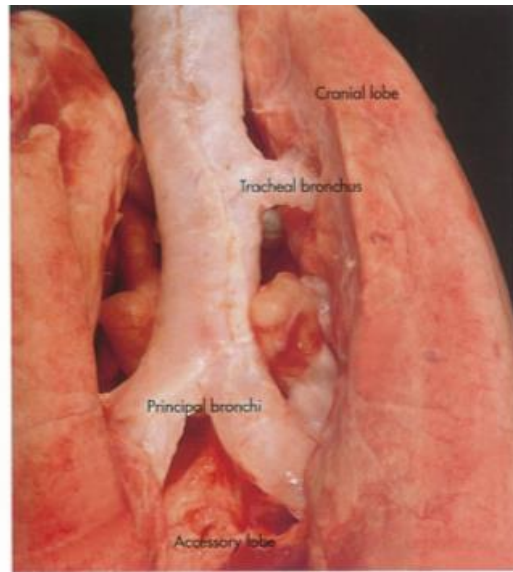


Fig. 8-32. Lungs of a pig, demonstrating the tracheal bronchus, dorsal aspect (courtesy of PD Dr. J. Maierl, Munich).

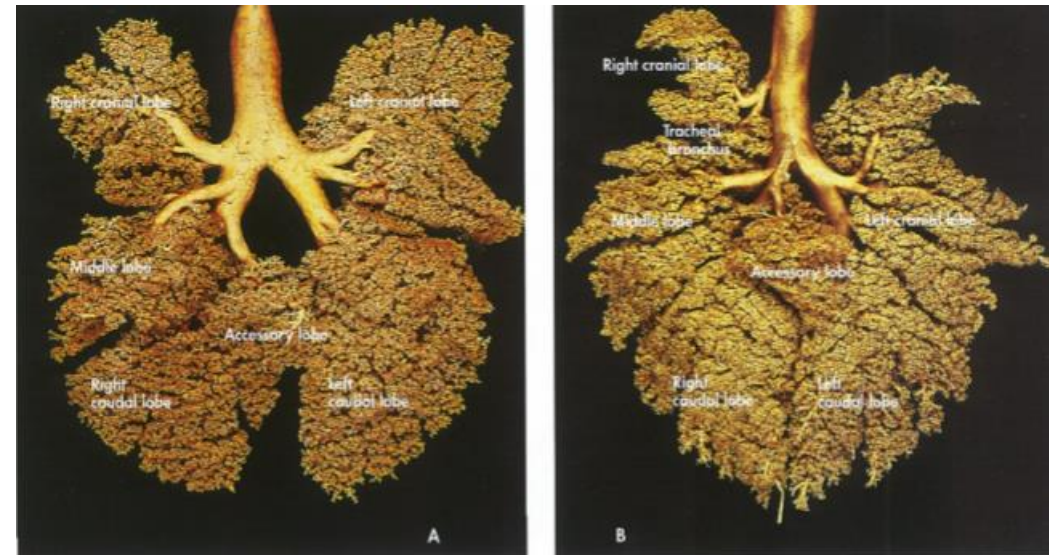


Fig. 8-33. Trachea and bronchial tree of a dog (A) and the pig (B), corrosion cast, ventral aspect.

TÜDŐ (PULMO)

- szivacsos, elasztikus, levegővel telt szerv
- mellüreg nagy részét kitölti
- pleura üregben
- színe vértartalmától függ
- légzőszerv - gázcsere

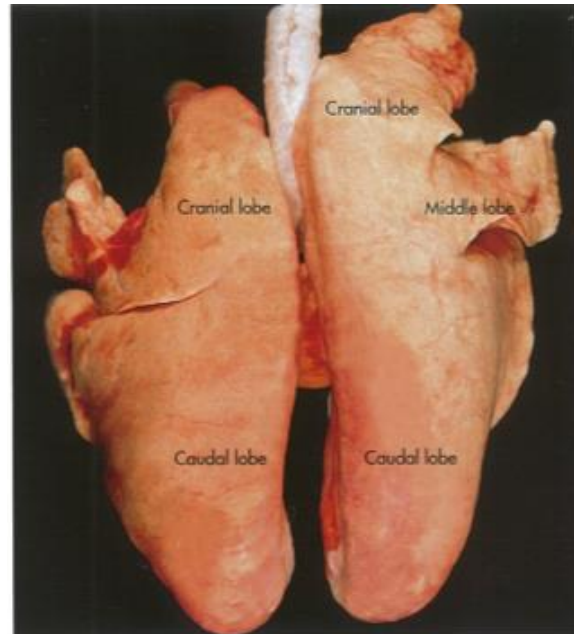


Fig. 8-31. Lungs of a pig, dorsal aspect (courtesy of PD Dr. J. Maierl, Munich).

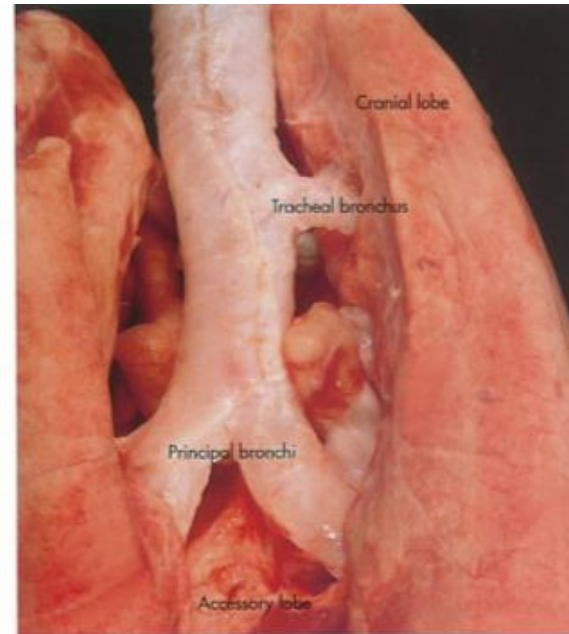


Fig. 8-32. Lungs of a pig, demonstrating the tracheal bronchus, dorsal aspect (courtesy of PD Dr. J. Maierl, Munich).

TÜDŐ (PULMO)

két tüdőszárny:

1. Pulmo dextra

2. Pulmo sinistra

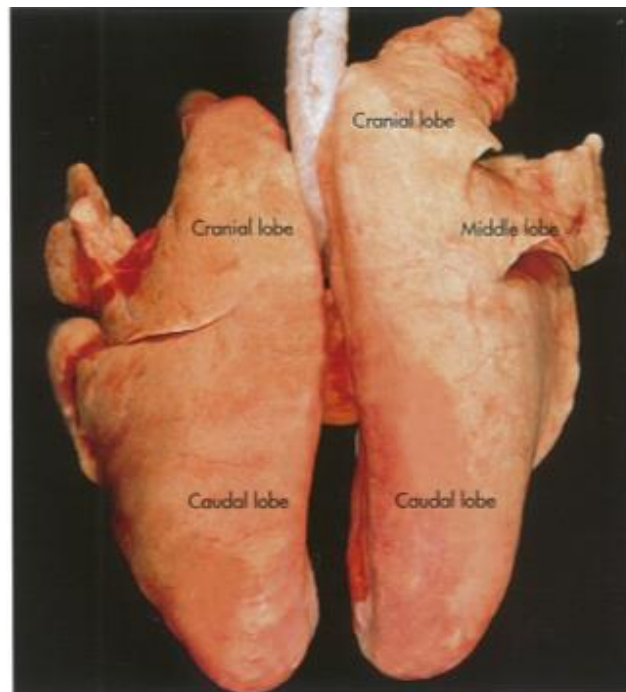


Fig. 8-31. Lungs of a pig, dorsal aspect (courtesy of PD Dr. J. Maierl, Munich).

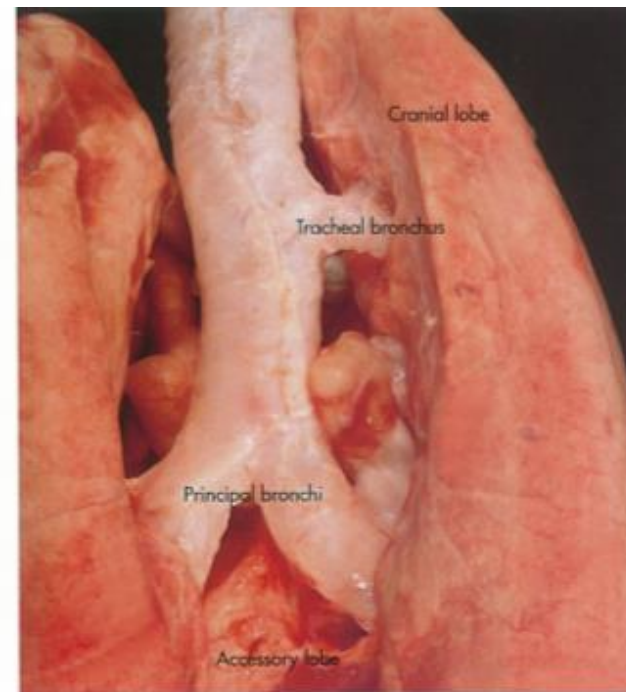


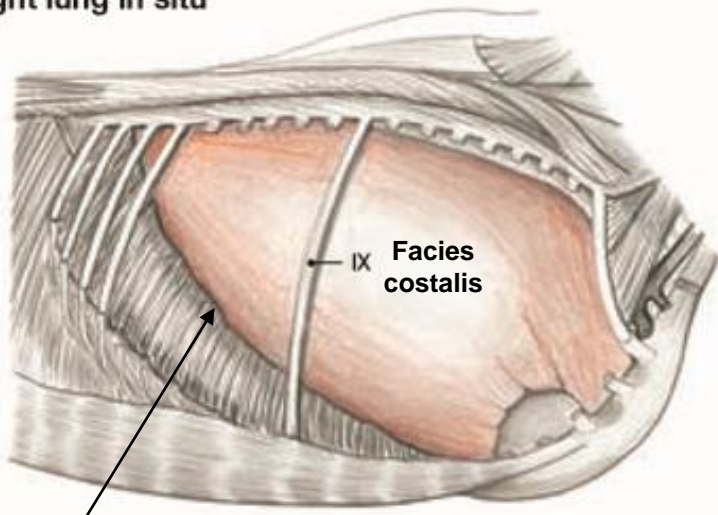
Fig. 8-32. Lungs of a pig, demonstrating the tracheal bronchus, dorsal aspect (courtesy of PD Dr. J. Maierl, Munich).

TÜDŐ (PULMO)

FELSZÍNEI:

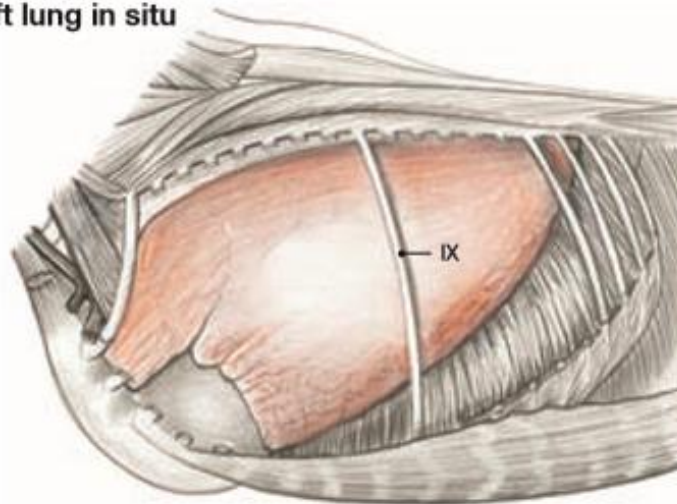
1. FACIES COSTALIS
2. FACIES MEDIASTINALIS
3. FACIES DIAPHRAGMATICA

Right lung in situ



Facies diaphragmatica

Left lung in situ



Eq

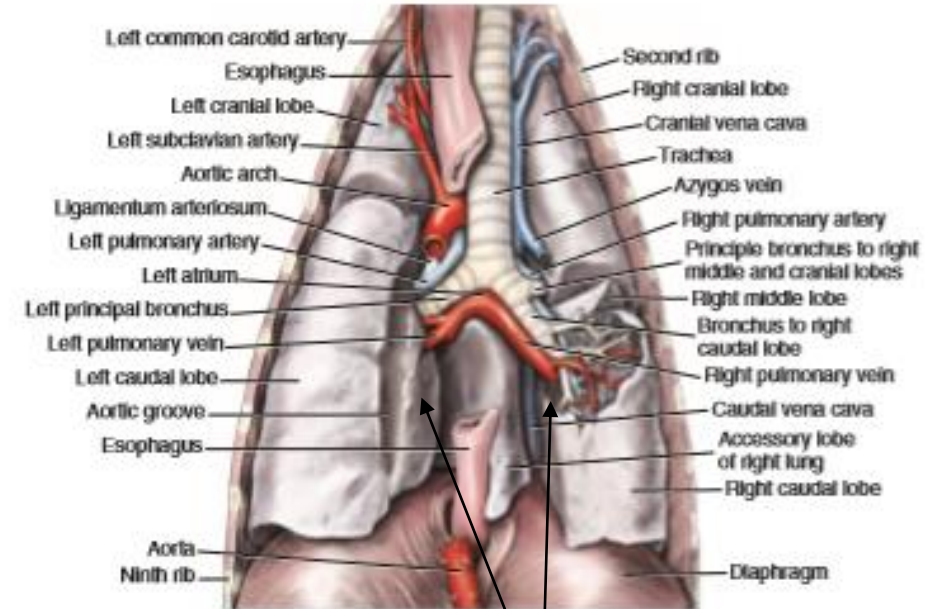


FIGURE 8-23 Bronchial tree and associated structures, dorsal aspect.

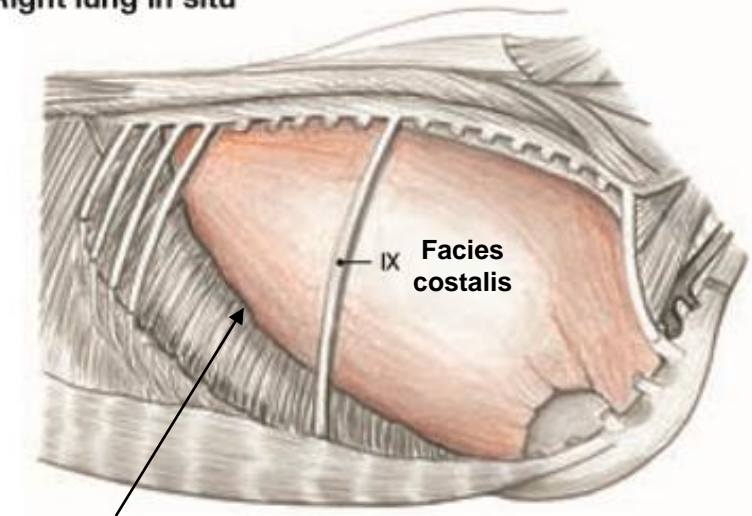
Ca
Facies mediastinalis

TÜDŐ (PULMO)

FACIES COSTALIS

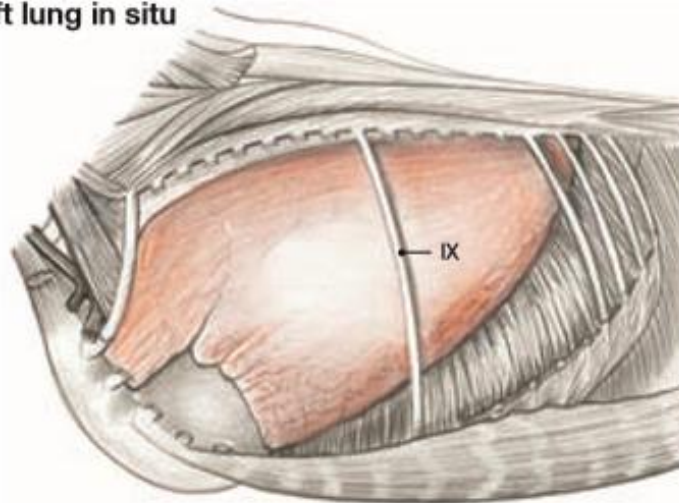
- mellkasfal felé eső felszín
- impressio costales

Right lung in situ



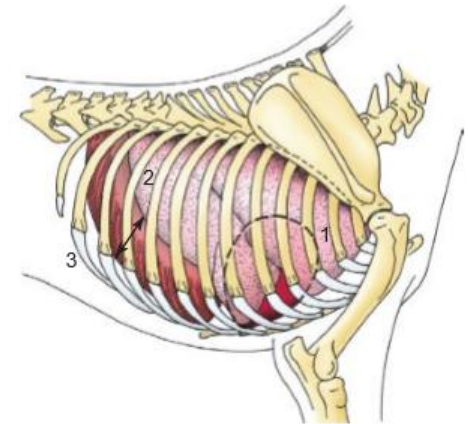
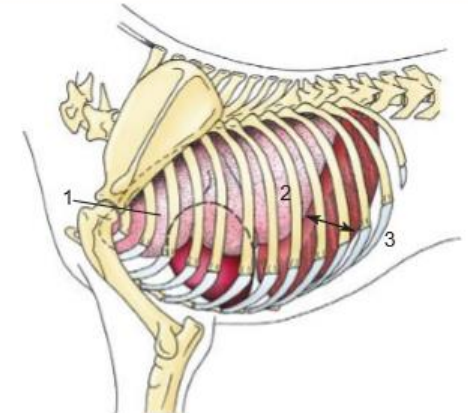
Facies diaphragmatica

Left lung in situ



Eq

Canine: Thoracic Organs
(Left View [Top] and
Right View [Bottom])



1. Cranial lobe
2. Caudal lobe
3. Costodiaphragmatic recess (arrow)

Note: The outline of the heart is indicated (broken line).

TÜDŐ (PULMO)

FACIES MEDIASTINALIS

- mediastinum (gátorüreg) felé eső felszín

1. impressio cardiaca

- bal tüdő félen az impressio mélyebb, nagyobb

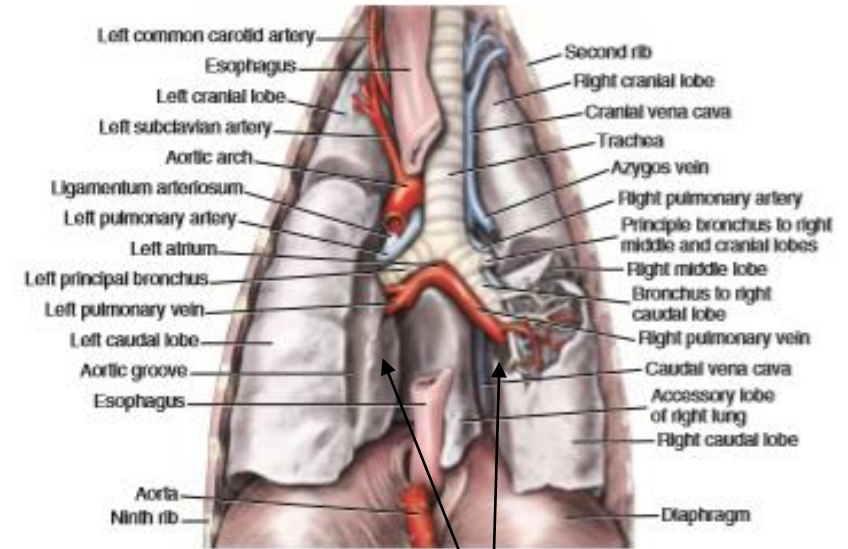
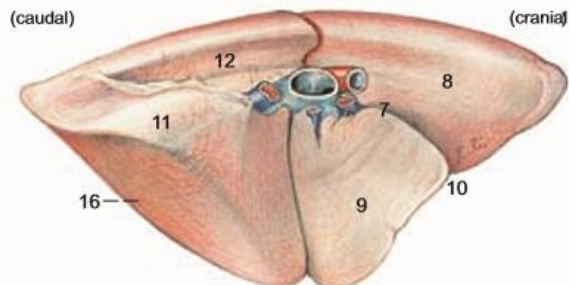
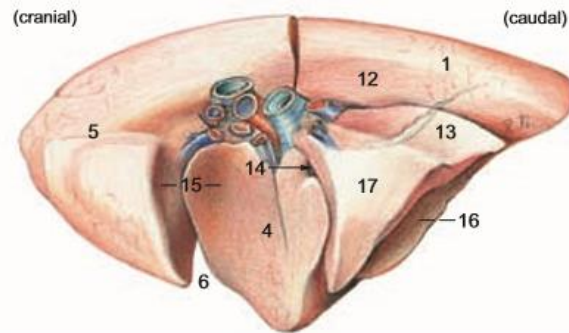


FIGURE 9-23 Bronchial tree and associated structures, dorsal aspect.

Ca

Facies mediastinalis

Right and left lung (medial aspect)



Ca.

6. Incisura cardiaca dext.

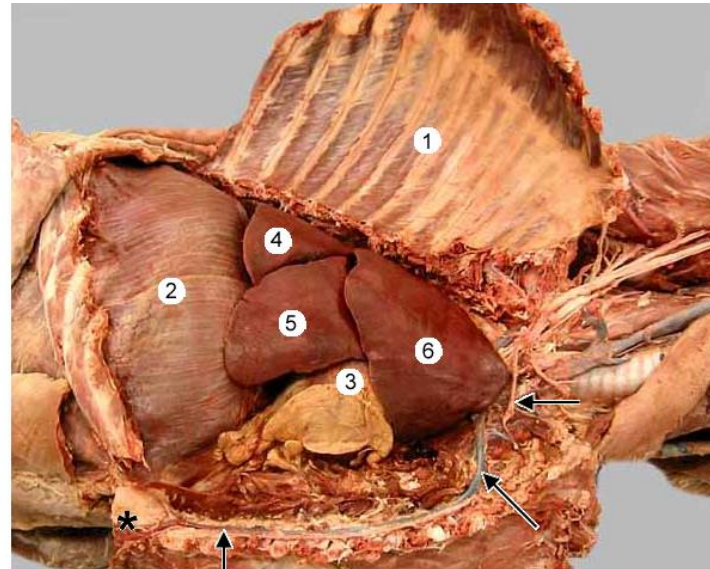
10. Incisura cardiaca sin.

12. Impressio aortica

13. Impressio oesophagea

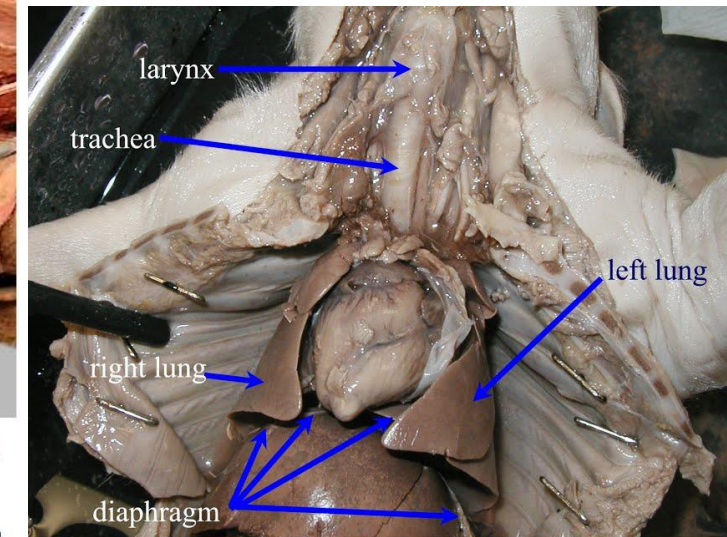
14. Sulcus venae cavae

16. Facies diaphragmatica



The pleural cavity has been opened by reflecting the right thoracic wall. The thoracic wall (1) is covered by **costal parietal pleura**. The diaphragm (2) is covered by **diaphragmatic parietal pleura**. The mediastinum, including the heart (3), is covered by **mediastinal parietal pleura**. The caudal (4), middle (5), and cranial (6) lobes of the **right lung** are covered by **visceral (pulmonary) pleura**. Cranial and middle lobes of the right lung form a cardiac notch (3) through which the heart is exposed. Internal thoracic vessels (arrows) can be seen terminating in cranial epigastric vessels (asterisk).

<http://vanat.cvm.umn.edu/carnLabs/Lab11/mg11-1.html>



<https://sites.google.com/a/carlabert.edu/dwann/tissue-study/fetal-pig-study>

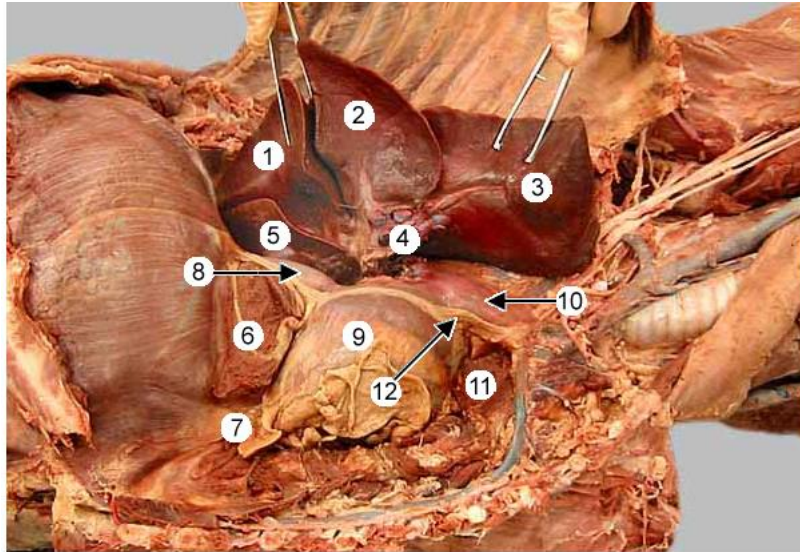
TÜDŐ (PULMO)

FACIES MEDIASTINALIS

2. impressio aortica

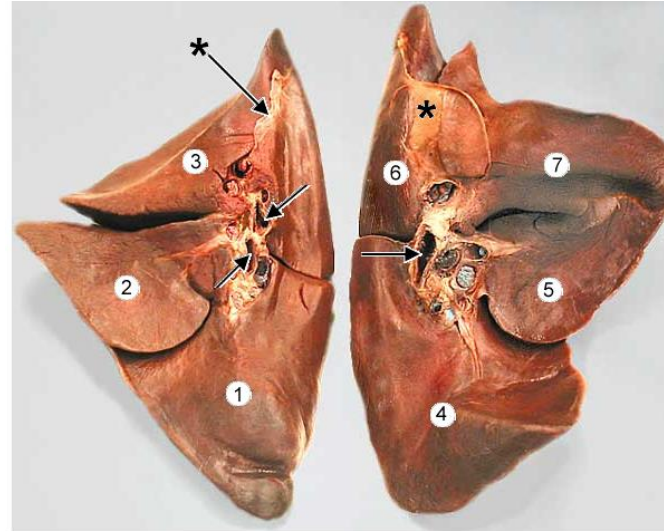
3. impressio oesophagea – jobb tüdő fél

4. sulcus venae caevae caudalis – jobb tüdő fél

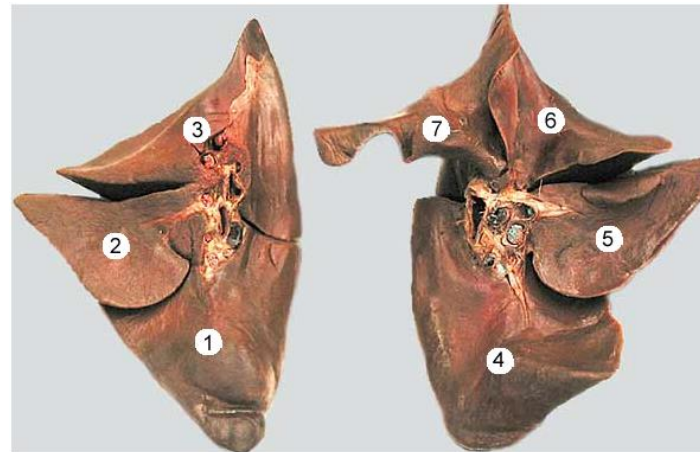


Caudal (1), middle (2), and cranial (3) lobes of the **right lung** are elevated and the root (4) of the lung has been cut to reveal the accessory lobe (5) of the right lung. The ventral part of the accessory lobe is hidden in a pocket formed by **plica vena cava** (6), which extends between the mediastinum (7) and the caudal vena cava (8). Also notice the heart (9), cranial vena cava (10), thymus (11), and phrenic n. (12).

<http://vanat.cvm.umn.edu/carnLabs/Lab11/Lab11.html>

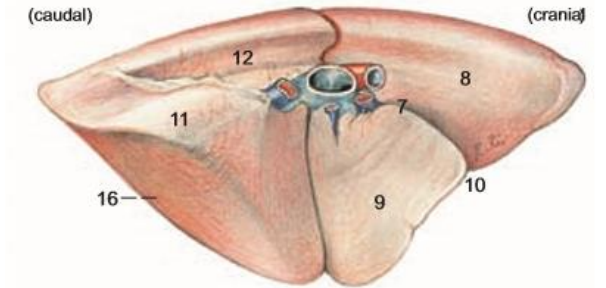
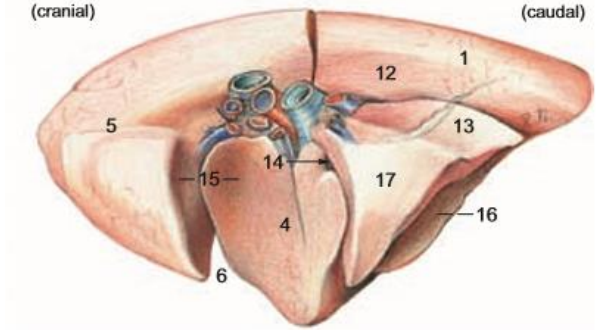


The two lungs are placed on a surface with medial sides up and dorsal borders facing one another, cranial is at the bottom. *Left:* The **left lung** is composed of a cranial lobe that has cranial (1) and caudal (2) parts and a caudal (3) lobe. Two lobar bronchi are evident (arrows). *Right:* The **right lung** has cranial (4), middle (5), caudal (6), and accessory (7) lobes. The lumen of the principal bronchus is evident (arrow). On both lungs, a pulmonary ligament (asterisk) is visible caudal to the hilus of the lung.



This is the same as the previous image except that the accessory lobe (7) of the right lung is reflected. The two lungs are placed on a surface with medial sides up and dorsal borders facing one another, cranial is at the bottom. *Left:* The **left lung** is composed of a cranial lobe that has cranial (1) and caudal (2) parts and a caudal (3) lobe. *Right:* The **right lung** has cranial (4), middle (5), caudal (6), and accessory (7) lobes.

Right and left lung (medial aspect)



Ca.

6. Incisura cardiaca dext.

10. Incisura cardiaca sin.

12. **Impressio aortica**

13. **Impressio oesophagea**

14. **Sulcus venae caevae**

16. **Facies diaphragmatica**

TÜDŐ (PULMO)

FACIES MEDIASTINALIS

5. TÜDŐKAPU (HILUS PULMONIS):

- bronchus principalis dext. et sin.
- a. et v. pulmonalis
- a. et v. bronchialis
- nyirokerek
- idegek

Radix pulmonis (tüdőgyökér) alkotása

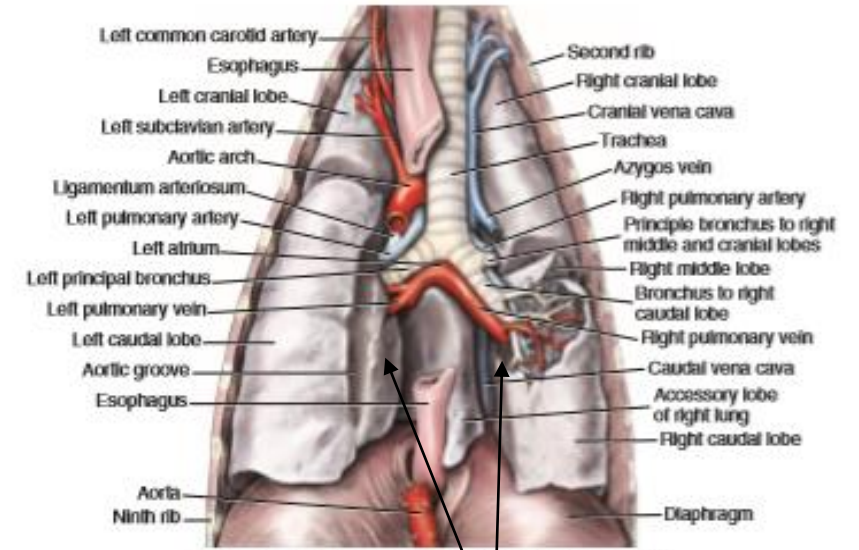
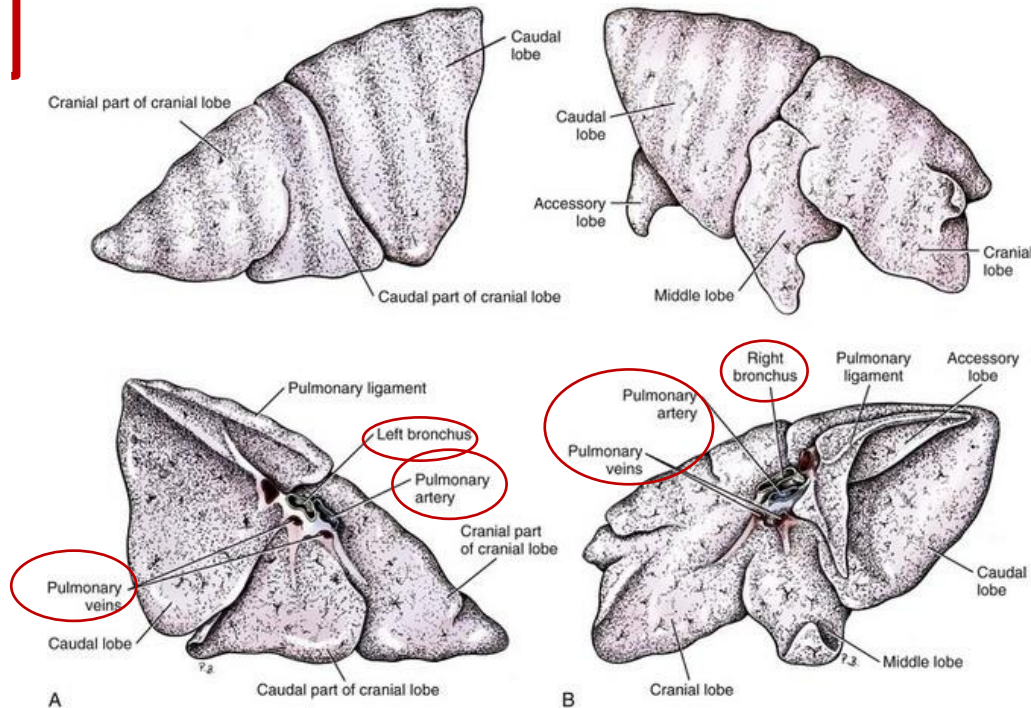


FIGURE 8-23 Bronchial tree and associated structures, dorsal aspect.

Ca

Facies mediastinalis

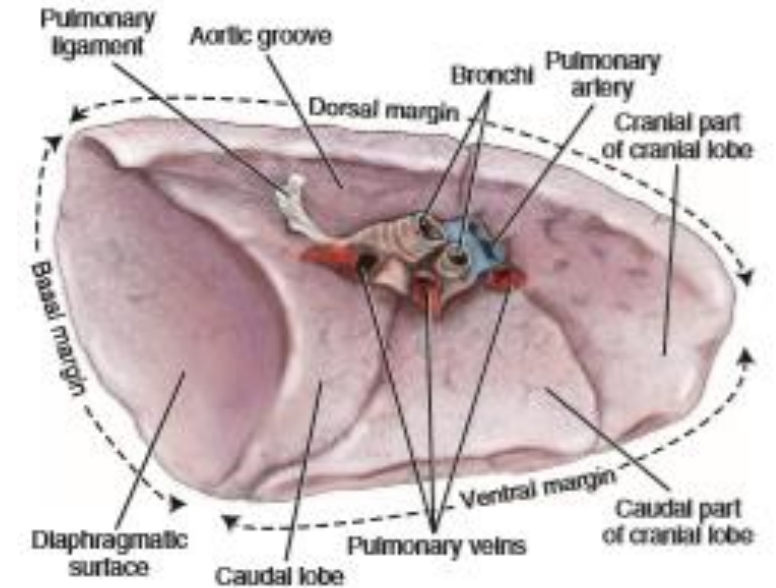


FIGURE 8-35 Margins and surfaces of the left lung, medial view.

TÜDŐ (PULMO)

FACIES DIAPHRAGMATICA

- rekeszi felszín

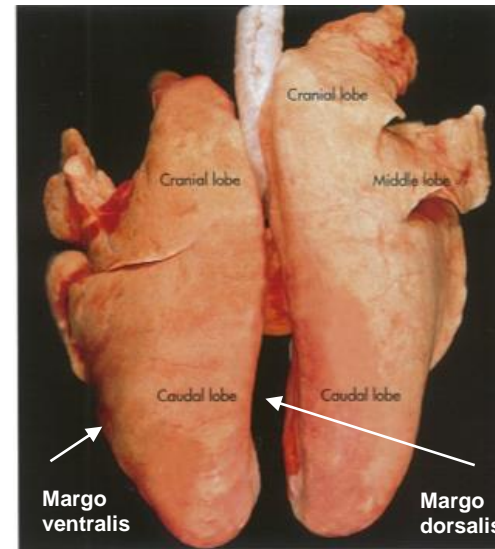


Fig. 8-31. Lungs of a pig, dorsal aspect (courtesy of PD Dr. J. Maierl, Munich).

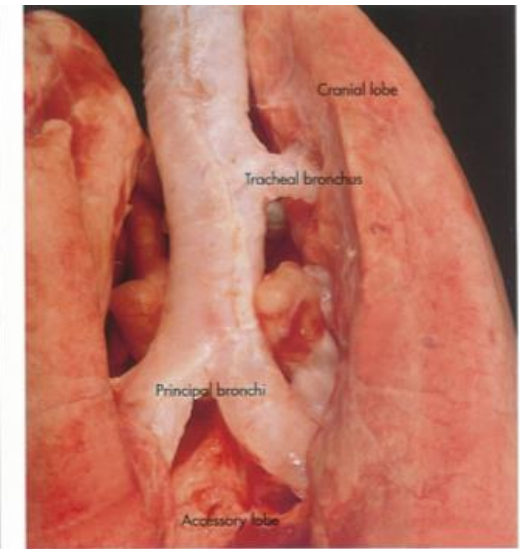


Fig. 8-32. Lungs of a pig, demonstrating the tracheal bronchus, dorsal aspect (courtesy of PD Dr. J. Maierl, Munich).

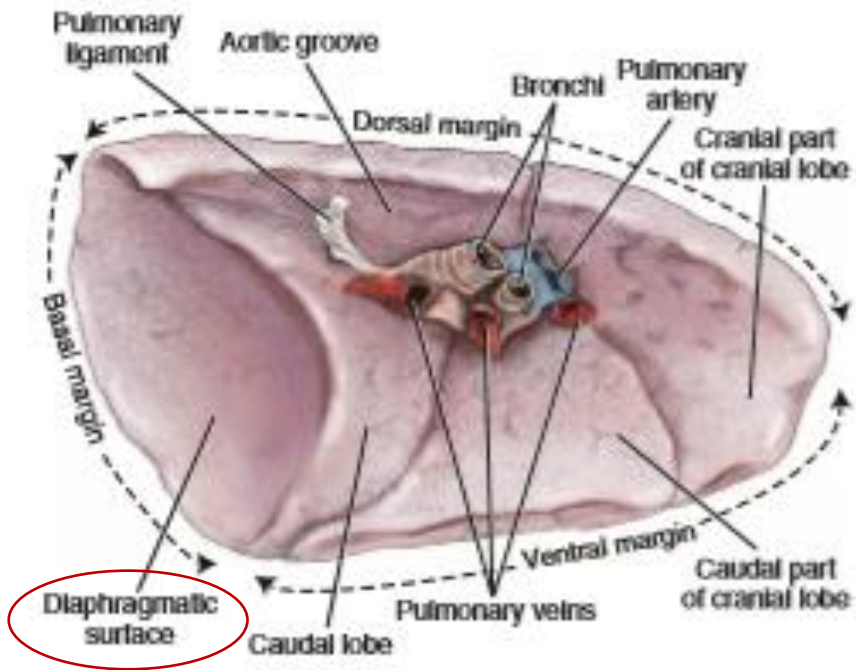
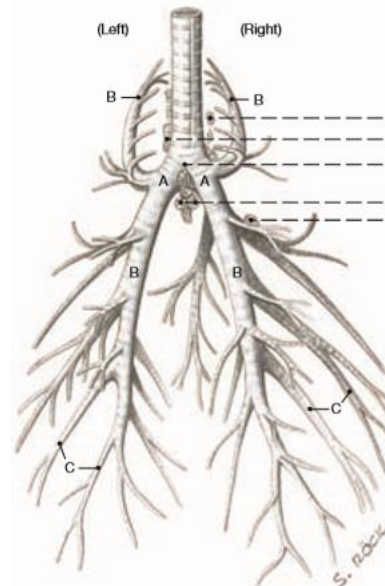
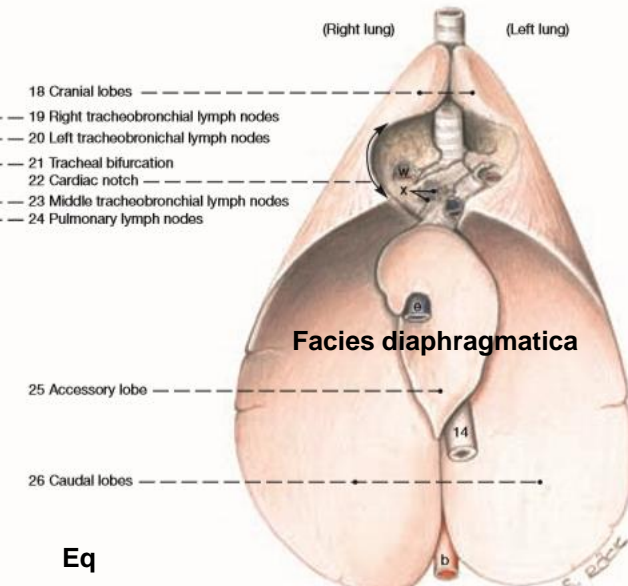


FIGURE 8-35 Margins and surfaces of the left lung, medial view.

Bronchial Tree, dorsal view



Lungs, ventral view



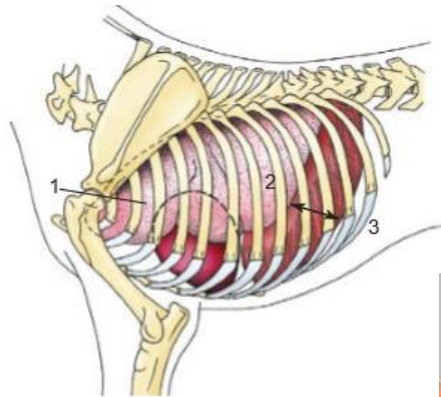
Eq

TÜDŐ (PULMO)

FACIES DIAPHRAGMATICA

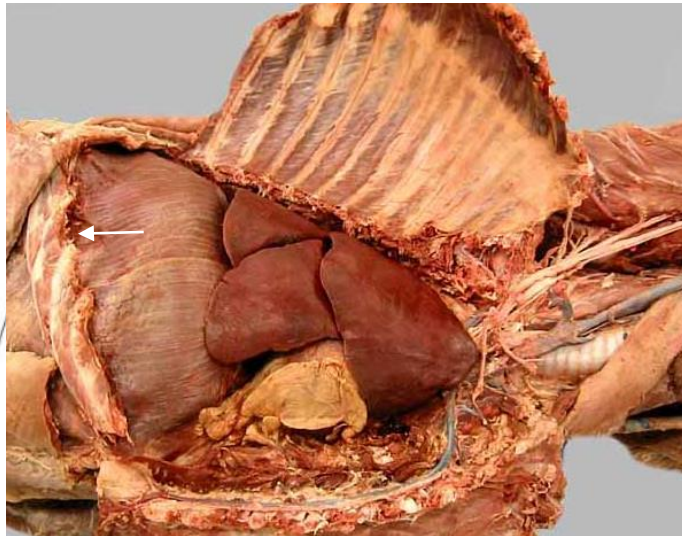
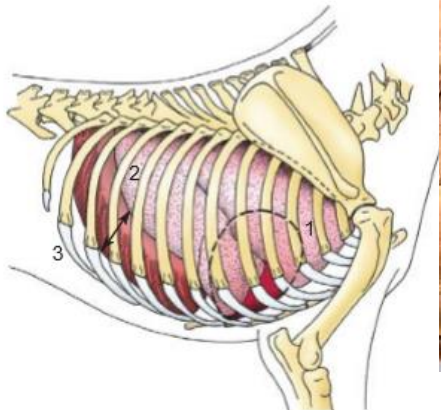
RECESSUS COSTODIAPHRAGMATICUS:

- térség rekesz és az elülső mellkasfal között – pleura parietalis áthajlása
- margo ventralis kerül bele belégzésnél

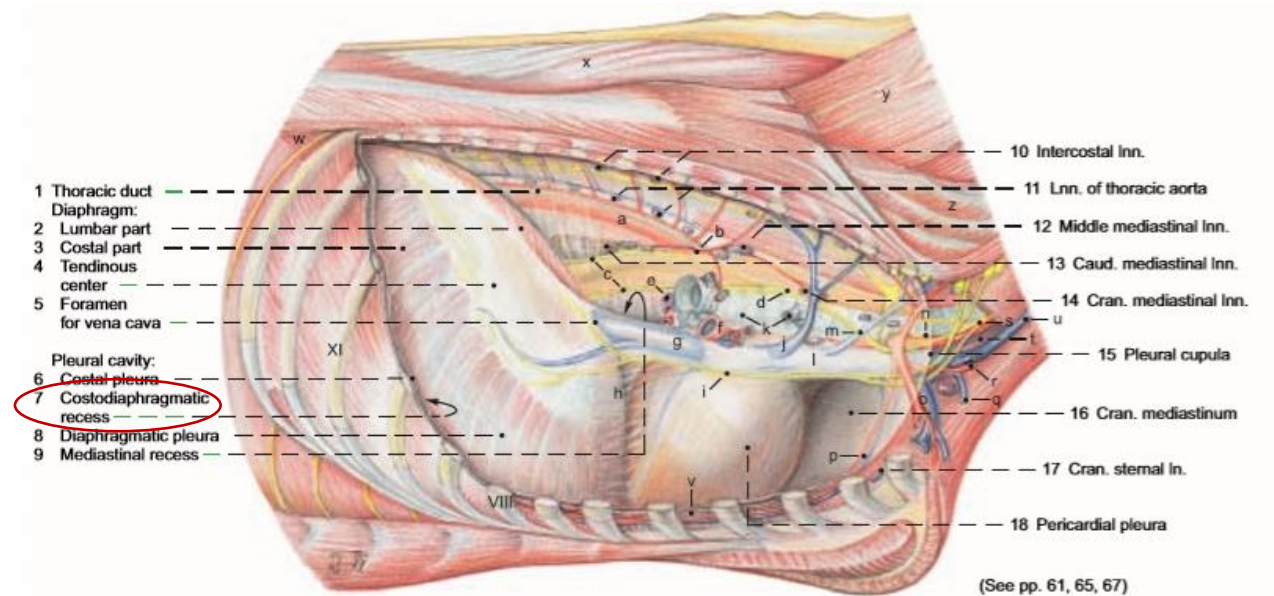


1. Cranial lobe
2. Caudal lobe
3. Costodiaphragmatic recess (arrow)

Note: The outline of the heart is indicated (broken line).



<http://vanat.cvm.umn.edu/carnLabs/Lab11/Img11-1.html>



- | | |
|-----------------------------|----------------------------|
| 1 Thoracic duct | 10 Intercostal Inn. |
| Diaphragm: | 11 Lnn. of thoracic aorta |
| 2 Lumbar part | 12 Middle mediastinal Inn. |
| 3 Costal part | 13 Caud. mediastinal Inn. |
| 4 Tendinous center | 14 Cran. mediastinal Inn. |
| 5 Foramen for vena cava | 15 Pleural cupula |
| Pleural cavity: | 16 Cran. mediastinum |
| 6 Costal pleura | 17 Cran. sternal In. |
| 7 Costodiaphragmatic recess | 18 Pericardial pleura |
| 8 Diaphragmatic pleura | |
| 9 Mediastinal recess | |

(See pp. 61, 65, 67)

Legend:

- | | | | | |
|--------------------------------|---------------------|---------------------------------|---|--|
| A Main bronchus | d Right vagus n. | j Right azygos v. | p Internal thoracic a. and v. | v Transverse thoracic m. |
| B Lobar bronchus | e Pulmonary vv. | k Trachea and tracheal bronchus | q Cephalic v. | w Retractor costae |
| C Segmental bronchus | f Pulmonary a. | l Cran. vena cava | r Supf. cervical a. and v. | x Spinalis et semispinalis cervicis et capitis |
| a Thoracic aorta | g Caud. vena cava | m Costocervical v. | s Vagosympathetic trunk | y Semispinalis capitis |
| b Bronchoesophageal a. | h Plica venae cavae | n Right recurrent laryngeal n. | t Common carotid a. and internal jugular v. | z Longissimus cervicis |
| c Dors. and vent. vagal trunks | i Phrenic n. | o Right subclavian a. and v. | u External jugular v. | |

TÜDŐ (PULMO)

SZÉLEK:

1. MARGO DORSALIS seu OBTUSUS: tompa
2. MARGO VENTRALIS seu ACUTUS: éles
3. MARGO BASALIS

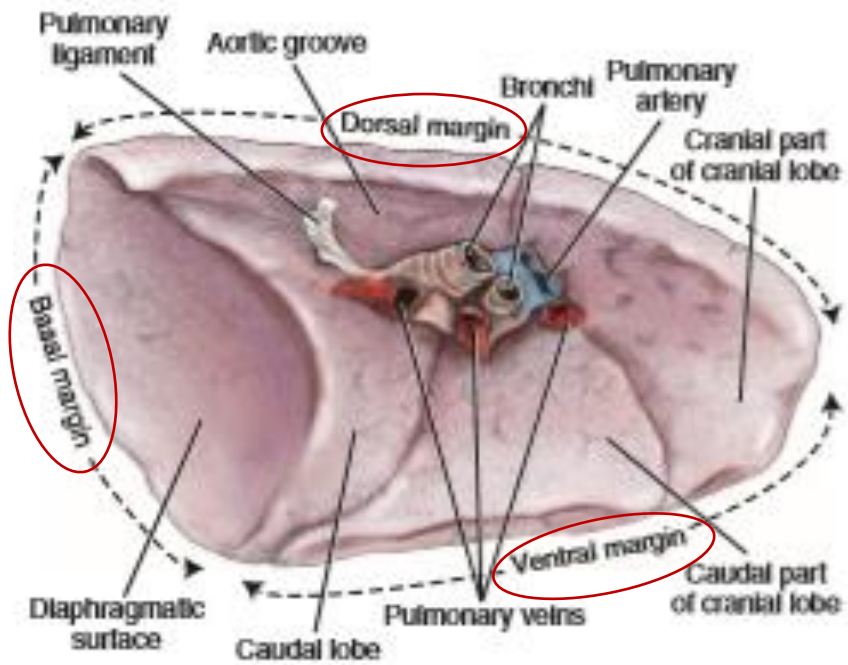


FIGURE 8-35 Margins and surfaces of the left lung, medial view.

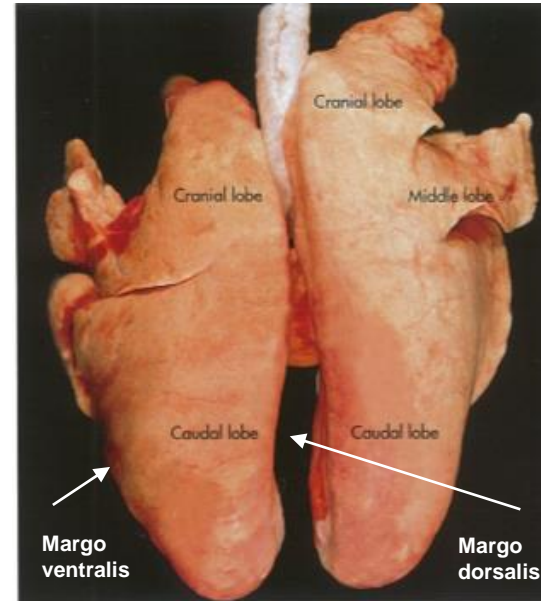


Fig. 8-31. Lungs of a pig, dorsal aspect (courtesy of PD Dr. J. Maierl, Munich).

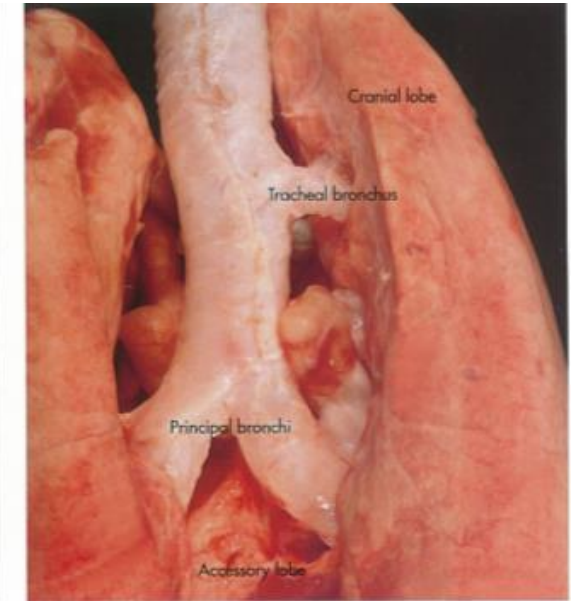
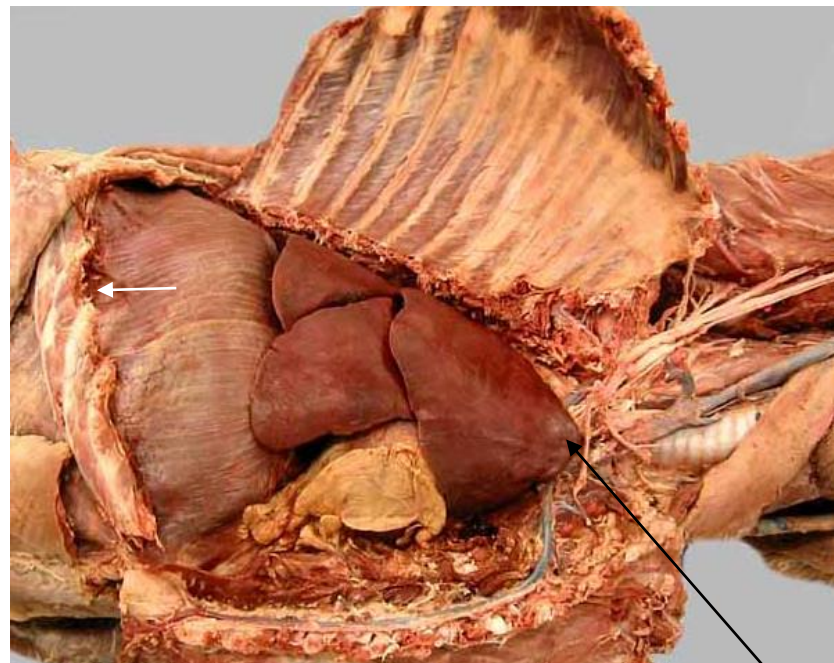


Fig. 8-32. Lungs of a pig, demonstrating the tracheal bronchus, dorsal aspect (courtesy of PD Dr. J. Maierl, Munich).

TÜDŐ (PULMO)

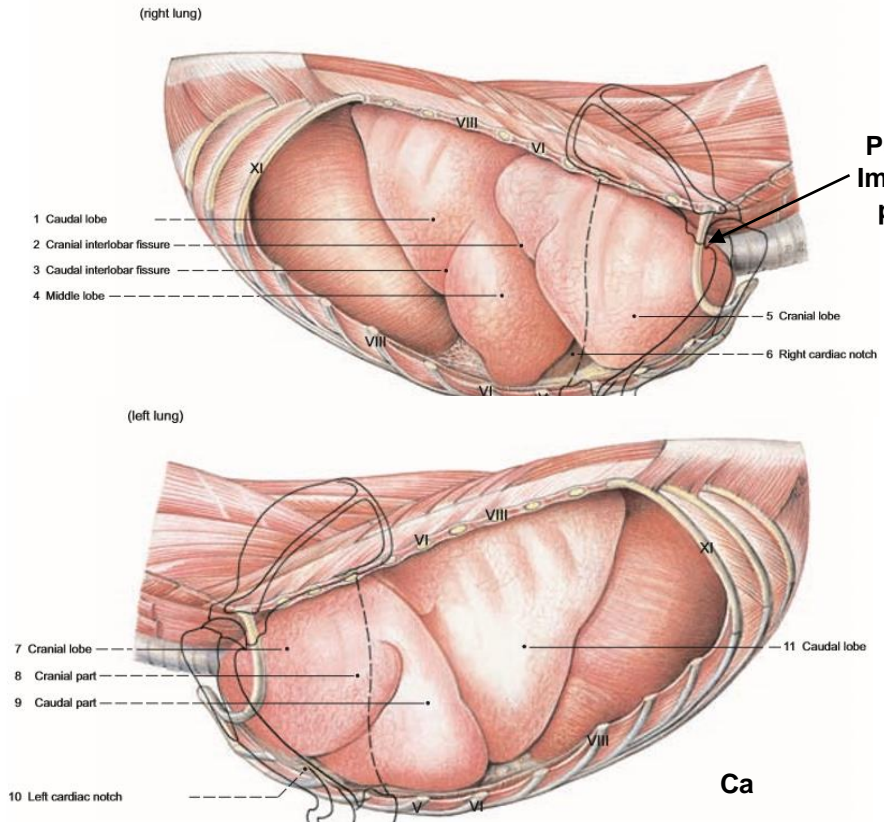
APEX PULMONIS:

- két tüdőszárny együtt alkotja
- kúp alakú
- cranialisan a cupula pleuraeaban az apertura thoracis cranialis fölé nyúlik

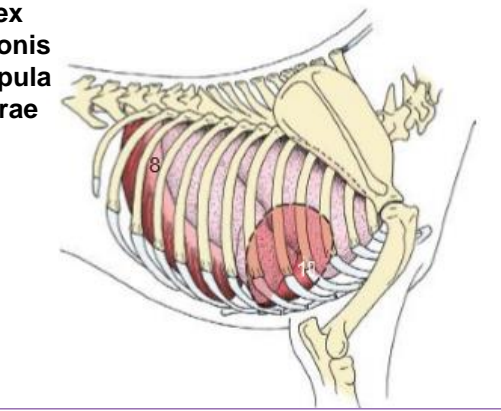
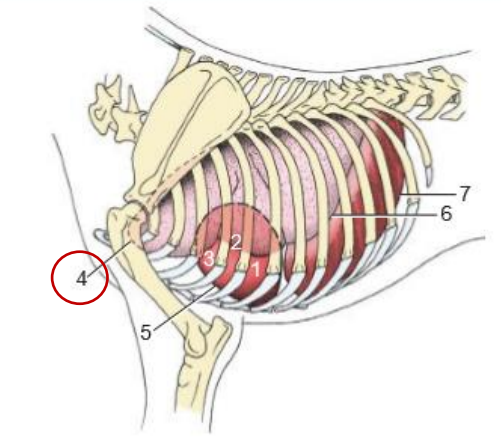


<http://vanat.cvm.umn.edu/carnLabs/Lab11/Img11-1.html>

Apex pulmonis



Apex Pulmonis Im Cupula pleurae



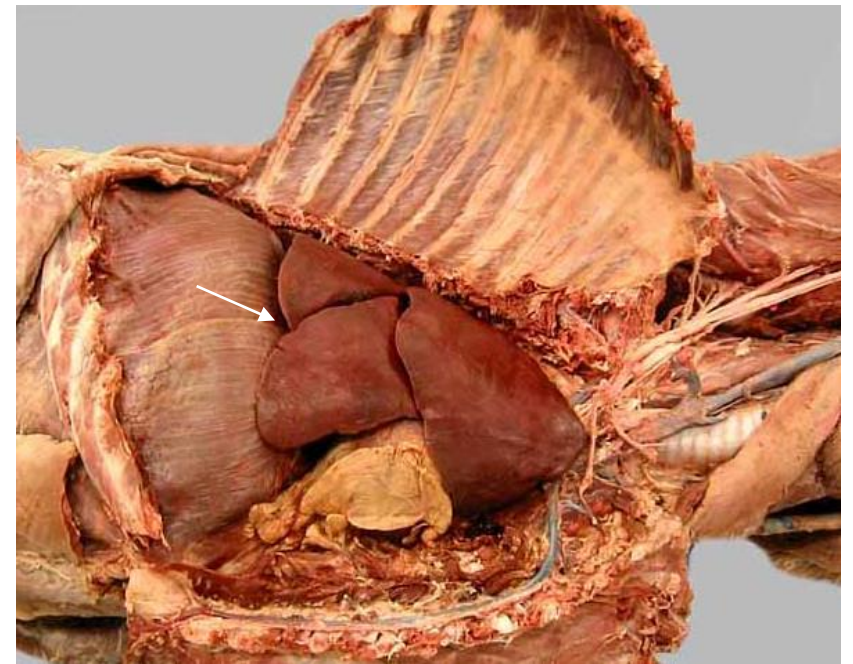
1. Left atrioventricular valve
- 1'. Right atrioventricular valve
2. Aortic valve
3. Pulmonary valve
4. Apex of left lung (broken line) in cupula pleurae
5. Heart
6. Basal border of the lung
7. Line of pleural reflection
8. Diaphragm

Note: Puncta maxima of the left atrioventricular valve.

TÜDŐ (PULMO)

BASIS PULMONIS:

- facies diaphragmatica



<http://vanat.cvm.umn.edu/carnLabs/Lab11/lmg11-1.html>

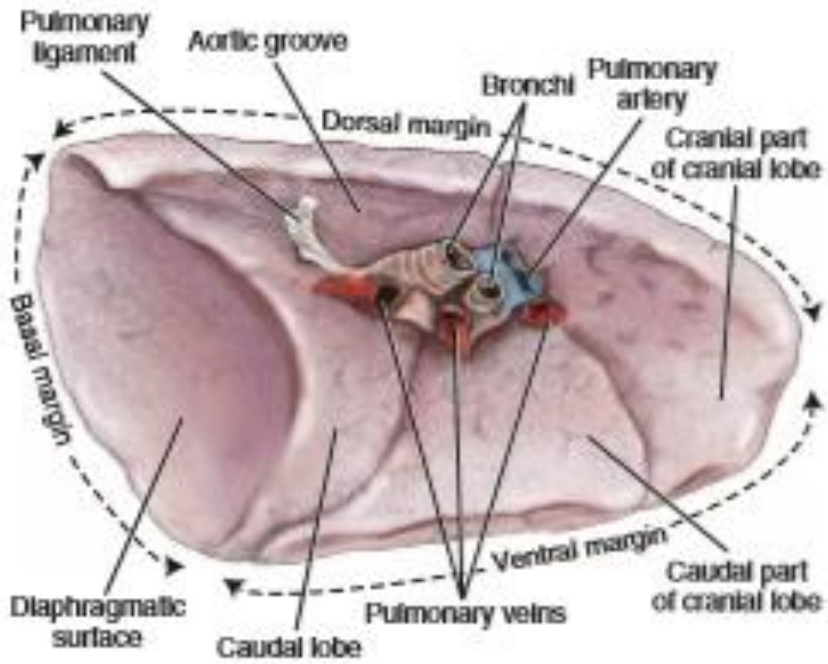
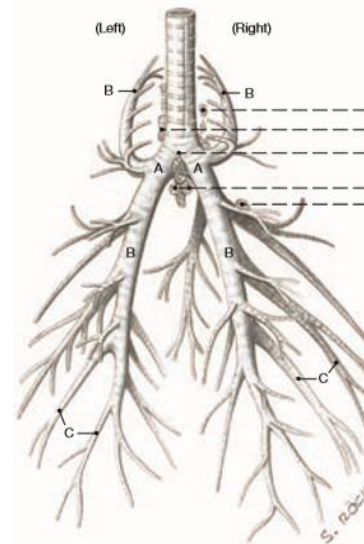
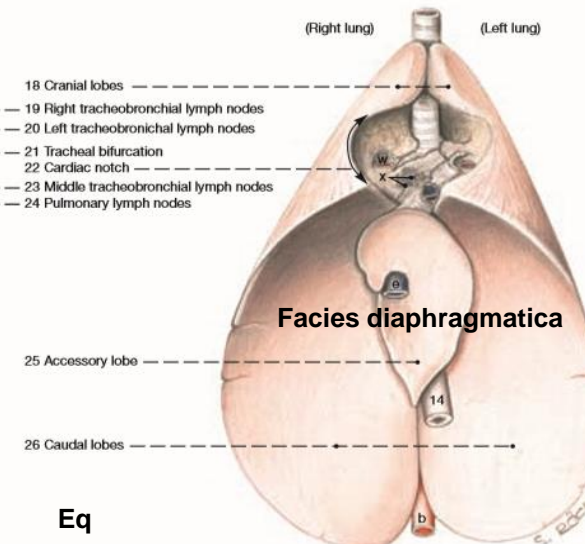


FIGURE 8-35 Margins and surfaces of the left lung, medial view.

Bronchial Tree, dorsal view



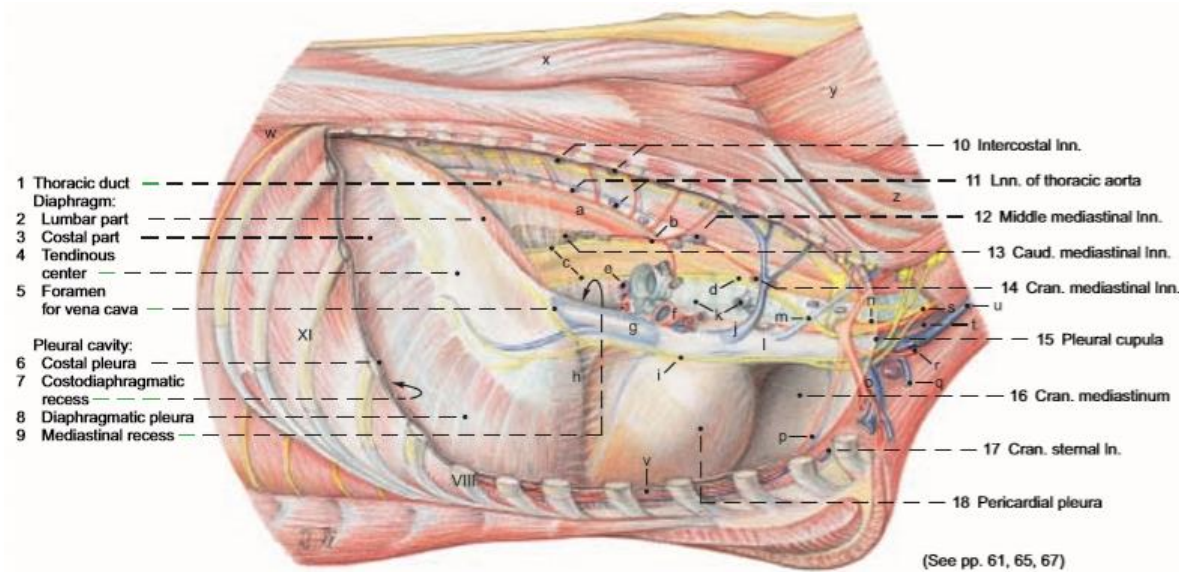
Lungs, ventral view



Eq

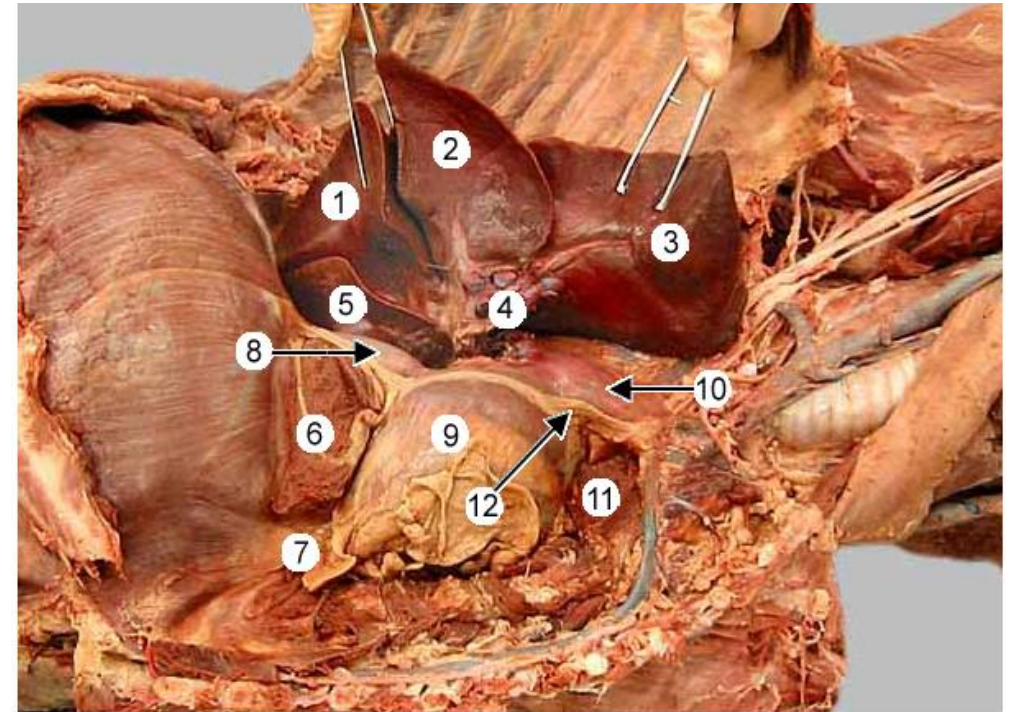
TÜDŐ RÖGZÍTÉSE

1. trachea
2. mediastinum
3. aorta, a. pulmonalis, vv. pulmonalis
4. ligamentum pulmonale
5. radix pulmonis



Legend:

- | | | | | |
|--------------------------------|---------------------|---------------------------------|---|--|
| A Main bronchus | d Right vagus n. | j Right azygos v. | p Internal thoracic a. and v. | v Transverse thoracic m. |
| B Lobar bronchus | e Pulmonary vv. | k Trachea and tracheal bronchus | q Cephalic v. | w Retractor costae |
| C Segmental bronchus | f Pulmonary a. | l Cran. vena cava | r Supf. cervical a. and v. | x Spinalis et semispinalis cervicis et capitis |
| a Thoracic aorta | g Caud. vena cava | m Costocervical v. | s Vagosympathetic trunk | y Semispinalis capitis |
| b Bronchoesophageal a. | h Plica venae cavae | n Right recurrent laryngeal n. | t Common carotid a. and internal jugular v. | z Longissimus cervicis |
| c Dors. and vent. vagal trunks | i Phrenic n. | o Right subclavian a. and v. | u External jugular v. | |

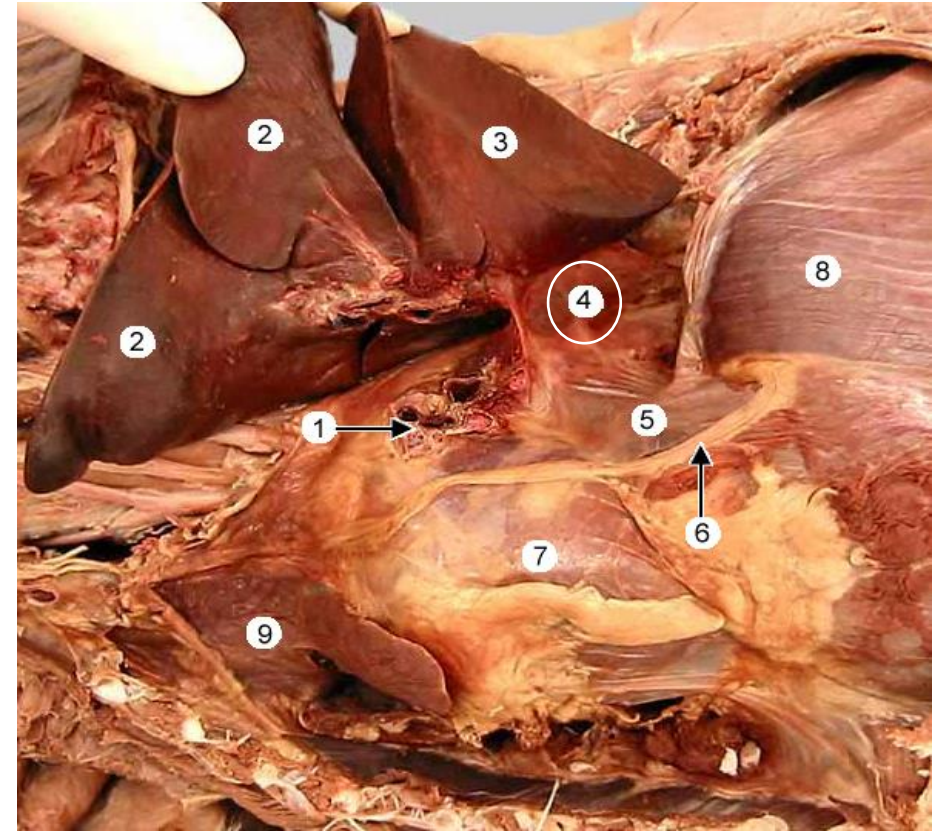


Caudal (1), middle (2), and cranial (3) lobes of the **right lung** are elevated and the root (4) of the lung has been cut to reveal the accessory lobe (5) of the right lung. The ventral part of the accessory lobe is hidden in a pocket formed by **plica vena cava** (6), which extends between the mediastinum (7) and the caudal vena cava (8). Also notice the heart (9), cranial vena cava (10), thymus (11), and phrenic n. (12).

TÜDŐ RÖGZÍTÉSE

Ligamentum pulmonale:

- dorsomedialisan
- a tüdőt a mediastinummal és a rekesszel kapcsolja össze



On the left side, the root of the lung (1) has been cut and the lung is reflected. The **left lung** is composed of a cranial lobe (2) with cranial and caudal parts and a caudal (3) lobe. The lung is covered by **visceral (pulmonary) pleura**. The **pulmonary ligament** (4), connects between visceral pleura and mediastinal parietal pleura (5). The **phrenic nerve** (6) crosses the surface of the heart (7) on its way to innervate the diaphragm (8). The thymus (9) is situated in the mediastinum cranial to the heart.

TÜDŐ RÖGZÍTÉSE

RADIX PULMONIS (TÜDŐGYÖKÉR):

1. bronchus principalis dext. et sin.
2. a. pulmonalis (truncus pulmonalis)
3. v. pulmonalis
4. a. bronchialis (aorta thoracica)
5. v. bronchialis
6. nyirokerek
7. idegek – plexus pulmonis

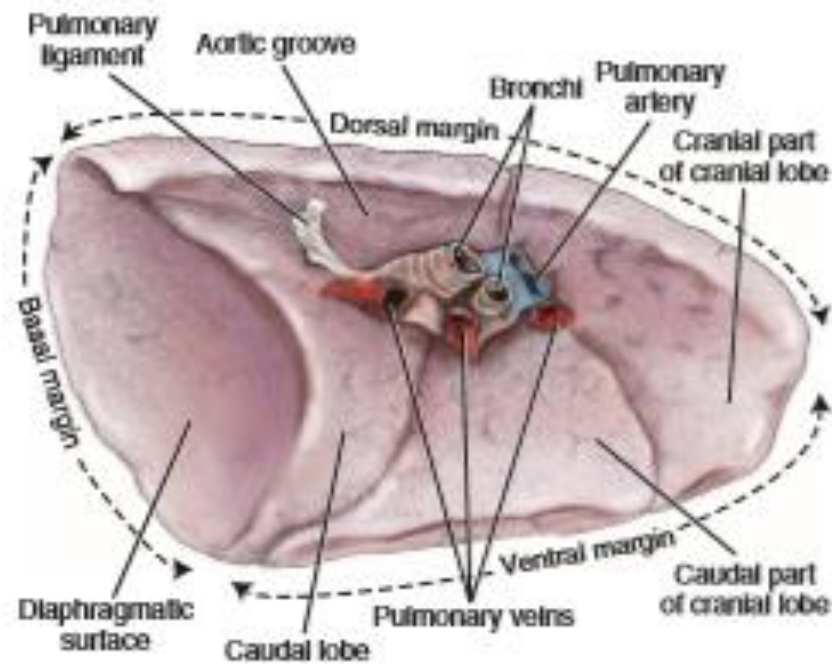


FIGURE 8-35 Margins and surfaces of the left lung, medial view.

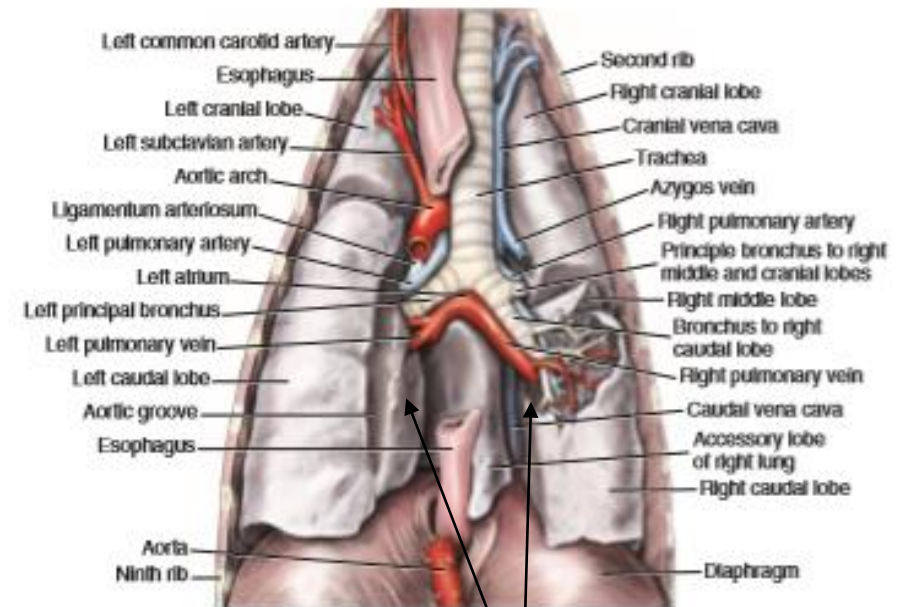
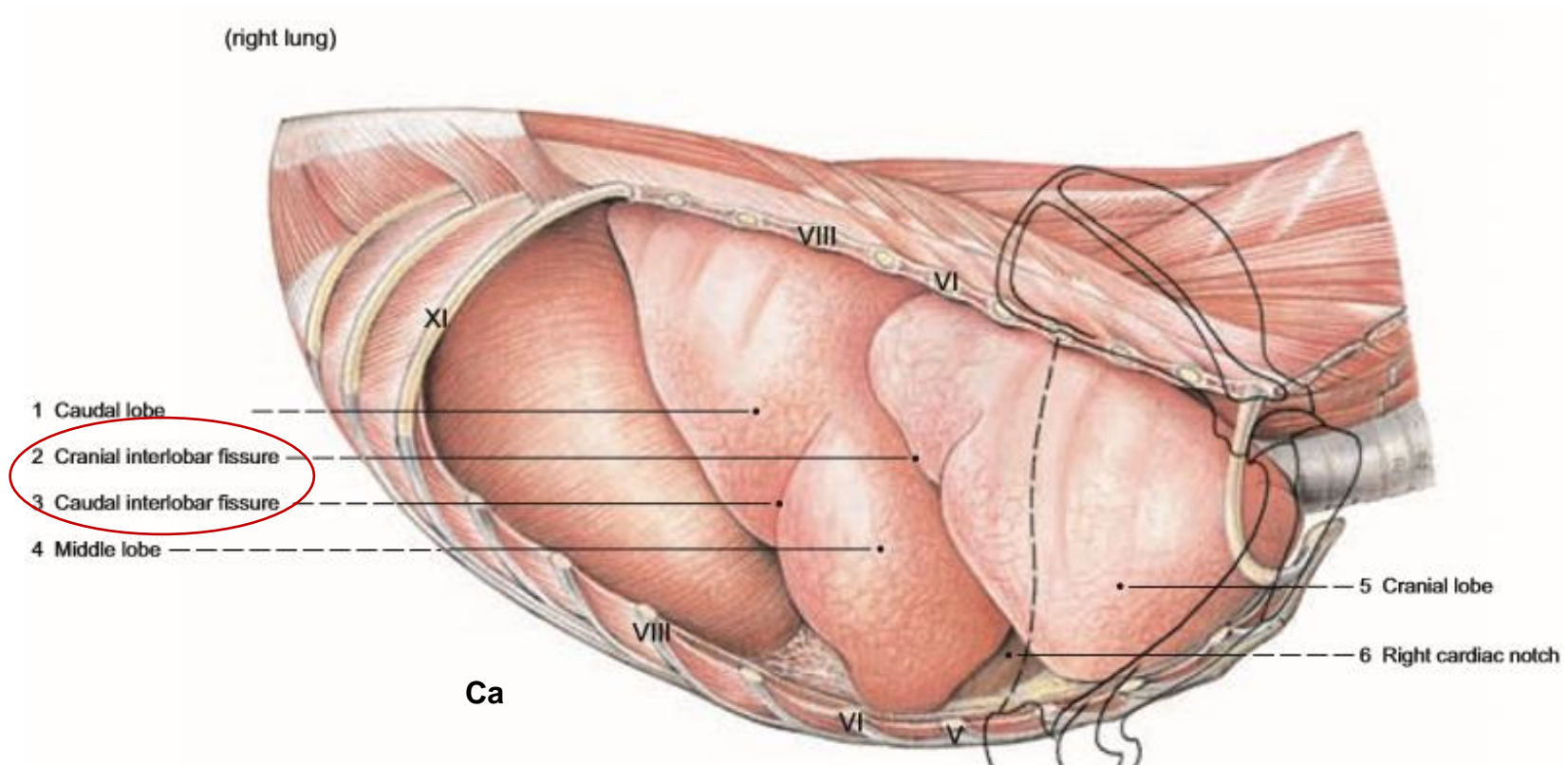


FIGURE 8-23 Bronchial tree and associated structures, dorsal aspect.

Ca
Facies mediastinalis

TÜDŐ LEBENYEI (LOBI PULMONIS)

- fissurae interlobares cranialis et caudalis



TÜDŐ LEBENYEI (LOBI PULMONIS)

BAL TÜDŐFÉL:

1. Lobus cranialis
2. Lobus caudalis

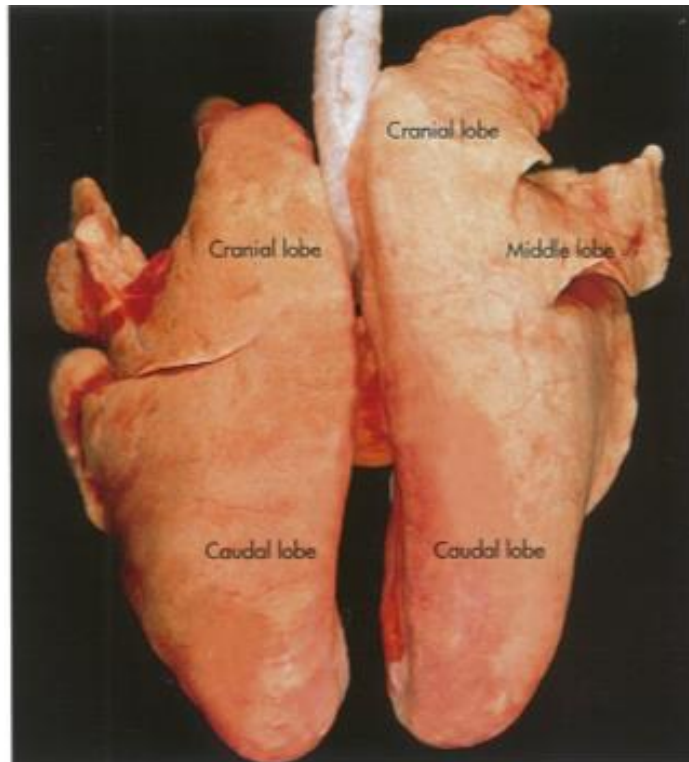
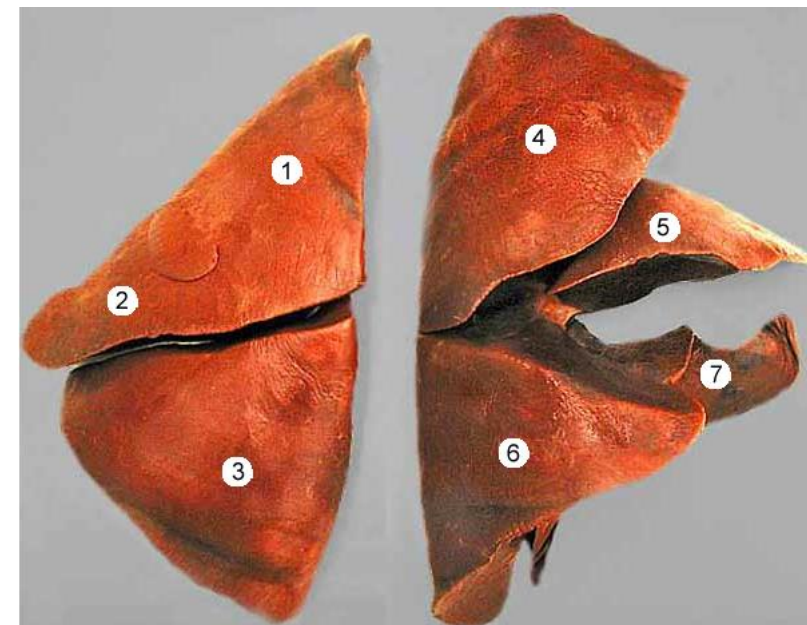
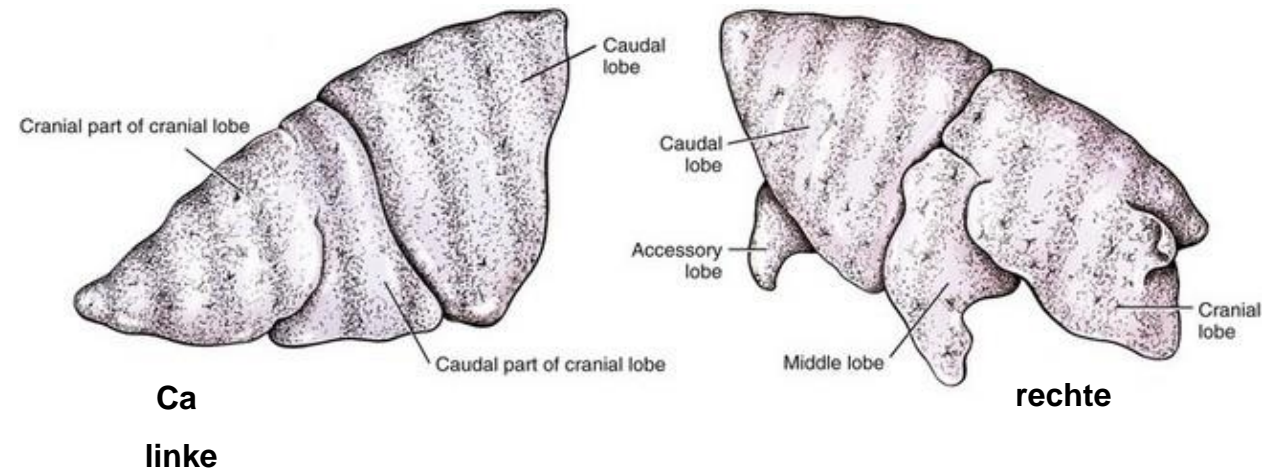


Fig. 8-31. Lungs of a pig, dorsal aspect (courtesy of PD Dr. J. Maierl, Munich).



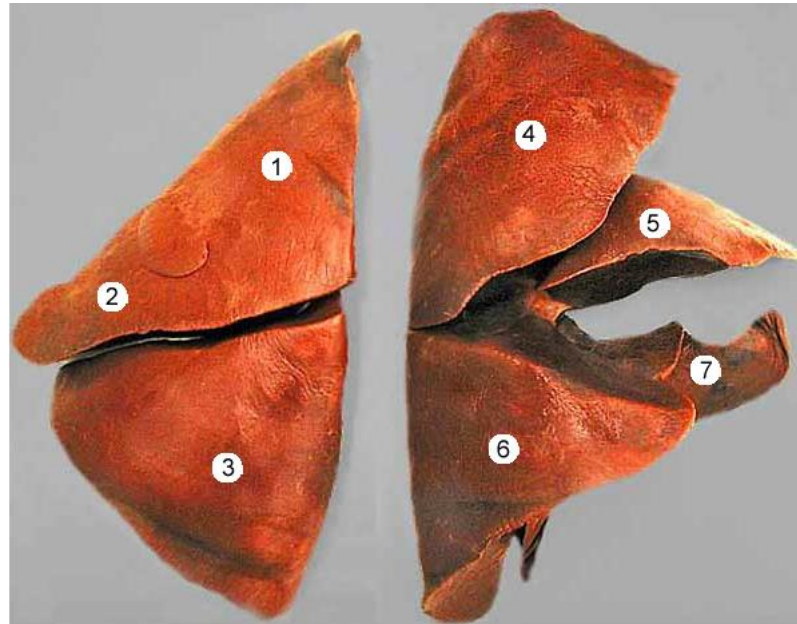
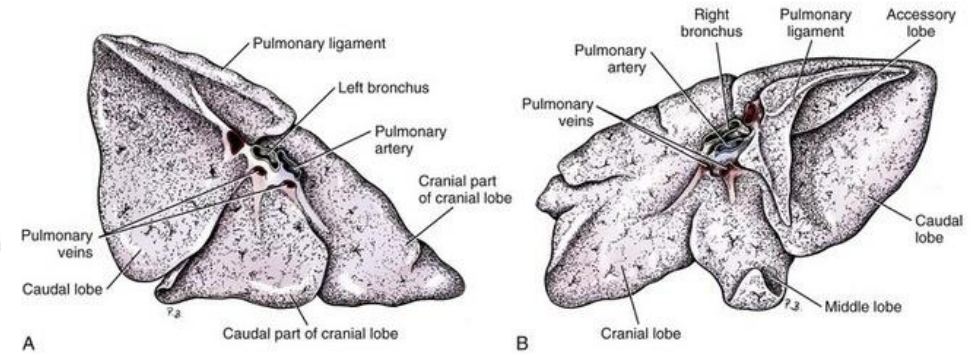
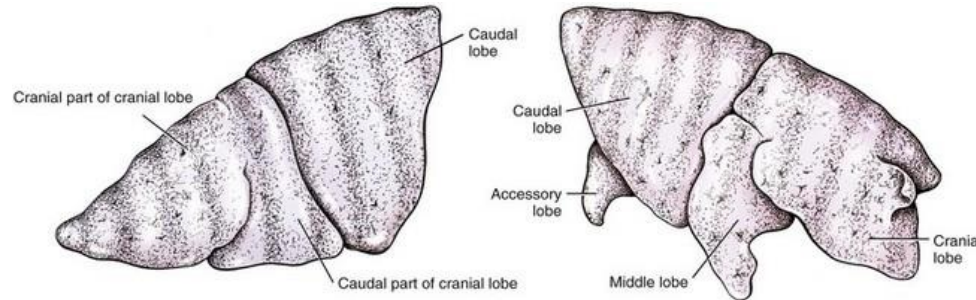
The two lungs are placed on a surface with lateral sides up and dorsal borders facing one another, cranial is at the top. *Left:* The **left lung** is composed of a cranial lobe that has cranial (1) and caudal (2) parts and a caudal (3) lobe. *Right:* The **right lung** has cranial (4), middle (5), caudal (6), and accessory (7) lobes.

<http://vanat.cvm.umn.edu/carnLabs/Lab11/lmg11-4.html>

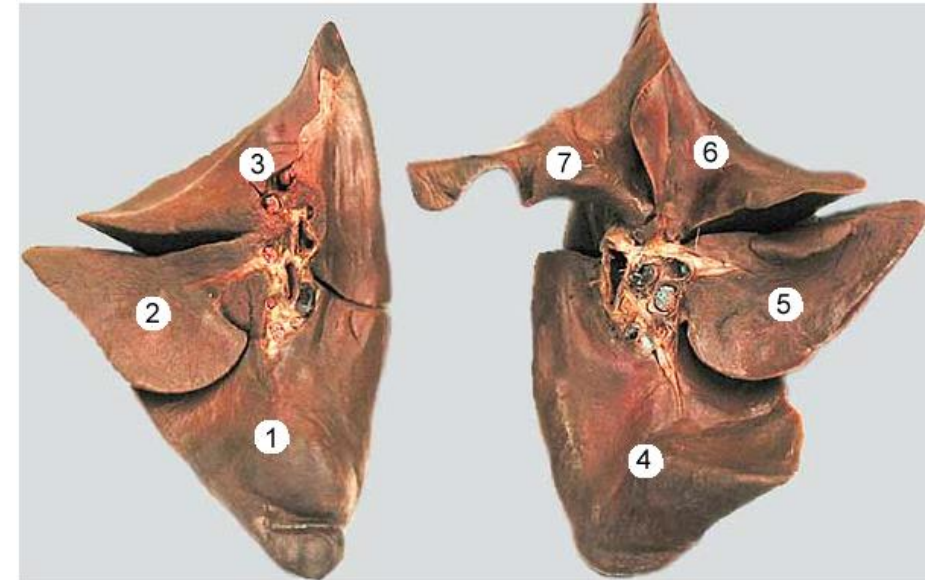
TÜDŐ LEBENYEI (LOBI PULMONIS)

JOBB TÜDŐFÉL:

1. Lobus cranialis
2. Lobus medius
3. Lobus caudalis
4. Lobus accessorius



The two lungs are placed on a surface with lateral sides up and dorsal borders facing one another, cranial is at the top. *Left:* The **left lung** is composed of a cranial lobe that has cranial (1) and caudal (2) parts and a caudal (3) lobe. *Right:* The **right lung** has cranial (4), middle (5), caudal (6), and accessory(7) lobes.



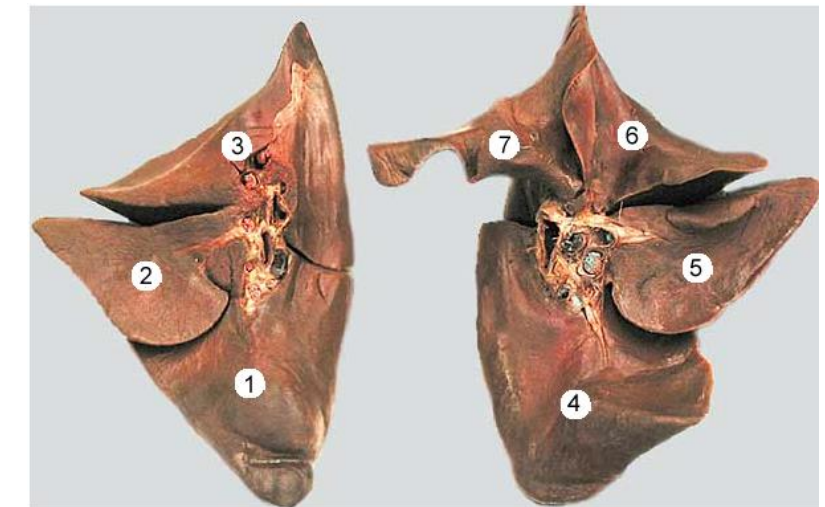
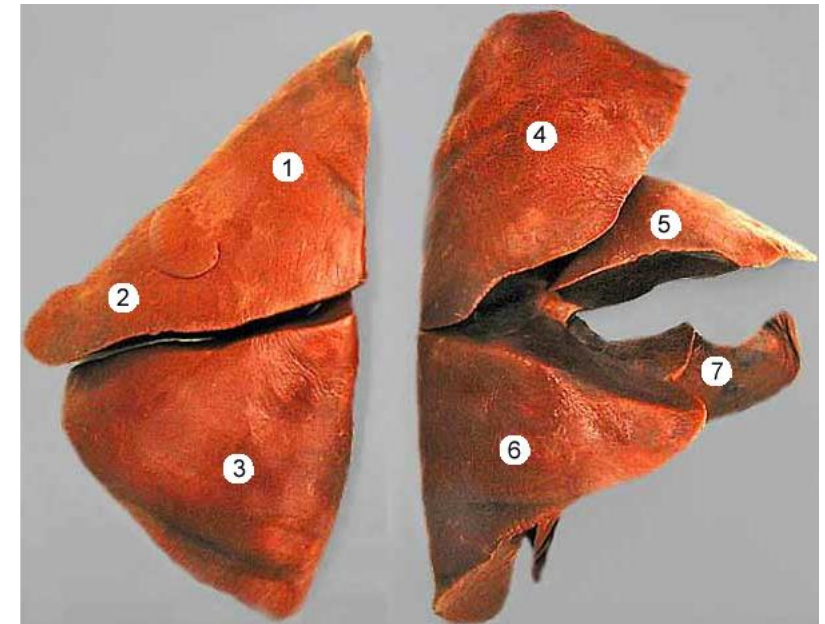
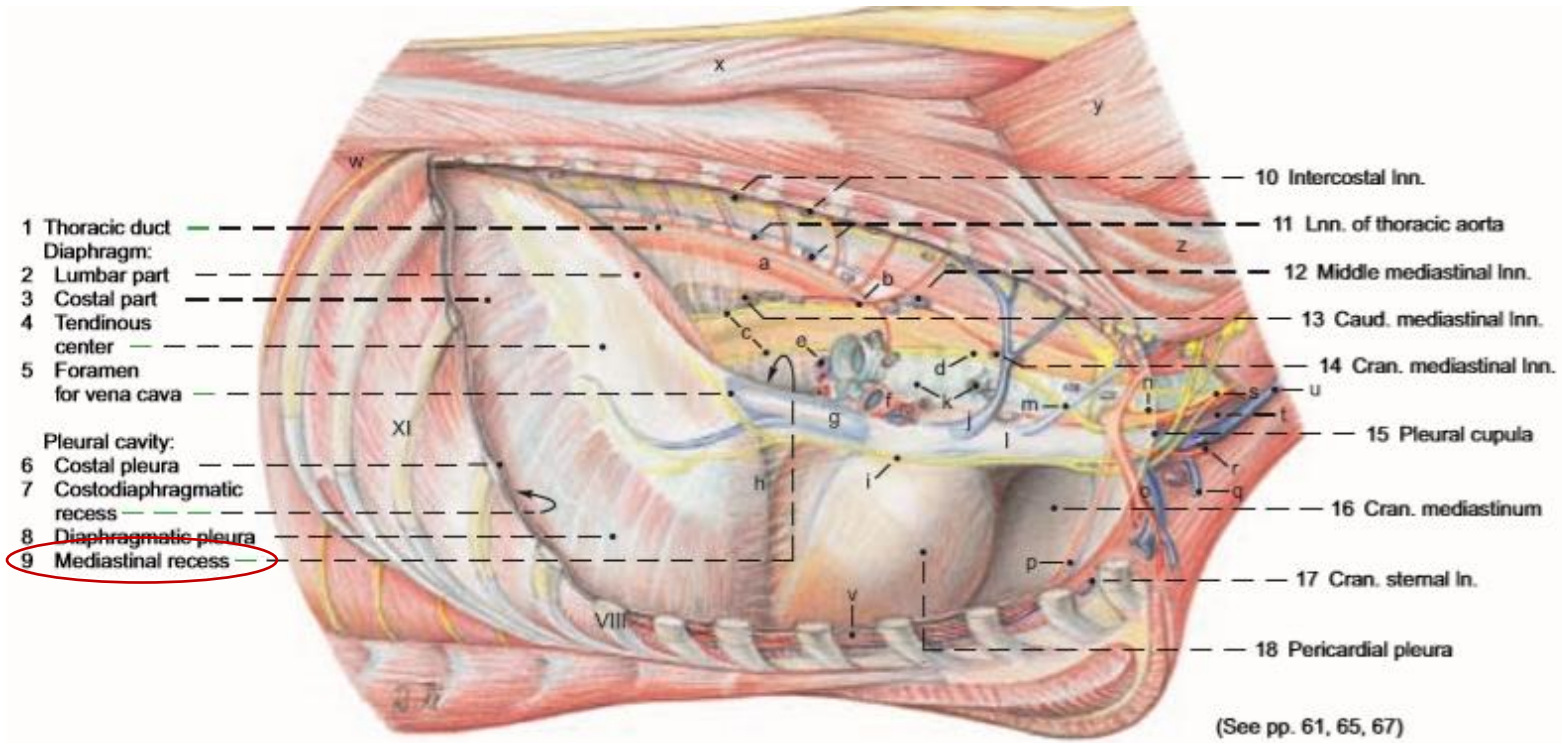
This is the same as the previous image except that the accessory lobe (7) of the right lung is reflected. The two lungs are placed on a surface with medial sides up and dorsal borders facing one another, cranial is at the bottom. *Left:* The **left lung** is composed of a cranial lobe that has cranial (1) and caudal (2) parts and a caudal (3) lobe. *Right:* The **right lung** has cranial (4), middle (5), caudal (6), and accessory(7) lobes.

TÜDŐ LEBENYEI (LOBI PULMONIS)

JOBB TÜDŐFÉL

Lobus accessorius:

- bronchus accessoriushoz
- recessus mediastini – ben helyezkedik el

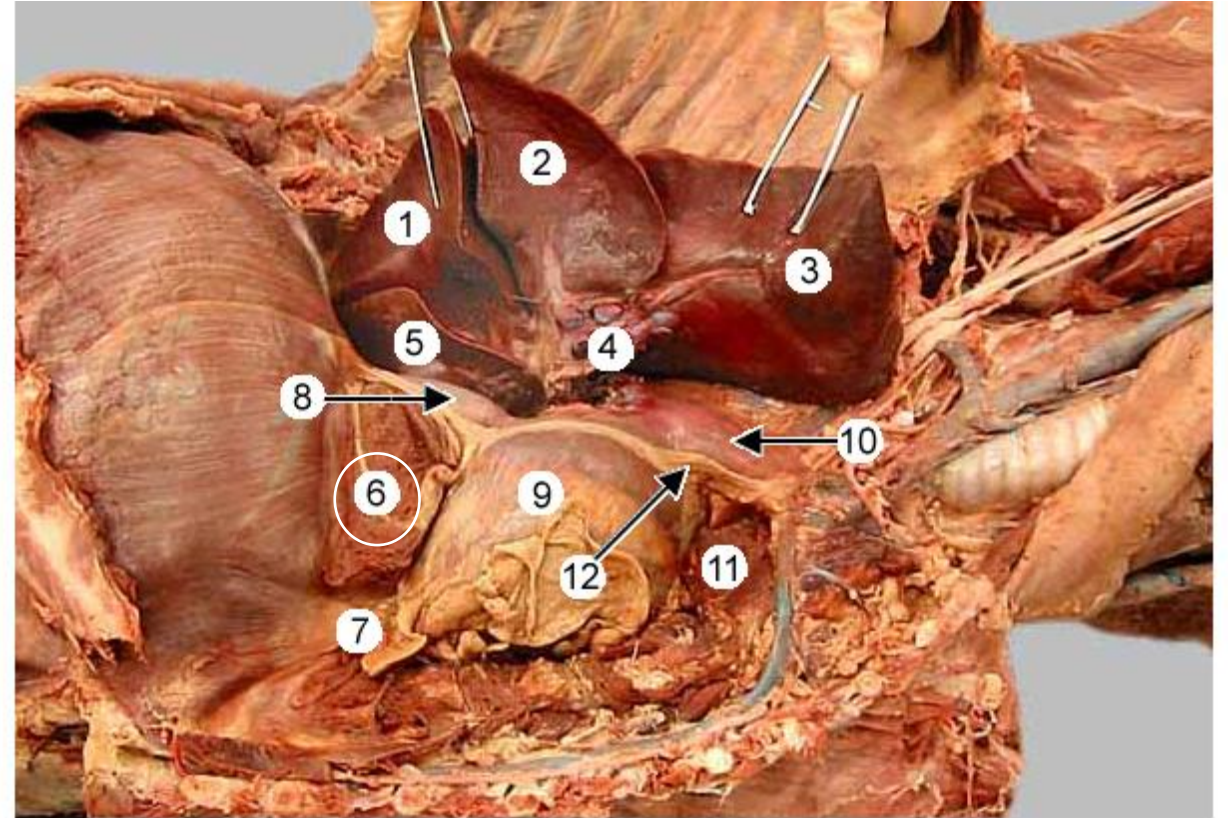


This is the same as the previous image except that the accessory lobe (7) of the right lung is reflected. The two lungs are placed on a surface with medial sides up and dorsal borders facing one another, cranial is at the bottom. *Left:* The **left lung** is composed of a cranial lobe that has cranial (1) and caudal (2) parts and a caudal (3) lobe. *Right:* The **right lung** has cranial (4), middle (5), caudal (6), and accessory(7) lobes.

TÜDŐ LEBENYEI (LOBI PULMONIS)

RECESSUS MEDIASTINI:

- a. mediastinum (bal)
- b. V. cava caudalis - plica venae cavae (jobb)
- c. pericardium (cranialisan)
- d. diaphragma (caudalisan) határolja
- lobus accessoriust tartalmazza



Caudal (1), middle (2), and cranial (3) lobes of the **right lung** are elevated and the root (4) of the lung has been cut to reveal the accessory lobe (5) of the right lung. The ventral part of the accessory lobe is hidden in a pocket formed by **plica vena cava** (6), which extends between the mediastinum (7) and the caudal vena cava (8). Also notice the heart (9), cranial vena cava (10), thymus (11), and phrenic n. (12).

TÜDŐ LEBENYEI (LOBI PULMONIS)

HÚSEVŐKBEN:

BAL TÜDŐFÉL:

1. Lobus cranialis sinister Pars cranialis
2. Lobus cranialis sinister Pars caudalis
3. Lobus caudalis sinister

JOB B TÜDŐFÉL:

1. Lobus cranialis dexter
2. Lobus medius
3. Lobus caudalis dexter
4. Lobus accessorius

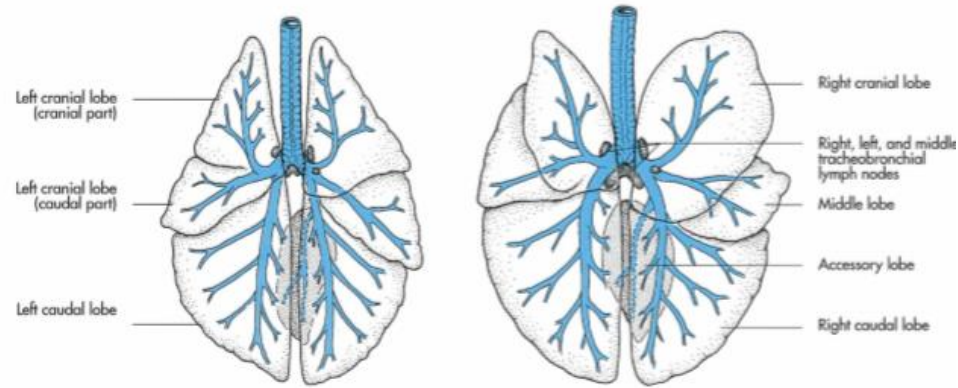
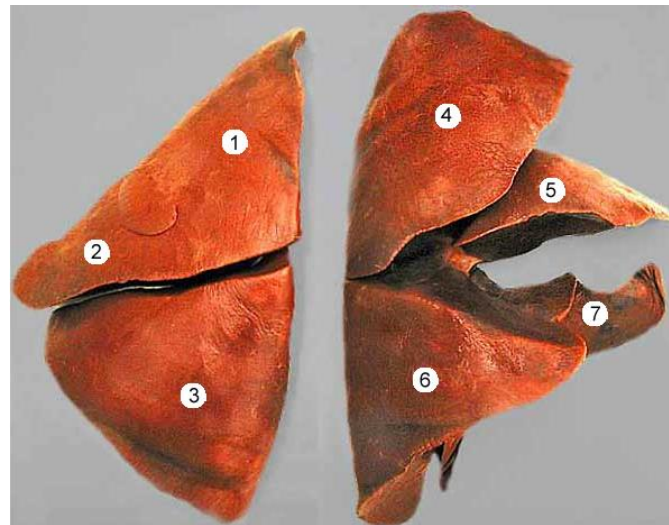
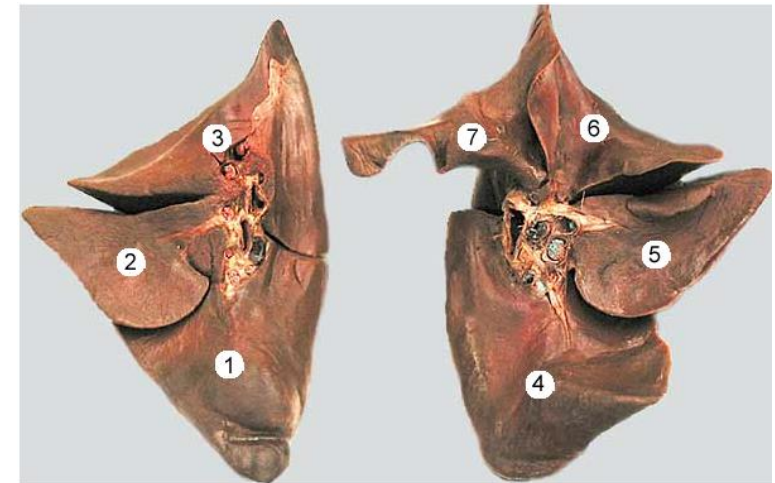


Fig. 8-26. Lung lobes, bronchial tree and lymphnodes of the cat (left) and the dog (right), dorsal aspect, schematic (Ghetie, 1958).



The two lungs are placed on a surface with lateral sides up and dorsal borders facing one another, cranial is at the top. *Left:* The **left lung** is composed of a cranial lobe that has cranial (1) and caudal (2) parts and a caudal (3) lobe. *Right:* The **right lung** has cranial (4), middle (5), caudal (6), and accessory(7) lobes.



This is the same as the previous image except that the accessory lobe (7) of the right lung is reflected. The two lungs are placed on a surface with medial sides up and dorsal borders facing one another, cranial is at the bottom. *Left:* The **left lung** is composed of a cranial lobe that has cranial (1) and caudal (2) parts and a caudal (3) lobe. *Right:* The **right lung** has cranial (4), middle (5), caudal (6), and accessory(7) lobes.

TÜDŐ LEBENYEI (LOBI PULMONIS)

SERTÉS:

BAL TÜDŐFÉL:

1. Lobus cranialis sinister Pars cranialis
2. Lobus cranialis sinister Pars caudalis
3. Lobus caudalis sinister

JOBB TÜDŐFÉL:

1. Lobus cranialis dexter
2. Lobus medius
3. Lobus caudalis dexter
4. Lobus accessorius

1. Right cranial lobe
2. Right middle lobe
3. Right caudal lobe
4. Accessory lobe of right lung
5. Divided left cranial lobe
6. Trachea
7. Tracheal bronchus
8. Right cardiac notch
9. Basal border

Note: Dorsal view.

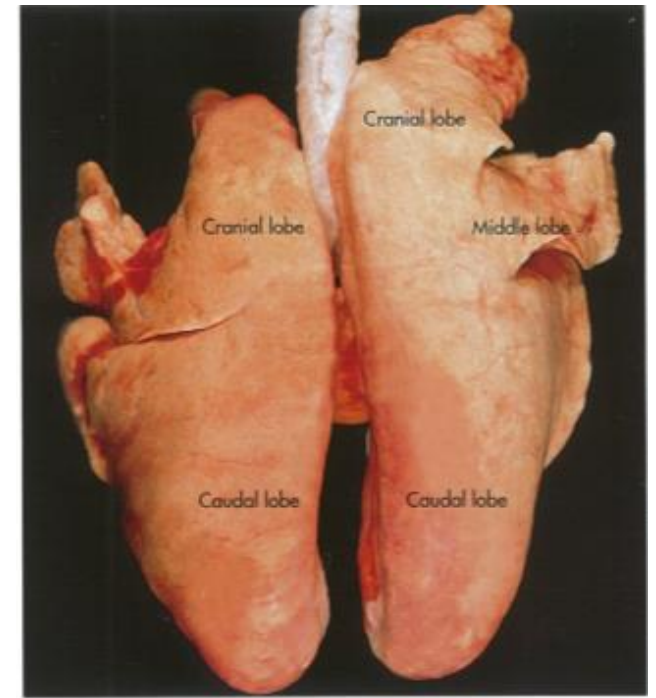
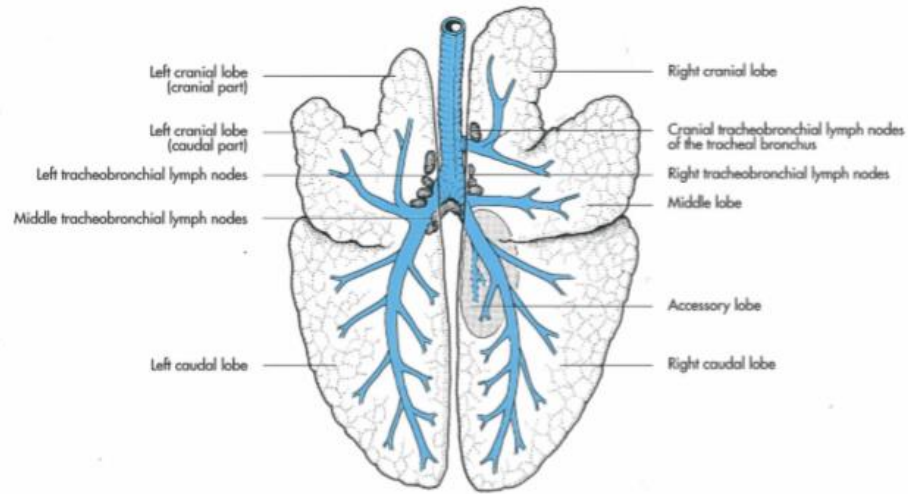
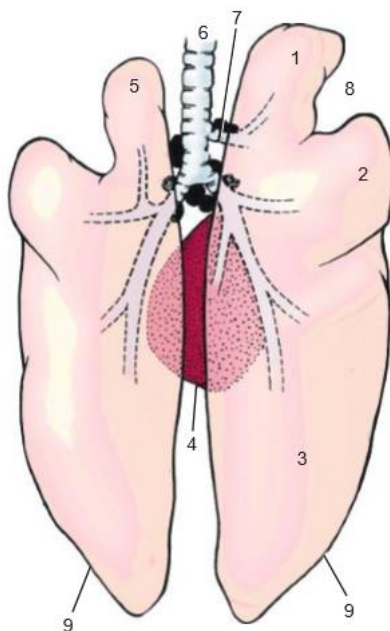


Fig. 8-31. Lungs of a pig, dorsal aspect (courtesy of PD Dr. J. Maierl,

TÜDŐ LEBENYEI (LOBI PULMONIS)

KÉRŐDZŐ:

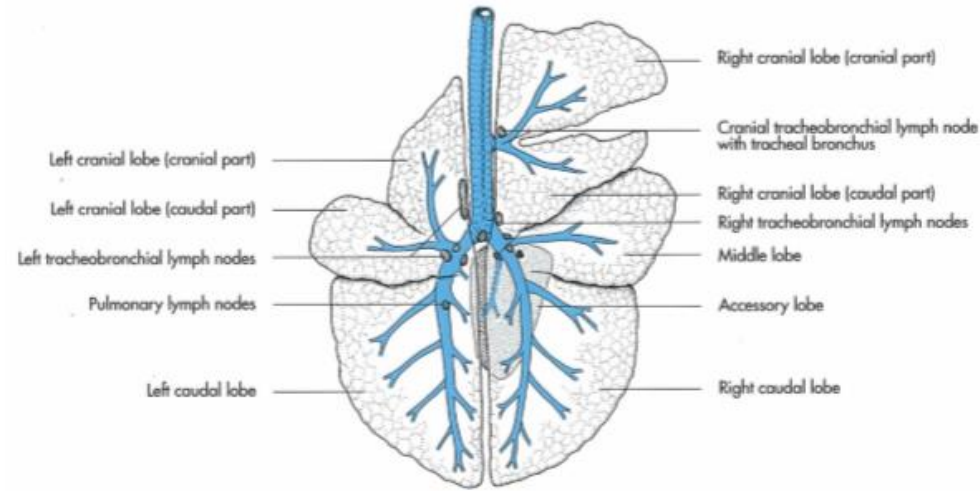
BAL TÜDŐFÉL:

1. Lobus cranialis sinister Pars cranialis
2. Lobus cranialis sinister Pars caudalis
3. Lobus caudalis sinister

JOBB TÜDŐFÉL:

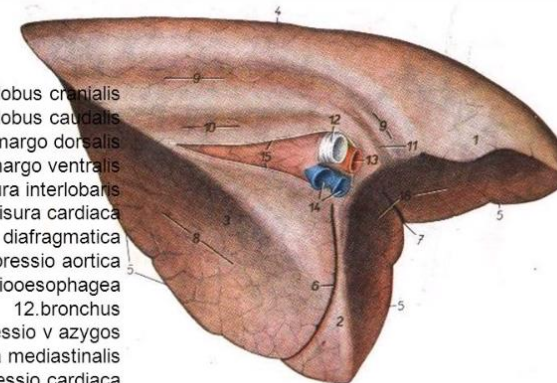
1. Lobus cranialis dexter Pars cranialis
2. Lobus cranialis dexter Pars caudalis
3. Lobus medius
4. Lobus caudalis dexter

5. Lobus accessorius



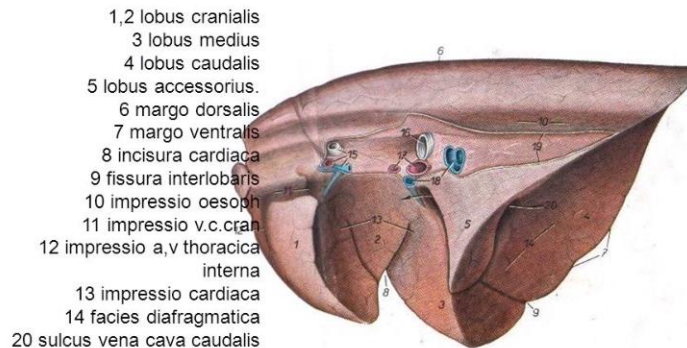
<https://www.youtube.com/watch?v=dxlHH7aYzV8>

PULMO SINISTRA CATTLE



- 1,2 lobus cranialis
3. lobus caudalis
4. margo dorsalis
5. margo ventralis
6. fissura interlobaris
7. Incisura cardiaca
8. facies diafragmatica
9. impressio aortica
- 10 impressiooesophagea
- 12.bronchus
- 11.Impressio v azygos
- 15.Ins pleura mediastinalis
- 16.Impressio cardiaca

PULMO DEXTRA CATTLE



- 1,2 lobus cranialis
- 3 lobus medius
- 4 lobus caudalis
- 5 lobus accessorius.
- 6 margo dorsalis
- 7 margo ventralis
- 8 incisura cardiaca
- 9 fissura interlobaris
- 10 impressio oesoph
- 11 impressio v.c.cran
- 12 impressio a,v thoracica interna
- 13 impressio cardiaca
- 14 facies diafragmatica
- 20 sulcus vena cava caudalis

<https://slideplayer.com/slide/6954748/>



<https://www.meiwoscience.com/animal-plastinated-specimens/lung-of-sheep-plastinated-specimen.html>

TÜDŐ LEBENYEI (LOBI PULMONIS)

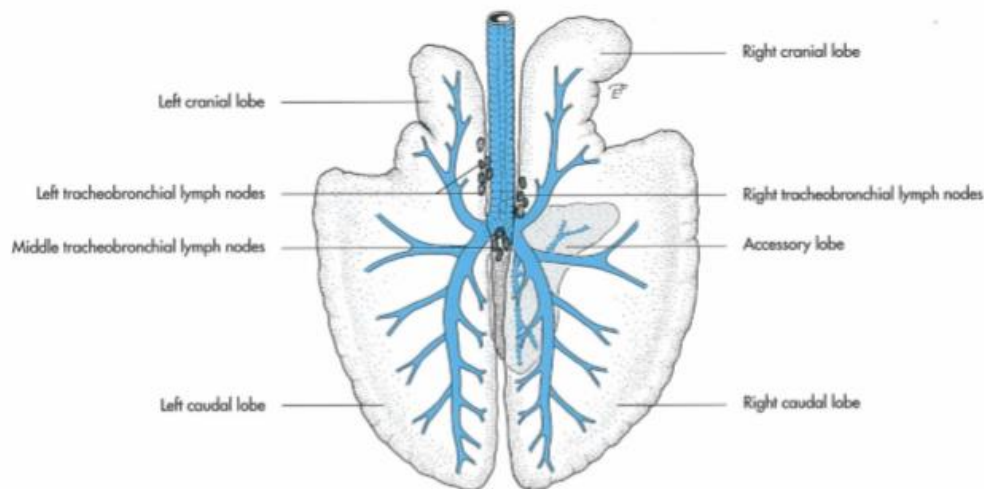
LÓ:

BAL TÜDŐFÉL:

1. Lobus cranialis sinister
2. Lobus caudalis sinister

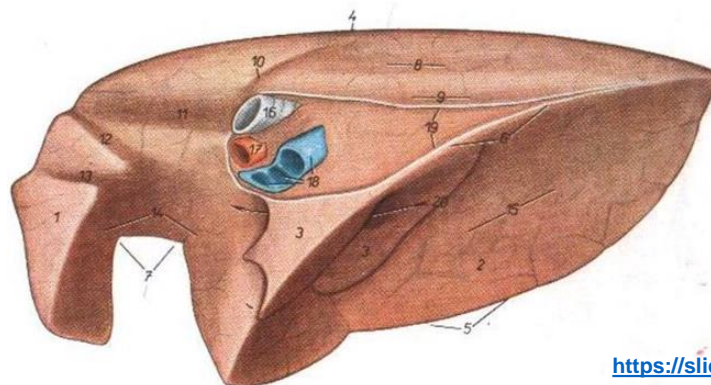
JOBB TÜDŐFÉL:

1. Lobus cranialis dexter
2. Lobus caudalis dexter
3. Lobus accessorius

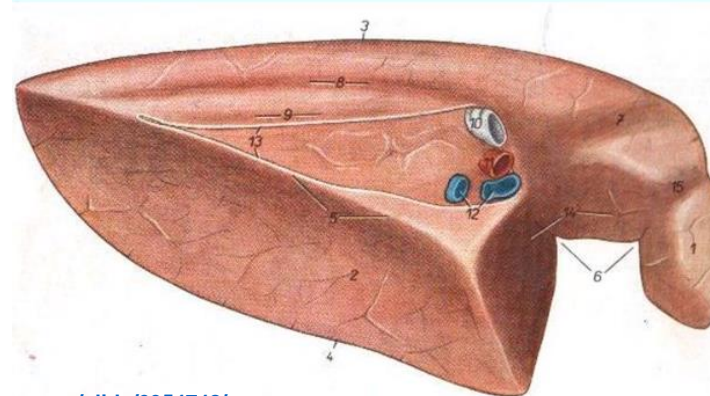


https://www.alibaba.com/product-detail/Plastinated-Specimen-Animal-Horse-Lung_50031464596.html

Pulmo dextra HORSE



Pulmo sinistra HORSE



<https://slideplayer.com/slide/6954748/>

TÜDŐ (PULMO)

BRONCHUS TRACHEALIS:

- Su, Bo
- jobb oldalon
- bifurcatio tracheae előtt

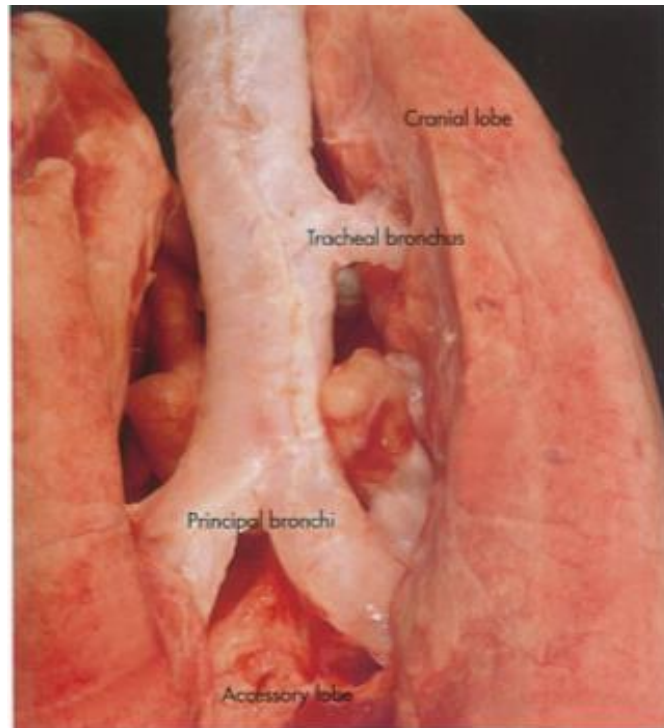


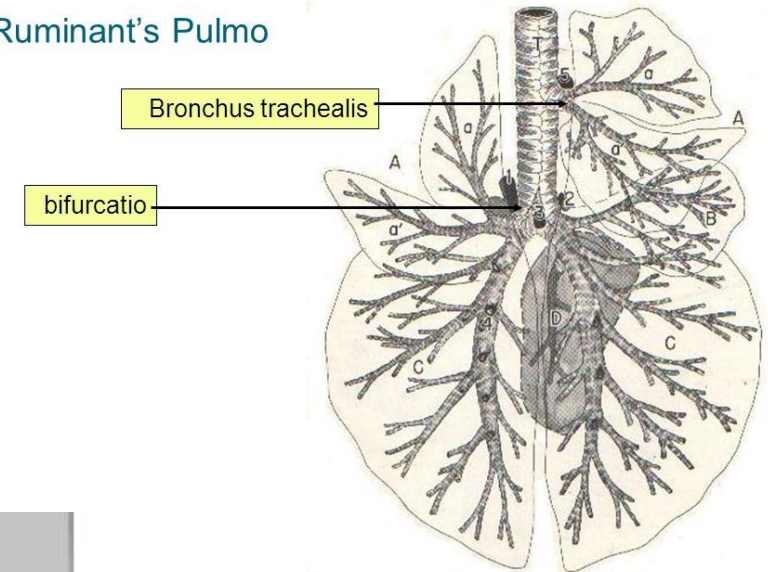
Fig. 8-32. Lungs of a pig, demonstrating the tracheal bronchus, dorsal aspect (courtesy of PD Dr. J. Maierl, Munich).



Figure 1. Porcine lung anatomy. Photograph (dorsal aspect) of lungs from a pig (age, ~ 22 wk; size, ~ 105 kg) showing trachea (a), carina (b), left lung (c), right lung (d), and cranial lobe bronchus (e). Standard 12-inch/30-cm ruler shown for scale.

<https://www.atsjournals.org/doi/pdf/10.1165/rcmb.2013-0453TR>

Ruminant's Pulmo

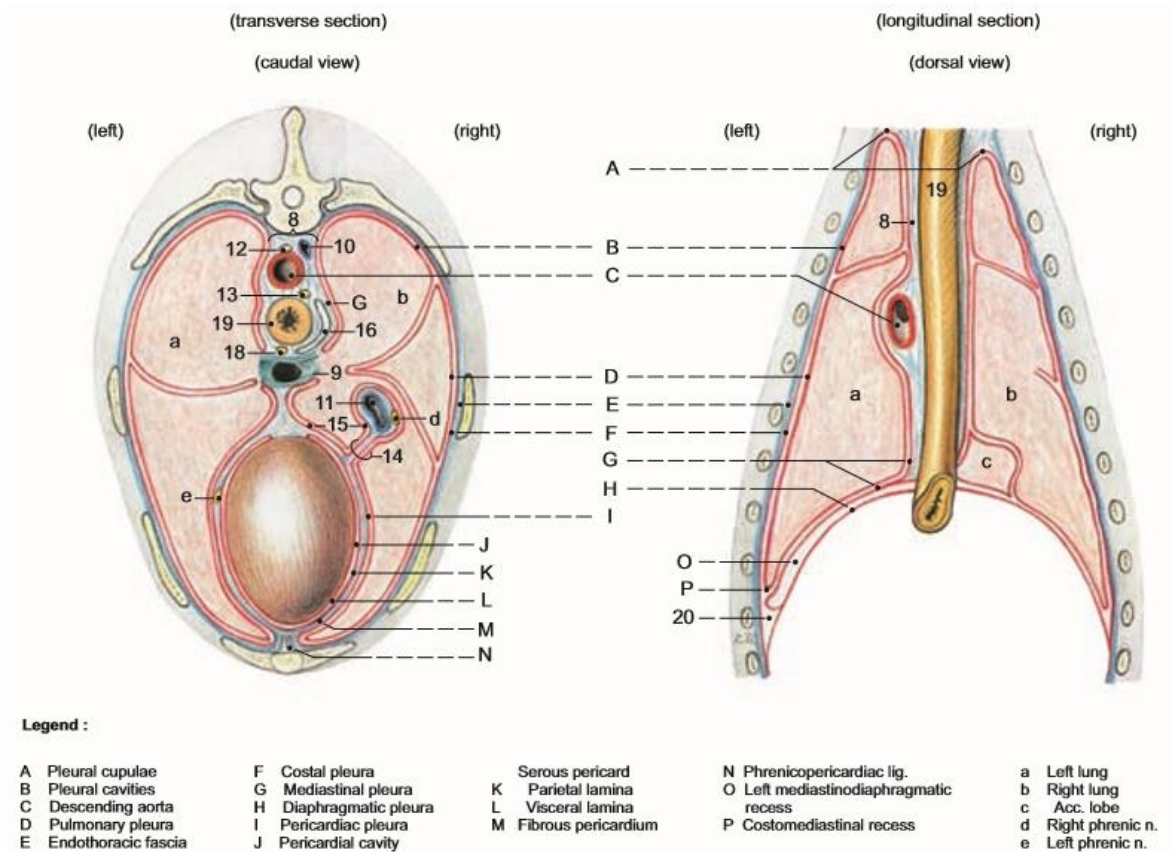
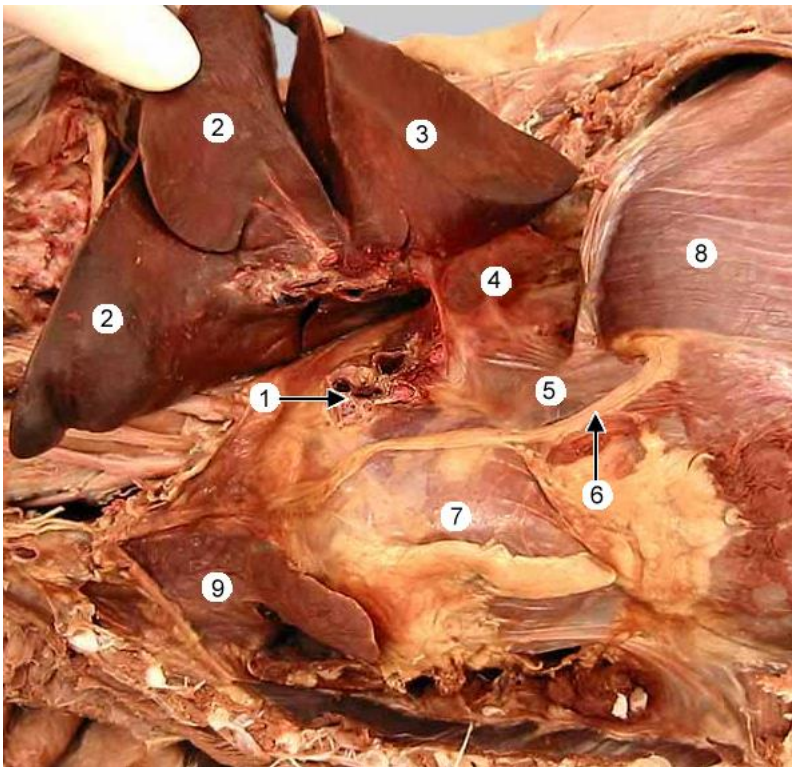


<https://slideplayer.com/slide/6954748/>

TÜDŐ (PULMO)

PLEURA (MELLHÁRTYA):

1. pleura pulmonalis seu pleura visceralis
 2. pleura parietalis
- cavum pleurae
 - liquor pleurae (serósus folyadék)



On the left side, the root of the lung (1) has been cut and the lung is reflected. The **left lung** is composed of a cranial lobe (2) with cranial and caudal parts and a caudal (3) lobe. The lung is covered by **visceral (pulmonary) pleura**. The **pulmonary ligament** (4), connects between visceral pleura and mediastinal parietal pleura (5). The **phrenic nerve** (6) crosses the surface of the heart (7) on its way to innervate the diaphragm (8). The thymus (9) is situated in the mediastinum cranial to the heart.

TÜDŐ VÉRELLÁTÁSA

VASA PUBLICA:

- funkcionális érrendszer
- kisvérkörhöz tartozó erek
- truncus pulmonalis - aa. pulmonales
- vv. pulmonales

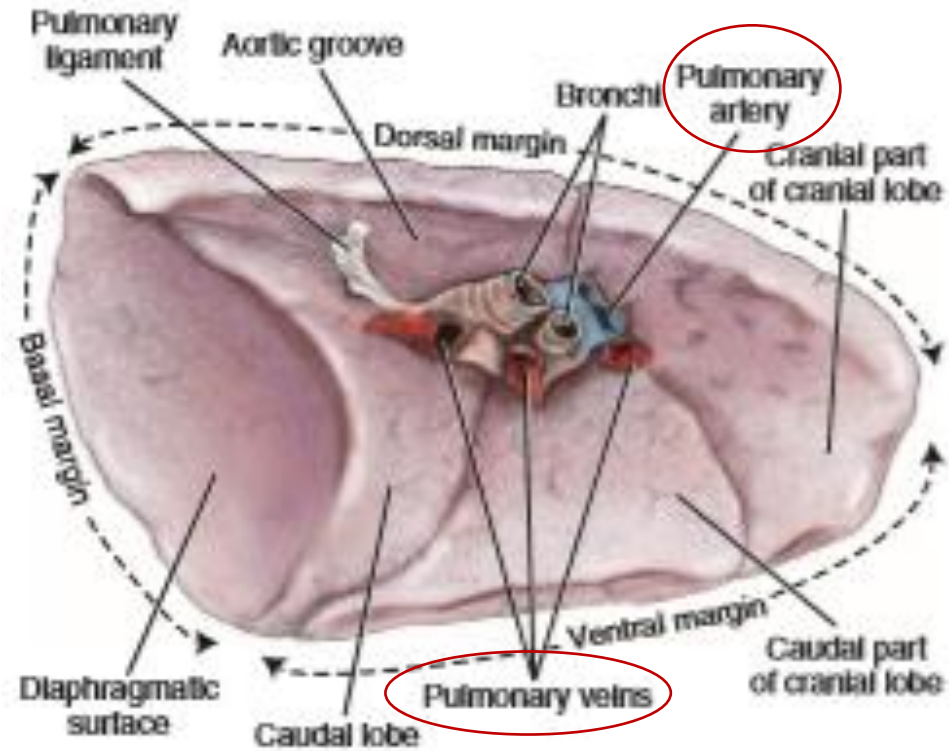
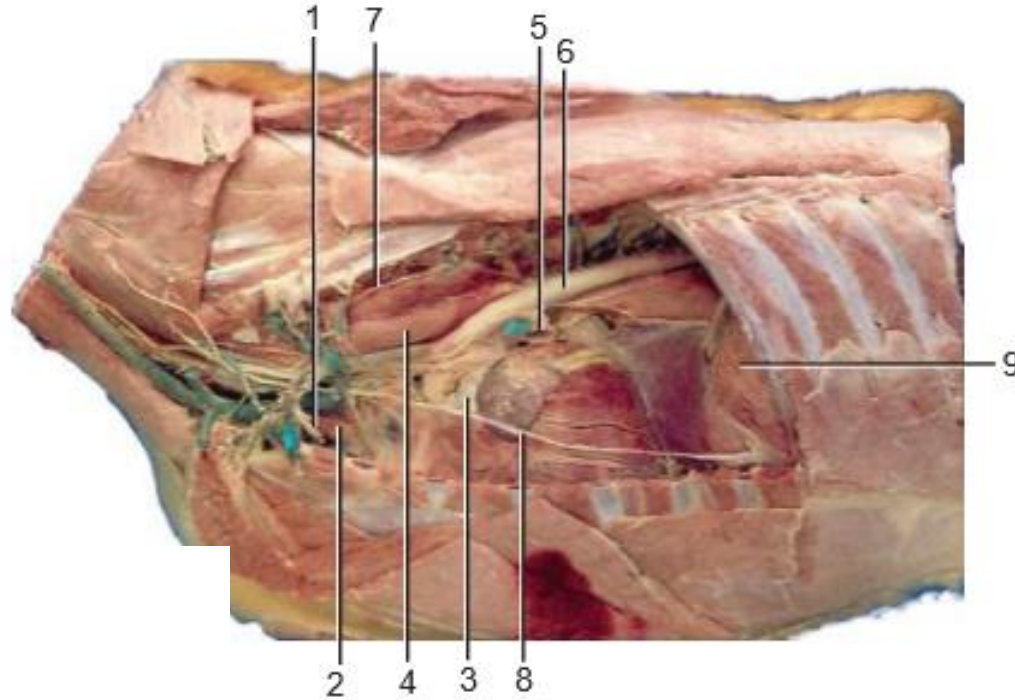


FIGURE 8-35 Margins and surfaces of the left lung, medial view.

TÜDŐ VÉRELLÁTÁSA

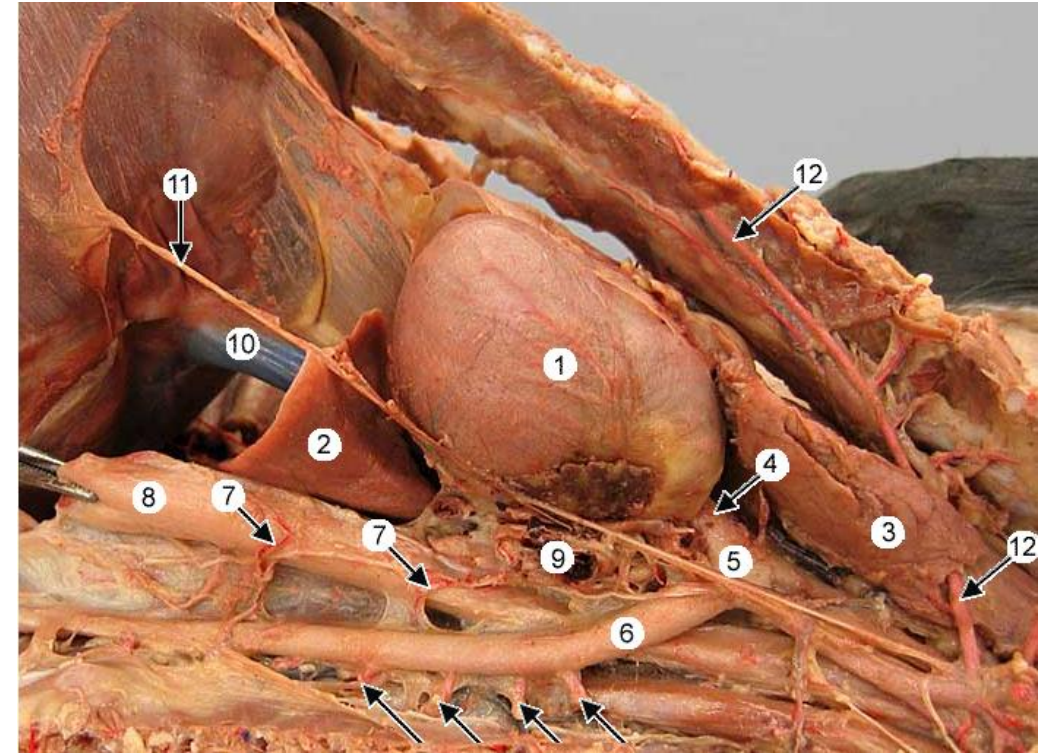
VASA PRIVATA:

- **nutritív érrendszer**
- **tüdő szövetét ellátó erek**
- **a. et v. broncho – oesophagea – aa. bronchiales**



1. Internal thoracic vessels
2. Thymus
3. Pulmonary trunk
4. Esophagus
5. Pulmonary veins entering left atrium
6. Aorta
7. Sympathetic trunk
8. Phrenic nerve
9. Diaphragm

Note: The lung and most of the pericardium have been removed.



Cat dissection, left dorsolateral view of the thorax. The heart (1), accessory lobe of the right lung (2), and the thymus (3) are evident, as are the **ascending aorta** (4), the **aortic arch** (5) and the **descending aorta** (6). The latter gives rise to dorsal **intercostal arteries** (arrows). In this specimen, two **bronchoesophageal arteries** (7) can be seen supplying the esophagus (8) and the root of the left lung (9).

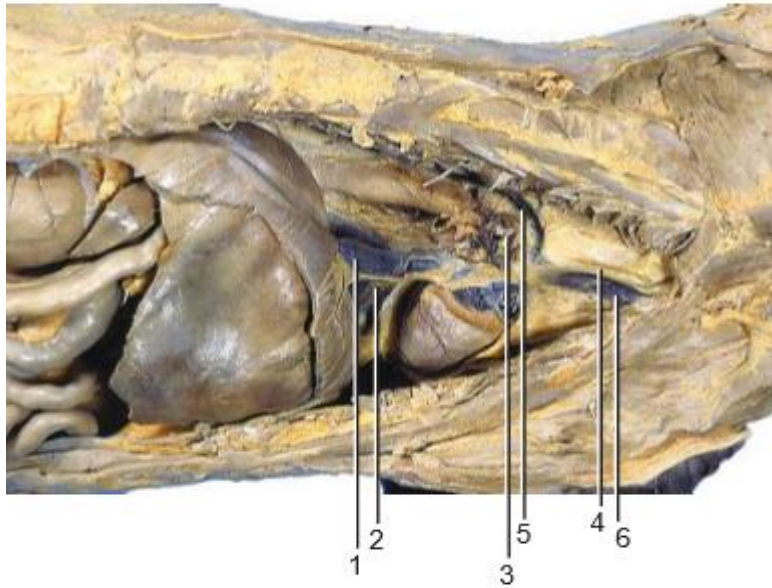
Also notice the caudal vena cava (10), the **phrenic n.** (11) innervating the diaphragm, and the **internal thoracic a.** (12).

<http://vanat.cvm.umn.edu/carnLabs/Lab11/lmg11-11.html>

TÜDŐ VÉRRELÁTÁSA

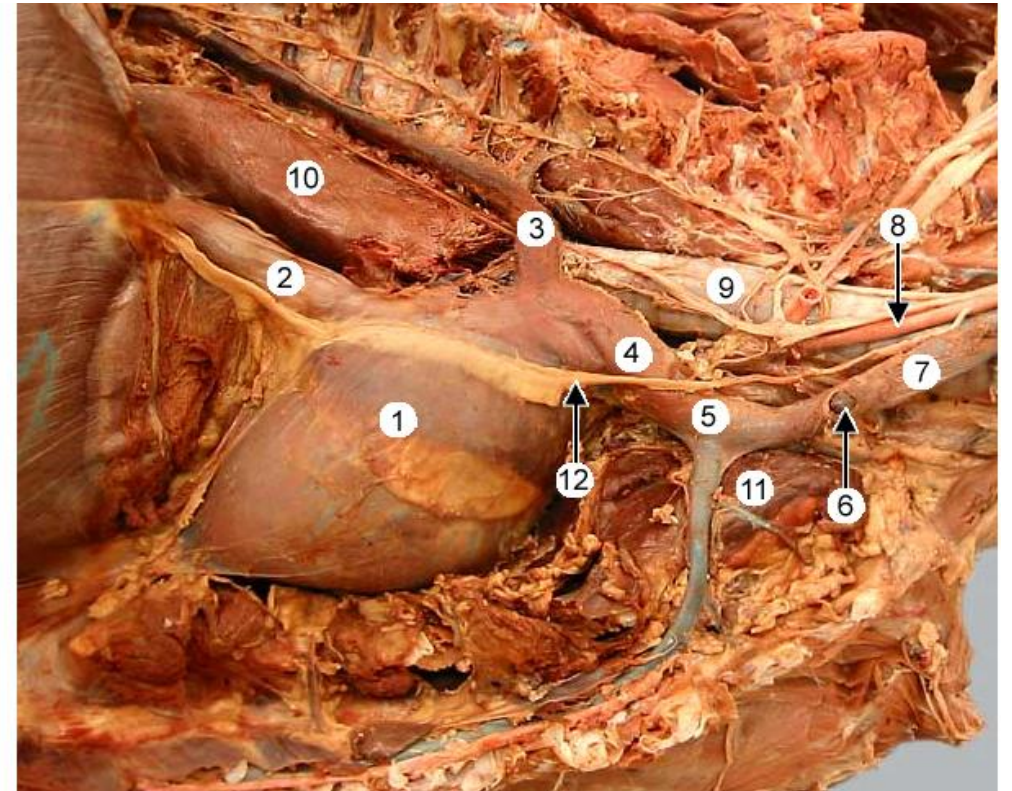
- VASA PRIVATA:

- vv. bronchiales – v. azygos dextr. vagy sin.



1. Caudal vena cava
2. Plica venae cavae
3. Root of lung and phrenic nerve
4. Right vagus
5. Right azygos vein
6. Cranial vena cava

Note: The right lung and most of the pericardium have been removed.



Mediastinum, right side: The right lung and mediastinal pleura have been removed to expose vessels and nerves. The **heart** (1) receives blood from the **caudal vena cava** (2), the **azygos vein** (3), and the **cranial vena cava** (4). The latter receives blood from bilateral **brachiocephalic veins** (5), each formed by the union of a subclavian vein (6) (cut away) and an external jugular vein (7).

KÖSZÖNÖM
A
FIGYELMET!



IRODALOMJEGYZÉK

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