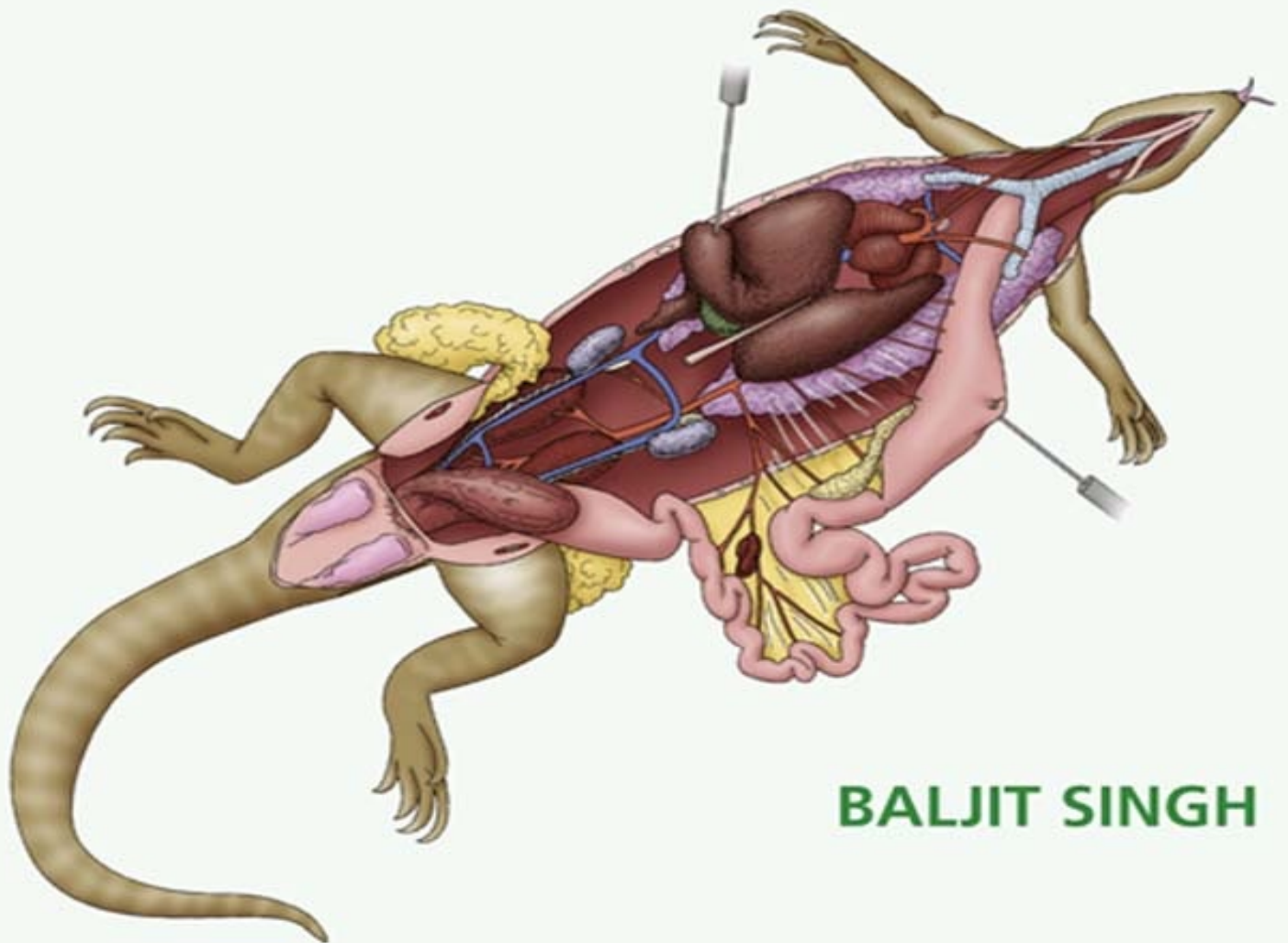


SAUNDERS
VETERINARY ANATOMY
FLASH CARDS
SECOND EDITION



BALJIT SINGH

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Saunders: Veterinary Anatomy Flash Cards

SECOND EDITION

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About the Flash Cards

Welcome to *Saunders Veterinary Anatomy Flash Cards*! These cards are designed to help you succeed in mastering veterinary anatomy. This set of 435 cards supports learning from any Elsevier veterinary anatomy text as well as veterinary anatomy texts from other publishers. The unique design and content also allow the flash cards to be used without a textbook.

- These cards provide a fun way to master canine, feline, equine, porcine, ruminant, and avian anatomy.
- A brand new section on Exotics offers coverage of the anatomy of small mammals 🐭 and reptiles 🐍—rodents, rabbits, ferrets, lizards, snakes, and more!
- All cards have beautiful full-color illustrations. Histologic views appear where relevant.
- The first seven sections are divided by regions of the body: The Head and Ventral Neck; The Neck, Back, and Vertebral Column; The Thorax; The Abdomen; The Pelvis and Reproductive Organs; The Forelimb; and The Hind Limb.
- Headings at the top of each card quickly place the card in its section.
- The front of each flash card displays a species-specific icon in the upper, left corner, allowing students to group the cards by animal for self-quizzing.
- Questions for consideration are sprinkled throughout, and the answers are on the back of the flash cards that have these questions.

Using Saunders Veterinary Anatomy Flash Cards

The front of the card shows the anatomic image with numbered lead lines pointing to different anatomic structures. The face of the flash card also displays the body region associated with the image, a card title and number, and a species-specific icon in the upper, left corner, allowing you to quickly reorganize the cards by animal if you choose.

The back of the card shows the answer key to the identification exercise on the front of the card. This allows you to quickly and easily check your comprehension of the information. The back of the card also shows a card title and number, along with additional notes where applicable.

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The Head and Ventral Neck

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1-85 Porcine: Lymph Center of the Head and Neck

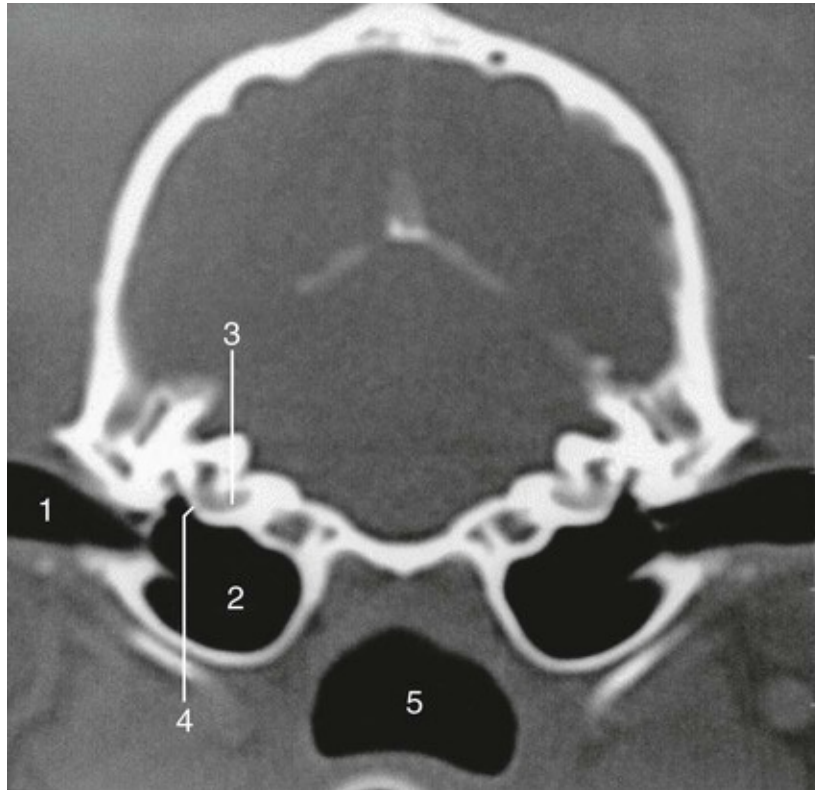
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1-87 Porcine: Vomeronasal Organ

1-88 Avian: Skull of a Chicken

1-89 Avian: Oropharynx Opened by the Reflection of the Mandibles

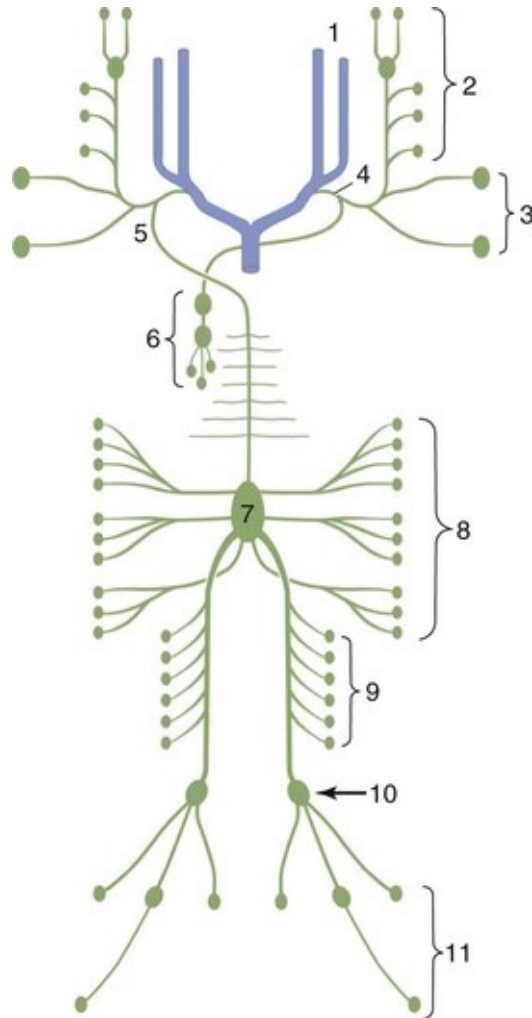
↻ 1-1 Canine: Tympanic Bullae and Petrous Temporal Bones



1. External acoustic meatus
2. Tympanic bulla
3. Cochlea
4. Round window
5. Nasopharynx

Note: This transverse image of a 2-mm thick computed tomographic slice image uses bone settings.

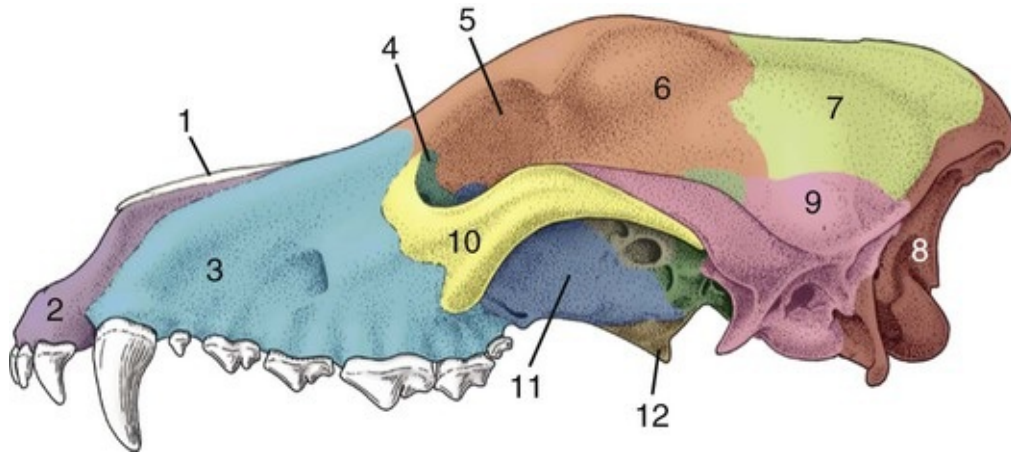
➤ 1-2 Canine: Lymph Nodes and Lymphatic Vessels



1. External and internal jugular veins
2. Lymph nodes from the head
3. Lymph nodes from the shoulder and forelimb
4. Tracheal duct
5. Thoracic duct
6. Lymph nodes from the thoracic organs
7. Cisterna chyli
8. Lymph nodes from the abdominal organs
9. Lymph nodes from the lumbar region and kidneys
10. Lymph nodes of the pelvis
11. Lymph nodes from the hind limb

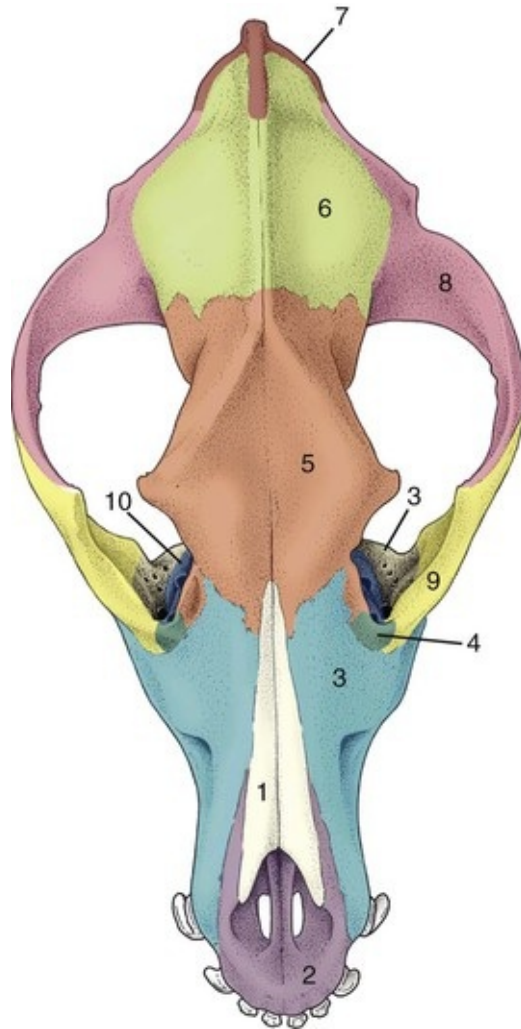
Note: Generalized schema presents the dorsal view. The top portion of the diagram represents the neck region.

↪ 1-3 Canine: Skull (Lateral View)



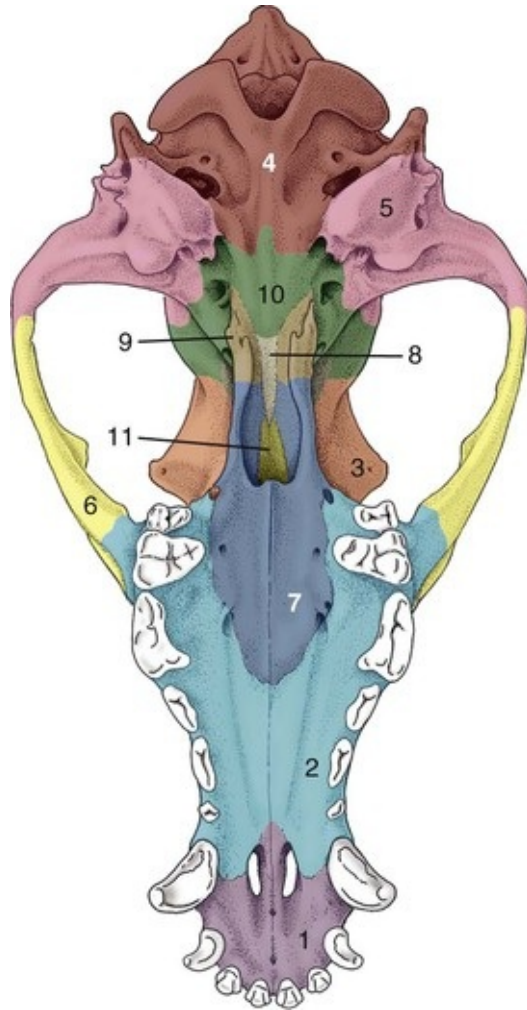
1. Nasal bone
2. Incisive bone
3. Maxilla bone
4. Lacrimal bone
5. Orbit bone
6. Frontal bone
7. Parietal bone
8. Occipital bone
9. Temporal bone
10. Zygomatic bone
11. Palatine bone
12. Pterygoid bone

↪ 1-4 Canine: Skull (Dorsal View)



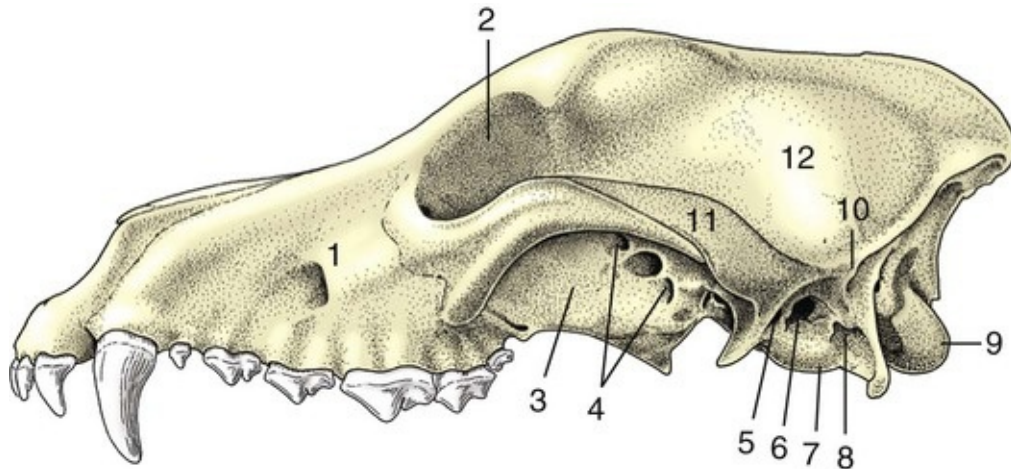
1. Nasal bone
2. Incisive bone
3. Maxilla bone
4. Lacrimal bone
5. Frontal bone
6. Parietal bone
7. Occipital bone
8. Temporal bone
9. Zygomatic bone
10. Palatine bone

↪ 1-5 Canine: Skull (Ventral View)



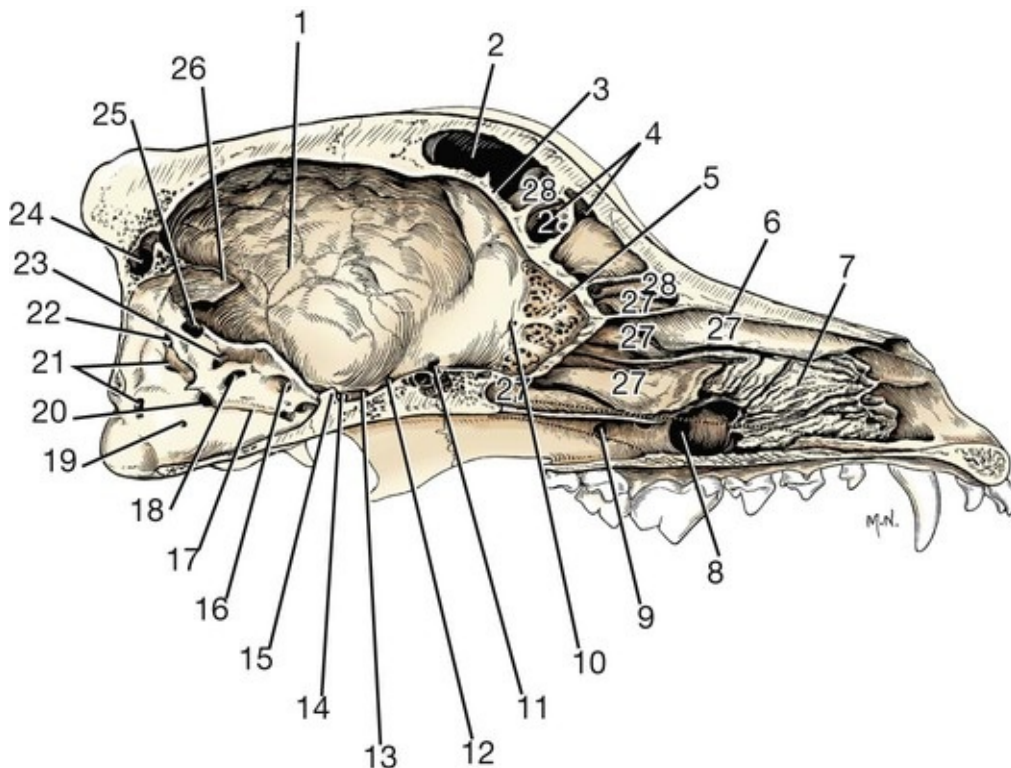
1. Incisive bone
2. Maxilla bone
3. Frontal bone
4. Occipital bone
5. Temporal bone
6. Zygomatic bone
7. Palatine bone
8. Presphenoid
9. Pterygoid bone
10. Basisphenoid
11. Vomer bone

↻ 1-6 Canine: Skull (Lateral View)



1. Infraorbital foramen
2. Orbit
3. Pterygopalatine fossa
4. Optic canal, orbital fissure, and rostral alar foramen
5. Retroarticular foramen
6. External acoustic meatus
7. Tympanic bulla
8. Stylomastoid foramen
9. Occipital condyle
10. Mastoid process
11. Zygomatic arch
12. Temporal fossa

↻ 1-7 Canine: Sagittal Section of Skull (Medial View)

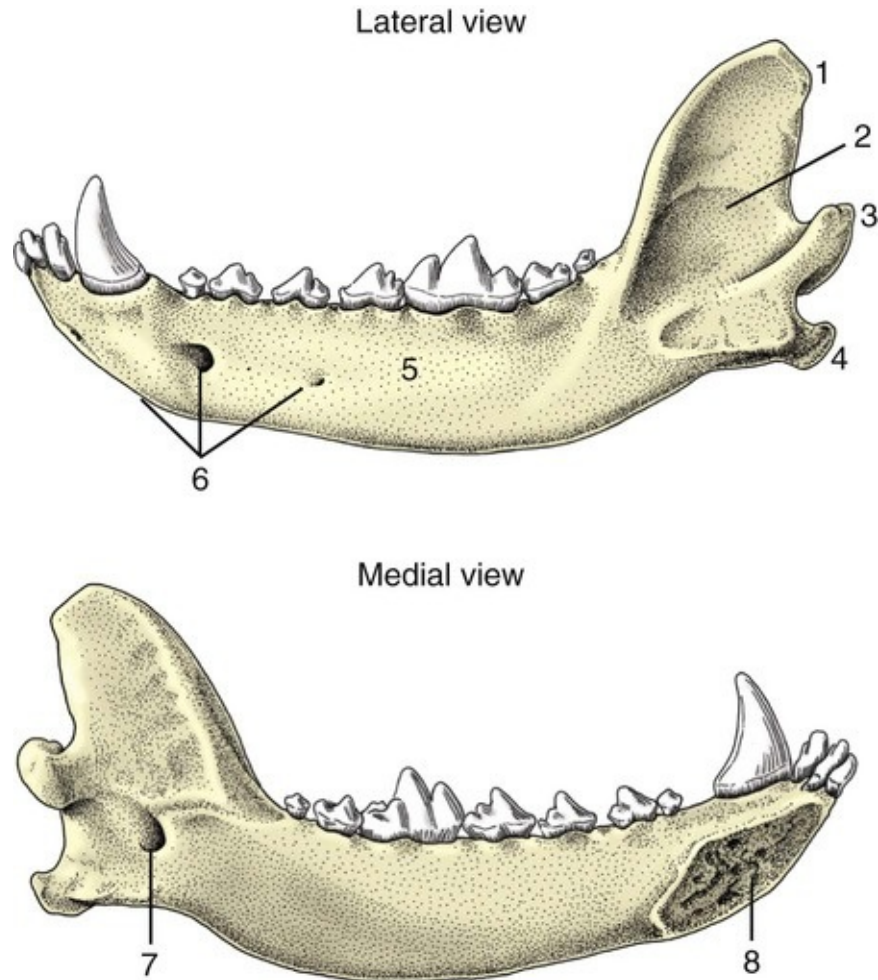


1. Groove for middle meningeal artery
2. Lateral part of frontal sinus
3. Internal table of frontal sinus
4. Medial part of frontal sinus
5. Cribriform plate
6. Dorsal nasal concha
7. Ventral nasal concha
8. Entrance to maxillary recess
9. Sphenopalatine foramen
10. Ethmoid foramina
11. Optic canal
12. Orbital fissure
13. Round foramen

14. Oval foramen
15. Dorsum sellae
16. Canal for trigeminal nerve
17. Petrooccipital fissure
18. Internal acoustic meatus
19. Hypoglossal canal
20. Jugular foramen
21. Condylod canal
22. Mastoid foramen
23. Cerebellar fossa
24. Transverse canal
25. Transverse groove
26. Tentorium osseum
27. Endoturbinates in the nasal cavity
28. Ectoturbinates located in the frontal sinus

➤ 1-8 Canine: Mandible

Q: What nerve passes through 7?



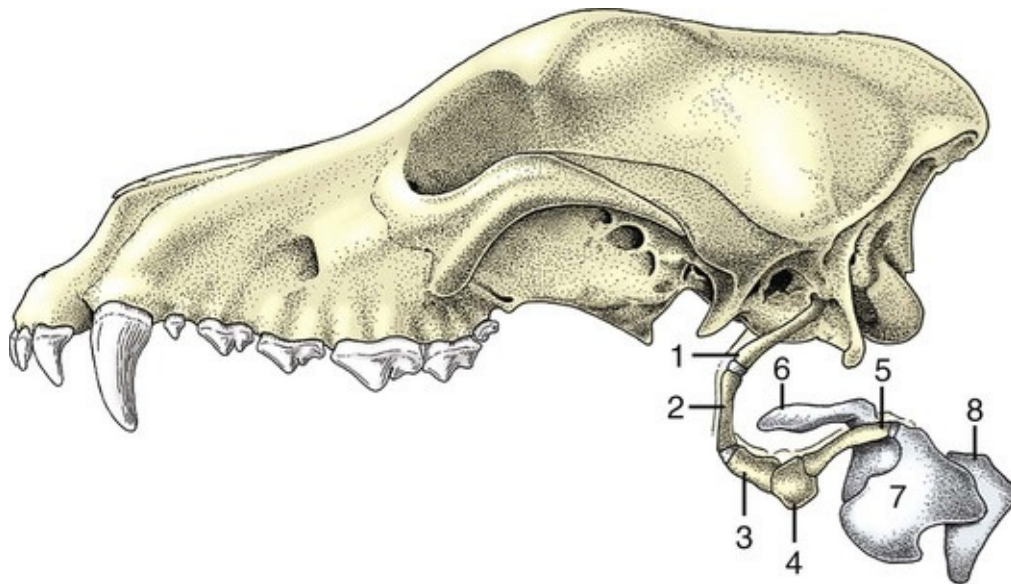
1. Coronoid process
2. Vertical part (ramus)
3. Condylar process
4. Angular process
5. Horizontal part (body)
6. Mental foramina
7. Mandibular foramen
8. Symphyseal surface

A: Inferior alveolar nerve

Note: Lateral and medial views visualize the left half of the canine mandible.

➤ **1-9 Canine: Hyoid Apparatus and**

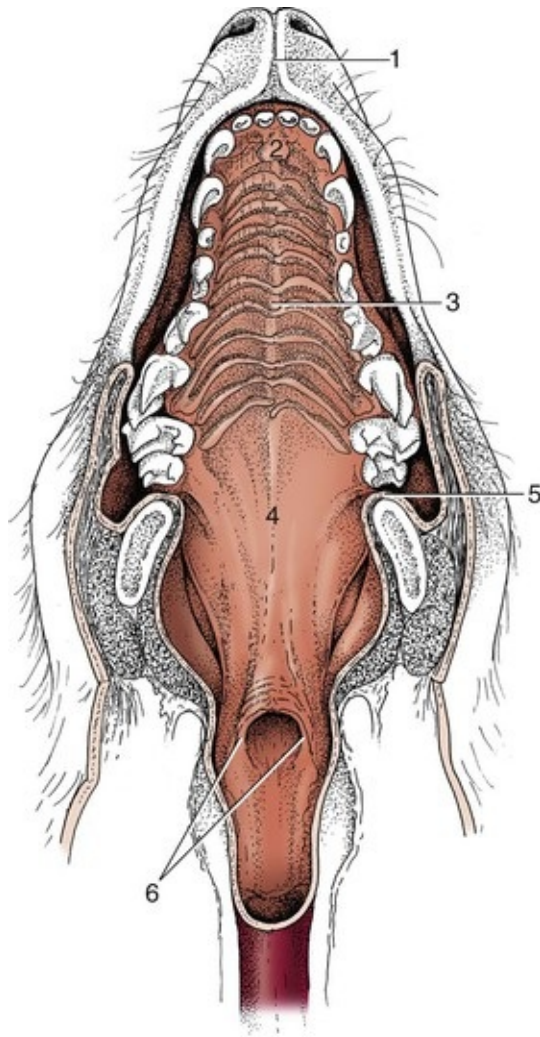
Larynx



1. Stylohyoid
2. Epihyoid
3. Ceratohyoid
4. Basihyoid
5. Thyrohyoid
6. Epiglottic cartilage
7. Thyroid cartilage
8. Cricoid cartilage

Note: Hyoid apparatus and larynx are suspended from the temporal region of a canine skull.

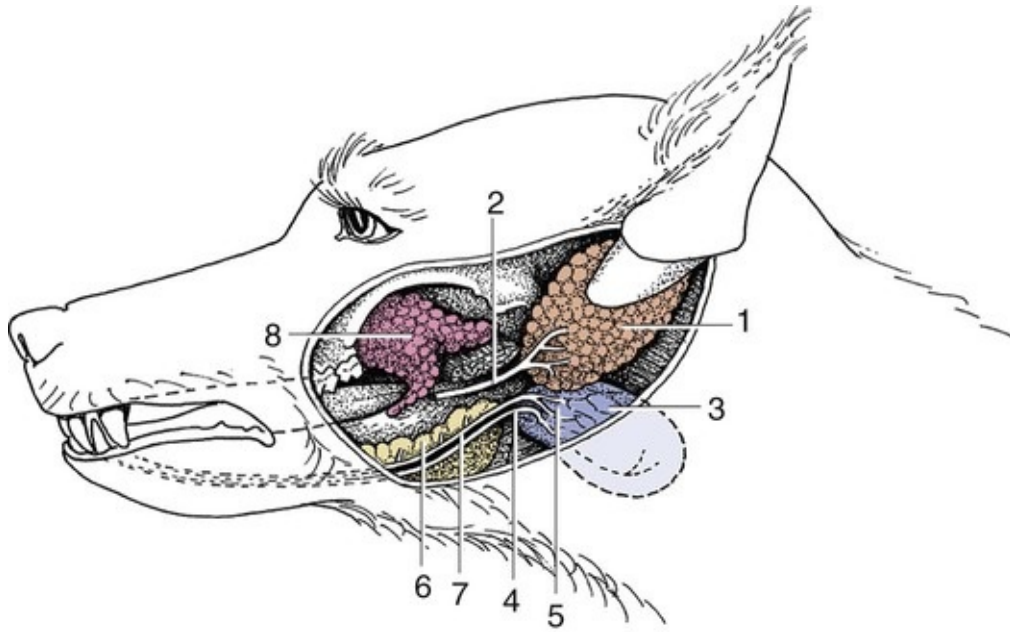
➤ 1-10 Canine: Hard and Soft Palate



1. Philtrum
2. Incisive papilla
3. Hard palate with rugae
4. Soft palate
5. Palatoglossal arch
6. Palatopharyngeal arches

↻ 1-11 Canine: Salivary Glands

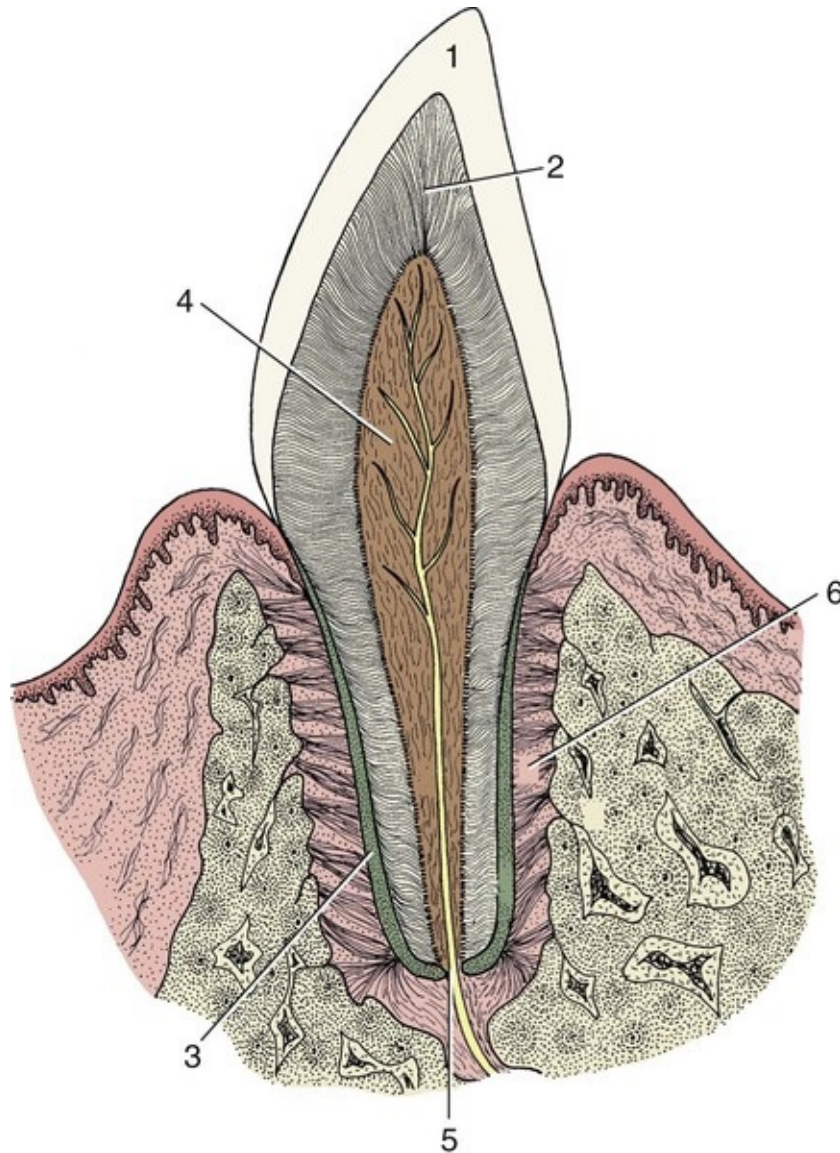
Q: Where does the mandibular duct open?



1. Parotid gland
2. Parotid duct
3. Mandibular gland
4. Mandibular duct
5. Monostomatic sublingual gland
6. Polystomatic sublingual gland
7. Major sublingual duct
8. Zygomatic gland

A: At the sublingual caruncle

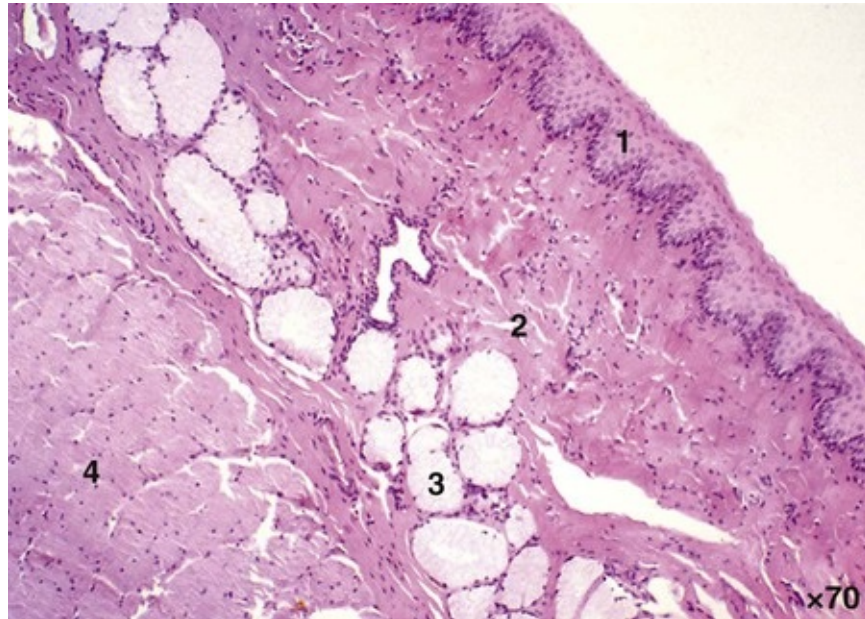
↪ 1-12 Canine: Simple Tooth



1. Enamel
2. Dentine
3. Cement
4. Pulp
5. Apical foramen
6. Periodontal ligament

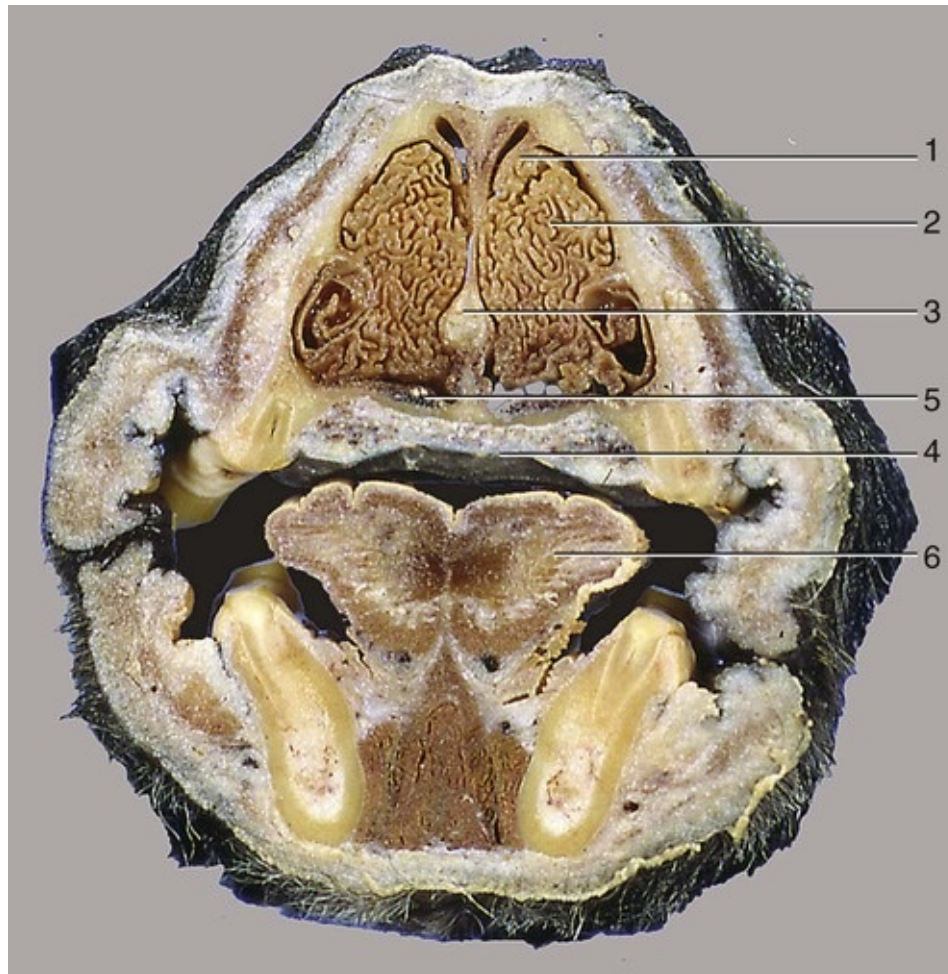
Note: Schematic longitudinal section of a simple tooth.

1-13 Canine: Esophagus



1. Stratified squamous epithelium
2. Submucosa
3. Mucus-secreting tubuloacinar glands
4. Muscularis interna

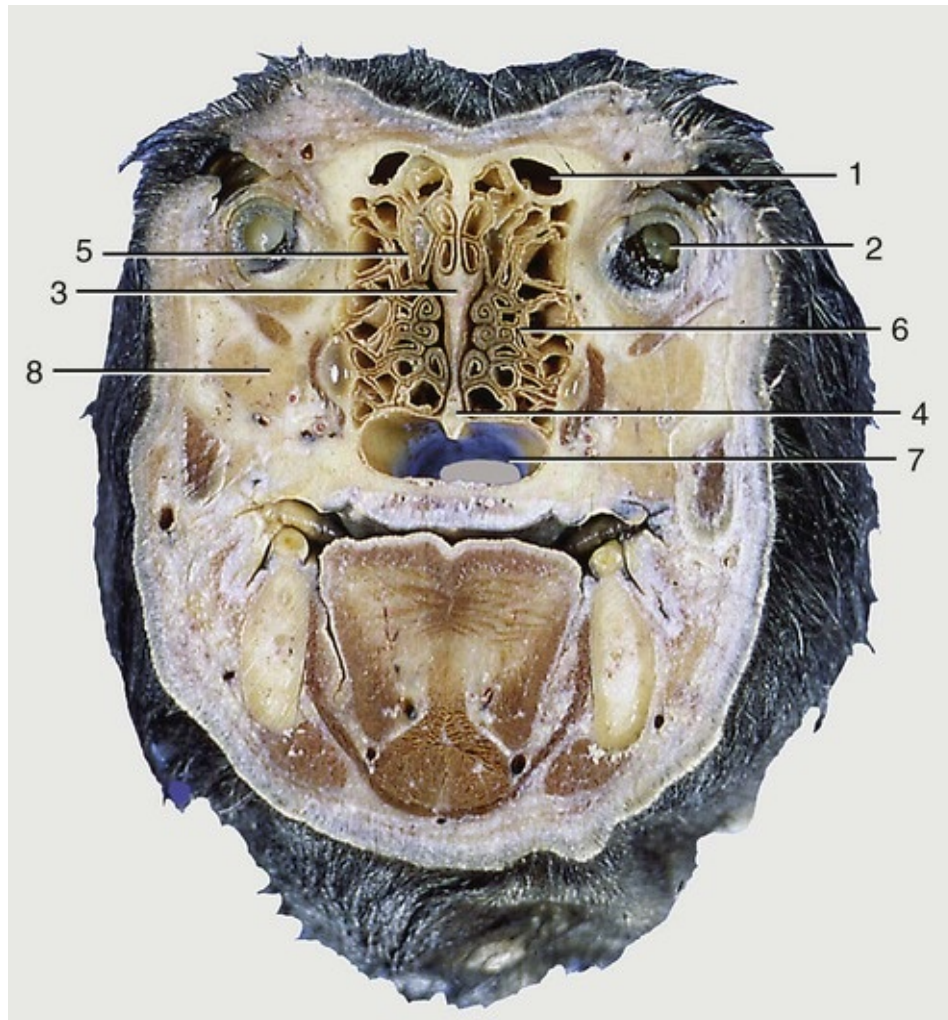
1-14 Canine: Head at the Level of P2



1. Dorsal concha
2. Ventral concha
3. Nasal septum
4. Hard palate
5. Venous plexus in nasal mucosa
6. Tongue

Note: Transverse section.

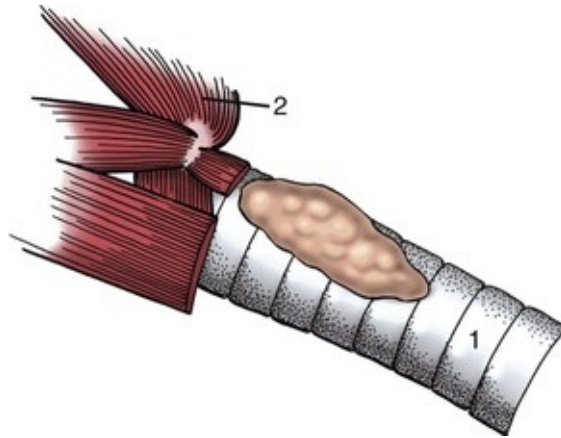
➤ **1-15 Canine: Head at the Level of the Eyeball**



1. Frontal sinus
2. Eyeball
3. Ethmoid bone, perpendicular lamina
4. Vomer
5. Ethmoid turbinates
6. Ethmoid turbinates
7. Choana
8. Zygomatic gland

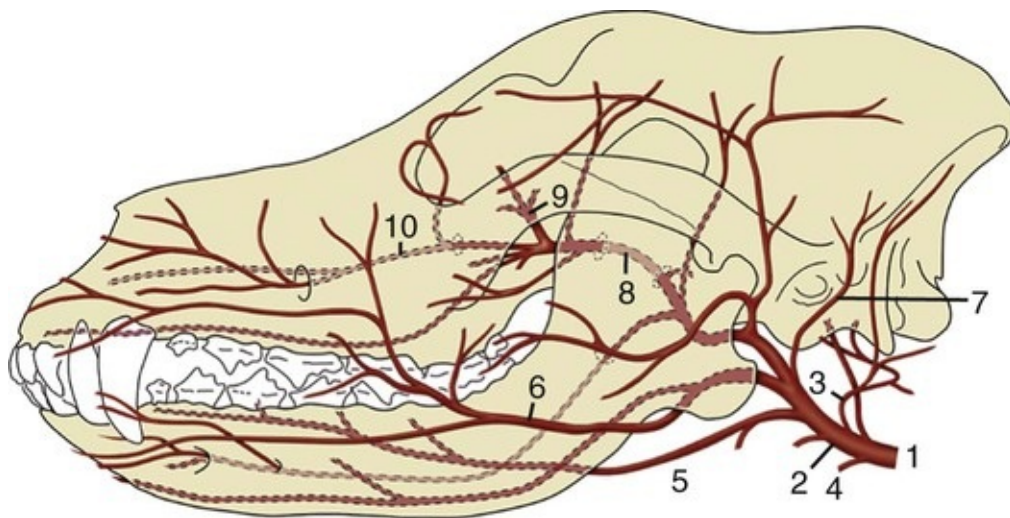
Note: Transverse section.

➤ **1-16 Canine: Thyroid Gland**



1. Trachea
2. Cricopharyngeus

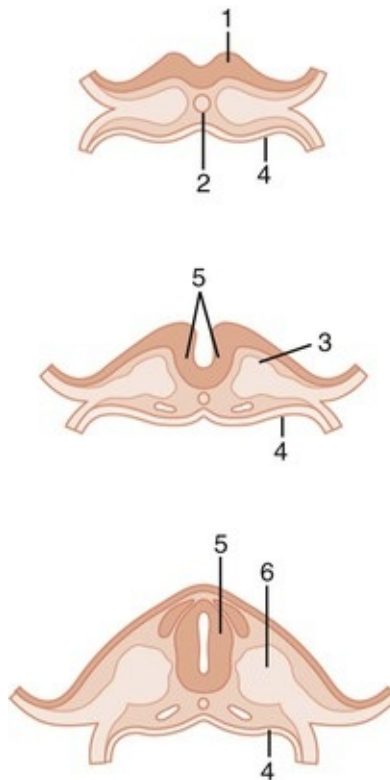
➤ **1-17 Canine: Arteries of the Head**



1. Common carotid artery
2. External carotid artery
3. Occipital artery
4. Cranial laryngeal artery
5. Lingual artery
6. Facial artery
7. Caudal auricular artery
8. Maxillary artery

- 9. External ophthalmic artery
- 10. Infraorbital artery

↻ 1-18 Canine: Closure of the Neural Plate

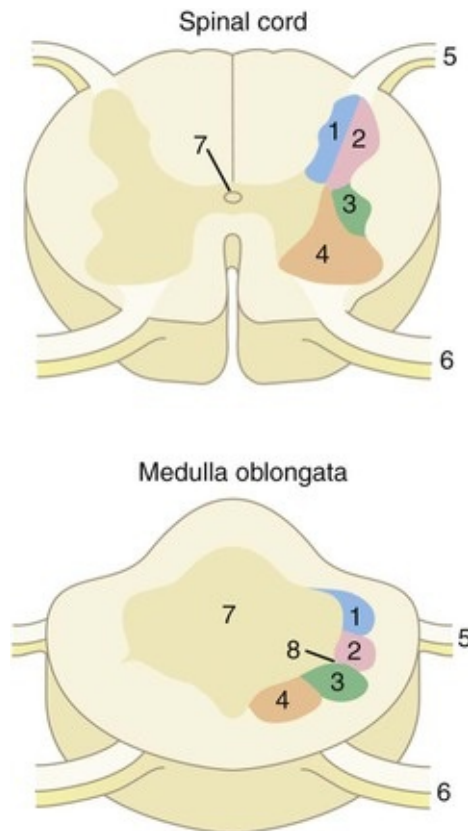


- 1. Neural plate
- 2. Notochord
- 3. Paraxial mesoderm
- 4. Endoderm
- 5. Neural tube
- 6. Somite

Note: Three stages in the closure of the neural plate.

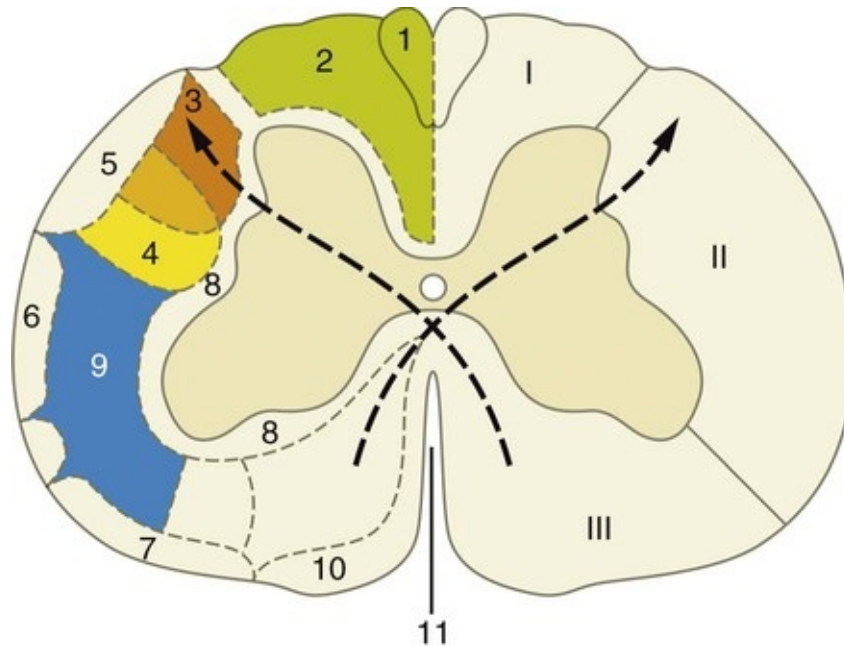
↻ 1-19 Canine: Gray Substance of the

Spinal Cord and Medulla Oblongata



1. Somatic afferent column
2. Visceral afferent column
3. Visceral efferent column
4. Somatic efferent column (lower motor neurons)
5. Dorsal root
6. Ventral root
7. Central canal or fourth ventricle
8. Sulcus limitans

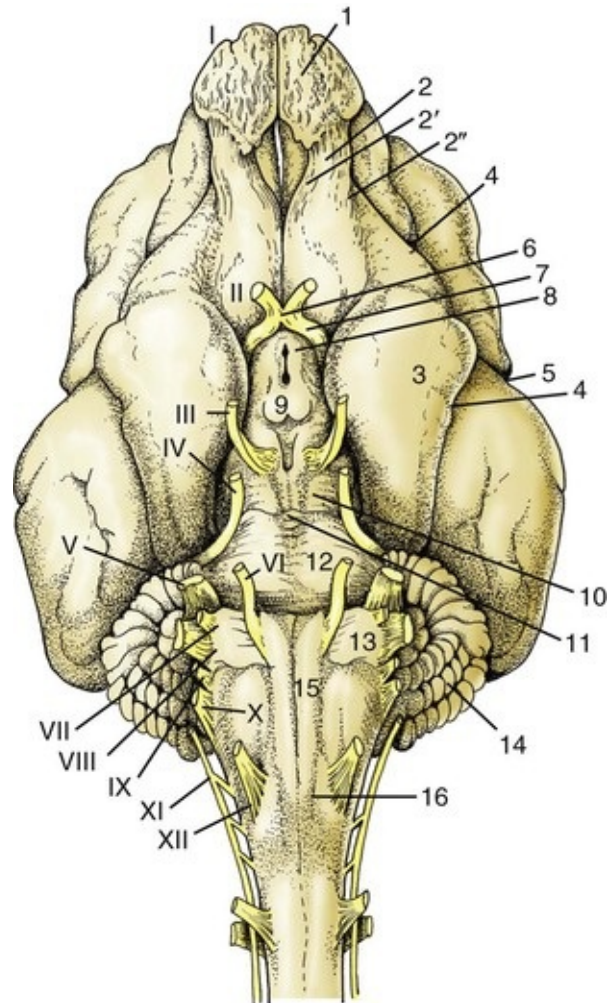
➤ 1-20 Canine: Spinal Cord



1. Fasciculus gracilis
2. Fasciculus cuneatus
3. Lateral corticospinal tract
4. Rubrospinal tract
5. Dorsal spinocerebellar tract
6. Ventral spinocerebellar tract
7. Spino-olivary and olivospinal tracts
8. Propriospinal system (fasciculi proprii)
9. Spinothalamic tract
10. Vestibulospinal tract
11. Ventral median fissure

Note: This simplified drawing of the hypothetical transverse section of the canine spinal cord shows the location of some principal tracts. The crossing of the pyramidal tracts (*dotted lined arrows*) is shown. *I*, Dorsal funiculus; *II*, lateral funiculus; *III*, ventral funiculus.

↻ 1-21 Canine: Brain (Ventral View)

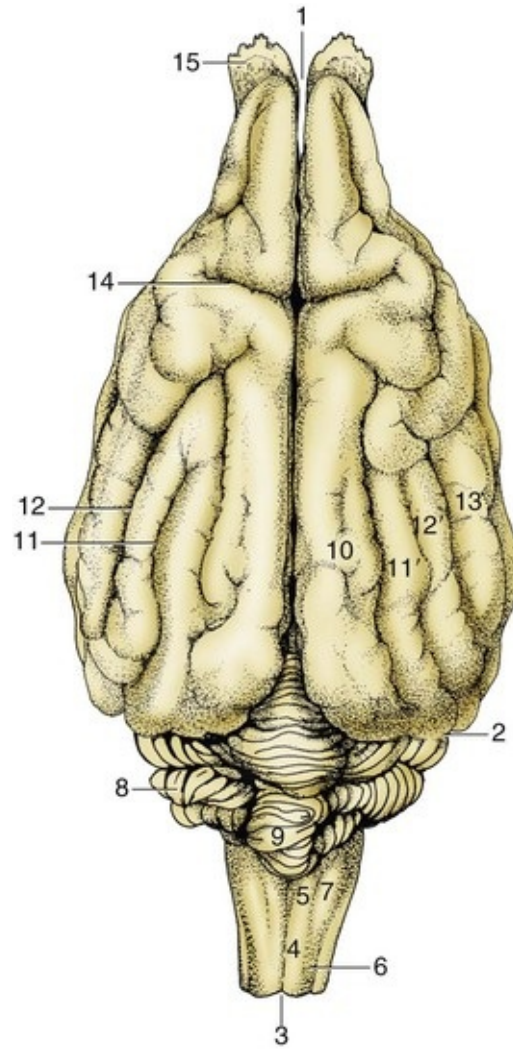


1. Olfactory bulb
2. Olfactory tract
- 2'. Medial olfactory tract
- 2''. Lateral olfactory tract
3. Piriform lobe
4. Rhinal sulcus
5. Sylvian sulcus
6. Optic chiasm
7. Optic tract
8. Tuber cinereum
9. Mammillary body
10. Crus cerebri

- 11. Interpeduncular fossa
- 12. Pons
- 13. Trapezoid body
- 14. Cerebellar hemisphere
- 15. Pyramidal tract
- 16. Crossing of pyramidal tracts

Note: Roman numerals I through XII designate the appropriate cranial nerves.

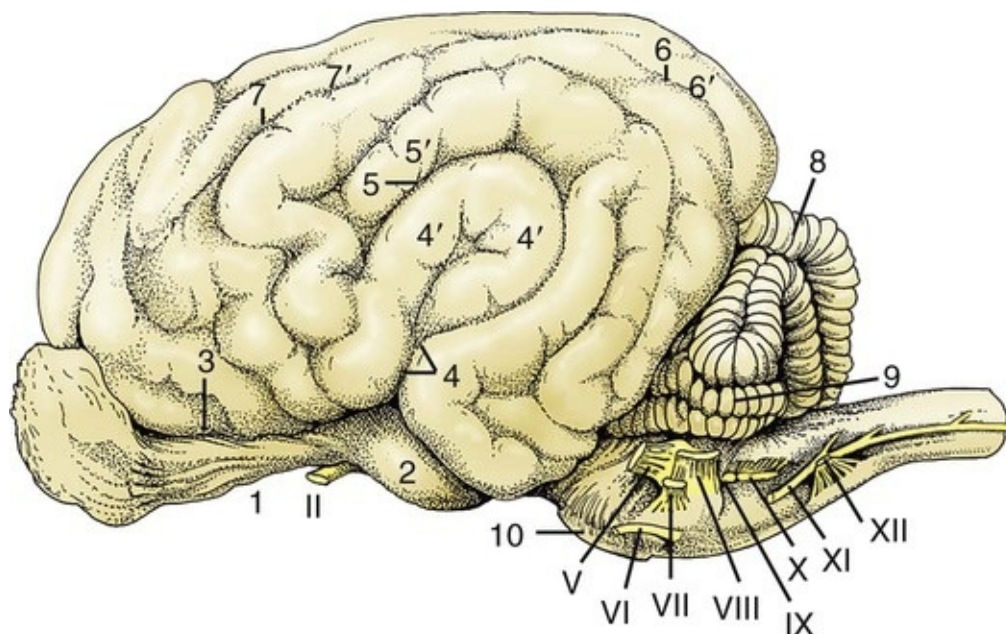
➤ 1-22 Canine: Cerebral Hemispheres (Dorsal View)



1. Longitudinal fissure
2. Transverse fissure
3. Dorsal median sulcus
4. Tractus gracilis
5. Nucleus gracilis
6. Tractus cuneatus
7. Nucleus cuneatus
8. Cerebellar hemisphere
9. Cerebellar vermis
10. Marginal gyrus
11. Ectomarginal sulcus
- 11'. Ectomarginal gyrus

- 12. Suprasylvian sulcus
- 12'. Suprasylvian gyrus
- 13. Ectosylvian gyrus
- 14. Cruciate sulcus
- 15. Olfactory bulb

↻ 1-23 Canine: Brain (Lateral View)

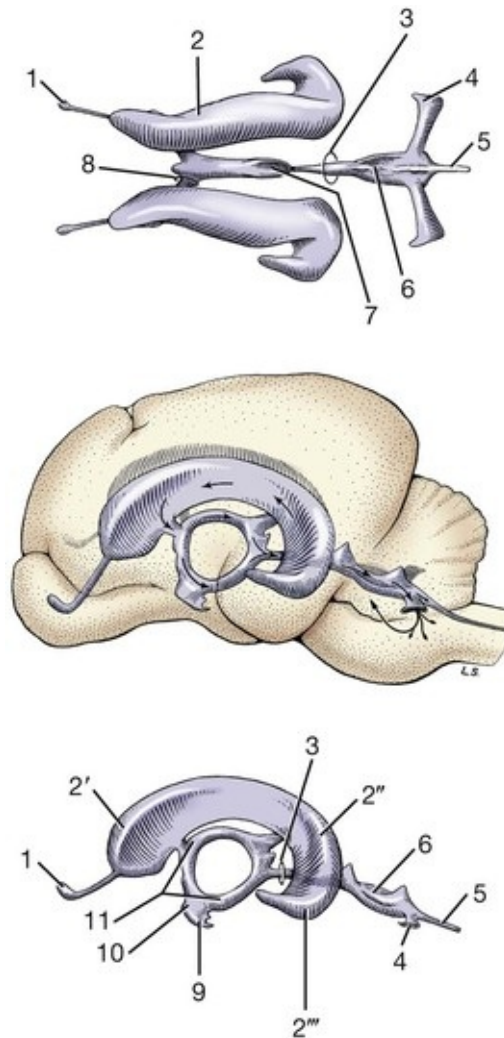


- 1. Olfactory tract
- 2. Piriform lobe
- 3. Rhinal sulcus
- 4. Sylvian sulcus
- 4'. Sylvian gyrus
- 5. Ectosylvian sulcus
- 5'. Ectosylvian gyrus
- 6. Ectomarginal sulcus
- 6'. Ectomarginal gyrus

- 7. Coronal sulcus
- 7'. Coronal gyrus
- 8. Cerebellar vermis
- 9. Paraflocculus
- 10. Pons

Note: Roman numerals designate the appropriate cranial nerves.

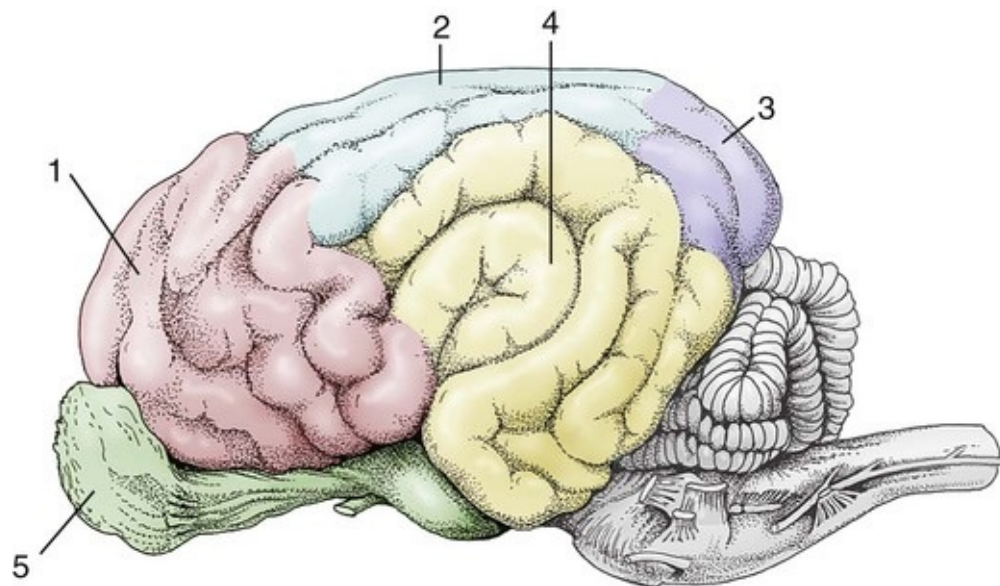
↻ 1-24 Canine: Ventricles of the Brain



- 1. Cavity of olfactory bulb

2. Lateral ventricle
- 2'. Rostral horn, lateral ventricle
- 2". Caudal horn, lateral ventricle
- 2'''. Ventral horn (temporal), lateral ventricle
3. Mesencephalic aqueduct
4. Lateral recess, IV ventricle
5. Central canal
6. Fourth ventricle
7. Suprapineal recess, III ventricle
8. Interventricular foramen
9. Infundibular recess
10. Optic recess
11. Third ventricle

↻ 1-25 Canine: Cortical Lobes of the Brain

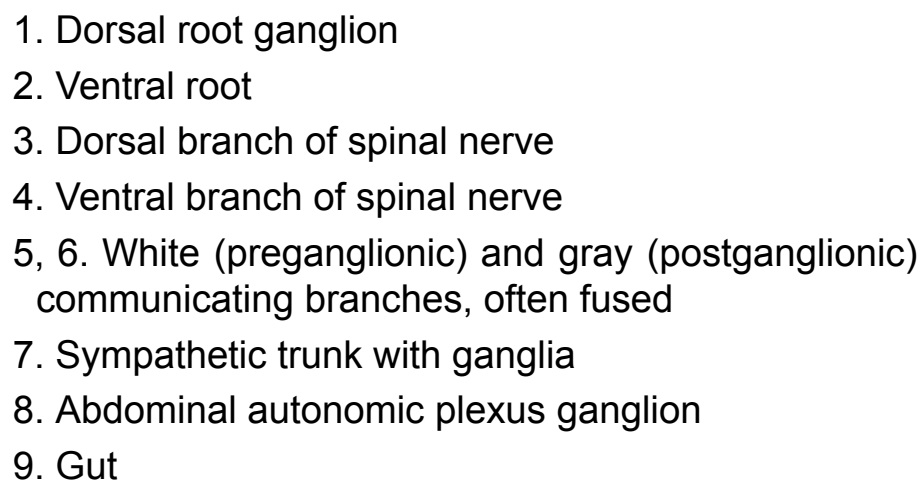


1. Frontal lobe
2. Parietal lobe

3. Occipital lobe
4. Temporal lobe
5. Olfactory lobe

Note: Lateral view.

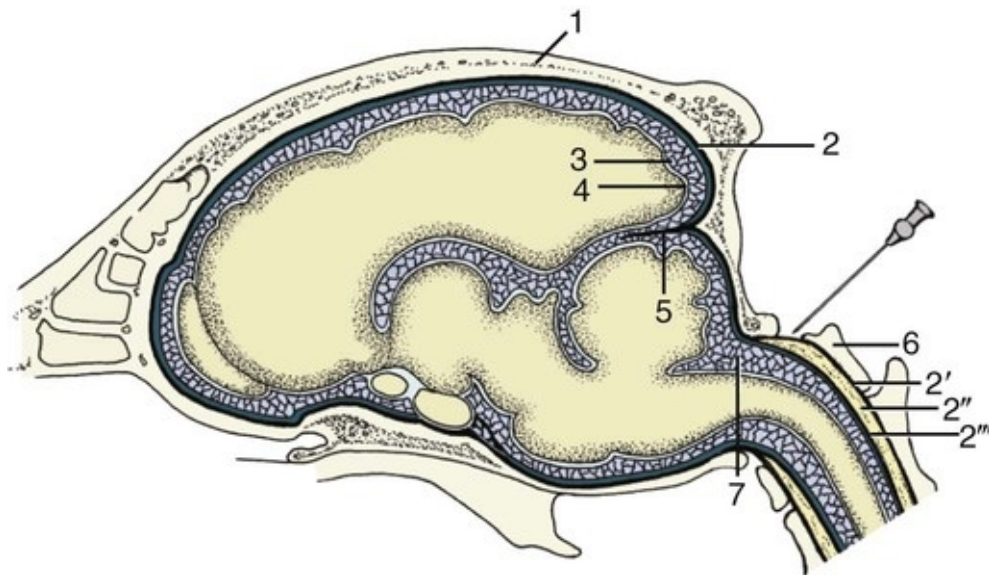
➤ 1-26 Canine: Visceral and Somatic Nervous System



Note: Comparison of the organization of the visceral (*black*) and somatic (*open*) nervous systems at the thoracolumbar level of the spinal cord. Afferent fibers (*interrupted lines*) and efferent fibers (*solid lines*) are visualized. The postganglionic sympathetic fibers are indicated by (*alternating black and stippled lines*) are also indicated.

a, Somatic afferent fibers; *b*, visceral afferent fibers; *c*, somatic efferent fibers; *d*, visceral efferent fibers (preganglionic sympathetic); *e*, postganglionic sympathetic (to peripheral structures); *f*, postganglionic sympathetic (to abdominal organs).

❧ 1-27 Canine: Meninges of the Brain

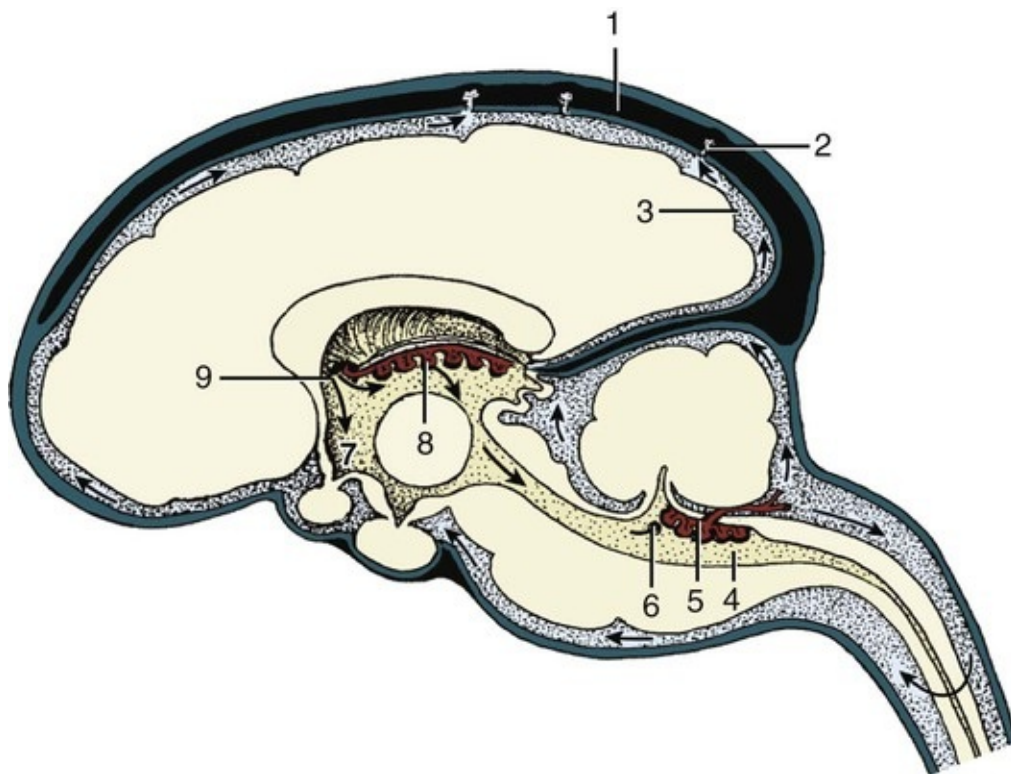


1. Calvaria
2. Dura mater (also connected to the bone as periosteum)
- 2'. Periosteum of vertebral canal
- 2''. Epidural space (with fat)
- 2'''. Dura mater of spinal cord
3. Subarachnoid space

4. Pia mater
5. Membranous tentorium cerebelli
6. Atlas
7. Cerebellomedullary cistern

Note: Schematic representation. The needle points to the atlanto-occipital space and the cerebellomedullary cistern.

↻ 1-28 Canine: Production and Circulation of Cerebrospinal Fluid

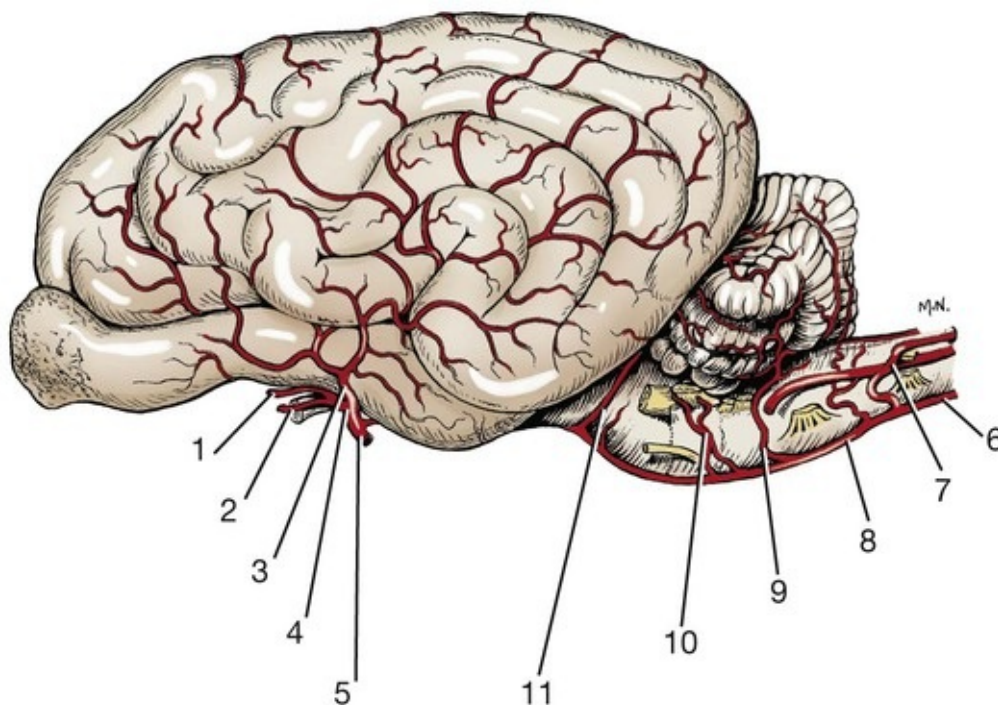


1. Dorsal sagittal sinus
2. Arachnoid villus
3. Subarachnoid space
4. Fourth ventricle
5. Choroid plexus of fourth ventricle

6. Aperture of fourth ventricle
7. Third ventricle
8. Choroid plexus of third ventricle
9. Interventricular foramen, connecting the lateral and third ventricles

Note: The blood vessels (*black area*), subarachnoid spaces (*heavily shaded*), ventricles (*lightly shaded*), and nervous tissue (*white*) are illustrated. The direction of the flow of the cerebrospinal fluid is shown (*arrows*).

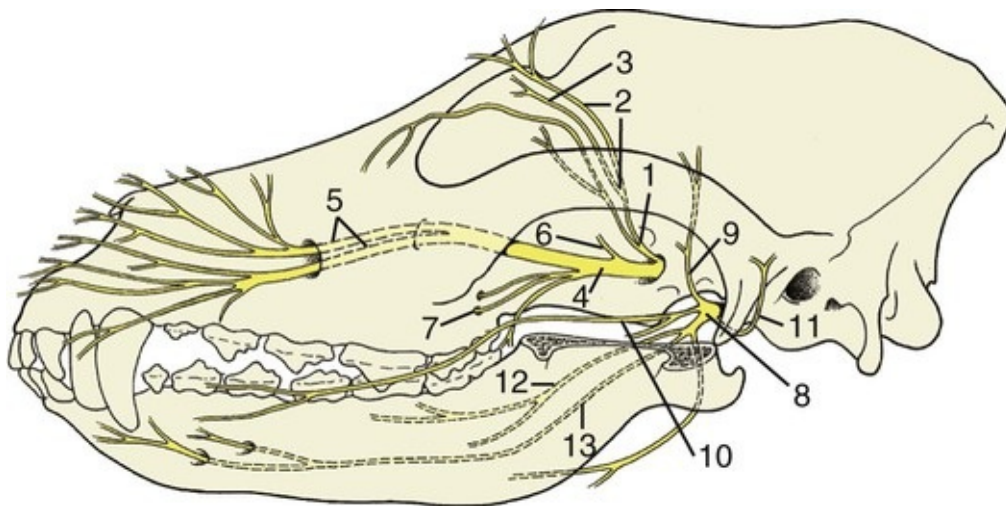
❧ 1-29 Canine: Distribution of Middle Cerebral Artery (Lateral View)



1. Internal ethmoidal artery
2. Internal ophthalmic artery
3. Middle cerebral artery
4. Rostral cerebral artery

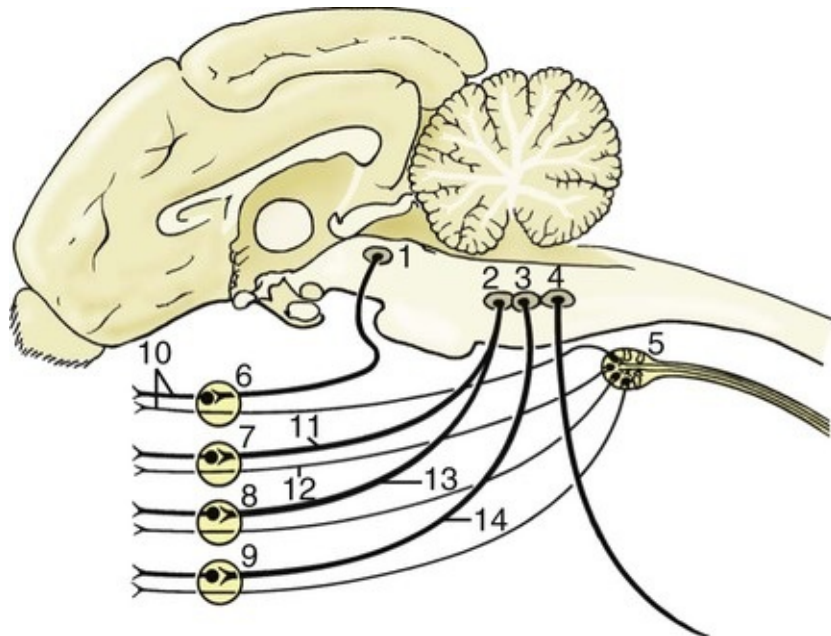
5. Internal carotid artery
6. Ventral spinal artery
7. Vertebral artery
8. Basilar artery
9. Caudal cerebellar artery
10. Labyrinthine artery
11. Rostral cerebellar artery

↻ 1-30 Canine: Trigeminal Nerve



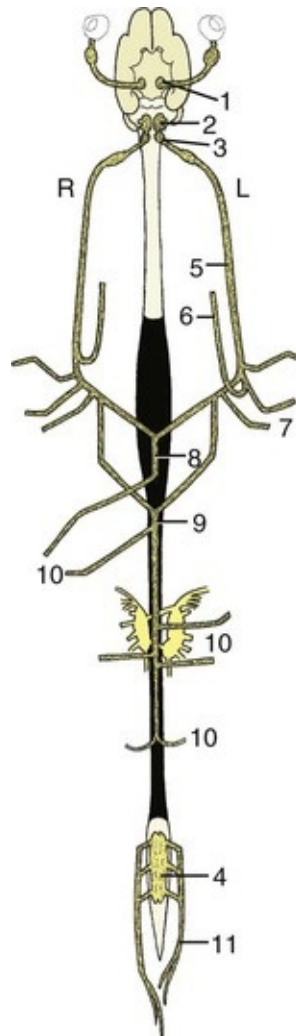
1. Ophthalmic nerve
2. Frontal nerve
3. Lacrimal nerve
4. Maxillary nerve
5. Infraorbital nerve
6. Zygomatic nerve
7. Greater palatine nerve
8. Mandibular nerve
9. Masticatory nerve
10. Buccal nerve
11. Auriculotemporal nerve
12. Lingual nerve
13. Inferior alveolar nerve

1-31 Canine: Autonomic Innervation of the Structures of the Head



1. Parasympathetic oculomotor nucleus (III)
2. Parasympathetic facial nucleus (VII)
3. Parasympathetic glossopharyngeal nucleus
4. Parasympathetic vagus nucleus
5. Cranial cervical ganglion
6. Ciliary ganglion
7. Pterygopalatine ganglion
8. Mandibular ganglion
9. Otic ganglion
10. Short ciliary nerves
11. Major petrosal nerve
12. Deep petrosal nerve
13. Chorda tympani
14. Tympanic plexus, minor petrosal nerve

1-32 Canine: Parasympathetic Nervous System

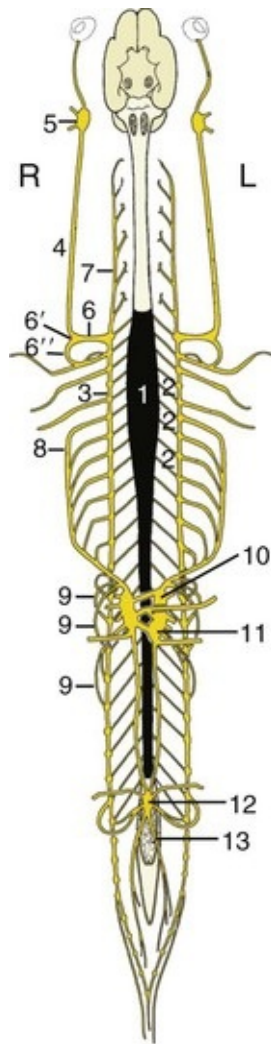


1. Parasympathetic oculomotor nucleus
2. Facial and glossopharyngeal parasympathetic nuclei of the medulla oblongata
3. Vagal parasympathetic nucleus of the medulla
4. Sacral outflow
5. Vagus nerve
6. Recurrent laryngeal nerve
7. Parasympathetic fibers to heart and lungs
8. Ventral vagal trunk

- 9. Dorsal vagal trunk
- 10. Parasympathetic fibers to the abdominal organs
- 11. Pelvic nerves

Note: Origin and distribution of the parasympathetic nervous system. Ventral view, schematic.

↪ 1-33 Canine: Sympathetic Nervous System

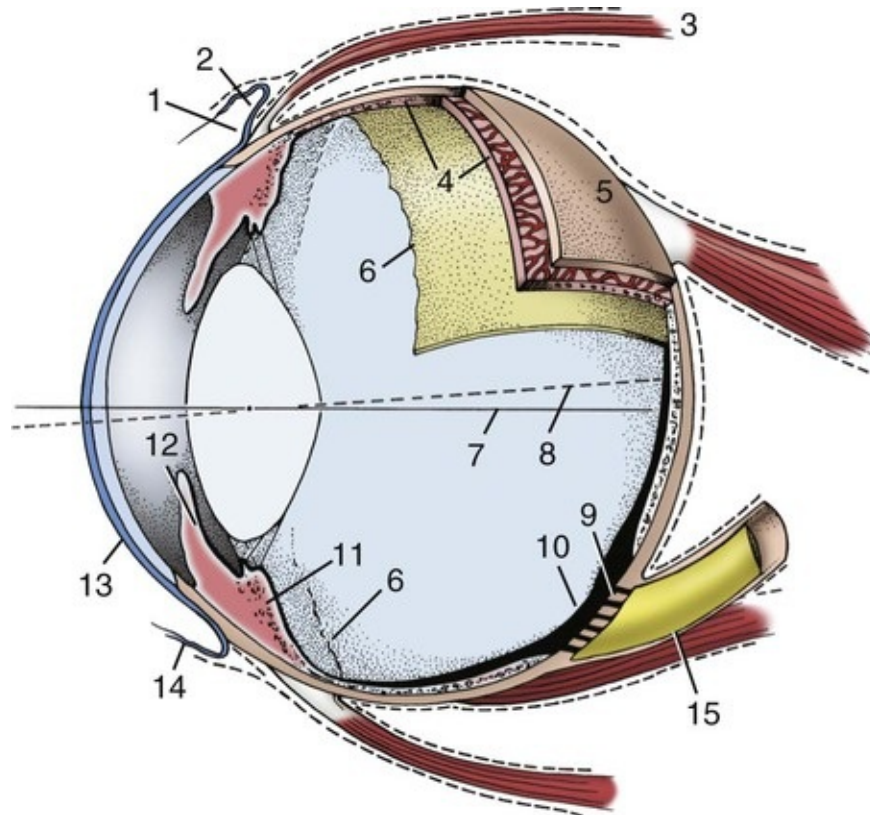


- 1. Sympathetic outflow from T1 to L3

2. Communicating branches
3. Sympathetic trunk
4. Sympathetic trunk
5. Cranial cervical ganglion
6. Cervicothoracic ganglion
- 6'. Middle cervical ganglion
- 6". Ansa subclavia
7. Vertebral nerve
8. Greater splanchnic nerve
9. Lesser splanchnic nerve
10. Celiac ganglion
11. Cranial mesenteric ganglion
12. Caudal mesenteric ganglion
13. Hypogastric nerve

Note: Origin and distribution of the sympathetic nervous system. Ventral view, schematic. The parasympathetic nuclei in brain and spinal cord are indicated (*in gray*).

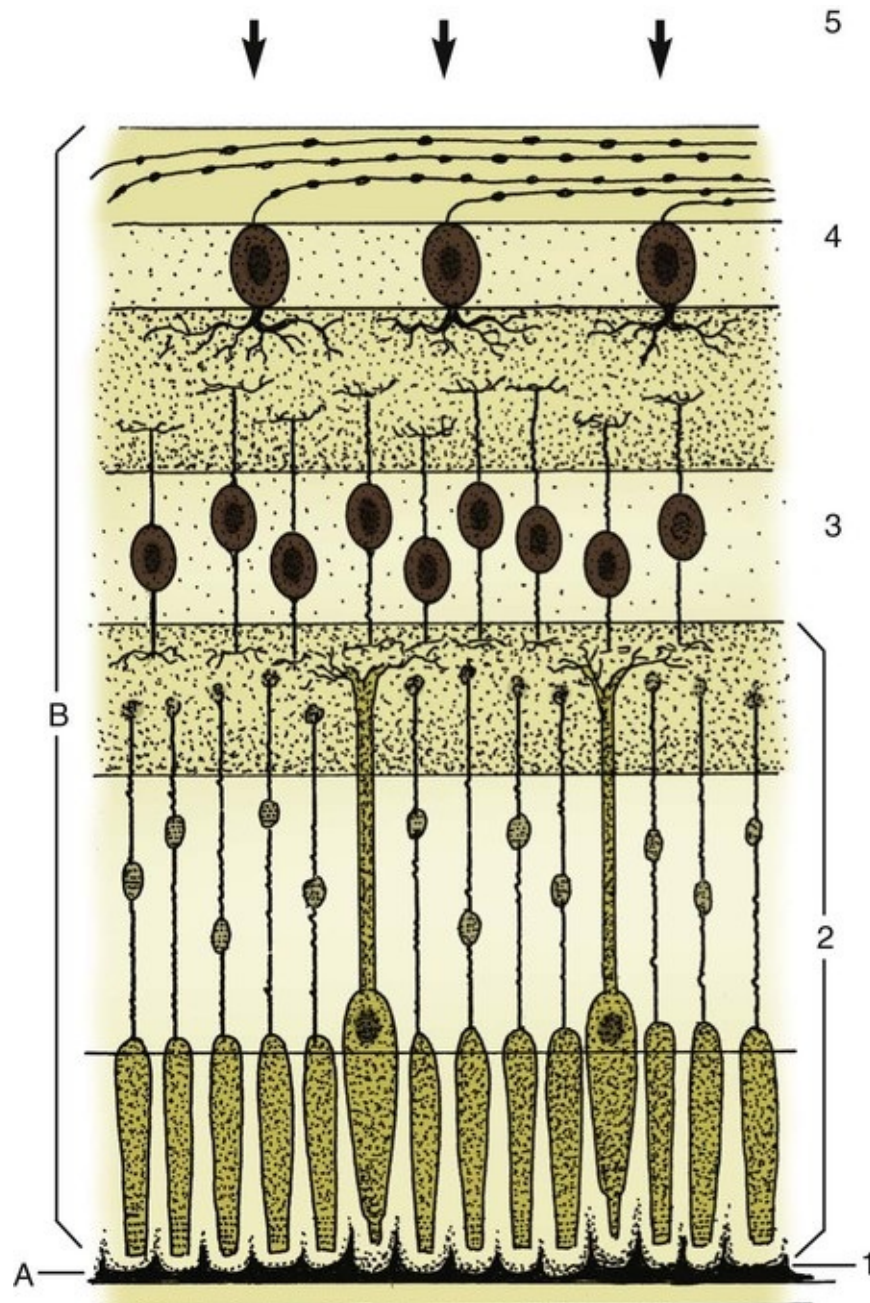
➤ 1-34 Canine: Three Tunics of the Eye



1. Limbus
2. Superior fornix
3. Dorsal rectus muscle
4. Choroid
5. Sclera
6. Ora serrata
7. Optic axis
8. Visual axis
9. Area cribrosa
10. Optic disc
11. Ciliary body
12. Iris
13. Cornea
14. Conjunctiva
15. Optic nerve

Note: Eye opened to show the three tunics (*drawn thicker than they actually are*).

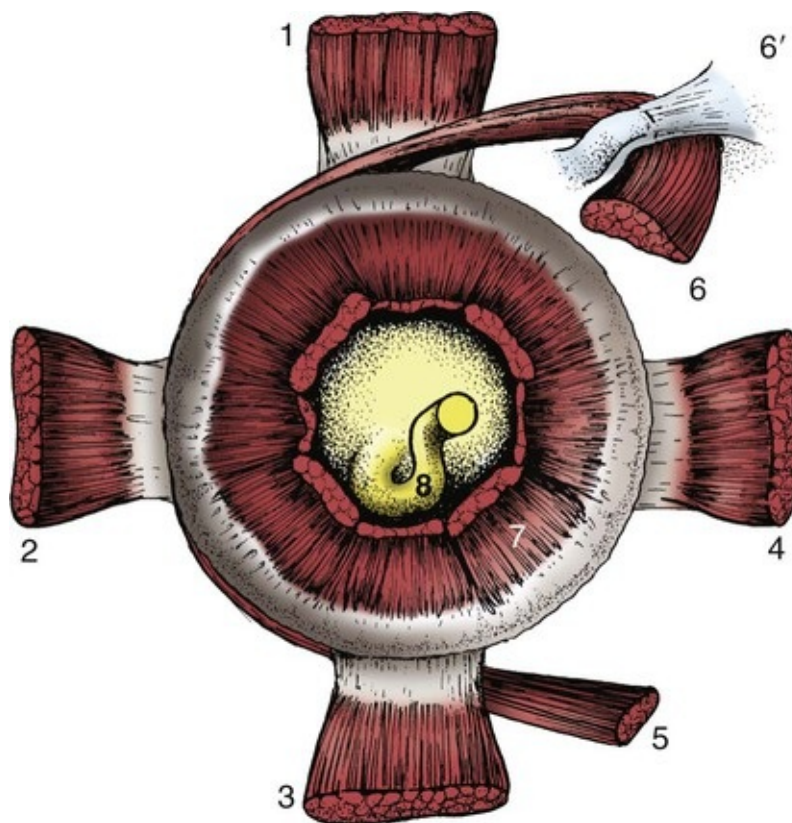
1-35 Canine: Retina



1. Pigmented cells
2. Receptor cells (rods and cones)
3. Bipolar ganglion cells
4. Multipolar ganglion cells
5. Incoming light (*arrows*)

Note: Outer pigmented layer (A) and inner neuroepithelial layer (B) of retina.

1-36 Canine: Stumps of the Ocular Muscles

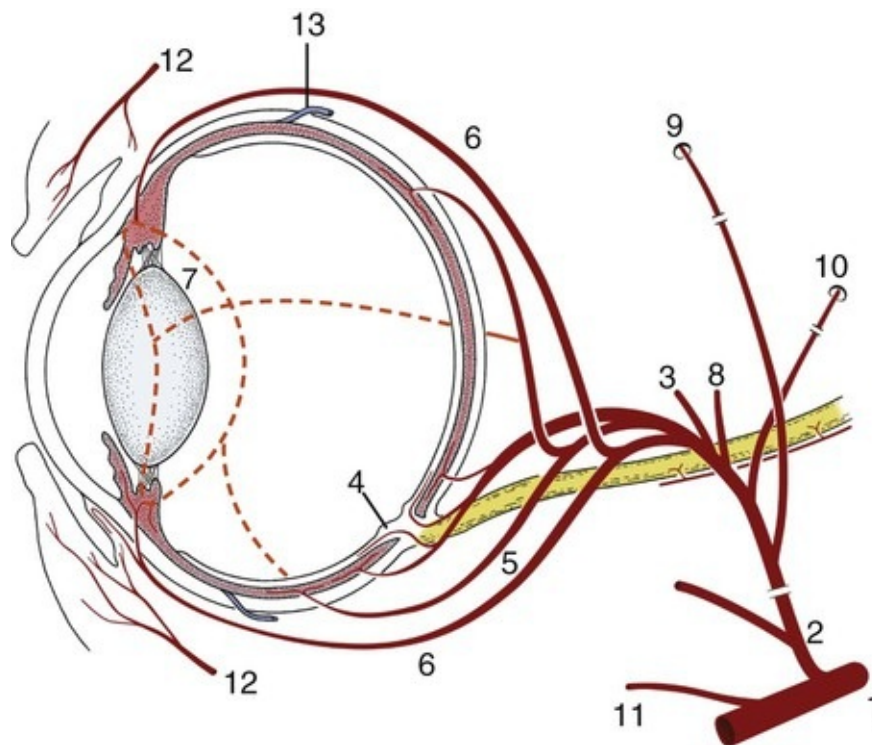


1. Dorsal rectus muscle
2. Lateral rectus muscle
3. Ventral rectus muscle
4. Medial rectus muscle
5. Ventral oblique muscle
6. Dorsal oblique muscle
- 6'. Trochlea

- 7. Retractor bulbi
- 8. Optic nerve

Note: Caudal view of left eyeball.

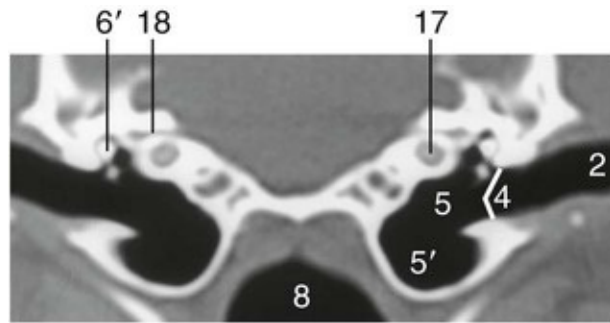
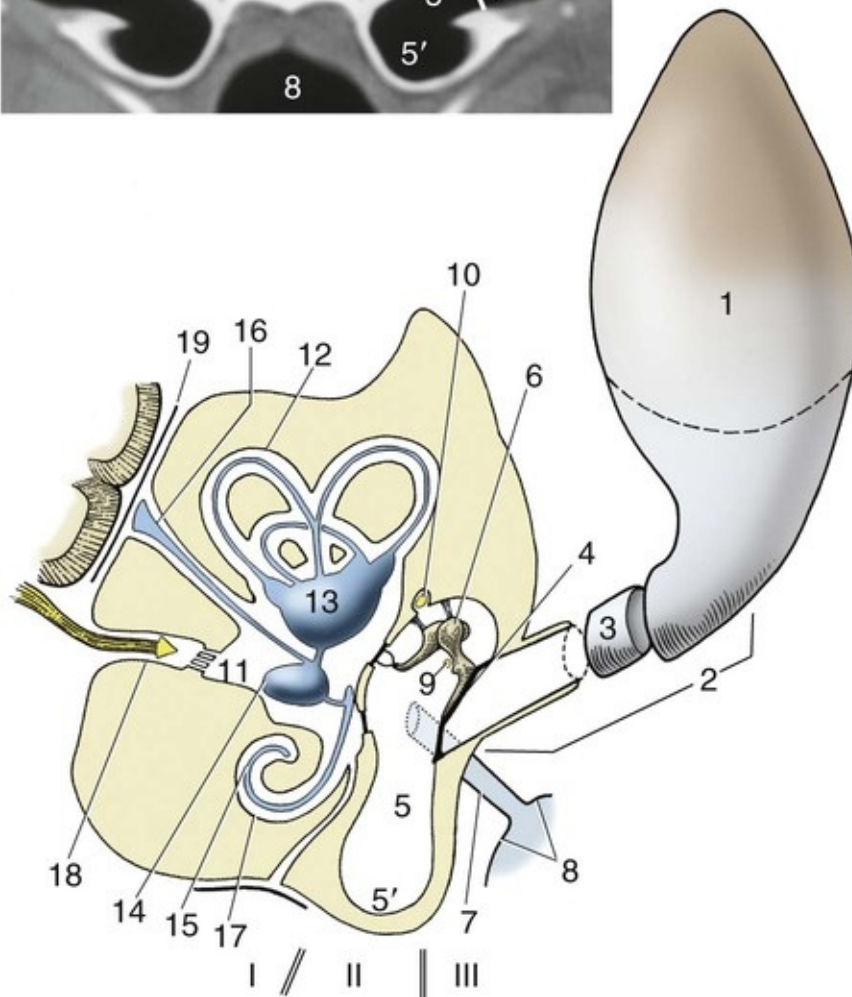
1-37 Canine: Principal Arteries Supplying the Eye



- 1. Maxillary artery
- 2. External ophthalmic artery
- 3. Lacrimal artery to lacrimal gland and superior eyelid
- 4. Retinal arteries
- 5. Long posterior ciliary artery
- 6. Anterior ciliary artery (substantial branches to 10 in horse, lesser branches in the other domestic species)

7. Greater arterial circle of the iris
8. Muscular branches
9. Supraorbital artery and foramen
10. External ethmoidal artery and foramen
11. Malar artery
12. Palpebral branches
13. Vorticose veins

➤ **1-38 Canine: CT Showing Ear Structures and Schema of the Ear**

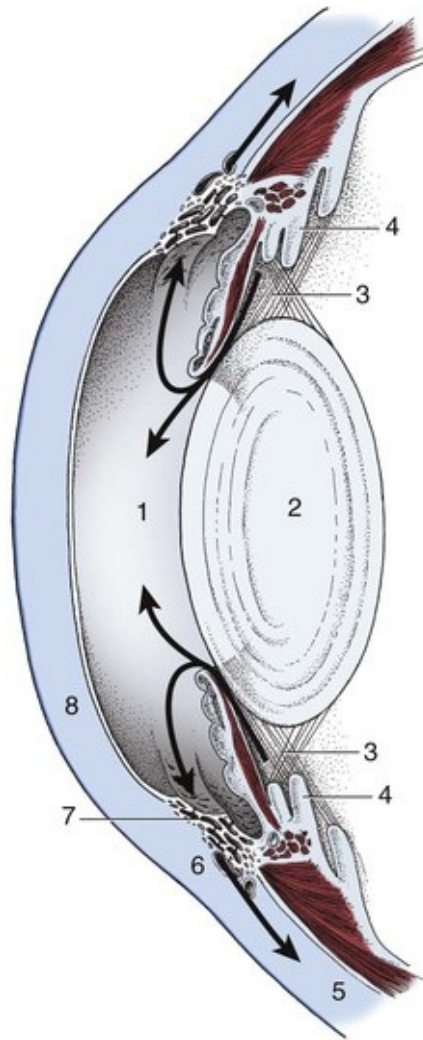


1. Auricle
2. External acoustic meatus
3. Annular
4. Tympanic membrane
5. Tympanic cavity
- 5'. Tympanic bulla
6. Auditory ossicles
- 6'. Malleus
7. Auditory tube

8. Nasopharynx
9. Chorda tympani
10. Facial nerve
11. Vestibule
12. Semicircular canals
13. Utricle
14. Sacculle
15. Cochlear duct
16. Endolymphatic duct
17. Cochlea
18. Internal acoustic meatus
19. Meninges

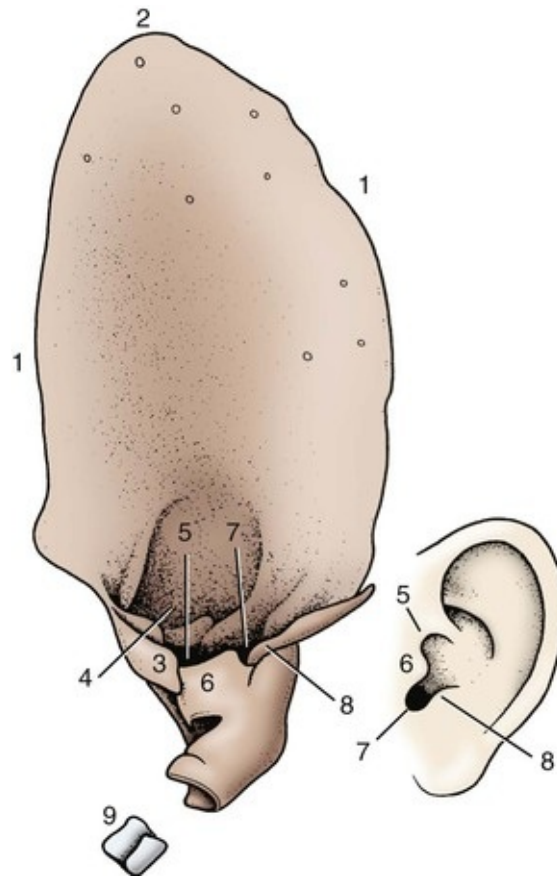
Note: Transverse image of a 2-mm-thick computed tomographic slice of the canine tympanic bullae and petrous temporal bones. (Bone settings are used.) The sizes of the structures shown are out of proportion to each other. *I*, Internal ear; *II*, middle ear; *III*, external ear.

❏ 1-39 Canine: The Flow (arrows) of Aqueous Humor



1. Anterior chamber
2. Lens
3. Zonular fibers
4. Ciliary body
5. Sclera
6. Venous plexus
7. Pectinate ligament
8. Cornea

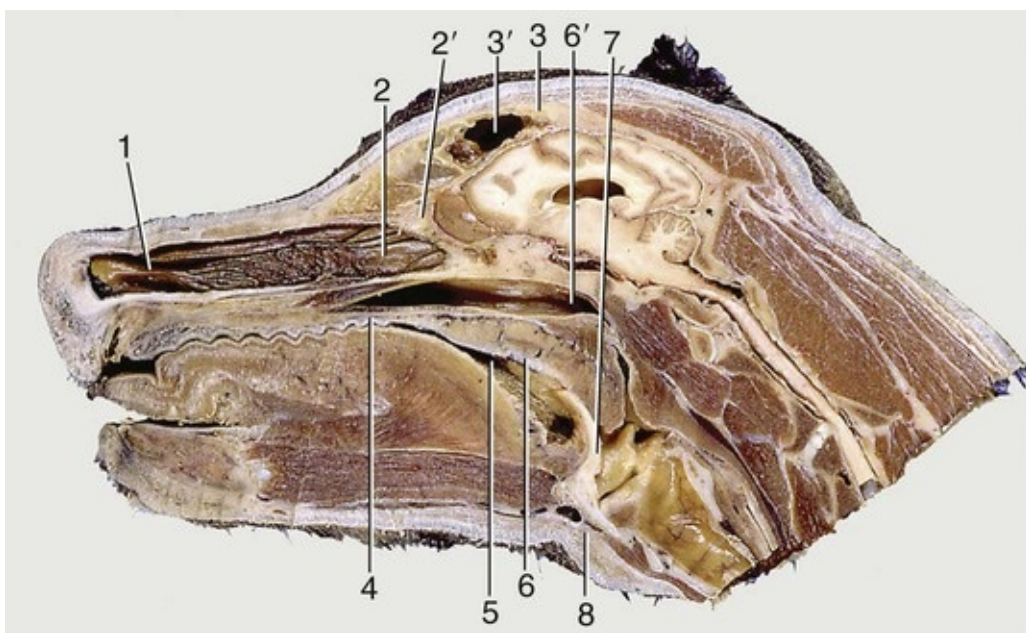
↻ 1-40 Canine: Left Auricular Cartilage



1. Helix
2. Apex
3. Medial crus of helix
4. Lateral crus of helix
5. Pretragic notch
6. Tragus
7. Intertragic notch
8. Antitragus
9. Annular cartilage

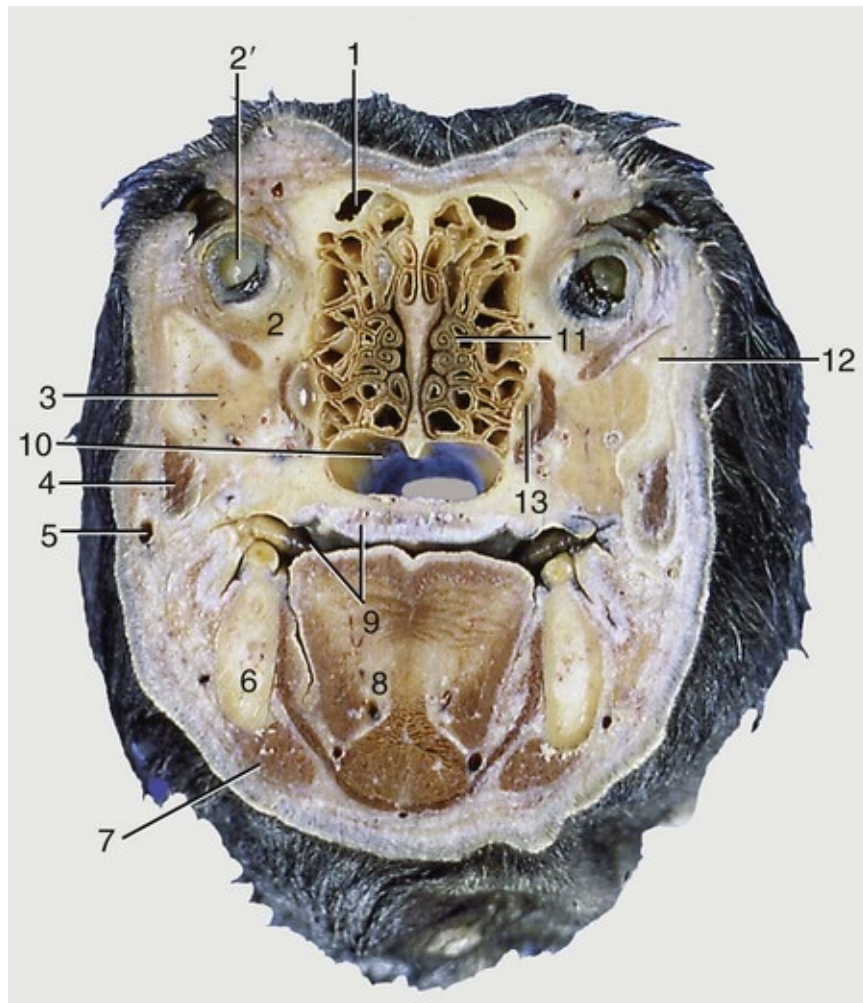
Note: Left auricular cartilage of dog compared with the human ear.

1-41 Canine: Paramedian Section of the Head



1. Ventral nasal concha
2. Ethmoid turbinates
- 2'. Cribriform plate
3. Frontal bone
- 3'. Frontal sinus
4. Hard palate
5. Oropharynx
6. Soft palate
- 6'. Nasopharynx
7. Epiglottis
8. Basihyoid

1-42 Canine: Head, Rostral Part of the Orbit

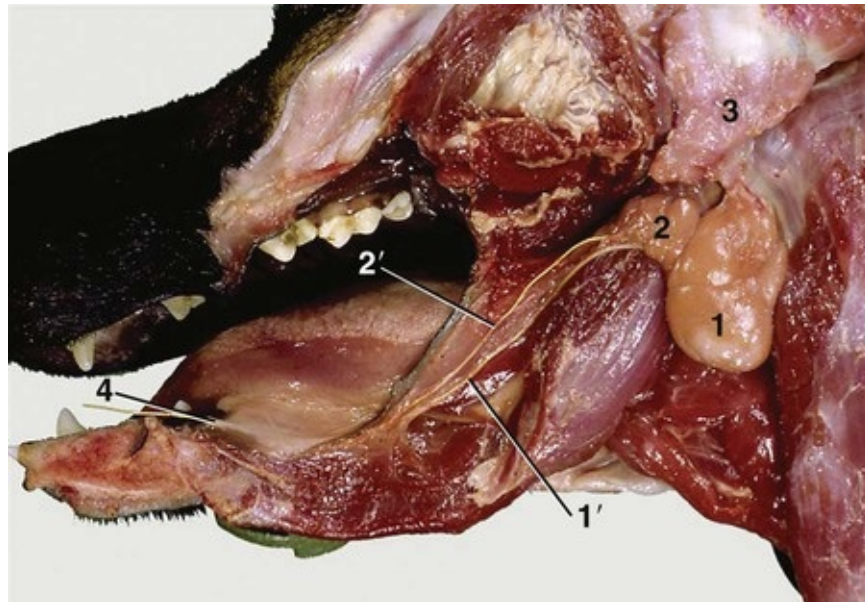


1. Frontal sinus
2. Orbital structures
- 2'. Eye
3. Zygomatic gland
4. Masseter
5. Facial vein
6. Mandible

7. Digastricus
8. Tongue
9. Oral cavity and hard palate
10. Choana
11. Ethmoid turbinates
12. Zygomatic arch
13. Maxillary recess

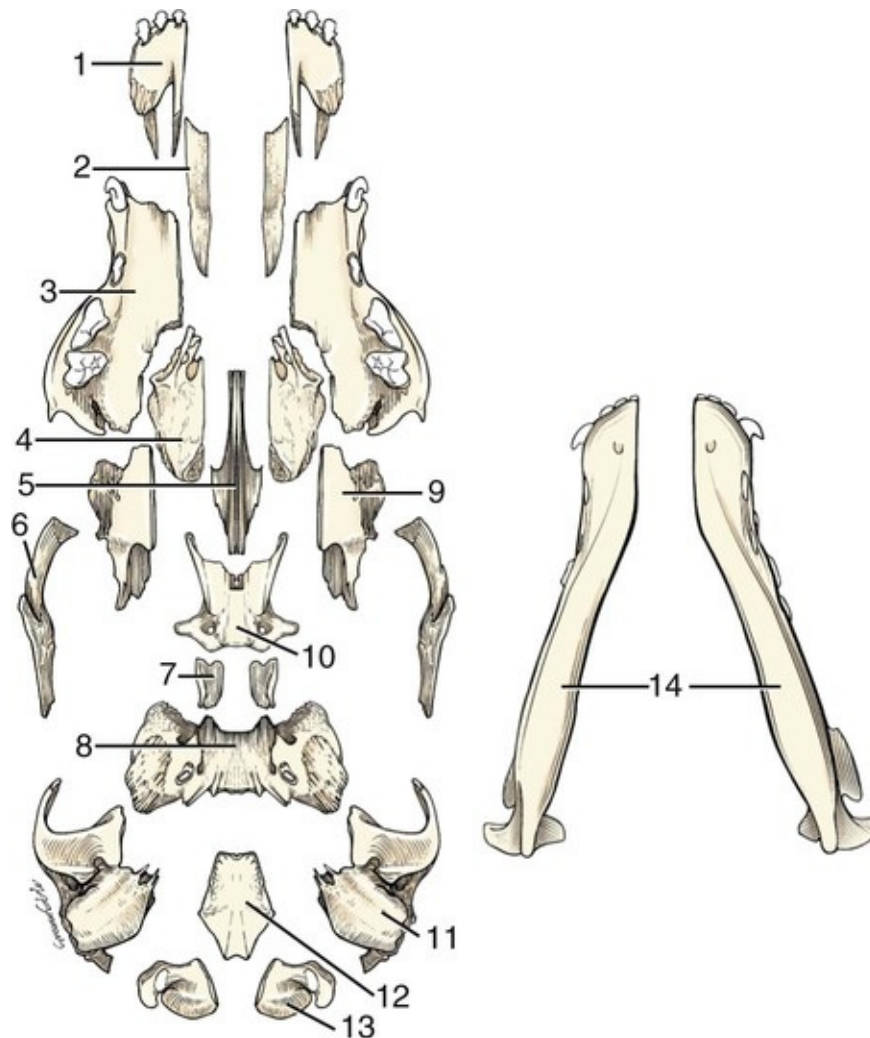
Note: Transverse section of the canine head through the rostral part of the orbit, rostral surface.

➤ 1-43 Canine: Salivary Glands



1. Mandibular gland
- 1'. Mandibular duct
2. Sublingual gland, monostomatic part
- 2'. Its duct
3. Parotid gland
4. Sublingual caruncle

1-44 Canine: Disarticulated Puppy Skull

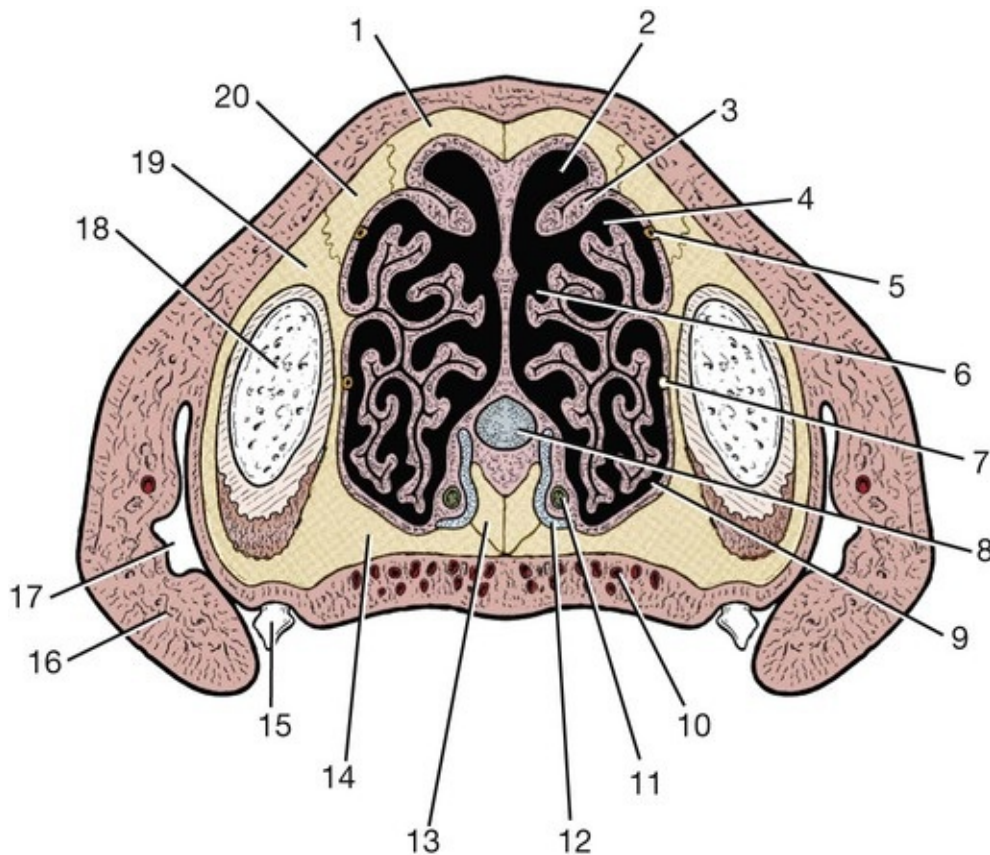


1. Incisive
2. Nasal
3. Maxilla
4. Ethmoid
5. Vomer
6. Zygomatic
7. Pterygoid
8. Basisphenoid

- 9. Palatine
- 10. Presphenoid
- 11. Temporal
- 12. Basioccipital
- 13. Exoccipital
- 14. Mandibles

Note: Ventral view.

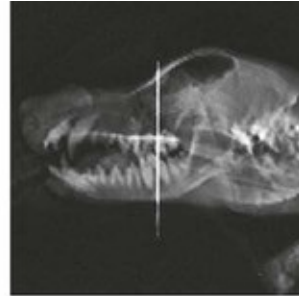
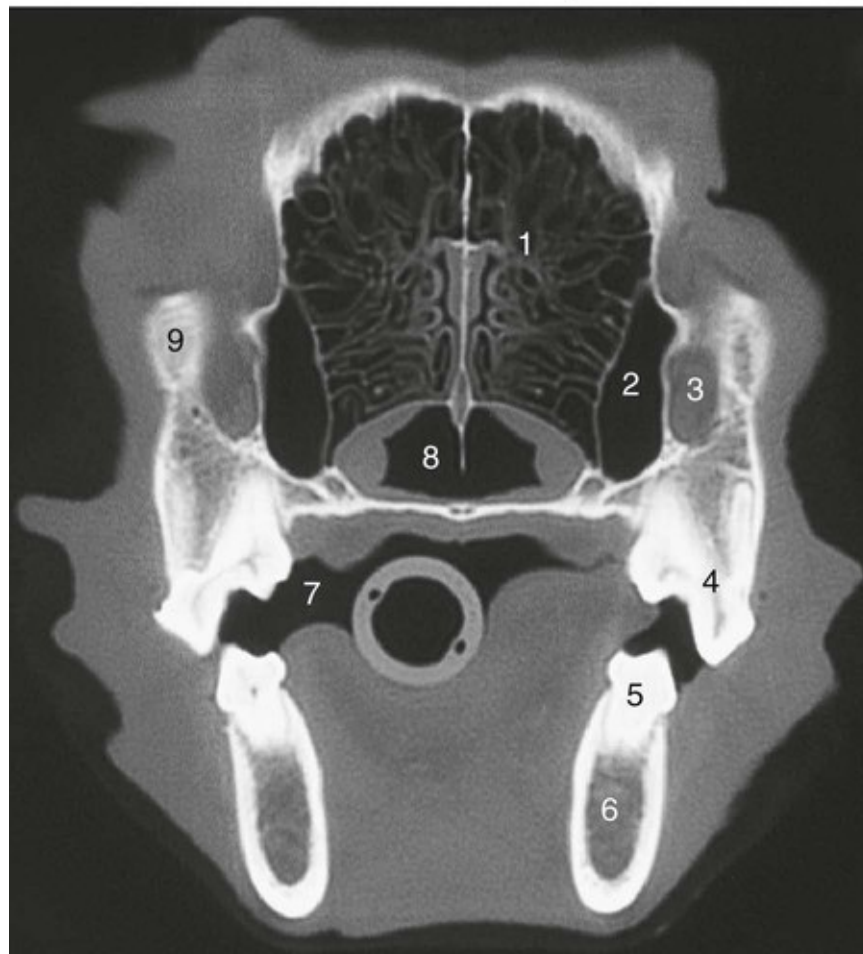
1-45 Canine: Traverse Section of the Nasal Cavity



1. Nasal
2. Dorsal nasal meatus
3. Dorsal nasal concha
4. Middle nasal meatus
5. Duct of lateral nasal gland
6. Common nasal meatus
7. Nasolacrimal duct
8. Cartilage of nasal septum
9. Ventral nasal meatus
10. Vascular plexus of hard palate
11. Vomeronasal organ

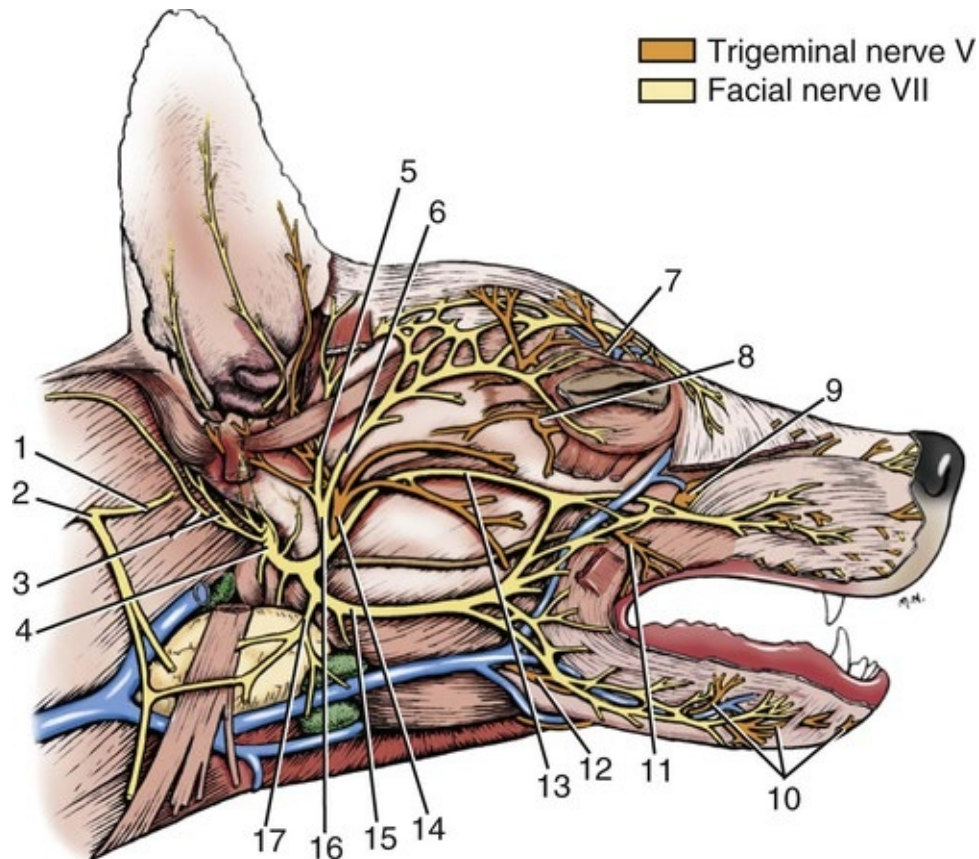
12. Vomeronasal cartilage
13. Palatine process of incisive
14. Palatine process of maxilla
15. First premolar
16. Lip
17. Vestibule
18. Canine tooth
19. Maxilla
20. Nasal process of incisive

➤ **1-46 Canine: CT Image of the Caudal Nasal Cavity**



1. Ethmoid turbinates
2. Maxillary recess
3. Maxillary foramen
4. Molar 1
5. Molar 1
6. Body-mandible
7. Oral cavity
8. Nasopharynx-caudal to choanae
9. Zygomatic bone

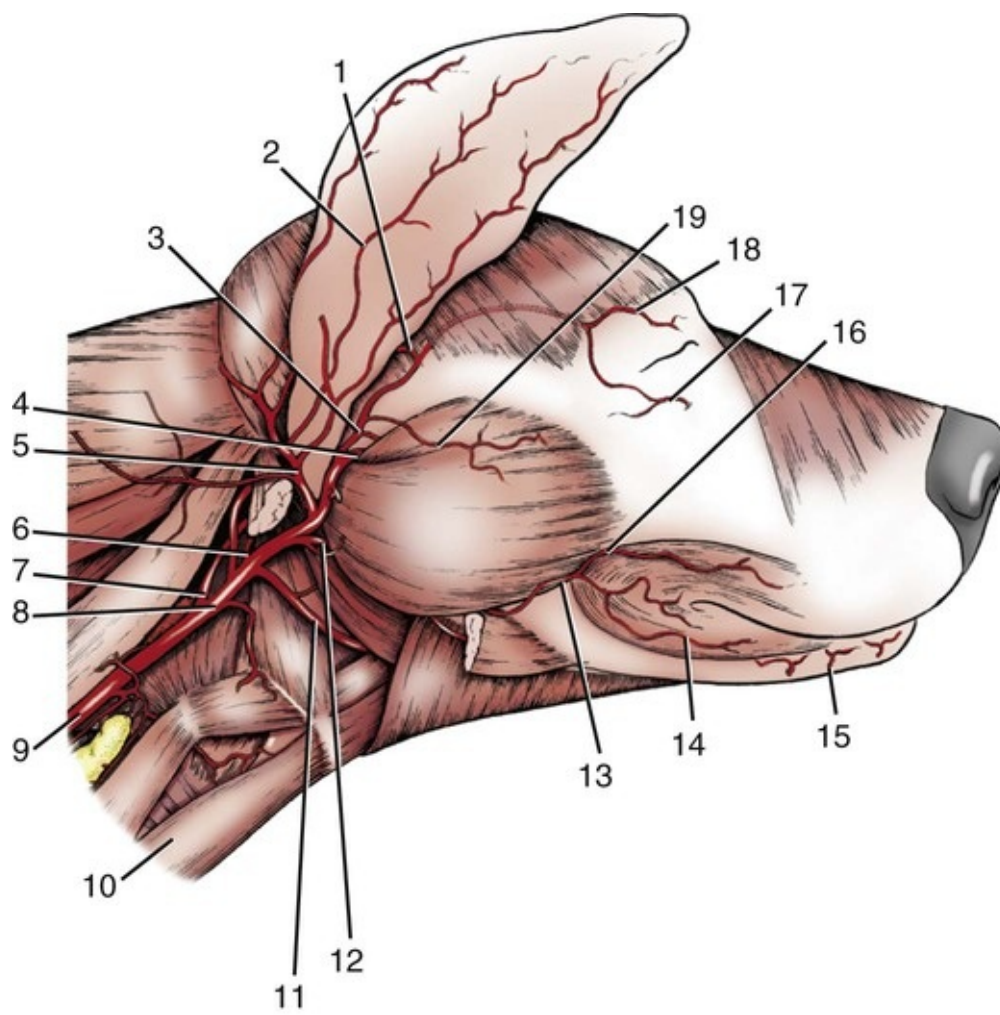
1-47 Canine: Superficial Branches of the Facial and Trigeminal Nerves



1. Great auricular nerve
2. C2, ventral branch
3. Caudal auricular branches
4. Facial nerve VII
5. Rostral auricular nerve
6. Palpebral nerve
7. Frontal nerve
8. Zygomaticofacial nerve
9. Infraorbital nerve
10. Mental nerves
11. Buccalis nerve

- 12. Branches of mylohyoid nerve
- 13. Dorsal buccal branch
- 14. Auriculotemporal nerve V
- 15. Ventral buccal branch
- 16. Auriculopalpebral nerve
- 17. Cervical branch

↻ 1-48 Canine: Branches of the Common Carotid Artery

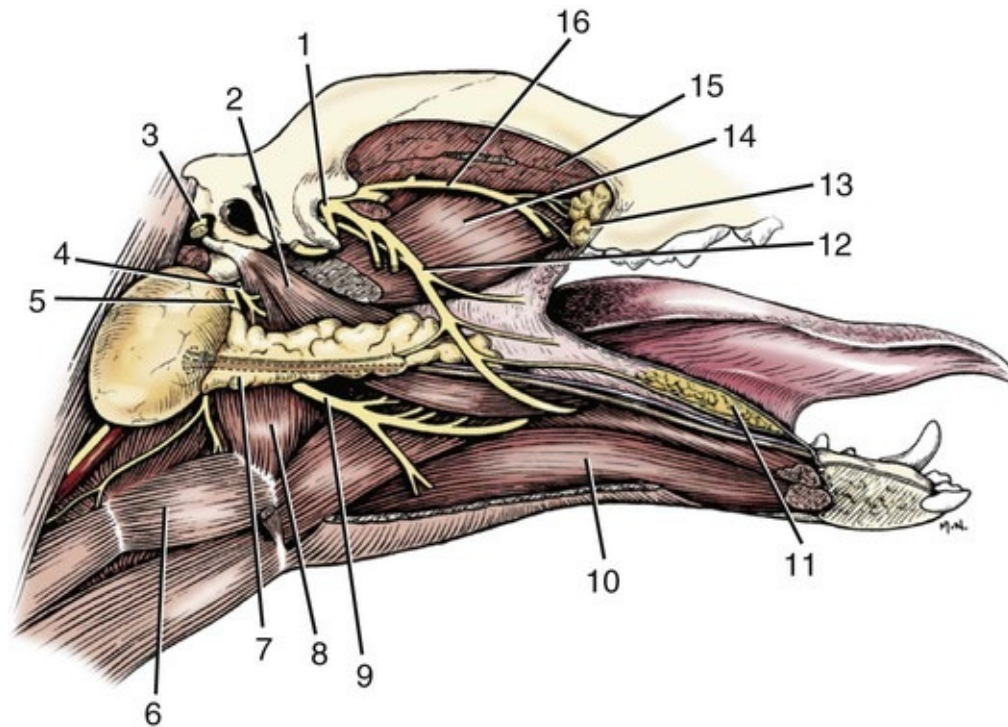


1. Rostral auricular

2. Intermediate auricular
3. Superficial temporal
4. Maxillary
5. Caudal auricular
6. Ascending pharyngeal
7. Internal carotid
8. External carotid
9. Common carotid
10. Sternohyoideus
11. Lingual
12. Facial
13. Facial
14. Inferior labial
15. Middle mental
16. Superior labial
17. Malar
18. Lateral superior palpebral
19. Transverse facial

Note: Superficial lateral view. A part of the digastricus is removed.

➤ **1-49 Canine: Muscles, Nerves, and Salivary Glands**

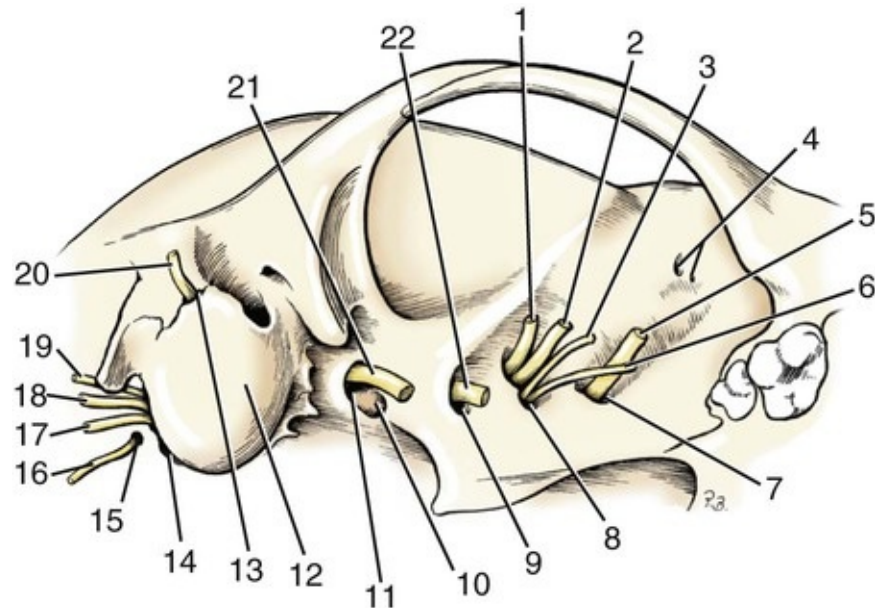


1. Mandibular branch of V
2. Stylopharyngeus
3. Facial nerve
4. Glossopharyngeal nerve
5. Hypoglossal nerve
6. Thyrohyoideus
7. Monostomatic sublingual gland
8. Hyopharyngeus
9. Hypoglossal nerve
10. Geniohyoideus
11. Polystomatic sublingual gland
12. Lingual nerve
13. Zygomatic gland
14. Medial pterygoid
15. Temporalis
16. Buccal nerve

Note: Medial to right mandible; lateral view.

➤ **1-50 Canine: Cranial Nerves Leaving the**

Skull

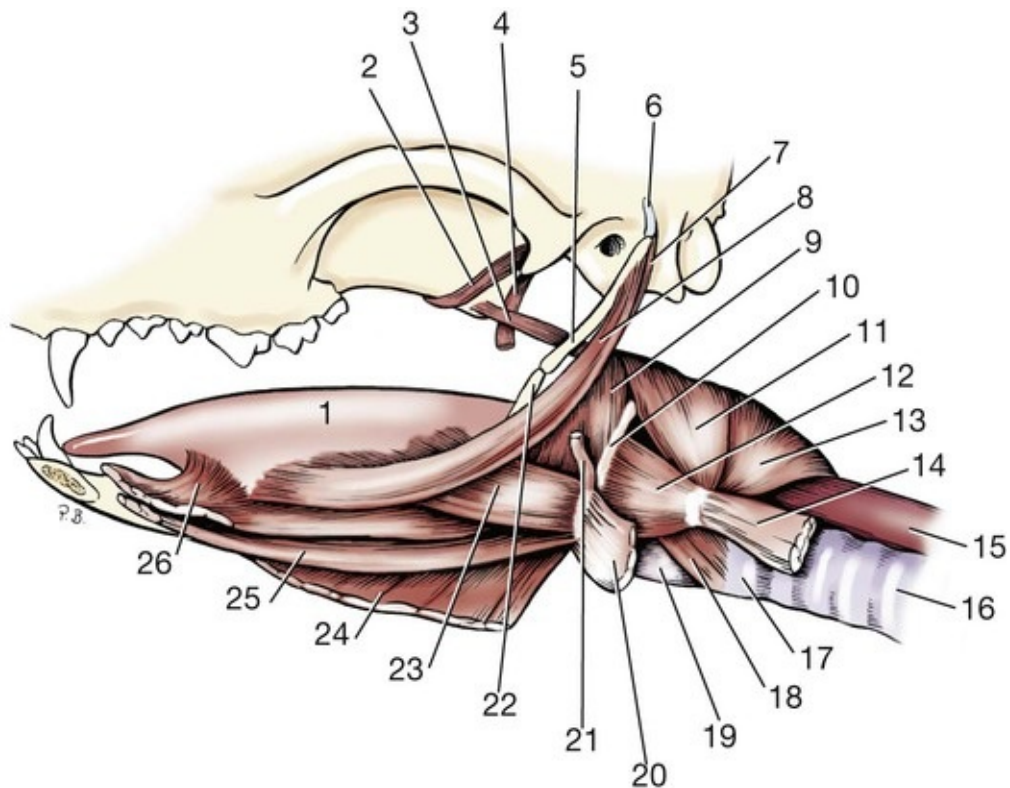


1. Oculomotor nerve
2. Ophthalmic nerve V
3. Abducent nerve
4. Ethmoidal foramina
5. Optic nerve
6. Trochlear nerve
7. Optic canal
8. Orbital fissure
9. Rostral alar foramen
10. Caudal alar foramen
11. Oval foramen
12. Tympanic bulla
13. Stylomastoid foramen
14. Tympano-occipital fissure
15. Hypoglossal canal
16. Hypoglossal nerve
17. Accessory nerve
18. Vagus nerve
19. Glossopharyngeal nerve
20. Facial nerve

- 21. Mandibular nerve V
- 22. Maxillary nerve V

Note: Ventrolateral view.

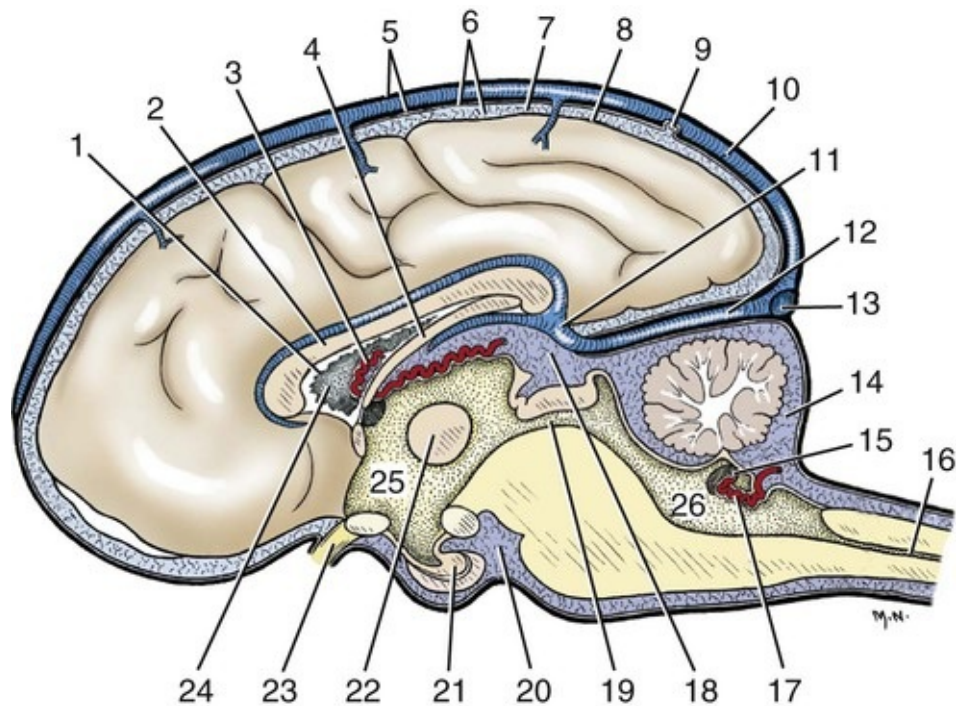
↻ 1-51 Canine: Muscles of the Pharynx and Tongue (Left Lateral View)



- 1. Tongue
- 2. Tensor veli palatine
- 3. Pterygopharyngeus
- 4. Levator veli palatine
- 5. Stylohyoid bone
- 6. Tympanohyoid cartilage
- 7. Stylopharyngeus
- 8. Styloglossus
- 9. Hyopharyngeus

10. Thyrohyoid bone
11. Thyropharyngeus
12. Thyrohyoideus
13. Cricopharyngeus
14. Sternothyroideus
15. Esophagus
16. Tracheal
17. Cricoid cartilage
18. Cricothyroideus
19. Thyroid cartilage
20. Sternohyoideus
21. Stylohyoideus
22. Epihyoid bone
23. Hyoglossus
24. Mylohyoideus
25. Geniohyoideus
26. Genioglossus

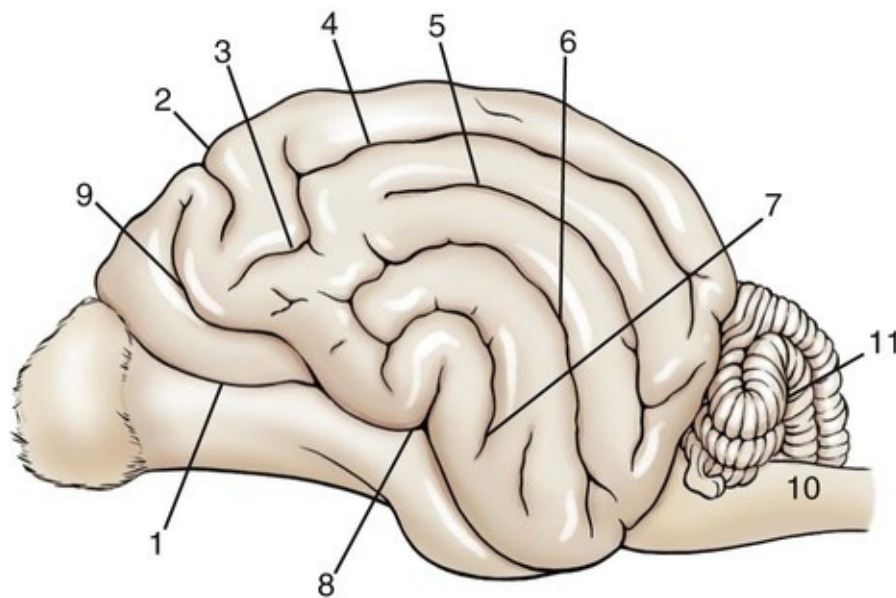
➤ 1-52 Canine: Meninges and Ventricles of the Brain, Median Plane



1. Cut edge of septum pellucidum
2. Corpus callosum
3. Choroid plexus, lateral ventricle
4. Fornix of hippocampus
5. Dura
6. Arachnoid membrane and trabeculae
7. Subarachnoid space
8. Pia
9. Arachnoid villus
10. Dorsal sagittal sinus
11. Great cerebral vein
12. Straight sinus
13. Transverse sinus
14. Cerebellomedullary cistern
15. Lateral aperture of fourth ventricle
16. Central canal
17. Choroid plexus, fourth ventricle
18. Quadrigeminal cistern
19. Mesencephalic aqueduct
20. Intercrural cistern
21. Neurohypophysis
22. Interthalamic adhesion

- 23. Optic nerve
- 24. Lateral ventricle over caudate nucleus
- 25. Third ventricle
- 26. Fourth ventricle

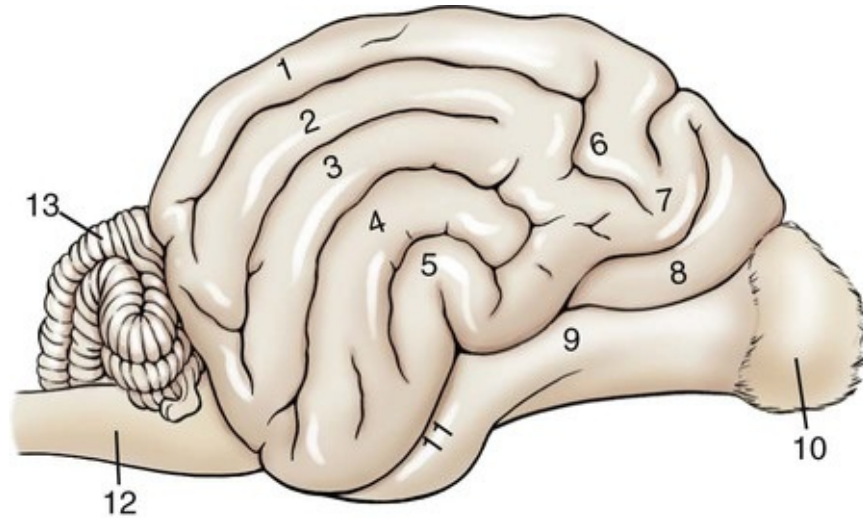
↻ 1-53 Canine: Sulci of the Brain



- 1. Rhinal
- 2. Cruciate
- 3. Coronal
- 4. Marginal
- 5. Ectomarginal
- 6. Suprasylvian
- 7. Ectosylvian
- 8. Sylvian
- 9. Presylvian
- 10. Brainstem
- 11. Cerebellum

Note: Left lateral view.

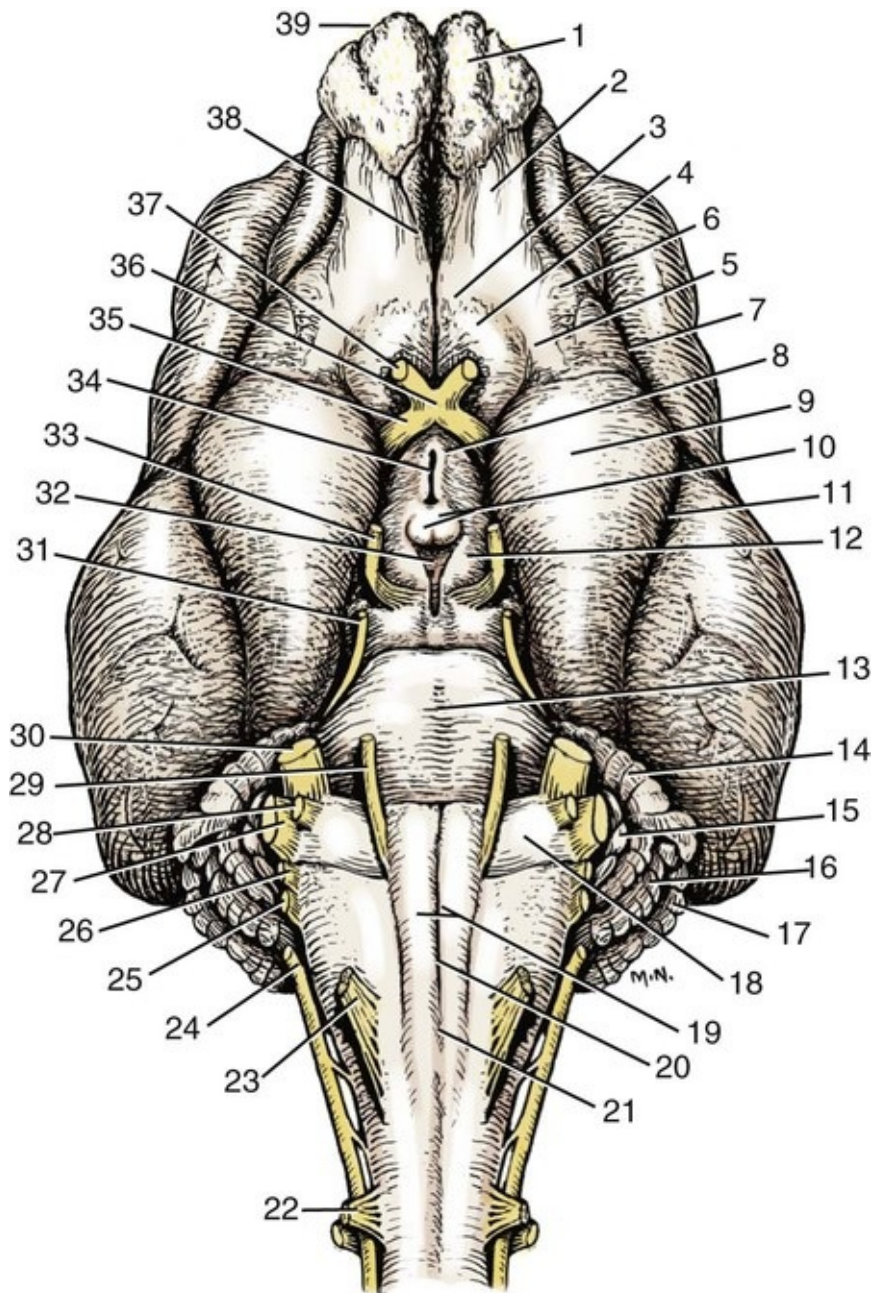
↻ 1-54 Canine: Gyri of the Brain



1. Marginal
2. Ectomarginal
3. Suprasylvian
4. Ectosylvian
5. Sylvian
6. Postcruciate
7. Precruciate
8. Prorean
9. Olfactory peduncle
10. Olfactory bulb
11. Piriform lobe
12. Brainstem
13. Cerebellum

Note: Right lateral view.

↻ 1-55 Canine: Brain, Cranial Nerves, and Brainstem



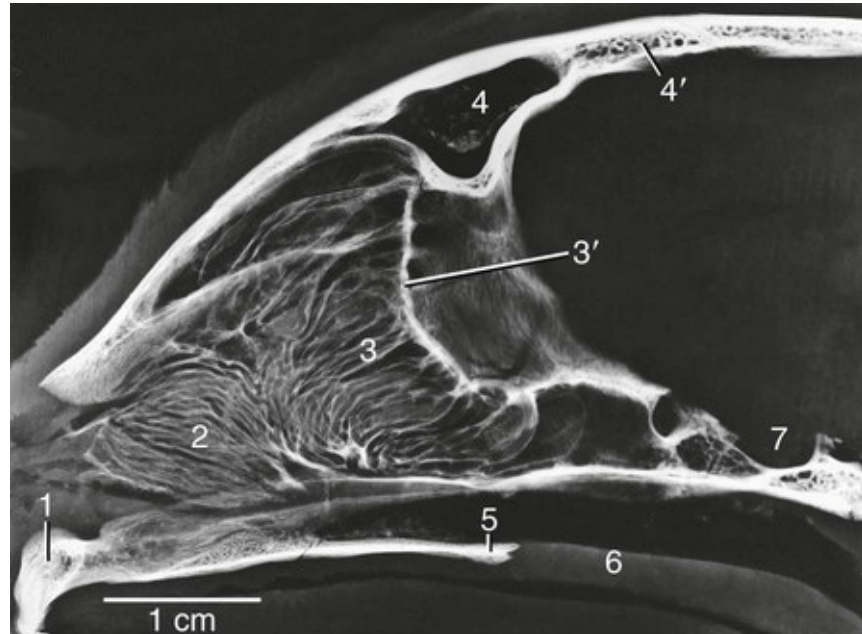
1. Olfactory bulb
2. Olfactory peduncle
3. Medial olfactory tract
4. Rostral perforated substance
5. Lateral olfactory tract
6. Lateral olfactory gyrus
7. Rostral rhinal sulcus
8. Tuber cinereum
9. Piriform lobe

10. Mammillary bodies
11. Caudal rhinal sulcus
12. Crus cerebri
13. Pons, transverse fibers
14. Ventral paraflocculus
15. Flocculus
16. Dorsal paraflocculus
17. Ansiform lobule
18. Trapezoid body
19. Pyramids
20. Ventral median fissure
21. Decussation of pyramids
22. First cervical spinal nerve
23. Hypoglossal nerve
24. Accessory nerve
25. Vagus nerve
26. Glossopharyngeal nerve
27. Vestibulocochlear nerve
28. Facial nerve
29. Abducent nerve
30. Trigeminal nerve
31. Trochlear nerve
32. Caudal perforated substance in interpeduncular fossa
33. Oculomotor nerve
34. Infundibulum
35. Optic tract
36. Optic chiasm
37. Optic nerve
38. Medial rhinal sulcus
39. Olfactory nerve

Note: Ventral view.

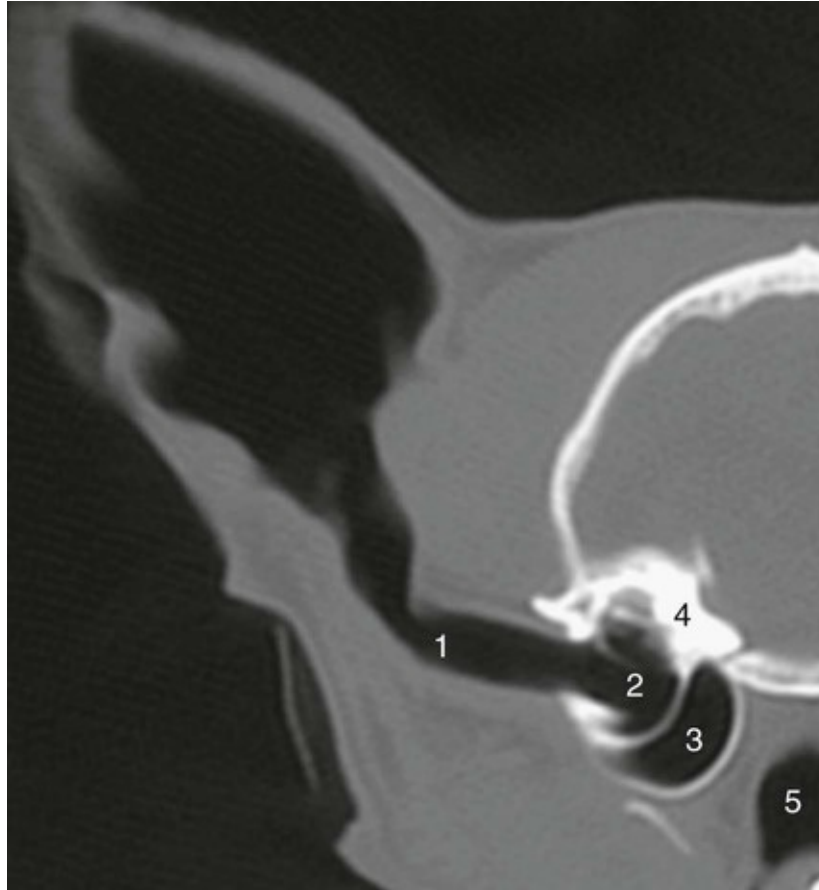
🔗 1-56 Feline: Tomogram of the Nasal

Cavity



1. Right nostril
2. Ventral nasal concha
3. Ethmoid turbinates
- 3'. Cribriform plate
4. Frontal sinus
- 4'. Frontal bone
5. Hard palate
6. Soft palate
7. Hypophysial fossa

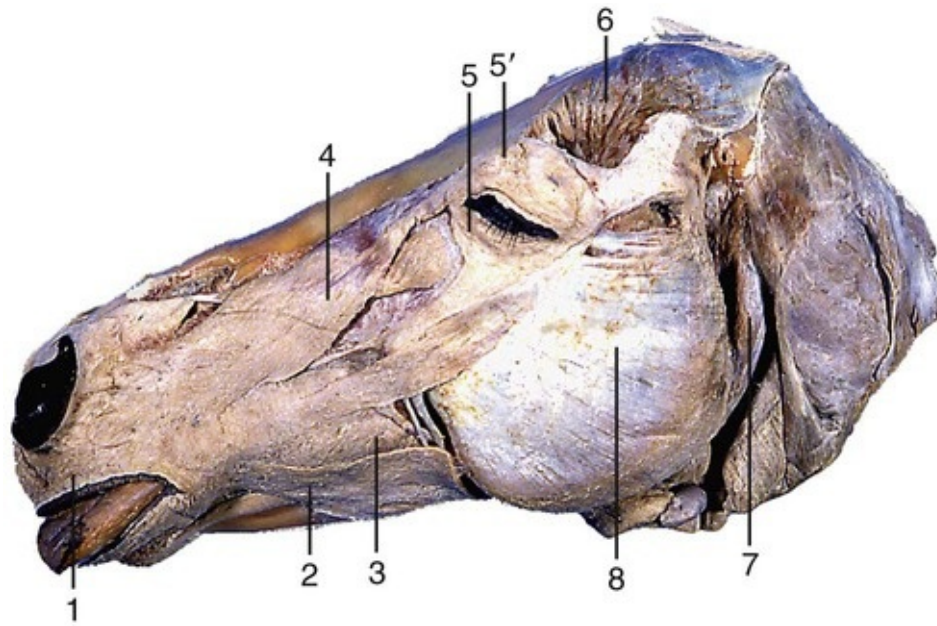
1-57 Feline: Ear Canal and Middle Ear



- 1. Ear canal
- 2, 3. Tympanic cavity
- 4. Petrous temporal bone
- 5. Nasopharynx

Note: Transverse CT scan (bone window) of half of a feline head shows the ear canal and middle ear.

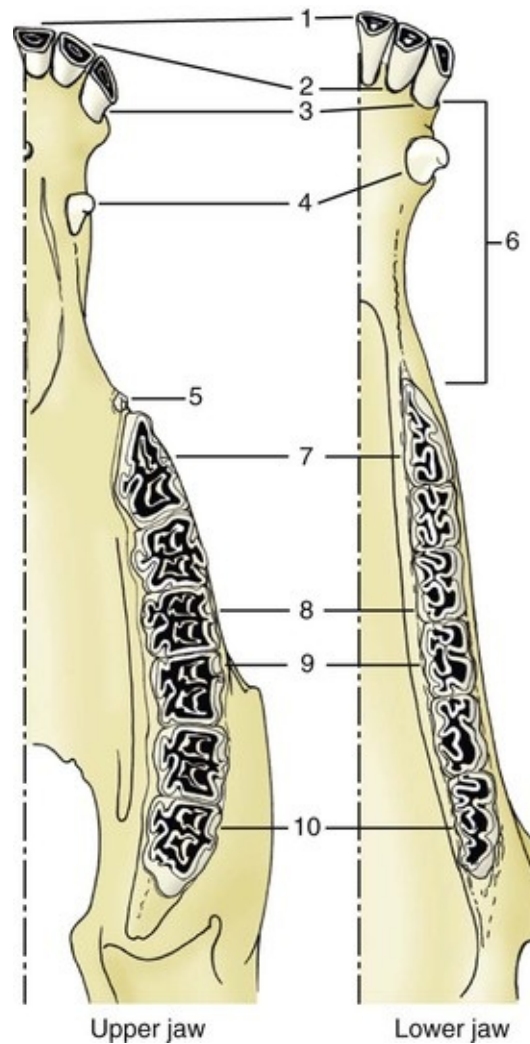
🐾 1-58 Equine: Superficial Muscles of the Head



1. Orbicularis oris
2. Depressor labii inferioris
3. Buccinator
4. Levator nasolabialis
5. Orbicularis oculi
- 5'. Levator anguli oculi medialis
6. Temporalis
7. Occipitomandibular part of digastricus
8. Masseter

Note: The cutaneous muscle has been removed.

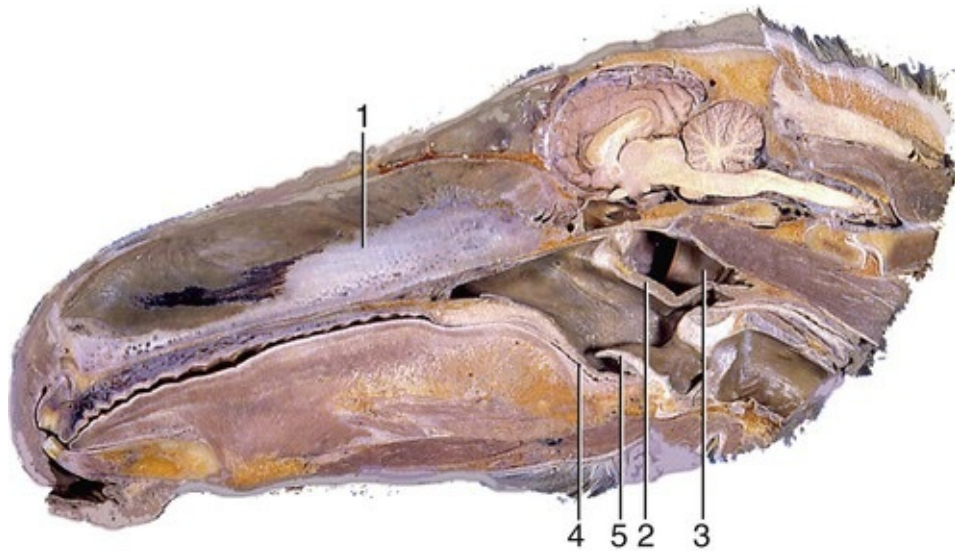
➤ **1-59 Equine: Permanent Dentition**



1. I1
2. I2
3. I3
4. Canine
5. P1 (wolf tooth)
6. Diastema
7. P2
8. P4
9. M1
10. M3

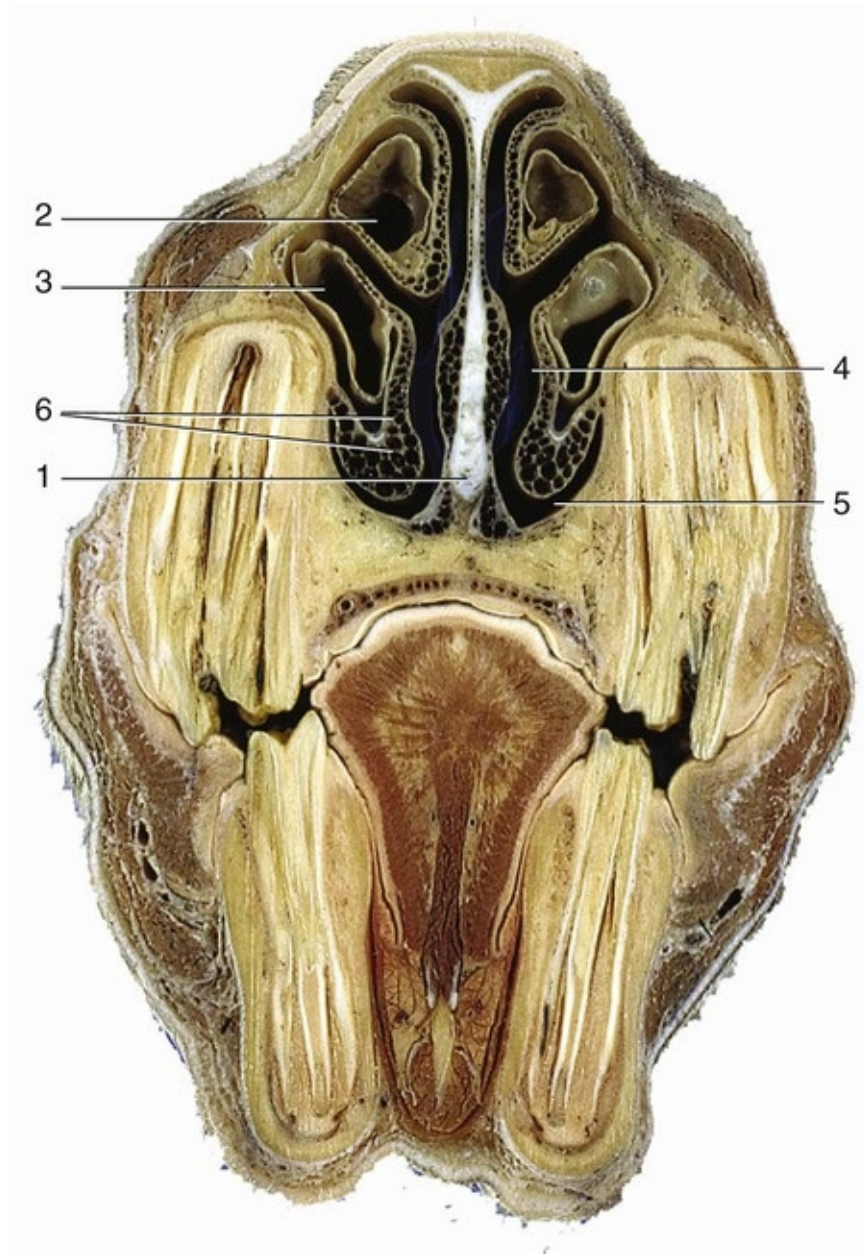
Note: Superior jaw (*left*) and lower jaw (*right*) are illustrated.

• 1-60 Equine: Paramedian Section of the Head



1. Nasal septum
2. Roof of the nasopharynx
3. Guttural pouch
4. Oropharynx
5. Epiglottis

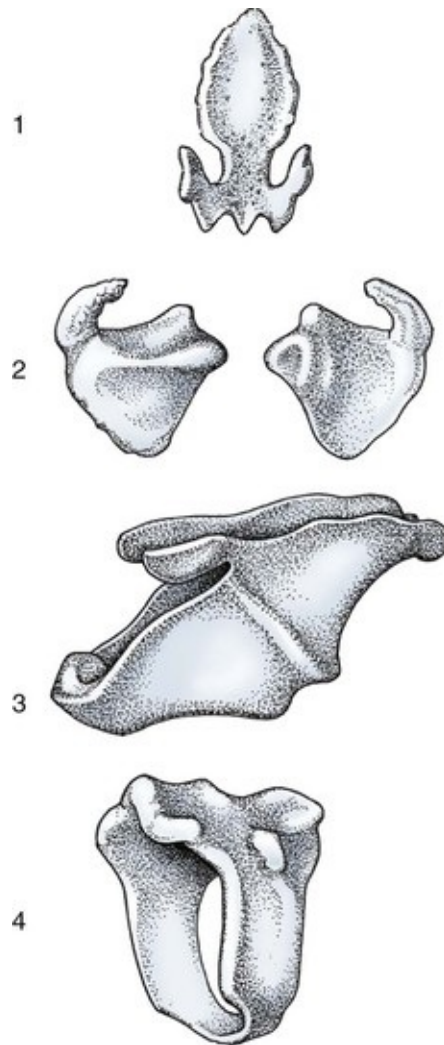
• 1-61 Equine: Head at the Level of P4



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

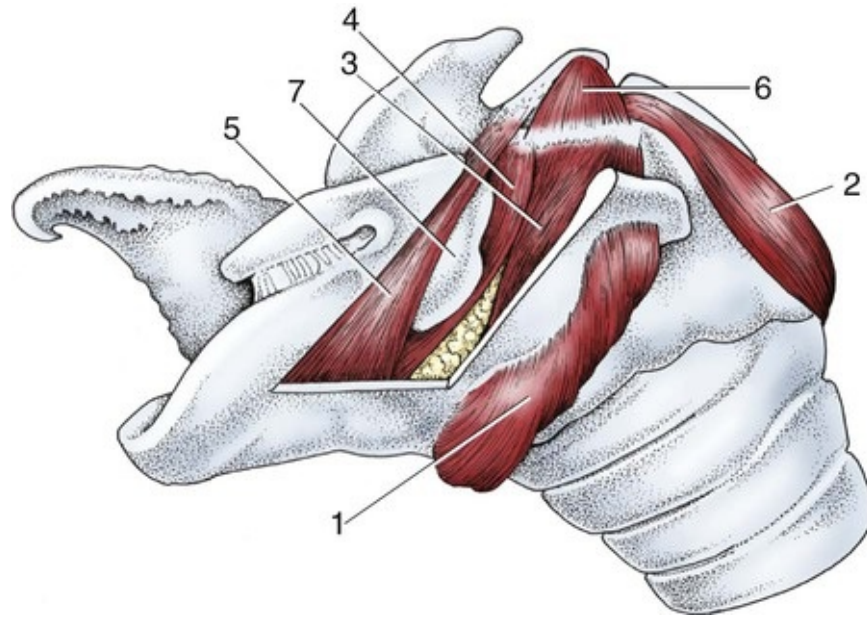
Note: Transverse section.

1-62 Equine: Laryngeal Cartilages



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

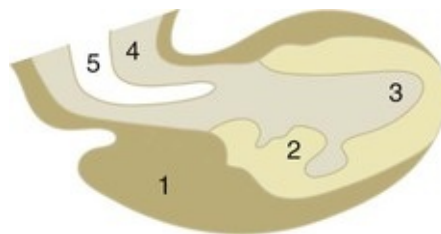
1-63 Equine: Intrinsic Muscles of the Larynx



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.

➤ 1-64 Equine: Hypophysis

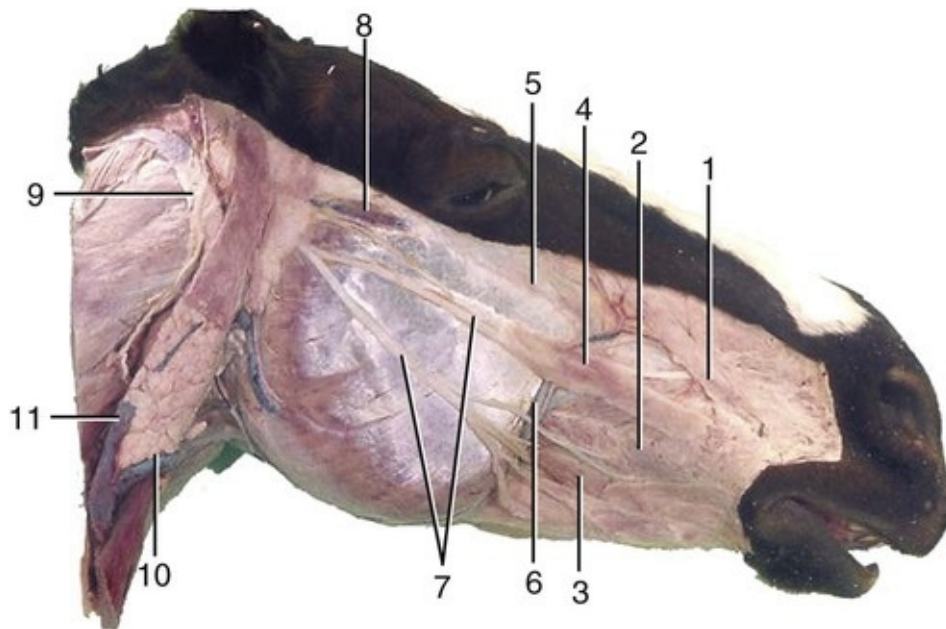


1. Adenohypophysis
2. Intermediate part
3. Neurohypophysis

4. Hypophysial stalk
5. Recess of third ventricle

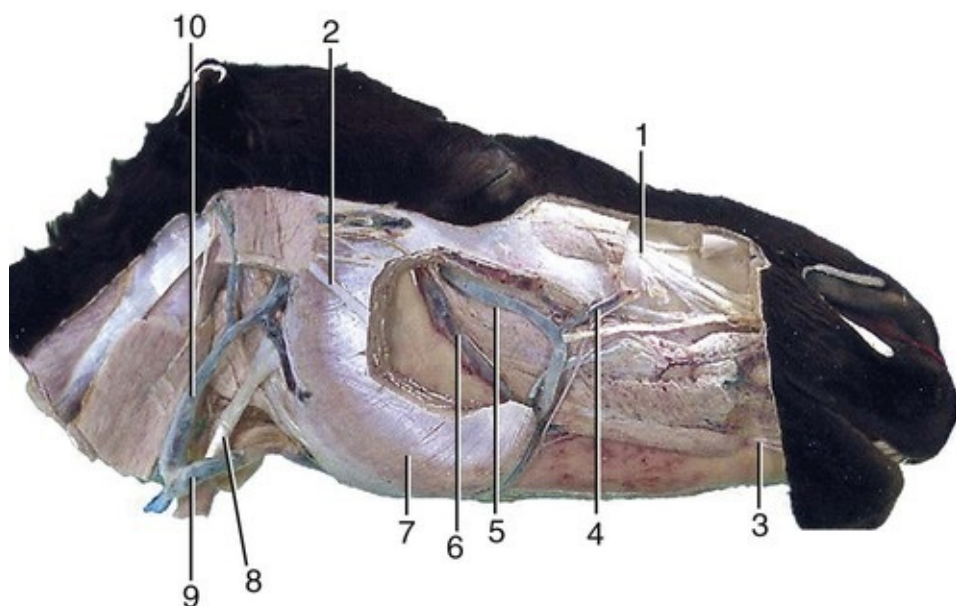
Note: Median section of the hypophysis of the horse. The rostral extremity of the gland is to the left.

1-65 Equine: Superficial Dissection of the Head



1. Levator nasolabialis
2. Buccinator
3. Depressor labii inferioris
4. Zygomaticus
5. Levator labii superioris
6. Facial artery and vein
7. Buccal branches of facial nerve
8. Transverse facial artery and vein and transverse facial branch of auriculotemporal nerve
9. Great auricular nerve (C2)
10. Linguofacial vein
11. Maxillary vein

1-66 Equine: Deeper Dissection of the Head

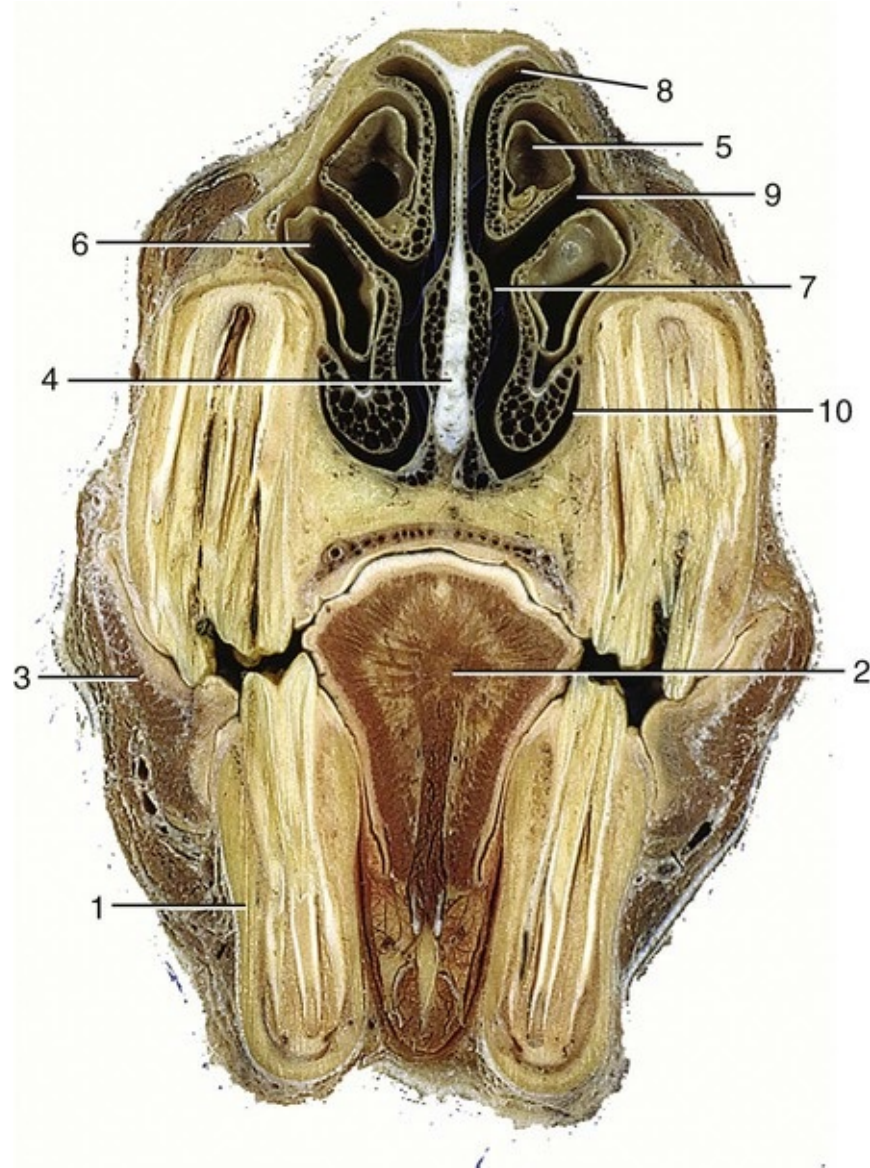


1. Infraorbital nerve
2. Dorsal buccal branch of facial nerve
3. Mental nerve
4. Transverse facial vein
5. Deep facial vein
6. Buccal vein
7. Masseter
8. Sternocephalicus
9. Linguofacial vein
10. Maxillary vein

Note: Parts of the superficial muscles, masseter, and parotid gland have been removed.

1-67 Equine: Head at the Level of the

Rostral Maxillary Sinus

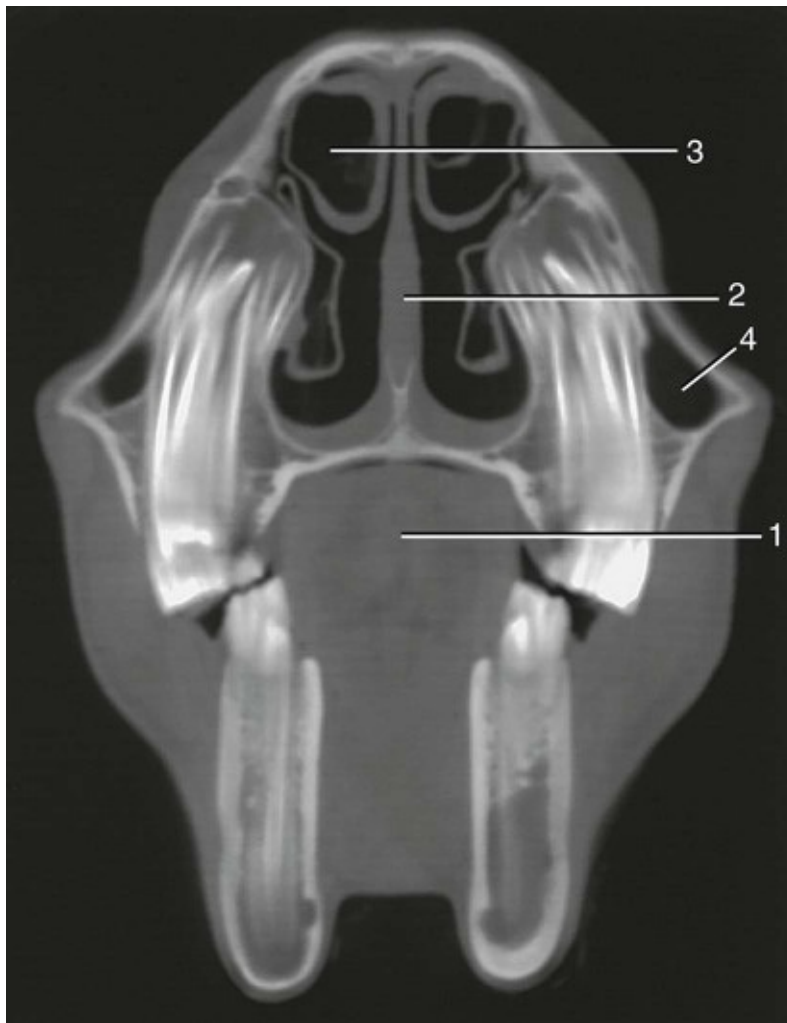


1. P4
2. Tongue
3. Buccinator
4. Nasal septum
5. Dorsal nasal concha
6. Ventral nasal concha
7. Common nasal meatus
8. Dorsal nasal meatus

- 9. Middle nasal meatus
- 10. Ventral nasal meatus

Note: Transverse section.

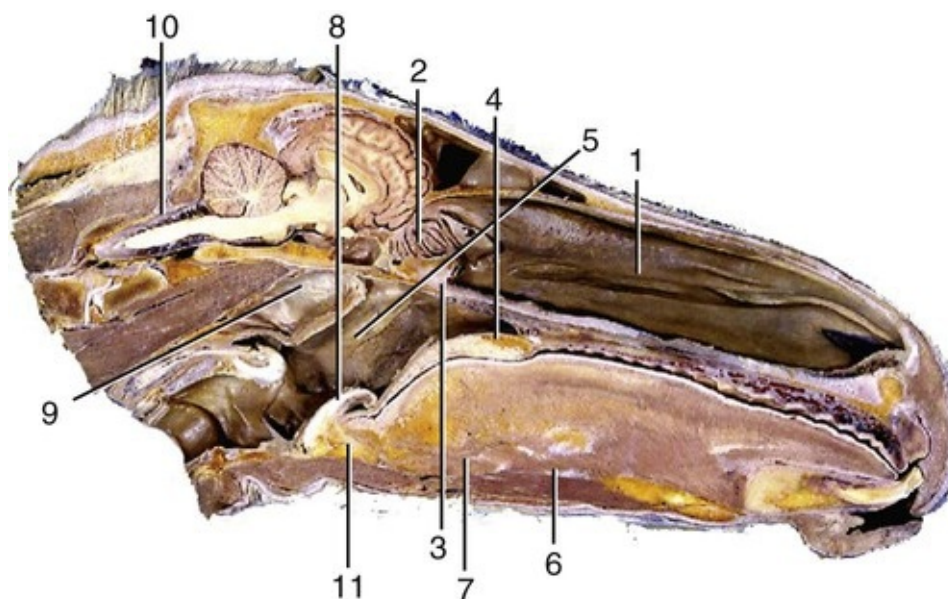
• 1-68 Equine: CT Scan (Bone Window) of Head at Level of the Rostral Maxillary Sinus



- 1. Tongue
- 2. Nasal septum

3. Dorsal nasal concha
4. Maxillary sinus

1-69 Equine: Median Section of the Head

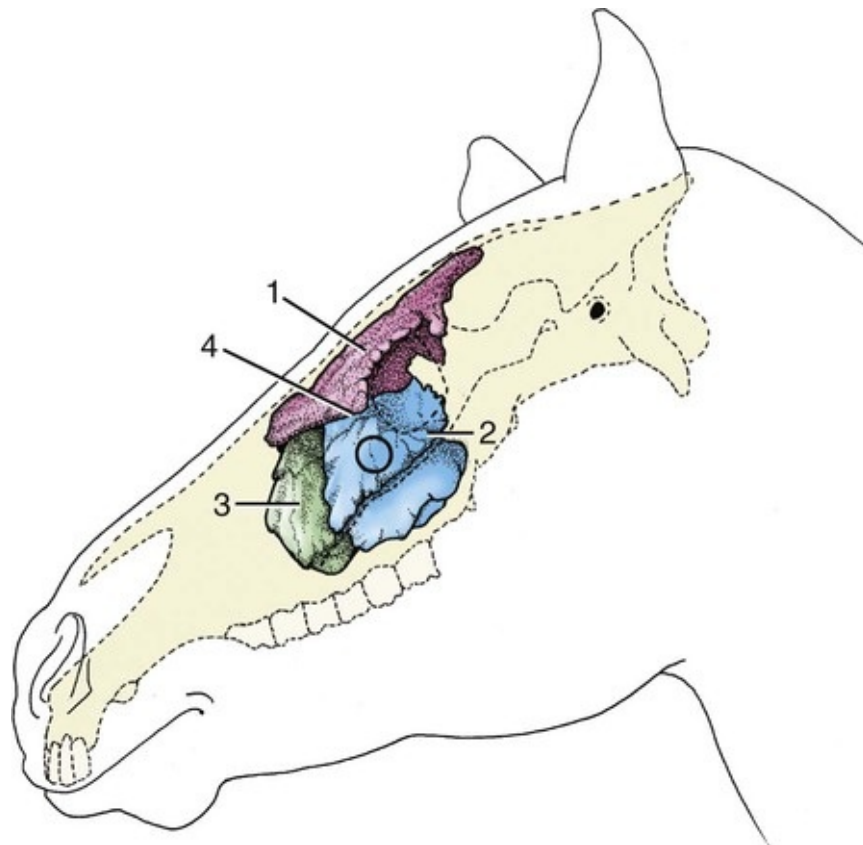


1. Dorsal nasal concha
2. Ethmoid turbinates
3. Right choana
4. Soft palate
5. Nasopharynx
6. Geniohyoideus
7. Genioglossus
8. Epiglottis
9. Medial wall of guttural pouch
10. Cerebellomedullary cistern
11. Basihyoid

Note: Most of the nasal septum has been removed.

1-70 Equine: Topography of

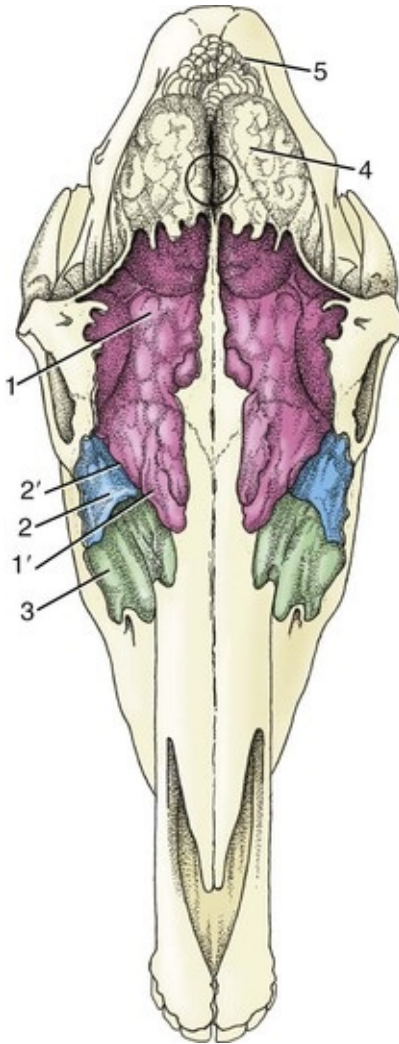
Conchofrontal and Maxillary Sinuses



1. Conchofrontal sinus
2. Caudal maxillary sinus
3. Rostral maxillary sinus
4. Position of frontomaxillary opening between 1 and 2

Note: Conchofrontal and maxillary sinuses are filled with casting material. The area where the caudal maxillary sinus can be trephined is shown (*circle*).

1-71 Equine: Brain and Frontal and Maxillary Sinuses

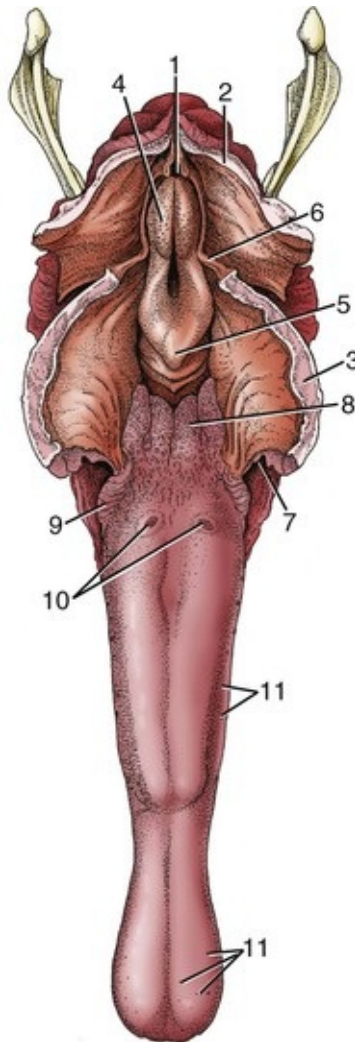


1. Frontal part of the conchofrontal sinus
- 1'. Dorsal conchal part of the conchofrontal sinus
2. Caudal maxillary sinus
- 2'. Position of frontomaxillary opening
3. Rostral maxillary sinus
4. Cerebrum
5. Cerebellum

Note: Projection of the brain and frontal and maxillary sinuses on the dorsal surface of the skull. The sinuses are filled with casting material. The frontal sinus extends caudally over the rostral part of the brain and rostrally beyond the level of the orbit. The center of the

brain and the location where a horse may be shot is indicated (*circle*).

1-72 Equine: Tongue and Pharynx

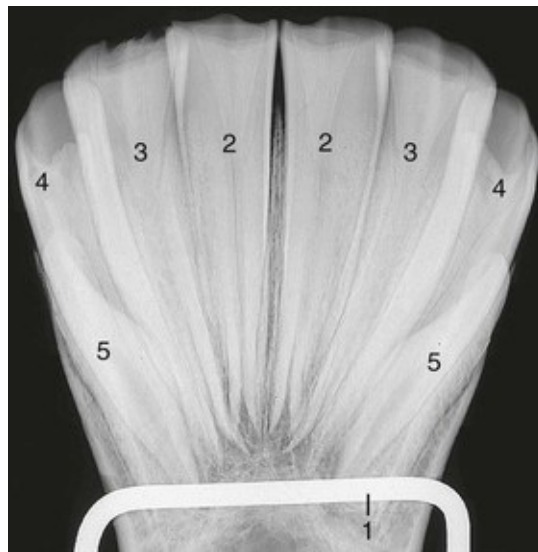


1. Entrance into esophagus
2. Dorsal wall of nasopharynx (split in median plane)
3. Soft palate (split in median plane)
4. Corniculate process of arytenoid cartilage
5. Epiglottis
6. Free border of soft palate, continued caudally by palatopharyngeal arch
7. Palatoglossal arch
8. Palatopharyngeal arch
9. Palatoglossal arch
10. Palatopharyngeal arch
11. Uvula

8. Lingual tonsil
9. Foliate papillae
10. Vallate papillae
11. Examples of fungiform papillae

Note: The pharynx has been opened dorsally to expose the entrance to the larynx.

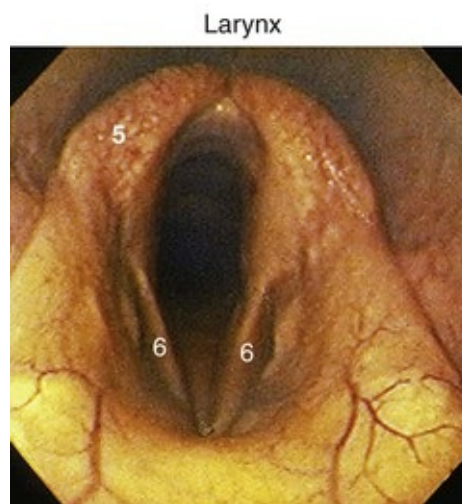
1-73 Equine: Root Convergence of Permanent Inferior Incisors



1. Mounting wire of specimen
2. Inferior first incisors
3. Inferior second incisors
4. Inferior third incisors
5. Inferior canine tooth, present only in the male

Note: Radiograph of a bone specimen from a 5-year-old (estimated) horse. Note the funnel-shaped infundibulum visible in each of the first and second incisors.

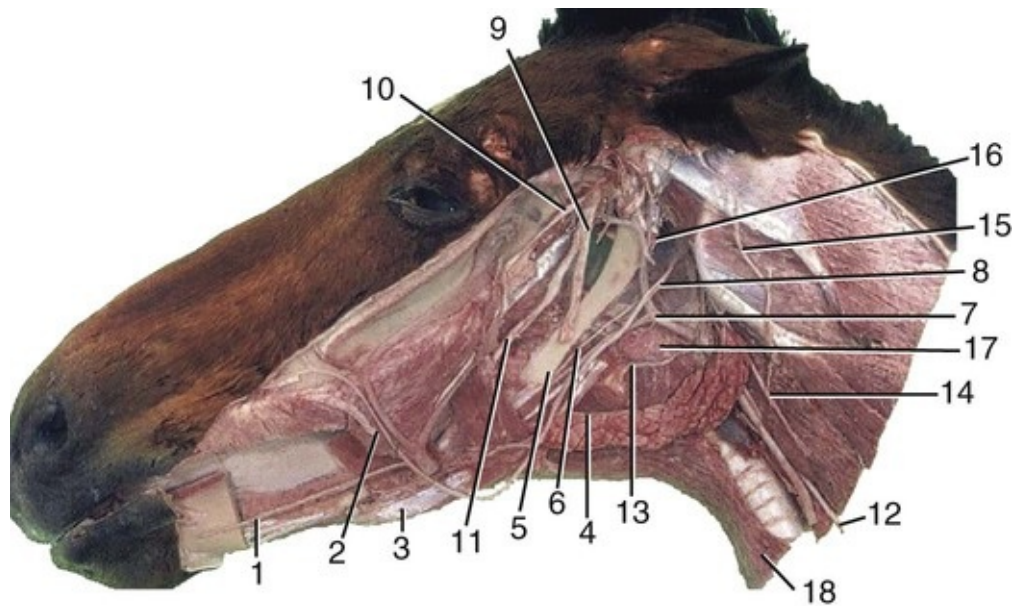
1-74 Equine: Nasopharynx and Larynx



1. Epiglottis
2. Laryngeal entrance
3. Pharyngeal recess
4. Entrance to auditory tube
5. Arytenoid cartilage
6. Left and right vocal folds

Note: Endoscopic views.

• 1-75 Equine: Deep Dissection of the Head

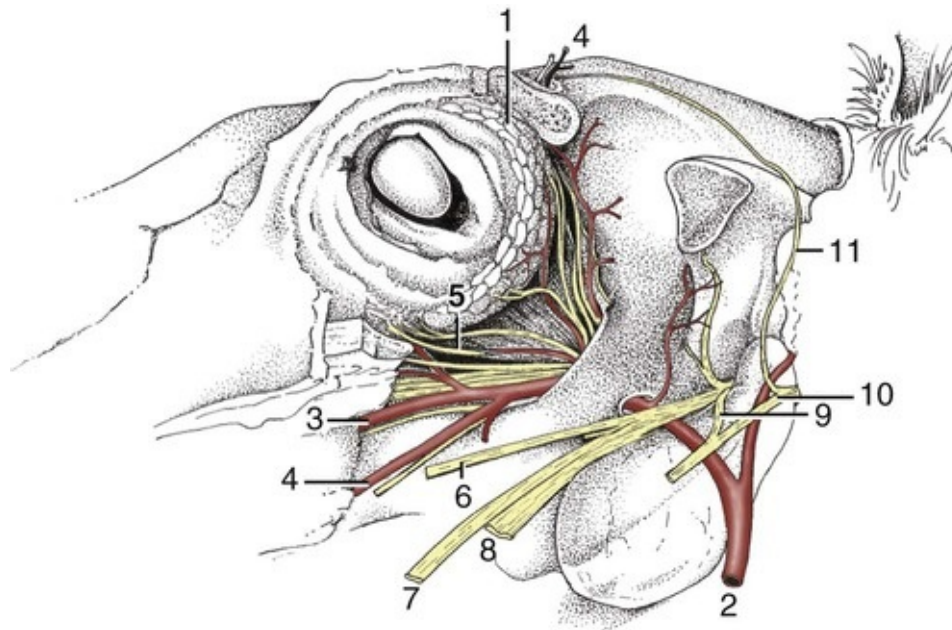


1. Sublingual gland
2. Facial artery and vein
3. Rostral belly of digastricus
4. Mandibular duct
5. Stylohyoid
6. Glossopharyngeal nerve
7. Linguofacial artery
8. Hypoglossal nerve
9. Mandibular nerve
10. Masseteric nerve
11. Lingual nerve
12. Vagus and sympathetic trunk
13. Cranial laryngeal nerve
14. Dorsal branch of spinal accessory nerve
15. Great auricular nerve
16. Guttural pouch
17. Medial retropharyngeal lymph nodes

18. Sternohyoideus

Note: The mandible and masticatory muscles have been removed.

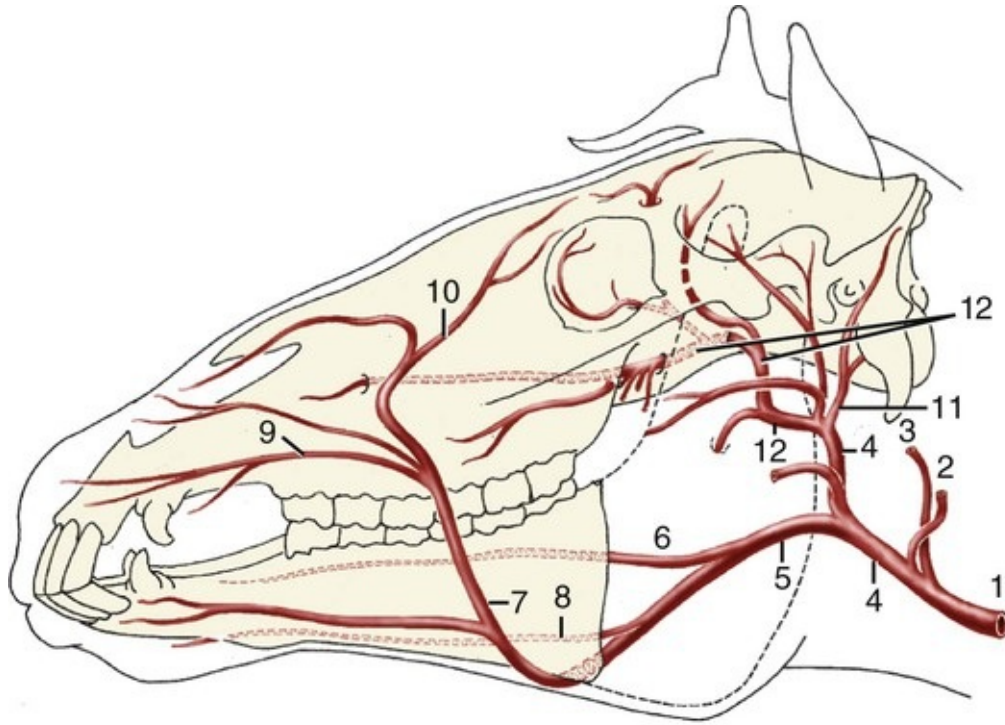
1-76 Equine: Dissection of the Orbit



1. Lacrimal gland
2. Maxillary artery
3. Major palatine artery
4. Buccal artery
5. Oculomotor nerve
6. Buccal nerve
7. Lingual nerve
8. Inferior alveolar nerve
9. Auriculotemporal nerve
10. Facial nerve
11. Auriculopalpebral nerve

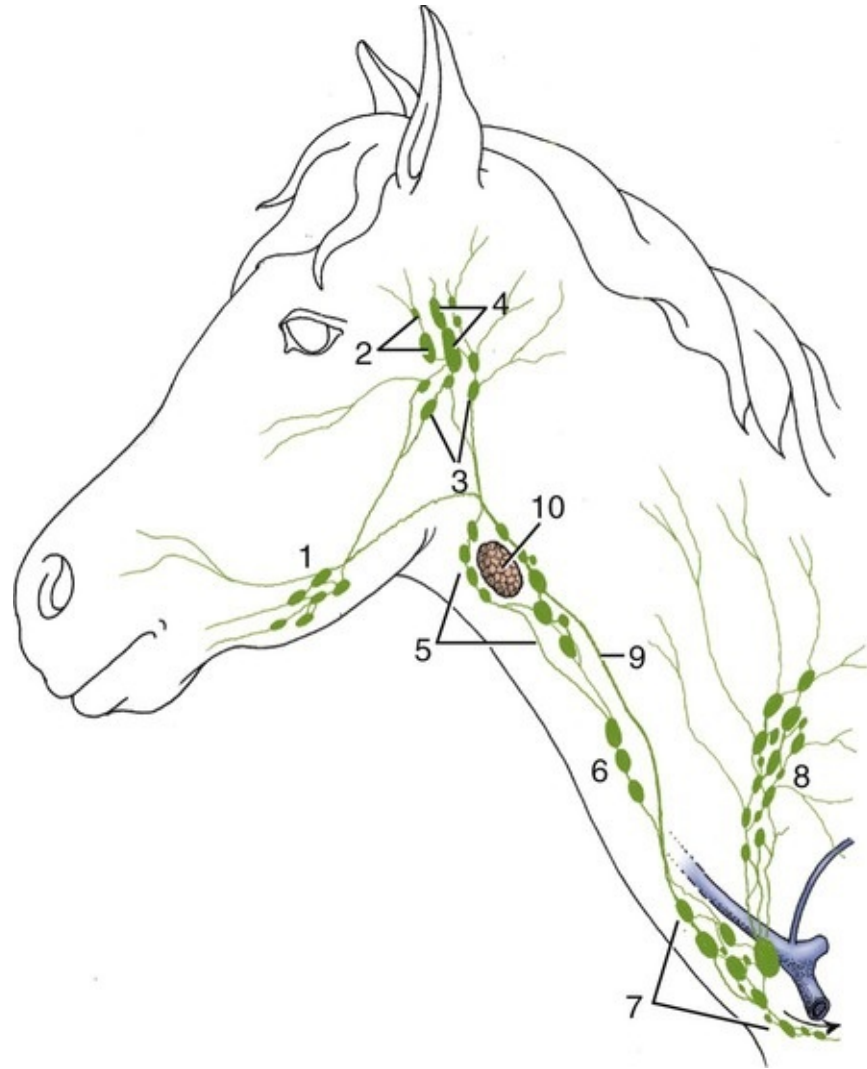
Note: The zygomatic arch and periorbital area have been removed.

1-77 Equine: Principal Arteries of the Head



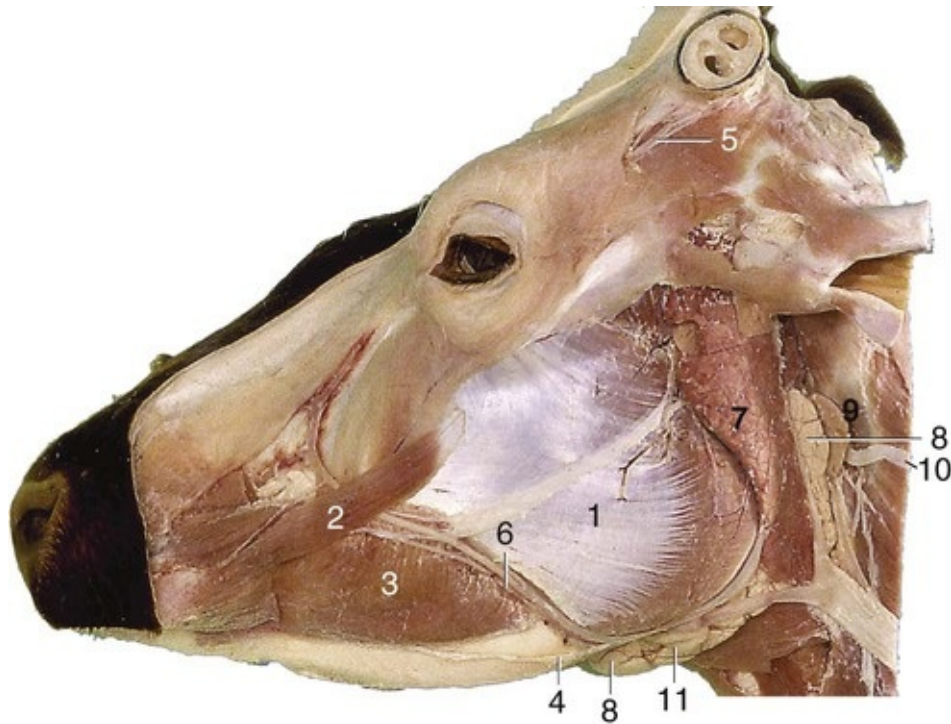
1. Common carotid artery
2. Occipital artery
3. Internal carotid artery
4. External carotid artery
5. Linguofacial artery
6. Lingual artery
7. Facial artery
8. Sublingual artery
9. Superior labial artery
10. Angularis oculi artery
11. Caudal auricular artery
12. Maxillary artery

➤ **1-78 Equine: Lymphatic Structures of the Head and Neck**



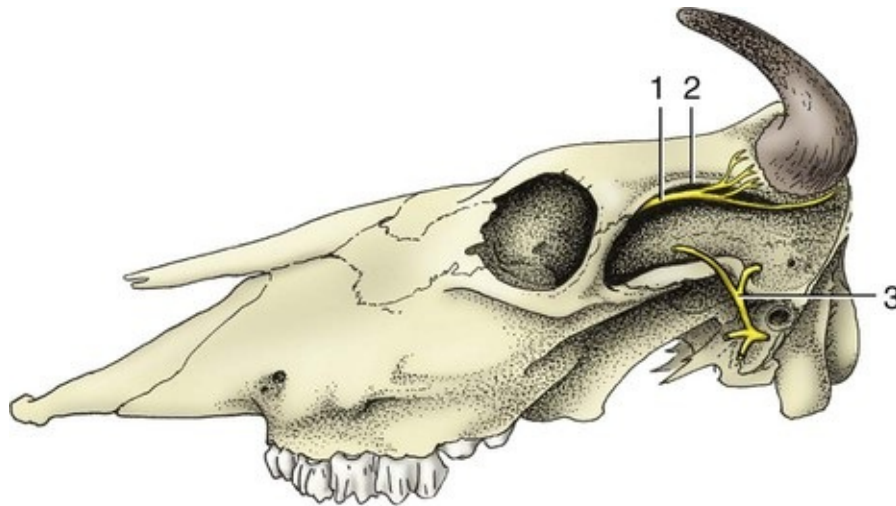
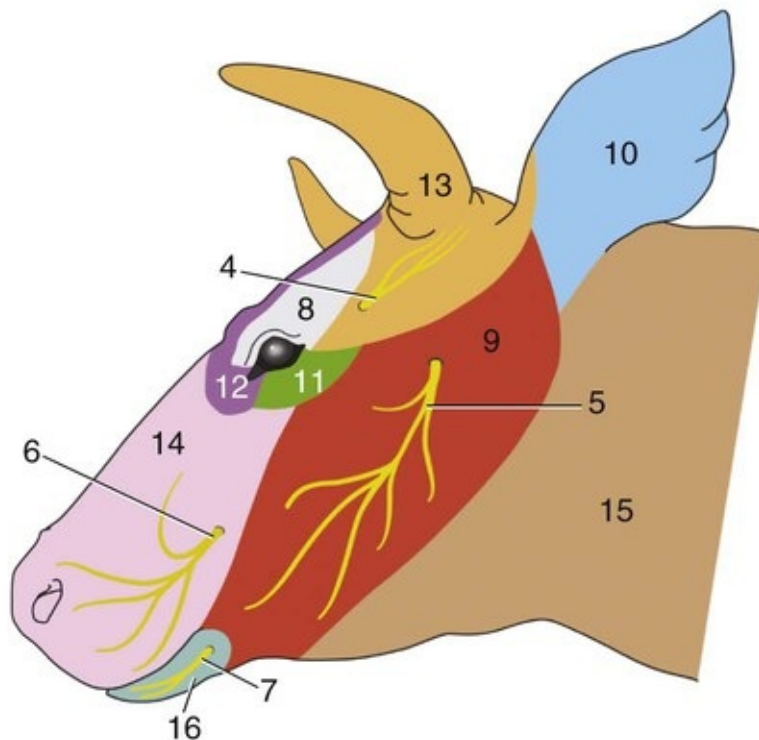
1. Mandibular lymph nodes
2. Parotid lymph nodes
3. Medial retropharyngeal lymph nodes
4. Lateral retropharyngeal lymph nodes
5. Cranial deep cervical lymph nodes
6. Middle deep cervical lymph nodes
7. Caudal deep cervical lymph nodes
8. Superficial cervical lymph nodes
9. Tracheal trunk
10. Thyroid gland

• 1-79 Bovine: Superficial Dissection of the Head



1. Masseter
2. Zygomaticus
3. Buccinator
4. Ventral buccal branch of facial nerve
5. Cornual nerve
6. Parotid duct and facial artery and vein
7. Parotid gland
8. Mandibular gland
9. Lateral retropharyngeal lymph node
10. Accessory nerve
11. Mandibular lymph node

• 1-80 Bovine: Skull and Skin Innervation of the Head

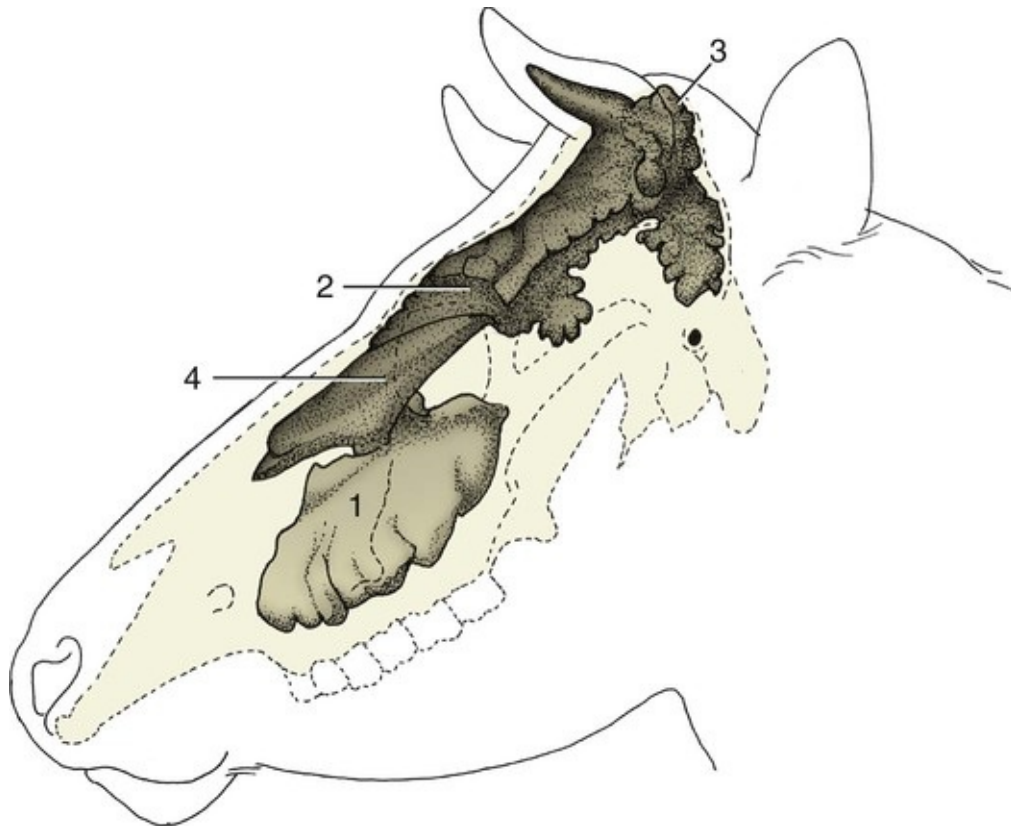


- 1. Cornual nerve
- 2. Temporal line
- 3. Auriculopalpebral nerve

4. Cornual nerve
5. Auriculotemporal nerve
6. Infraorbital nerve
7. Mental nerve
8. Ophthalmic nerve; frontal nerve
9. Mandibular nerve; auriculotemporal nerve
10. Vagus nerve
11. Zygomatic nerve
12. Infratrochlear nerve
13. Zygomaticotemporal branch; cornual nerve
14. Maxillary nerve; infraorbital nerve
15. Cervical nerves
16. Mental nerve

Note: The cornual nerve follows the temporal line to the base of the horn. The auriculopalpebral nerve is palpable where it crosses the zygomatic arch.

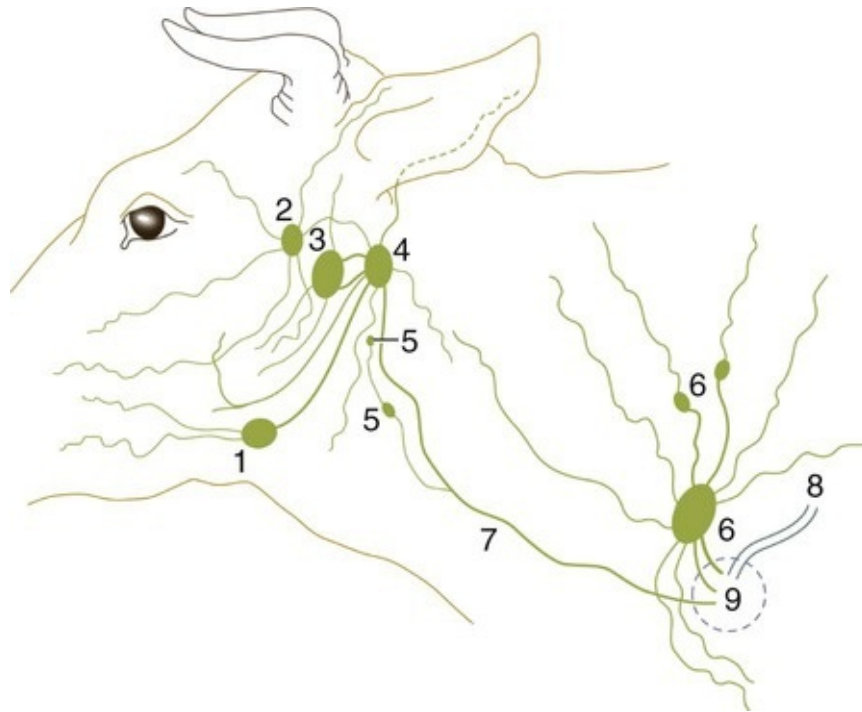
• 1-81 Bovine: Paranasal Sinuses



1. Maxillary sinus
2. Rostral frontal sinuses
3. Caudal frontal sinus
4. Dorsal conchal sinus

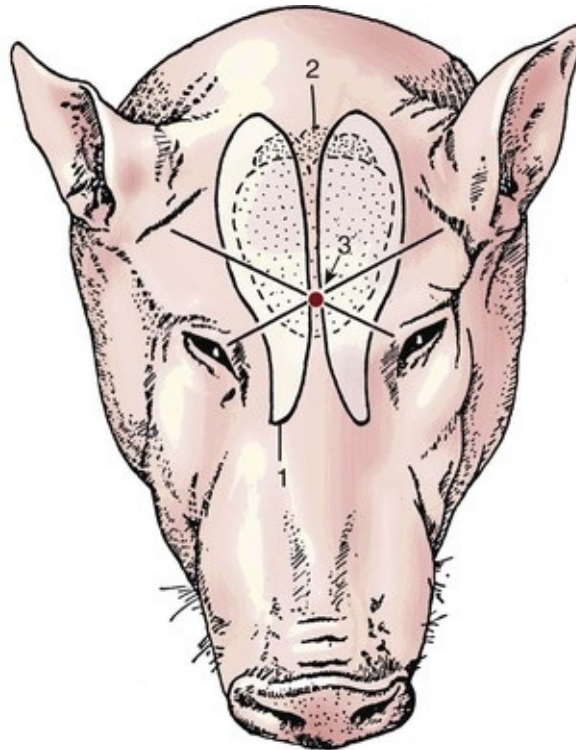
Note: Topographic depiction of the paranasal sinuses, which are filled with casting material.

• 1-82 Bovine: Lymph Drainage of the Head and Neck



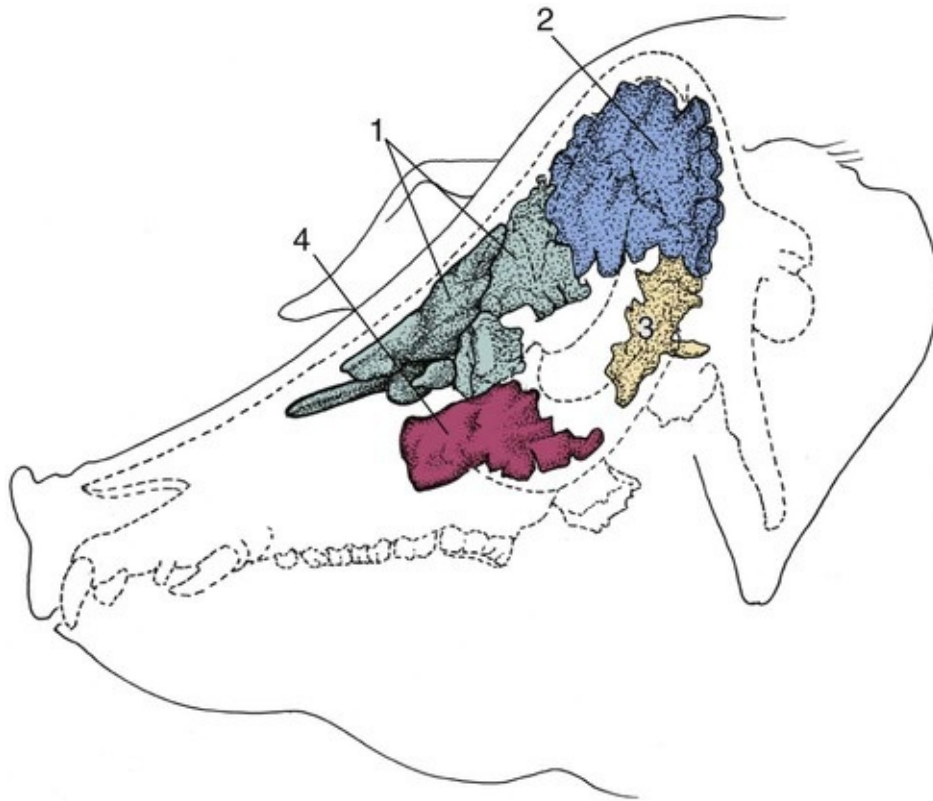
1. Mandibular lymph node
2. Parotid lymph node
3. Medial retropharyngeal lymph node
4. Lateral retropharyngeal lymph node
5. Deep cervical lymph nodes
6. Superficial cervical lymph nodes
7. Tracheal trunk
8. Thoracic duct
9. Area within which lymphatic vessels enter veins

➤ **1-83 Porcine: Head of a 9-Month-Old**



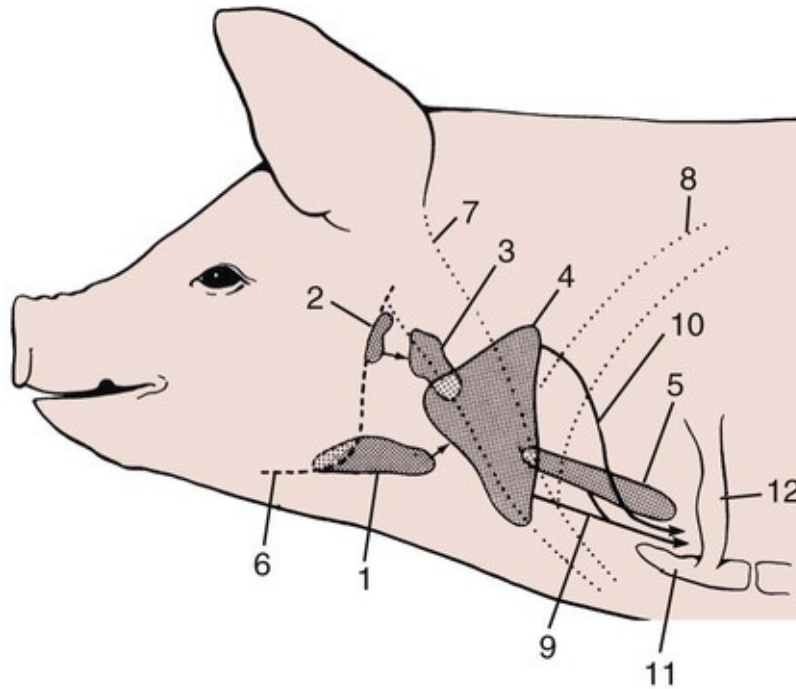
1. Outline of frontal sinuses
2. Position of brain
3. Point at which pig is best shot for stunning at slaughter

• 1-84 Porcine: Paranasal Sinuses



1. Rostral frontal sinus
2. Caudal frontal sinus
3. Sphenoidal sinus
4. Maxillary sinus

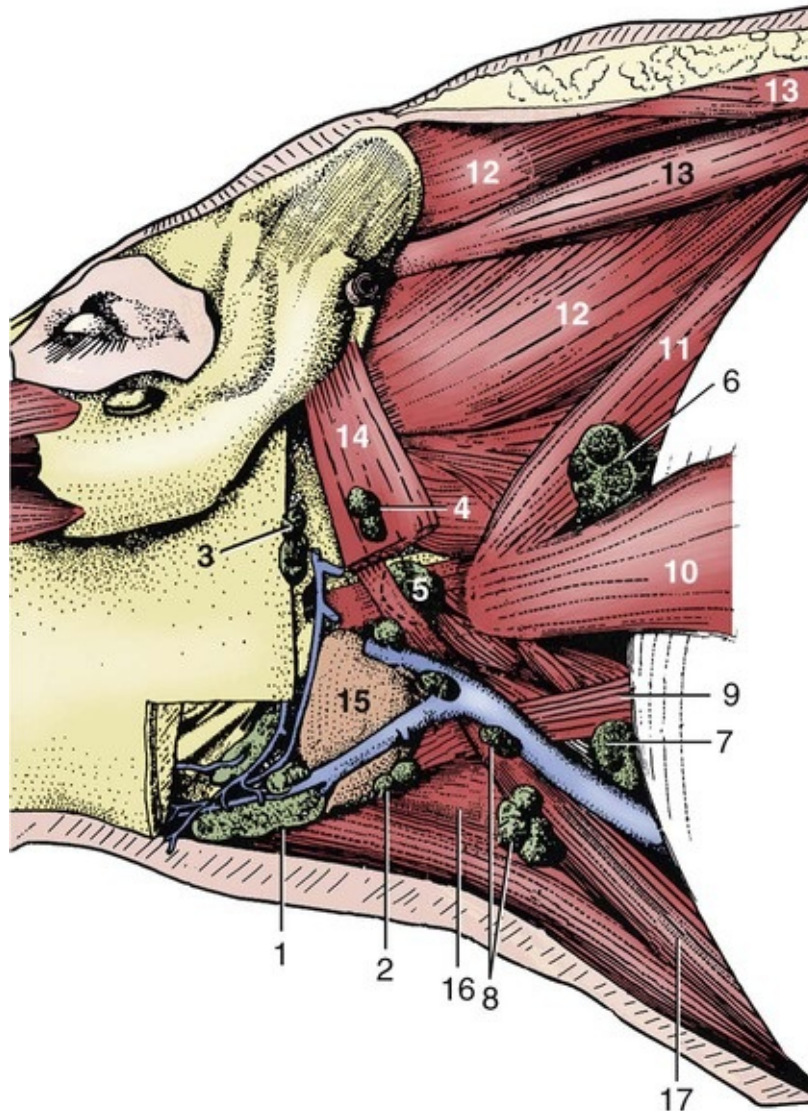
• 1-85 Porcine: Lymph Center of the Head and Neck



1. Mandibular lymph center
2. Parotid lymph center
3. Retropharyngeal lymph center
4. Superficial cervical lymph center
5. Deep cervical lymph center
6. Mandible
7. Cleidocephalicus
8. Subclavius
9. Tracheal lymph trunk
10. Lymph from dorsal superficial cervical nodes
11. Manubrium sterni
12. First rib

Note: The arrows indicate lymph flow in this schematic illustration.

1-86 Porcine: Dissection of the Neck to Show Lymph Nodes

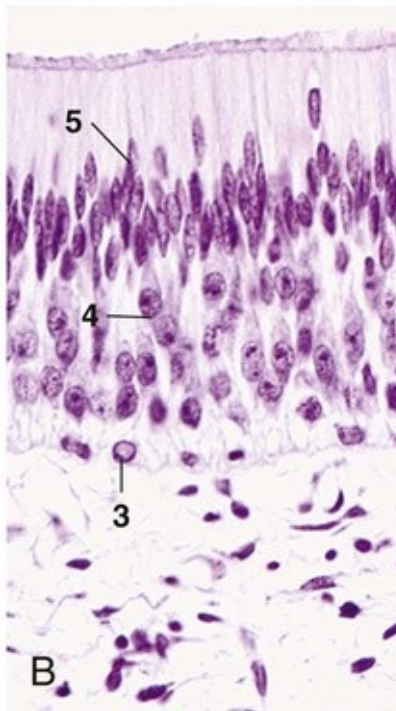


1. Mandibular lymph nodes
2. Accessory mandibular lymph nodes
3. Parotid lymph nodes
4. Lateral retropharyngeal lymph nodes
5. Medial retropharyngeal lymph nodes

6. Dorsal superficial cervical lymph nodes
7. Middle superficial cervical lymph nodes
8. Ventral superficial cervical lymph nodes
9. Omohyoideus
10. Omotransversarius
11. Serratus ventralis cervicis
12. Splenius
13. Rhomboideus cervicis et capitis
14. Cleidocephalicus, occipital part
15. Mandibular gland
16. Thyrohyoideus
17. Sternoccephalicus

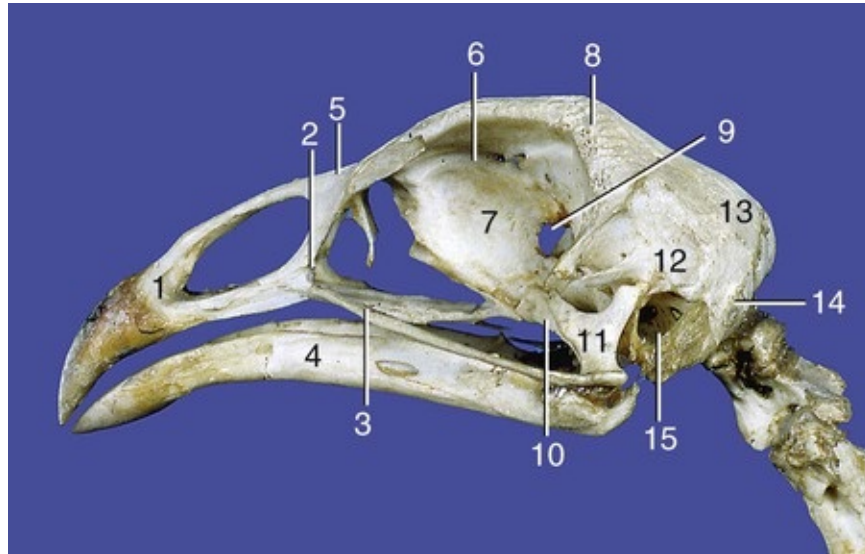
Note: Left, lateral view.

➤ 1-87 Porcine: Vomeronasal Organ



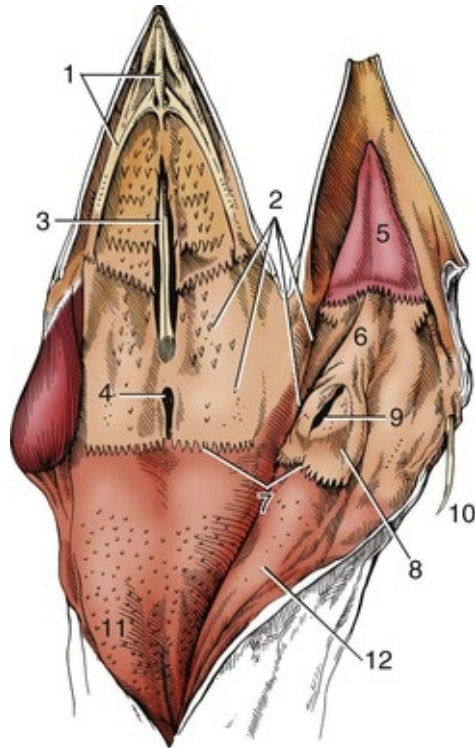
1. Ciliated pseudostratified columnar epithelium
2. Pseudostratified columnar epithelium
3. Basal Cells
4. Ciliated sustentacular cells
5. Ciliated neurosensitive cells

1-88 Avian: Skull of a Chicken



1. Premaxilla
2. Maxilla
3. Jugal arch
4. Mandible
5. Nasal bone
6. Orbit
7. Interorbital septum
8. Frontal bone
9. Optic foramen
10. Pterygoid bone
11. Quadrate bone
12. Temporal bone
13. Parietal bone
14. Occipital bone
15. Tympanic cavity

➤ **1-89 Avian: Oropharynx Opened by the Reflection of the Mandibles**



1. Median and lateral palatine ridges
2. Openings of salivary glands
3. Choana
4. Infundibular cleft (opening of auditory tubes)
5. Body of tongue
6. Root of tongue
7. "Mechanical" papillae
8. Laryngeal mound
9. Glottis
10. Branchial cornu of hyobranchial apparatus
11. Esophagus
12. Position of trachea

The Neck, Back, and Vertebral Column

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2-12 Canine: Retropharyngeal Lymph Node and Thyroid Gland

2-13 Canine: Veins of the Neck

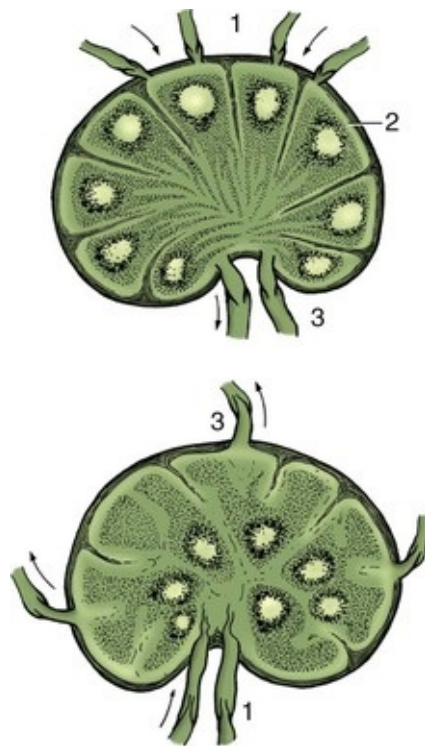
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2-15 Feline: Thoracic and Lumbar Vertebrae

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- 2-19 Bovine: Median Section of the Vertebral Canal and Its Contents
- 2-20 Bovine: Longitudinal Section of Tactile Hair Follicle
- 2-21 Bovine: Tactile Hair Follicle of a Calf

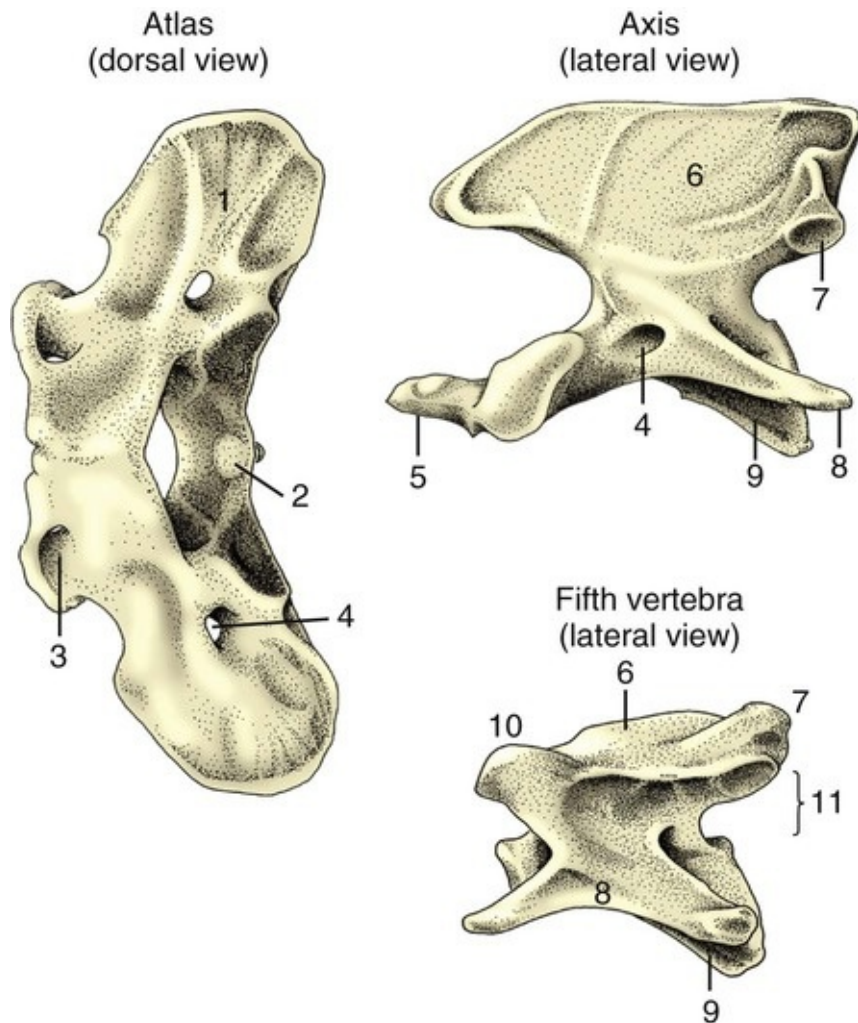
2-1 Canine and Porcine: Structure of a Lymph Node



- 1. Afferent lymphatics
- 2. Subcapsular sinus
- 3. Efferent lymphatics

Note: The germinal centers (lymph nodules) occupy the cortical region (*top*). The germinal centers lie centrally in the pig (*bottom*). The direction of lymph flow is indicated in both regions (*arrows*).

↻ 2-2 Canine: Cervical Vertebrae

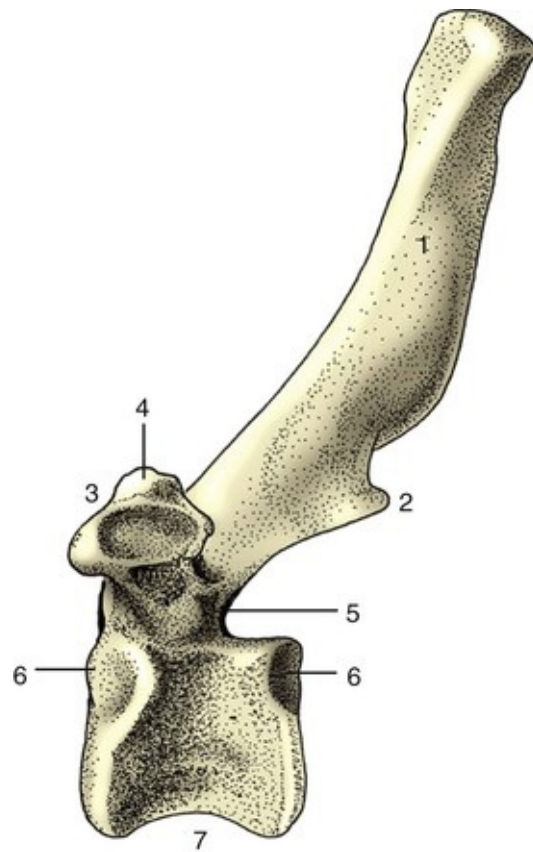


1. Wing of atlas
2. Fovea dentis
3. Lateral vertebral foramen
4. Transverse foramen
5. Dens
6. Spinous process

- 7. Caudal articular process
- 8. Transverse process
- 9. Body
- 10. Cranial articular process
- 11. Position of vertebral foramen

Note: Cranium is to the left.

↻ 2-3 Canine: Thoracic Vertebrae

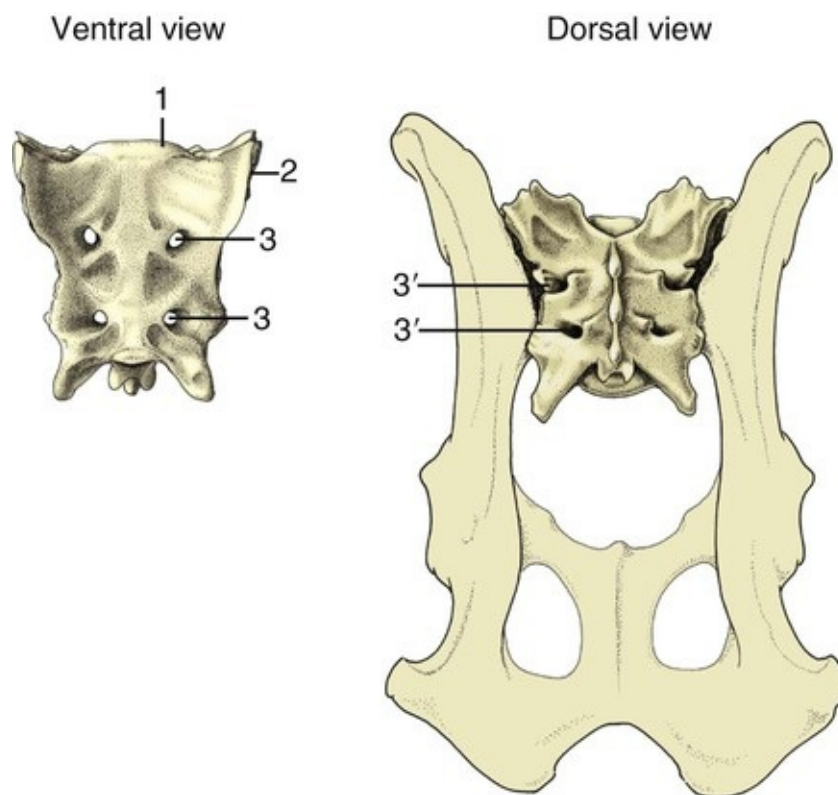


- 1. Spinous process
- 2. Caudal articular process
- 3. Transverse process with costal fovea
- 4. Mammillary process
- 5. Caudal vertebral notch
- 6. Costal foveae

7. Body

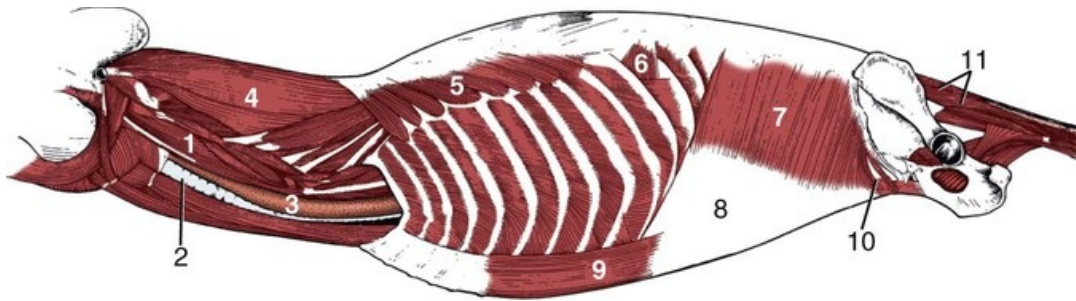
Note: Left, lateral view.

2-4 Canine: Sacrum and Caudal Vertebrae



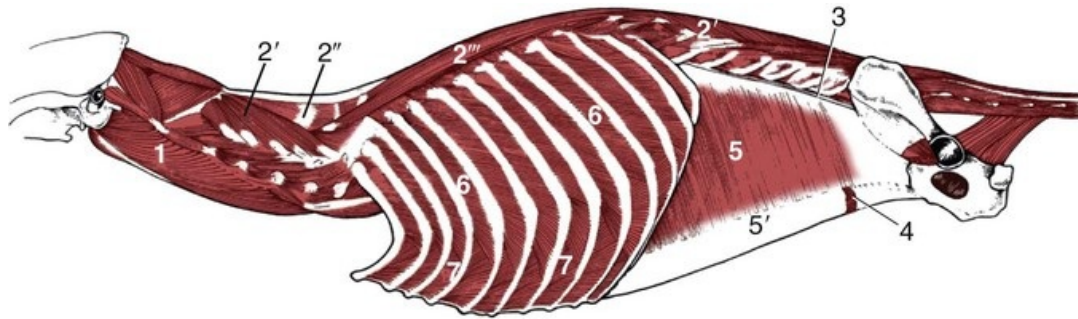
1. Promontory
2. Auricular articular surface
3. Ventral sacral foramina for ventral branches of sacral nerves
- 3'. Dorsal sacral foramina for braches of sacral nerves

2-5 Canine: Trunk Muscles, Deeper Layers



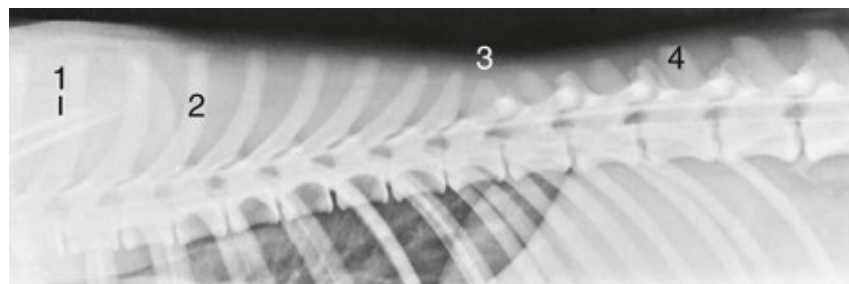
1. Longus capitis
2. Trachea
3. Esophagus
4. Splenius
5. Serratus dorsalis cranialis
6. Serratus dorsalis caudalis
7. Internal abdominal oblique
8. Aponeurosis
9. Rectus abdominis
10. Caudal free border of the internal abdominal oblique
11. Dorsal sacrocaudal muscles

2-6 Canine: Trunk Muscles, Deepest Layers



1. Longus capitis
2. Transversospinalis system
- 2'. Multifidus
- 2''. Spinalis cervicis
- 2'''. Spinalis et semispinalis
3. Quadratus lumborum
4. Rectus abdominis
5. Transversus abdominis
- 5'. Aponeurosis
6. External intercostal muscles
7. Internal intercostal muscles

2-7 Canine: Thoracic and Lumbar Vertebrae

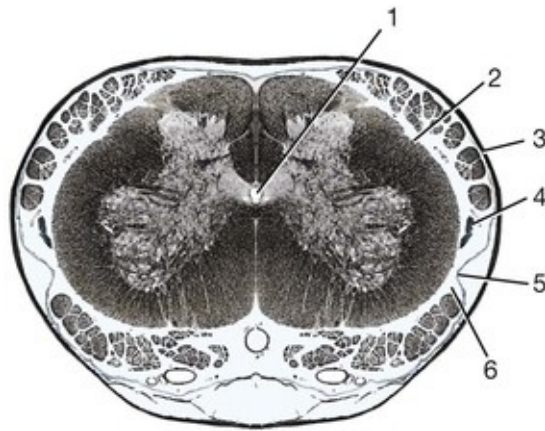


1. Scapular spines
2. Spinous process of T5

3. Anticlinal vertebra (T11)
4. Spinous process of L1

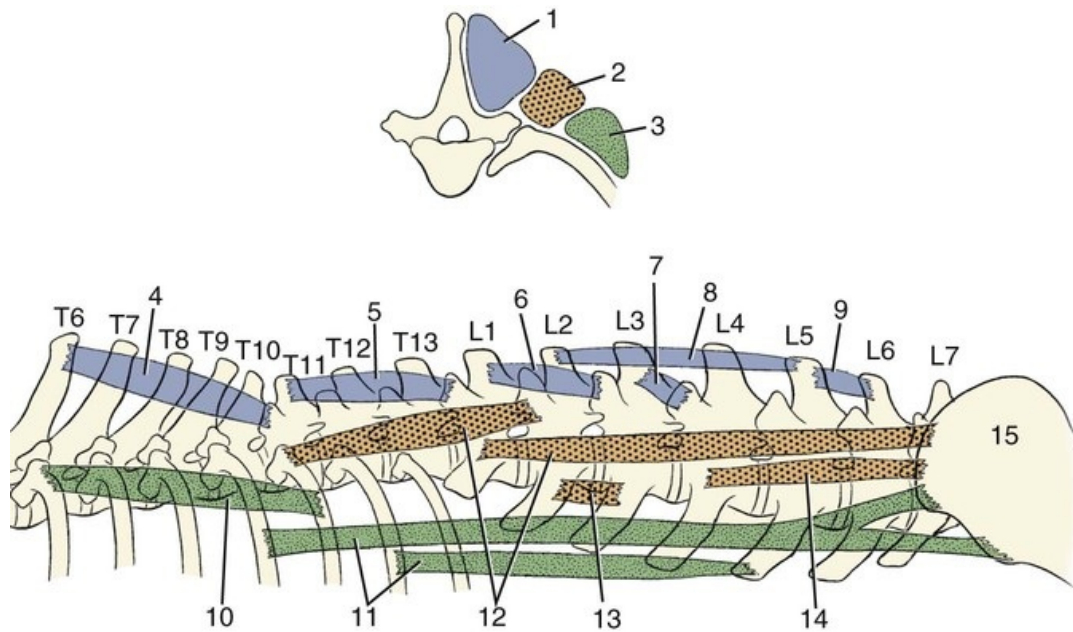
Note: This lateral radiograph was obtained after the injection of a contrast agent into the subarachnoid space.

2-8 Canine: Enlarged Transverse Section of Seventh Lumbar Section



1. Central canal
2. Pia mater
3. Dura mater
4. Denticulate ligament
5. Arachnoid membrane
6. Subarachnoid space

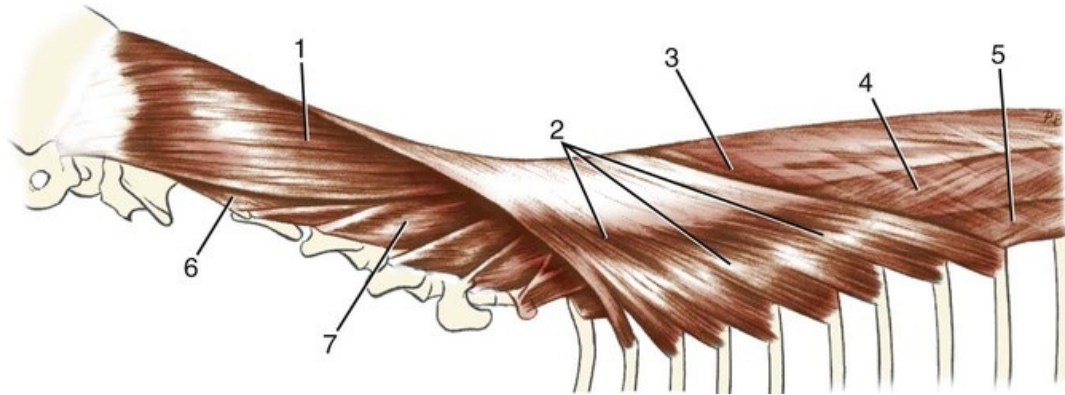
2-9 Canine: Epaxial Muscles



1. Transversospinalis system
2. Longissimus system
3. Iliocostalis system
4. Semispinalis
5. Multifidus
6. Long rotator
7. Short rotator
8. Spinalis
9. Interspinalis
10. Iliocostalis thoracis
11. Iliocostalis lumborum
12. Longissimus lumborum
13. Intertransversarius
14. Longissimus lumborum
15. Ilium

Note: Each of the muscles shown can be present, spanning other vertebrae, thus overlapping and obscuring their individual nature.

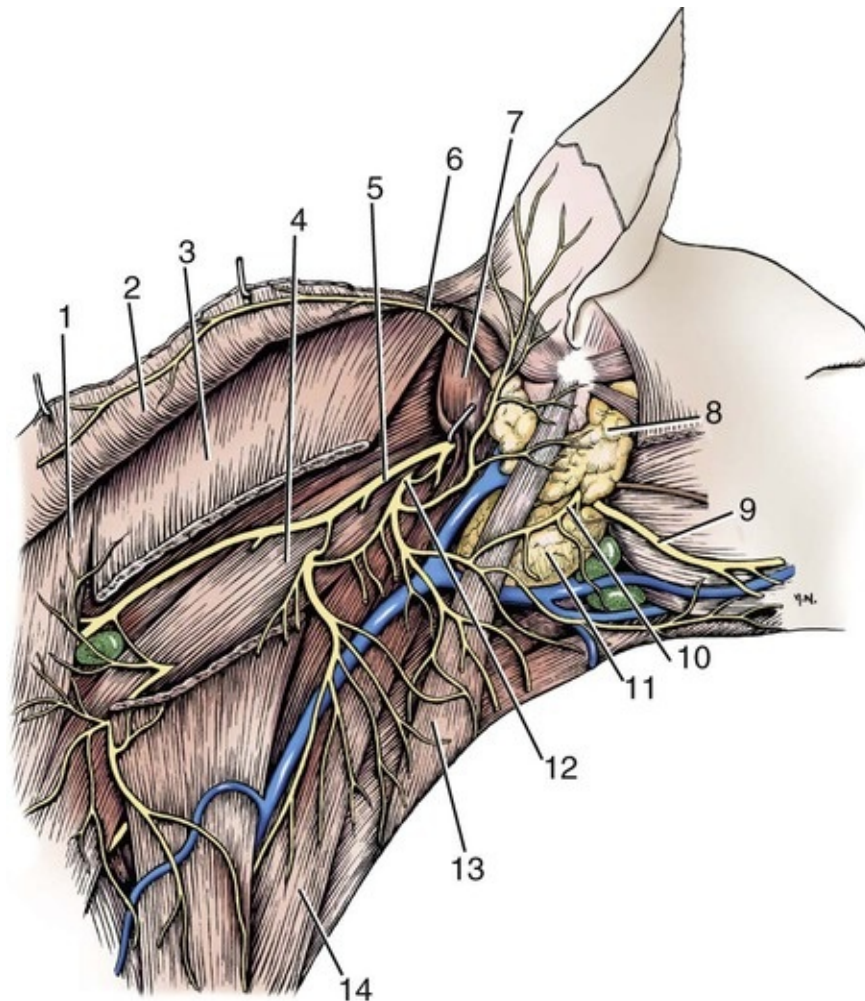
↪ 2-10 Canine: Epaxial Muscles



1. Splenius
2. Serratus dorsalis cranialis
3. Spinalis et semispinalis
4. Longissimus
5. Iliocostalis
6. Longissimus capitis
7. Longissimus cervicis

Note: Each of the muscles shown can be present, spanning other vertebrae, thus overlapping and obscuring their individual nature.

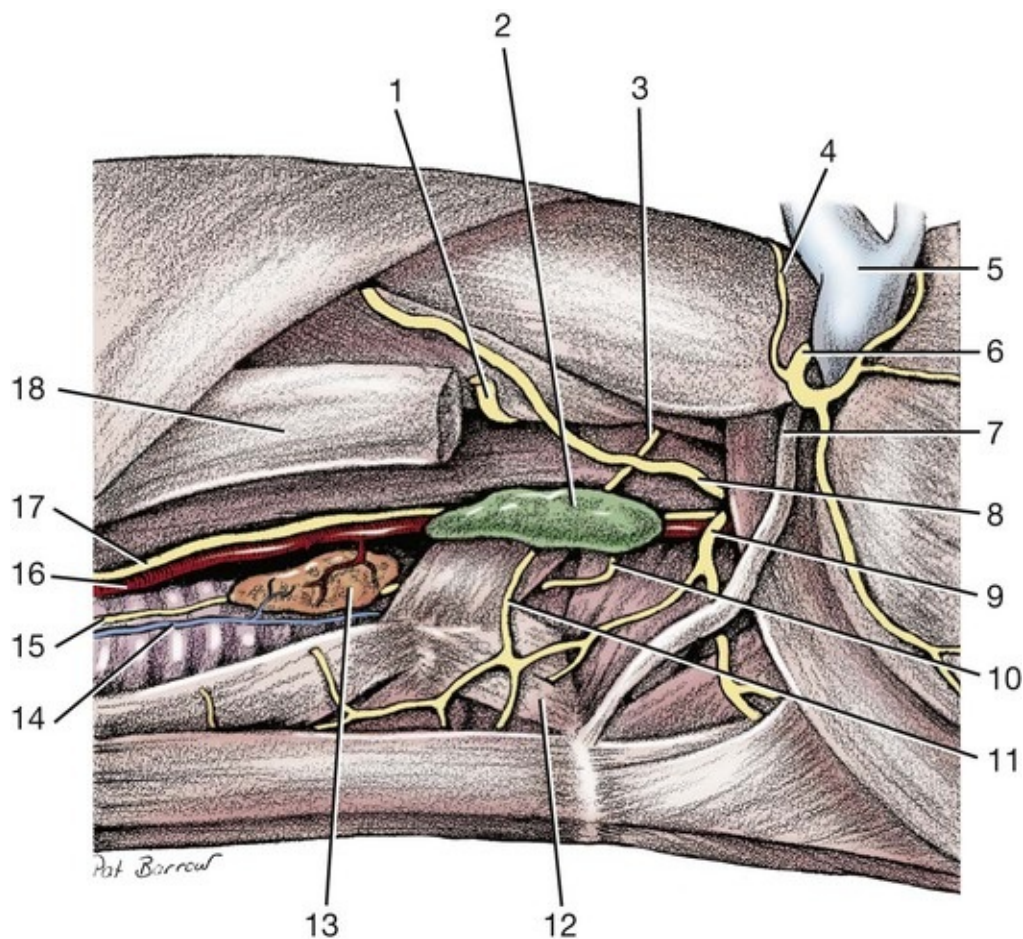
2-11 Canine: Superficial Nerves of the Neck



1. Trapezius
2. Platysma
3. Cleidocephalicus pars cervicalis
4. Omotransversarius
5. Accessory (XI cranial) nerve
6. Caudal auricular nerve (VII)
7. Sternocephalicus pars occipitalis
8. Parotid gland
9. Ventral buccal branch (VII)
10. Cervical branch of VII
11. Mandibular gland
12. C2, ventral branch
13. Parotidoauricularis
14. Sternocephalicus

Note: Lateral aspect.

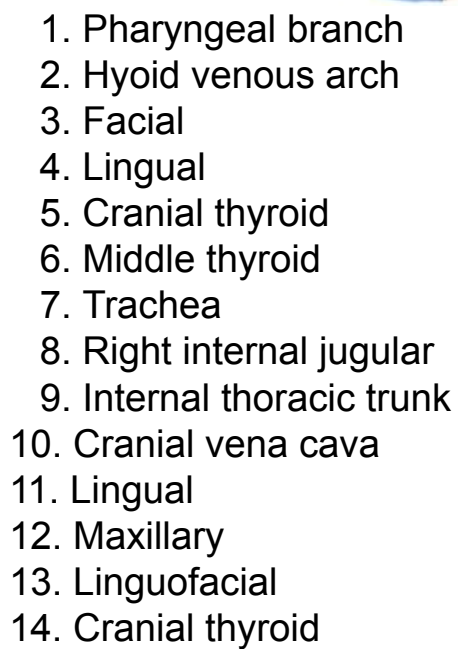
2-12 Canine: Retropharyngeal Lymph Node and Thyroid Gland



1. Second cervical spinal nerve
2. Medial retropharyngeal lymph node
3. First cervical spinal nerve
4. Caudal auricular nerve
5. Auricular cartilage
6. Facial nerve
7. Stylohyoideus
8. Accessory nerve

9. Hypoglossal nerve
10. Cranial laryngeal nerve
11. Ansa cervicalis
12. Thyrohyoideus
13. Thyroid gland
14. Internal jugular vein
15. Recurrent laryngeal nerve
16. Common carotid artery
17. Vagosympathetic nerve trunk
18. Mastoid part of cleidocephalicus

➤ **2-13 Canine: Veins of the Neck**

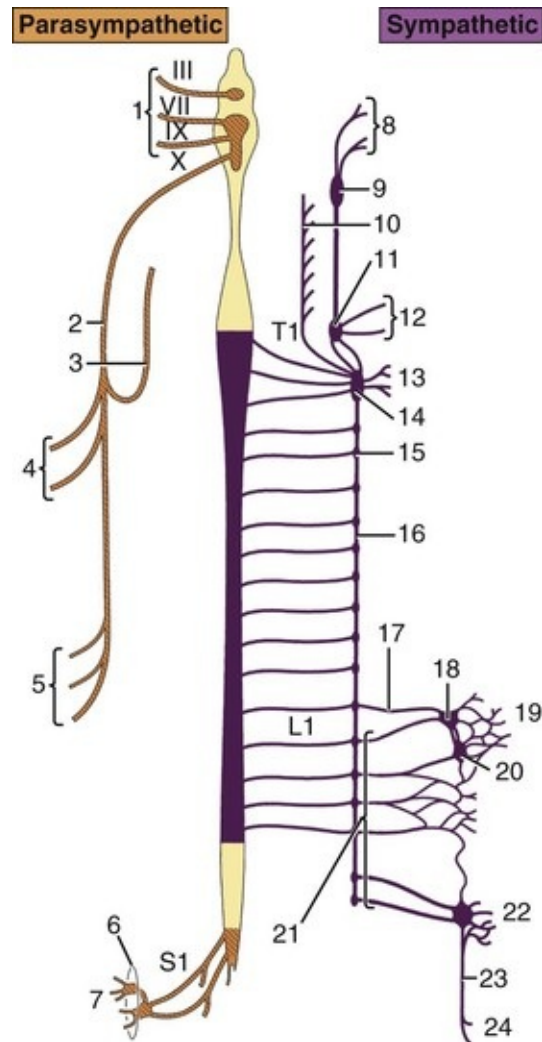


1. Pharyngeal branch
2. Hyoid venous arch
3. Facial
4. Lingual
5. Cranial thyroid
6. Middle thyroid
7. Trachea
8. Right internal jugular
9. Internal thoracic trunk
10. Cranial vena cava
11. Lingual
12. Maxillary
13. Linguofacial
14. Cranial thyroid

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.

↻ **2-14 Canine: Peripheral Distribution of Sympathetic and Parasympathetic Divisions**



1. Eye, lacrimal, nasal, and salivary glands
 III. Oculomotor nerve
 VII. Facial nerve
 IX. Glossopharyngeal nerve
 X. Vagus nerve
2. Vagus nerve
3. Recurrent laryngeal nerve to larynx and esophagus
4. Heart and lungs
5. Abdominal viscera
6. Pelvic ganglia and plexus
7. Urogenital organs and large intestine
8. Eye, sweat, blood vessels, and mucosal glands
9. Cranial cervical ganglion

10. Vertebral nerve
11. Middle cervical ganglion
12. Heart and lungs
13. To brachial plexus
14. Cervicothoracic ganglion
15. Sympathetic trunk ganglion
16. Sympathetic trunk
17. Greater splanchnic nerve
18. Celiac ganglion
19. Celiacomesenteric plexus
20. Cranial mesenteric ganglion
21. Lumbar splanchnic
22. Caudal mesenteric ganglion and plexus
23. Hypogastric nerve
24. To pelvic plexus

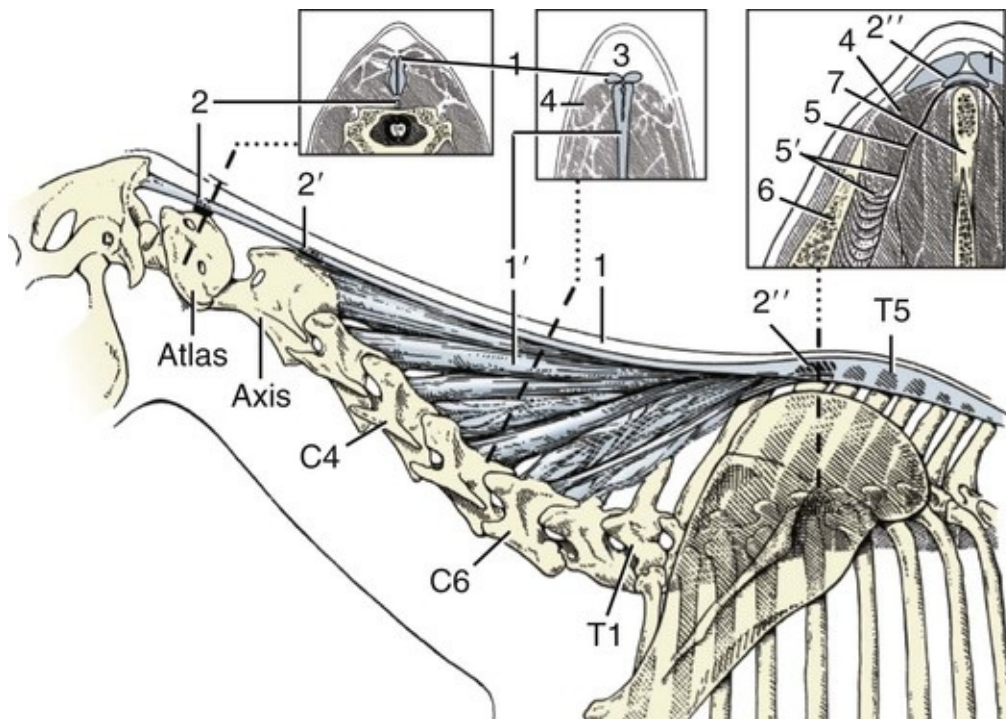
2-15 Feline: Thoracic and Lumbar Vertebrae



1. Spinous process of T5
2. Anticlinal vertebra (T11)
3. Spinous process of L1
4. Rudimentary rib
5. Sublumbar muscles

Note: Lateral radiograph.

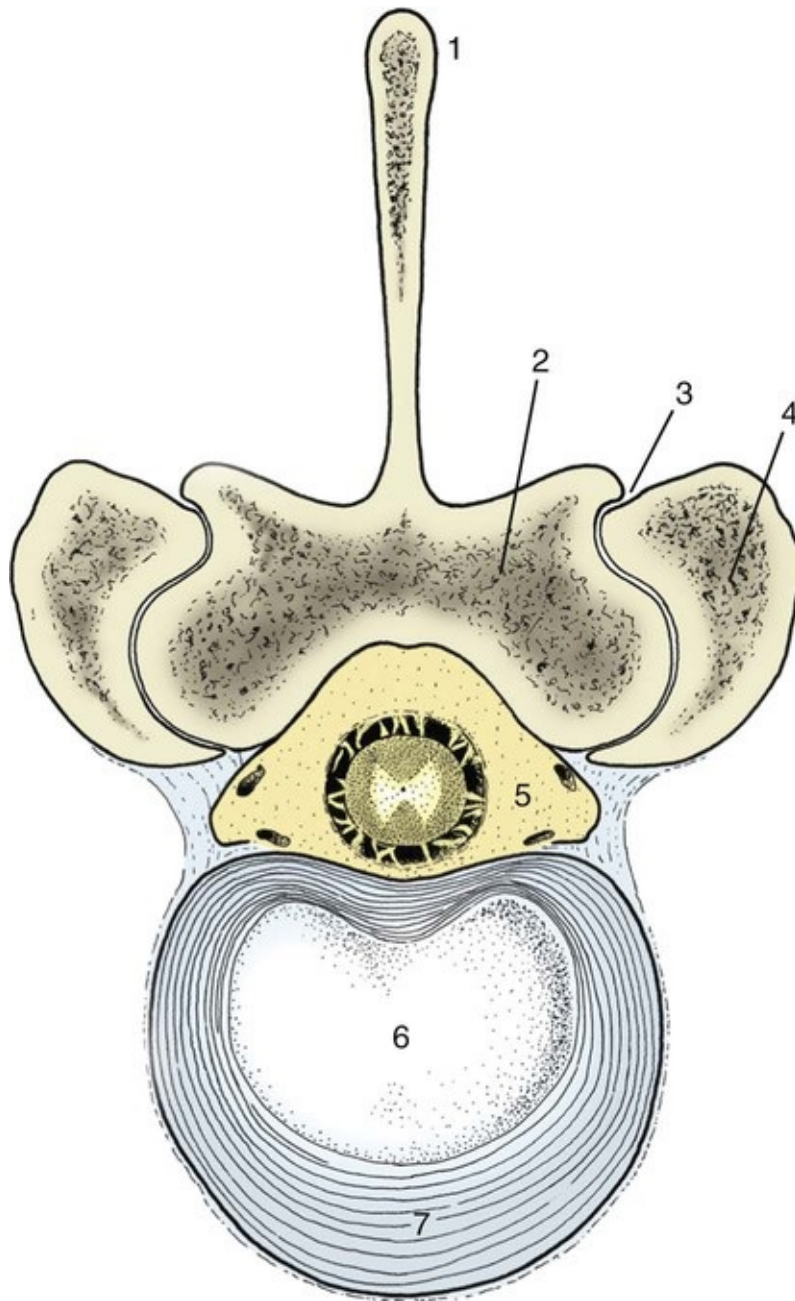
2-16 Equine: Nuchal Ligament and Associated Bursae



1. Funicular part of nuchal ligament
- 1'. Laminar parts of nuchal ligament
2. Cranial nuchal bursa
- 2'. Caudal nuchal (inconstant) bursa
- 2''. Supraspinous bursae
3. Fatty "crest" dorsal to nuchal ligament
4. Rhomboideus
5. Dorsoscapular ligament connecting spinous processes of the withers with the scapula
- 5'. Elastic part of 5
6. Scapula
7. Spinous processes

Note: Lateral view with three transverse sections.

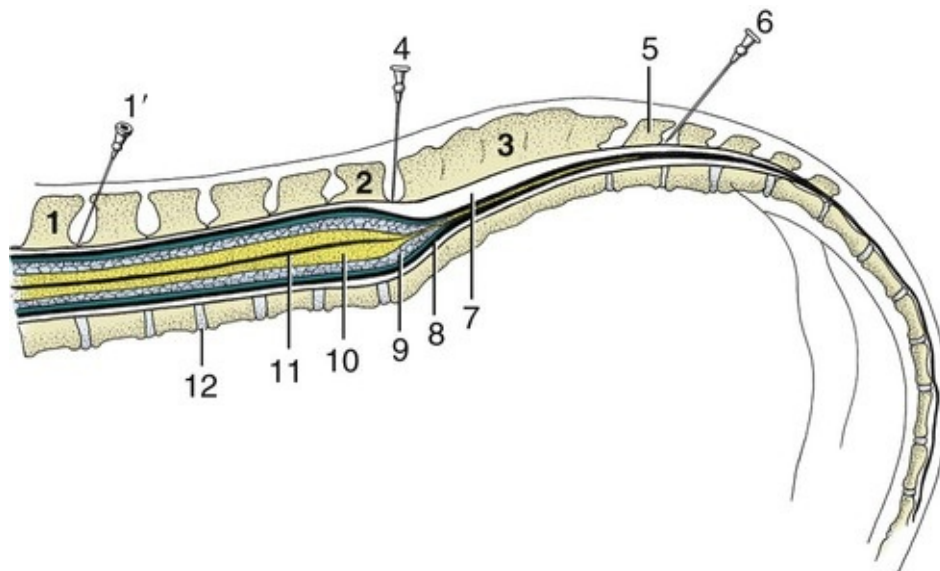
2-17 Bovine: Lumbar Intervertebral Disc



- 1. Spinous process
- 2. Lamina

3. Synovial intervertebral joint
4. Articular process of adjacent vertebra
5. Vertebral canal with contents (spinal cord and meninges surrounded by epidural fat)
6. Nucleus pulposus
7. Anulus fibrosus

• 2-18 Bovine: Vertebral Canal

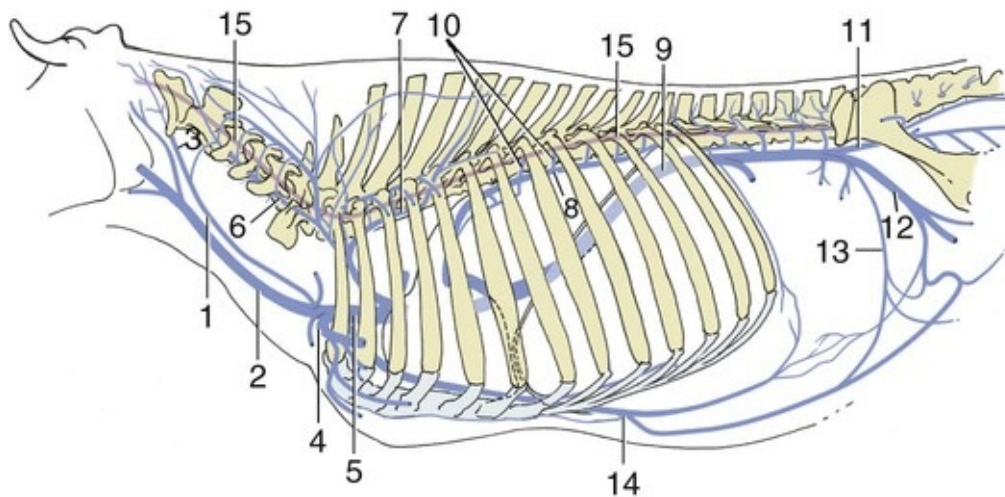


1. First lumbar vertebra
- 1'. Needle in position for flank anesthesia
2. Last lumbar vertebra (L6)
3. Sacrum
4. Needle in lumbosacral space
5. First caudal vertebra
6. Needle between first and second caudal vertebrae (tail block)
7. Epidural space
8. Dura mater

- 9. Subarachnoid space
- 10. Spinal cord
- 11. Central canal
- 12. Intervertebral disc

Note: Caudal part of the bovine vertebral canal and its contents, schematic. Epidural injection sites are indicated by the needles.

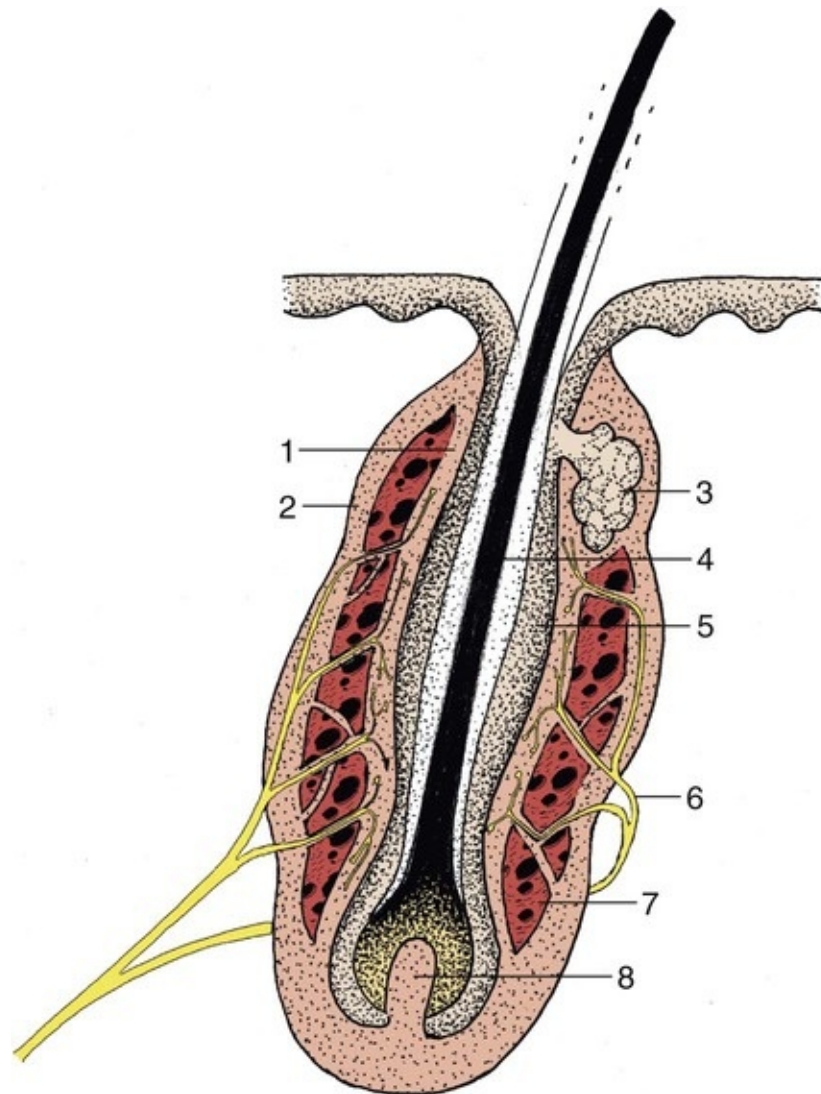
• 2-19 Bovine: Connections of the Major Veins with the Vertebral Plexus-Azygous System



- 1. Internal jugular vein
- 2. External jugular vein
- 3. Occipital vein
- 4. Axillary vein
- 5. Cranial vena cava
- 6. Vertebral vein
- 7. Supreme intercostal vein
- 8. Left azygous vein
- 9. Caudal vena cava
- 10. Intercostal veins

11. Internal iliac vein
12. External iliac vein
13. Deep circumflex iliac vein
14. Cranial epigastric vein
15. Internal vertebral plexus (red)

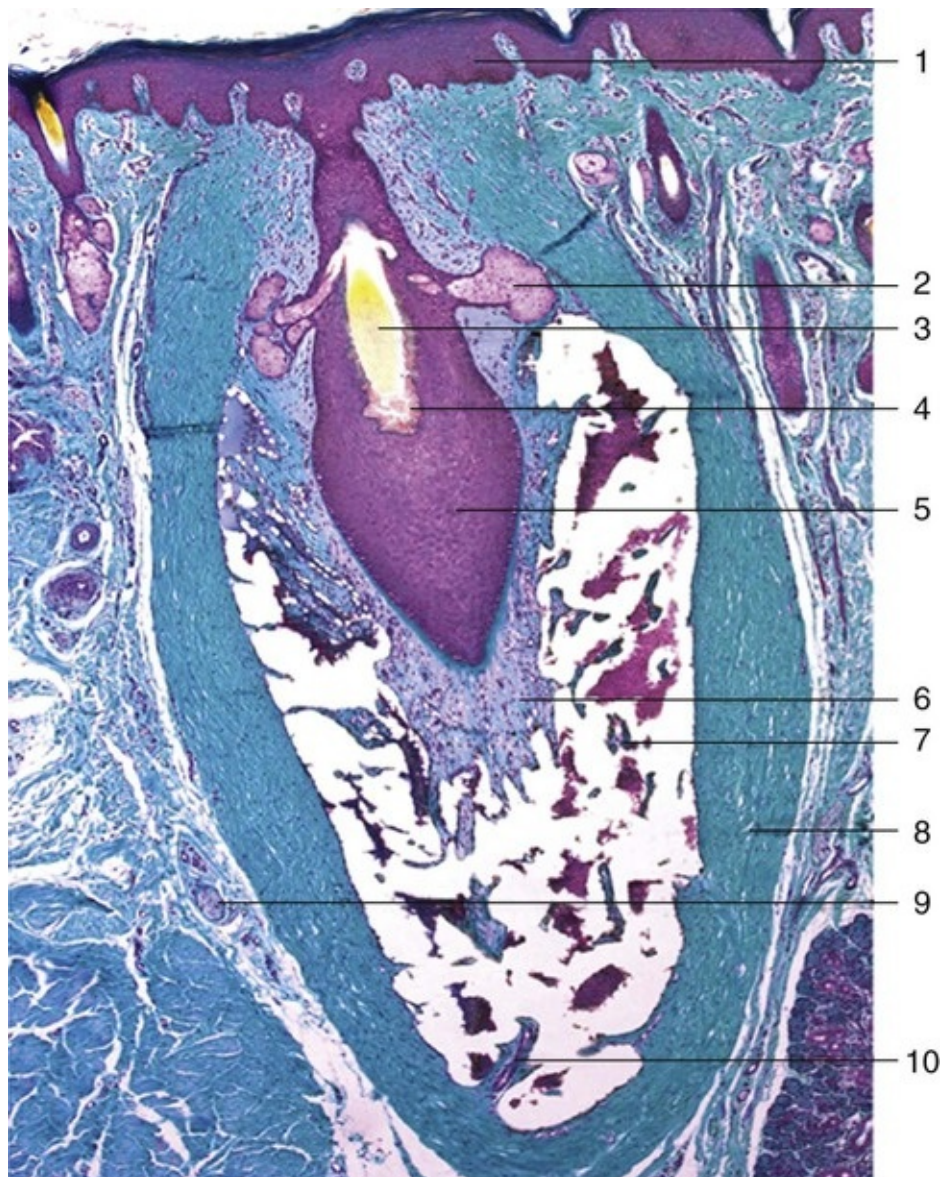
• 2-20 Bovine: Longitudinal Section of Tactile Hair Follicle



1. Internal wall of blood sinus
2. External wall of blood sinus
3. Sebaceous gland
4. Root of hair
5. Epidermal wall of hair follicle
6. Nerve ending in wall of blood sinus

- 7. Blood sinus
- 8. Dermal papilla

• 2-21 Bovine: Tactile Hair Follicle of a Calf



1. Epidermis

2. Sebaceous gland
3. Hair
4. Inner hair root sheath
5. Outer hair root sheath
- 6,7. Trabeculated blood sinus
8. Inner and outer layer dermal sheath
9. Nerve ending
10. Trabecula

The Thorax

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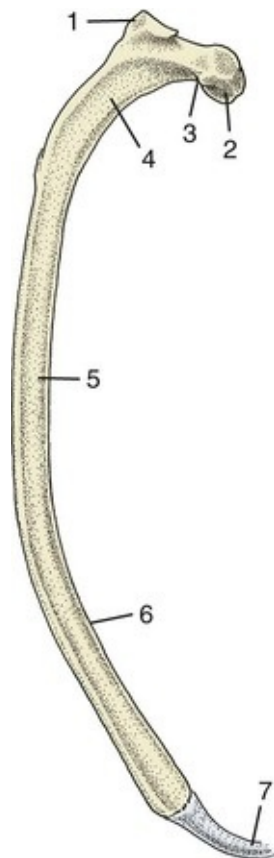
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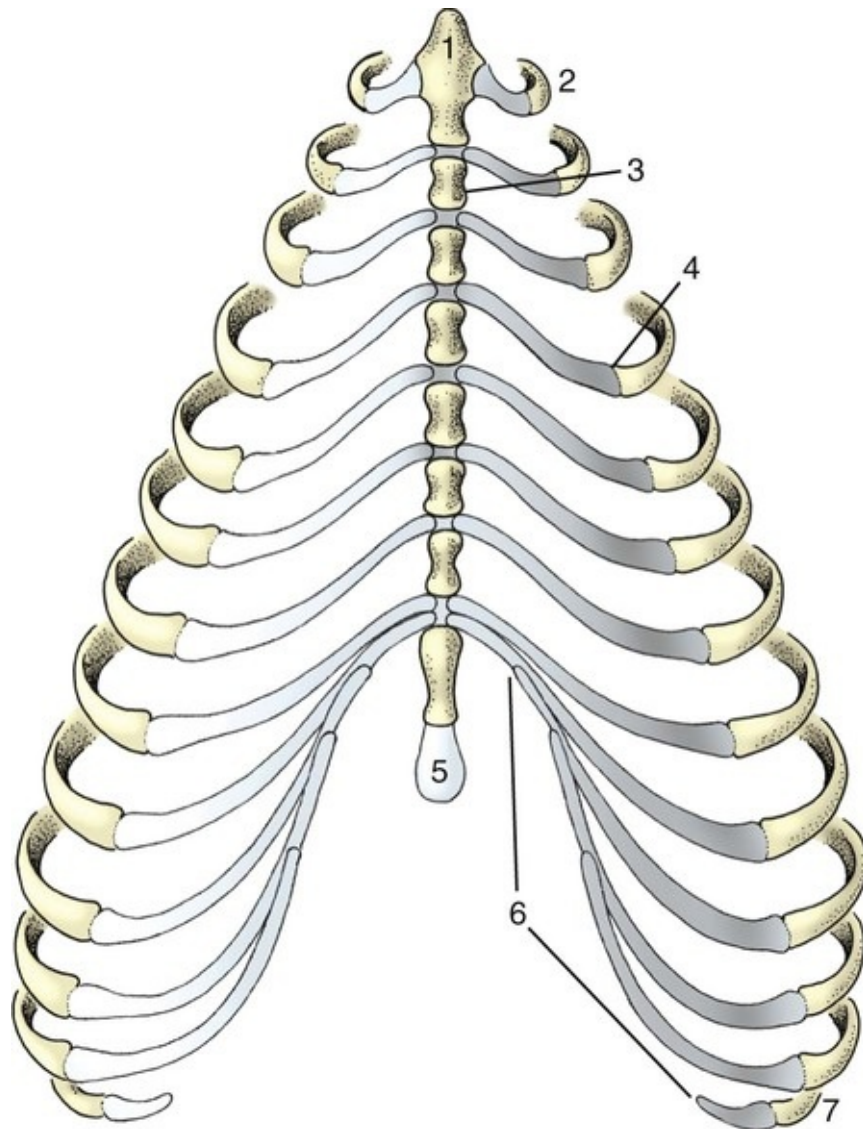
↻ 3-1 Canine: Left Rib



1. Tubercle
2. Head
3. Neck
4. Angle
5. Body
6. Costochondral junction
7. Costal cartilage

Note: Caudal view.

3-2 Canine: Sternum and Costal Cartilages

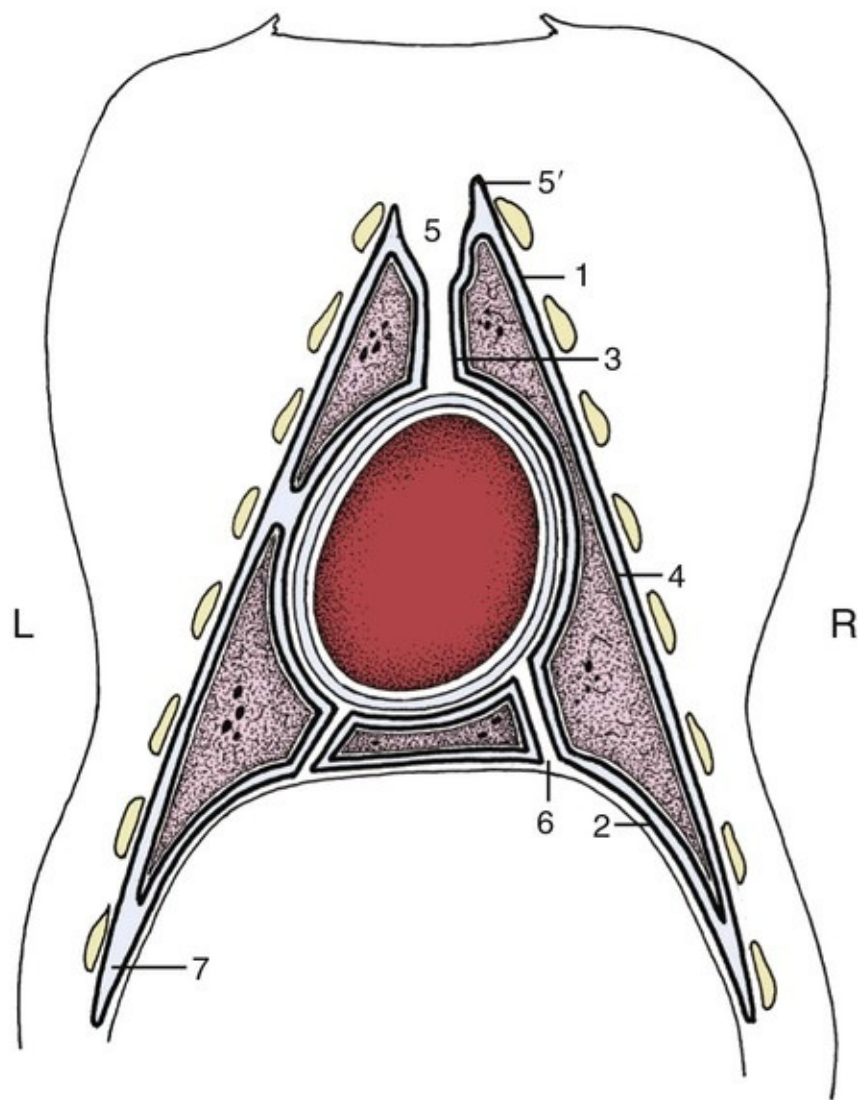


1. Manubrium
2. First rib
3. Sternebra
4. Costochondral junction

- 5. Xiphoid cartilage
- 6. Costal arch
- 7. Floating rib

Note: Ventral view.

3-3 Canine: Pleura

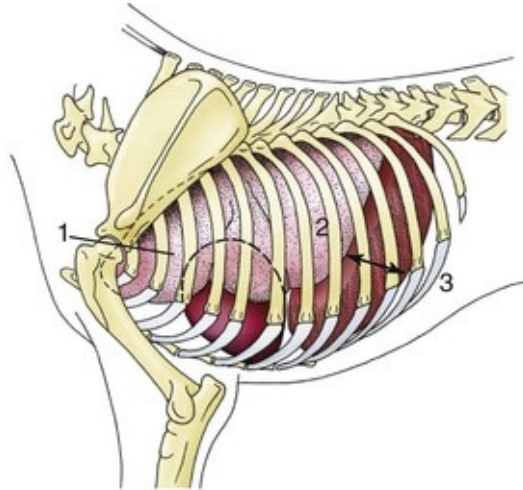
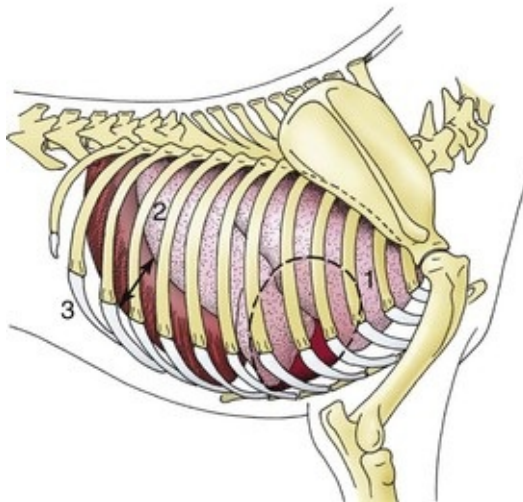


- 1. Costal pleura

2. Diaphragmatic pleura
3. Mediastinal pleura
4. Visceral (pulmonary) pleura
5. Cranial mediastinum
- 5'. Cupula pleurae
6. Plica venae cavae
7. Costodiaphragmatic recess

Note: The distribution of the pleura (*heavy black lines*) is illustrated.

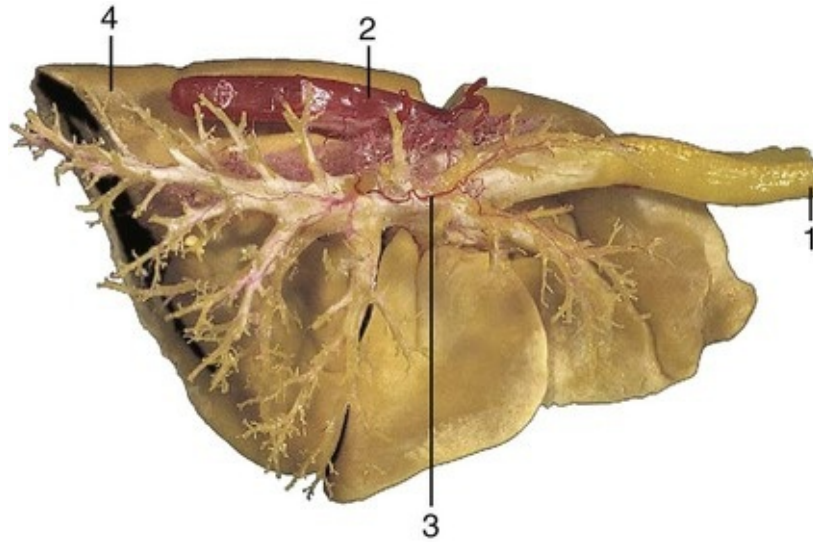
➤ **3-4 Canine: Thoracic Organs (Left View [Top] and Right View [Bottom])**



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

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

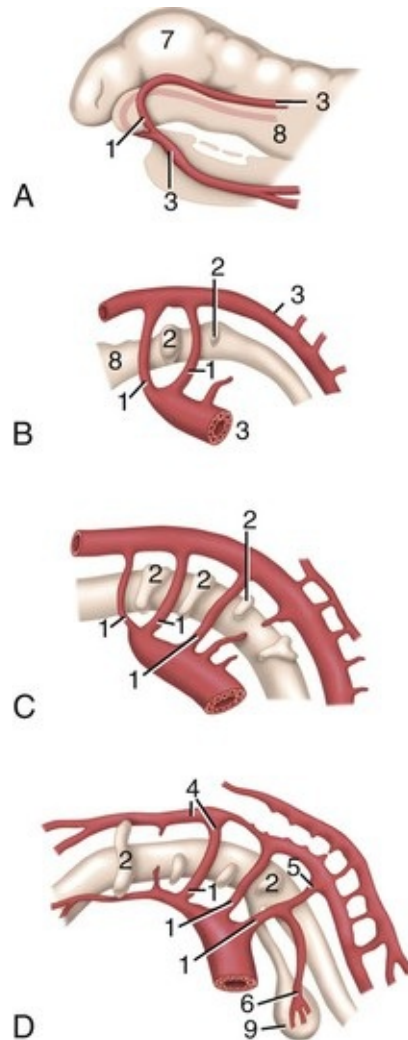
↻ 3-5 Canine: Lungs and Partial Aorta



1. Trachea
2. Aorta
3. Bronchial artery
4. Caudal lobe of left lung

Note: Corrosion specimen of the lungs and part of the canine aorta. On the right side, the resins in the bronchioli and smaller bronchi have been removed to expose the main tracheobronchial tree.

3-6 Canine: Transformation of the Aortic Arches

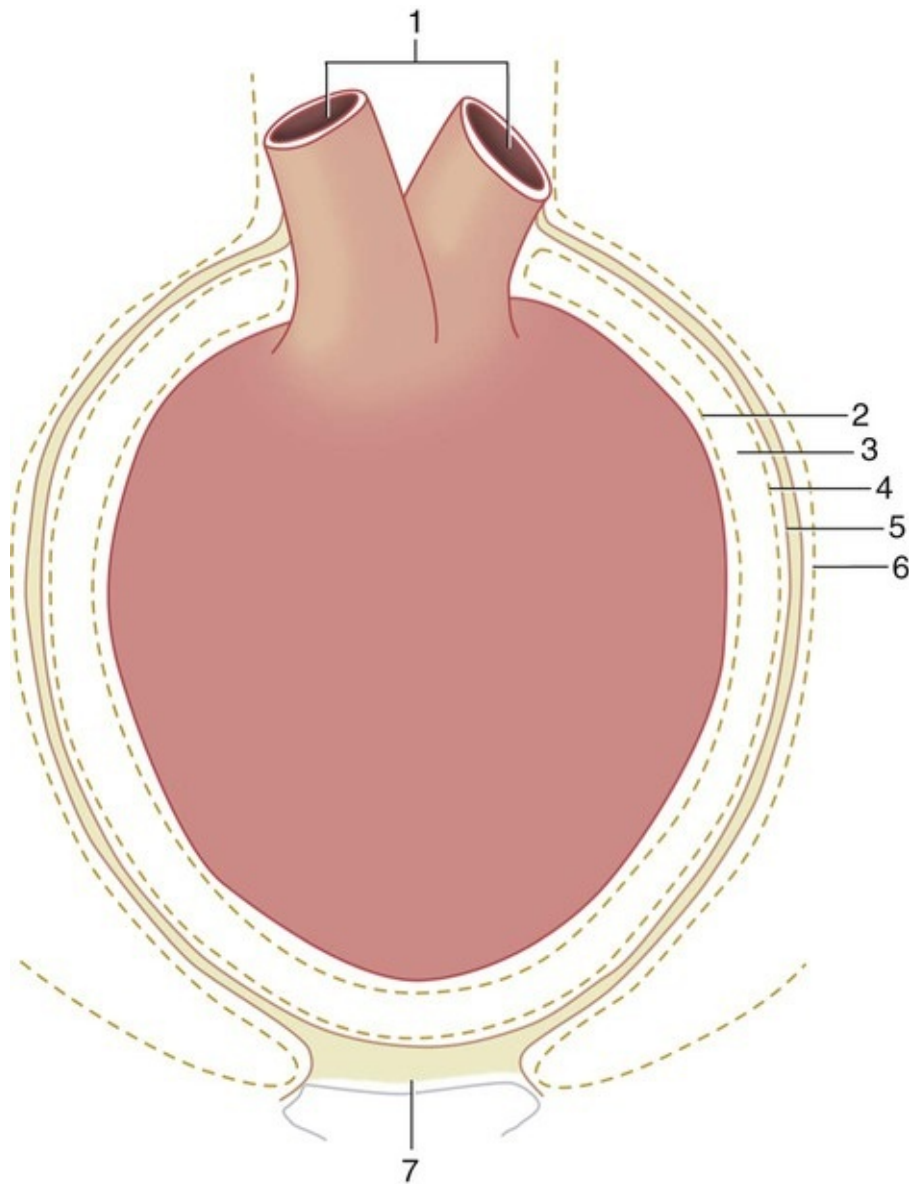


1. Aortic arches
2. Pharyngeal pouches
3. Ventral and dorsal aortae
4. Internal carotid artery
5. Ductus arteriosus
6. Left pulmonary artery
7. Brain vesicle
8. Foregut
9. Lung bud

Note: Left lateral view. **A**, Dorsal and ventral aortae are connected by the first aortic arches. **B**, First and second aortic arches are present. **C**, The first arch begins to disappear, the third is complete, and the fourth and sixth develop. **D**, The third arch and the cranial part of the

dorsal aorta are now transformed into the internal carotid artery, whereas the sixth gives rise to the pulmonary trunk and ductus arteriosus.

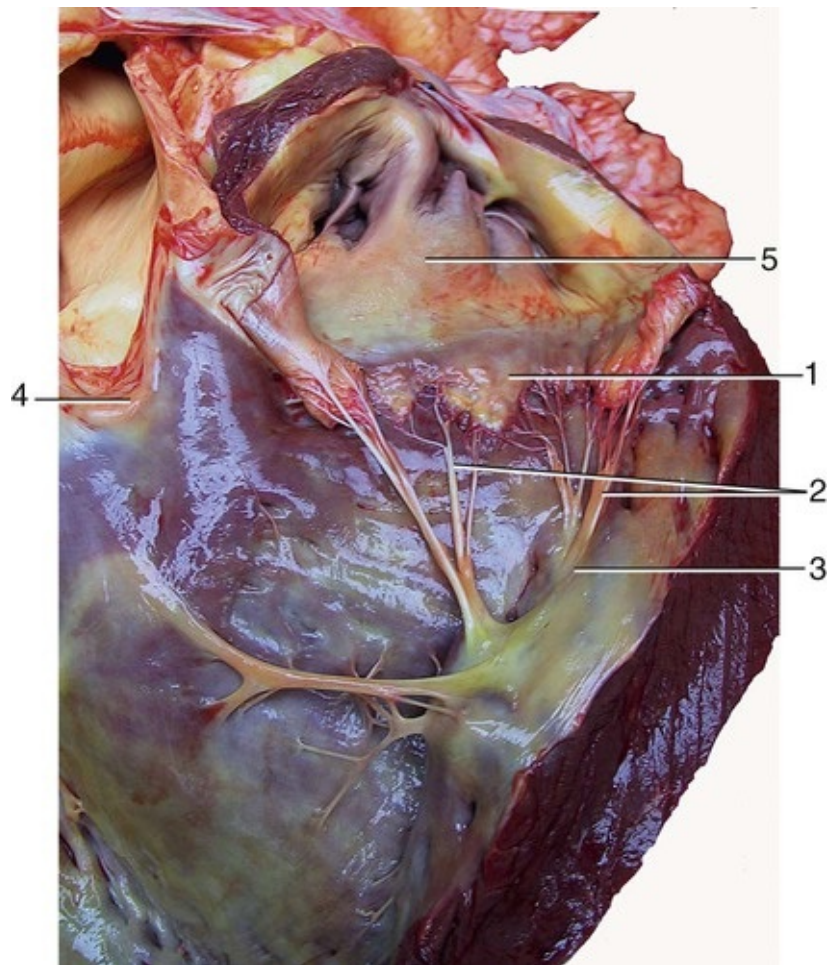
↻ 3-7 Canine: Pericardium



- 1. Great vessels
- 2. Visceral pericardium (epicardium)

3. Pericardial cavity (exaggerated in size)
4. Parietal pericardium
5. Fibrous pericardium
6. Mediastinal pleura
7. Sternopericardial ligament

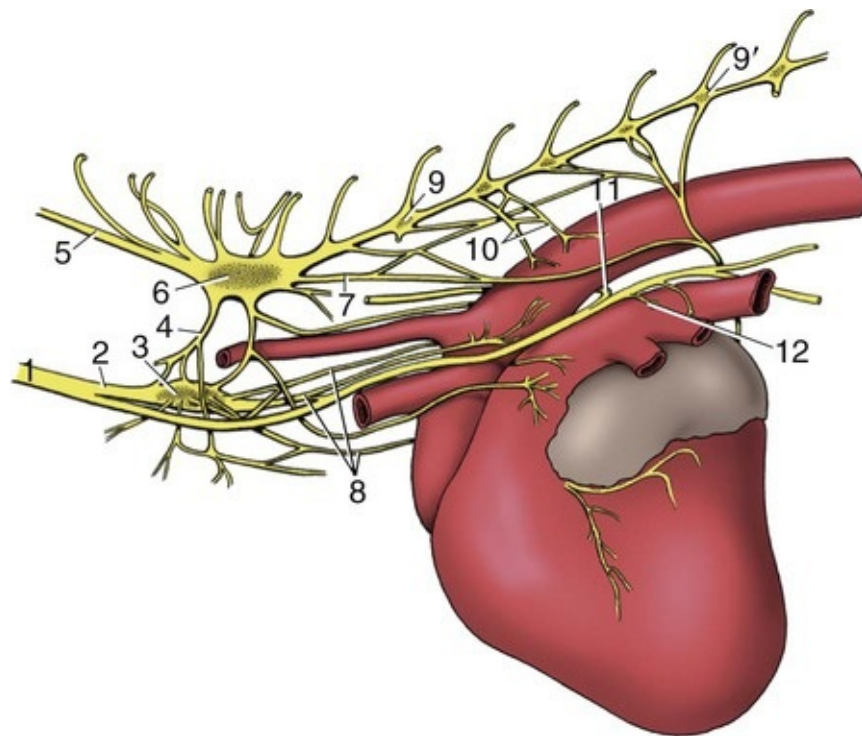
↻ 3-8 Canine: Right Ventricle



1. Cusp of right atrioventricular valve
2. Chordae tendineae
3. Papillary muscles
4. Pulmonary valve
5. Right atrium

Note: Cranioventral view of the interior of the right ventricle.

↪ 3-9 Canine: Cardiac Nerves and Related Ganglia

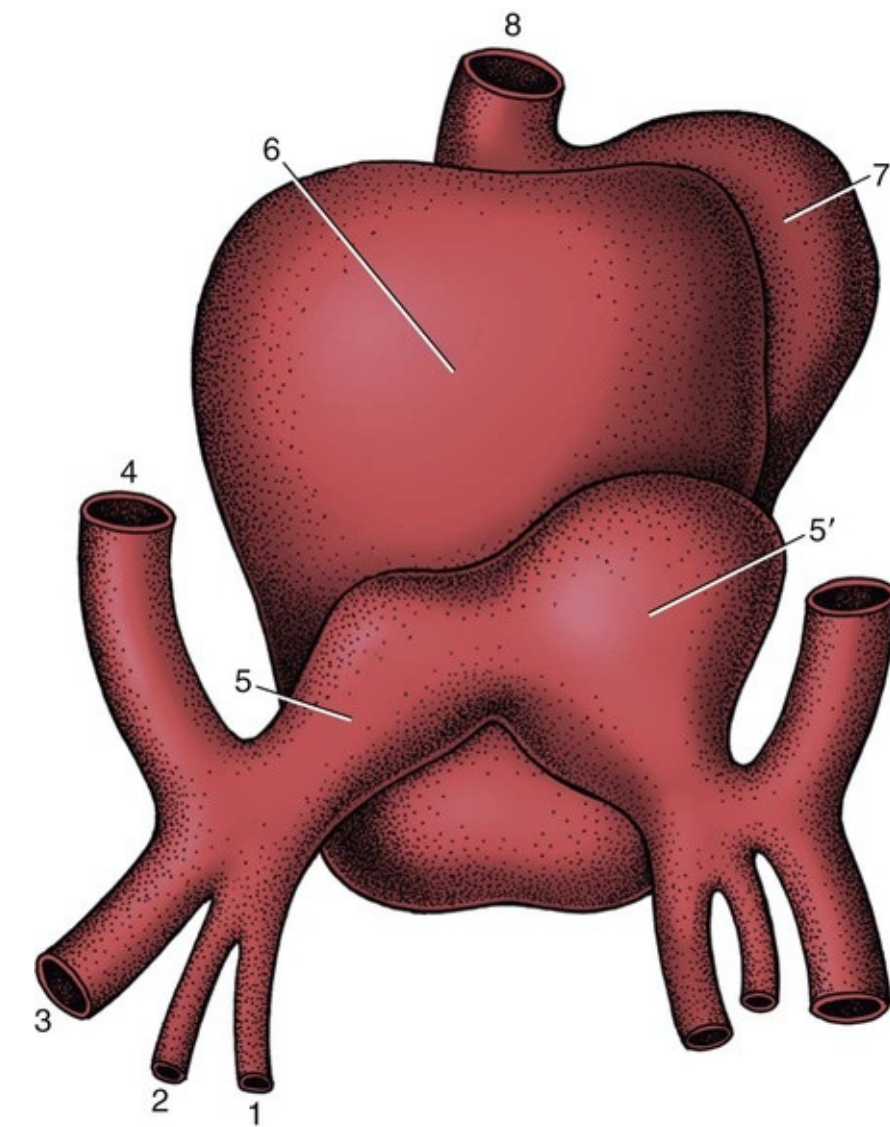


1. Vagosympathetic trunk
2. Sympathetic trunk
3. Middle cervical ganglion
4. Cranial limbs of ansa subclavia
5. Vertebral nerve
6. Cervicothoracic ganglion
7. Caudodorsal cervicothoracic cardiac nerves
8. Cardiac nerves from middle cervical ganglion
9. Third thoracic ganglia
- 9'. Seventh thoracic ganglia

- 10. Thoracic cardiac nerves
- 11. Left recurrent laryngeal nerve
- 12. Left vagus nerve

Note: Left lateral view.

↪ 3-10 Canine: Developing Heart

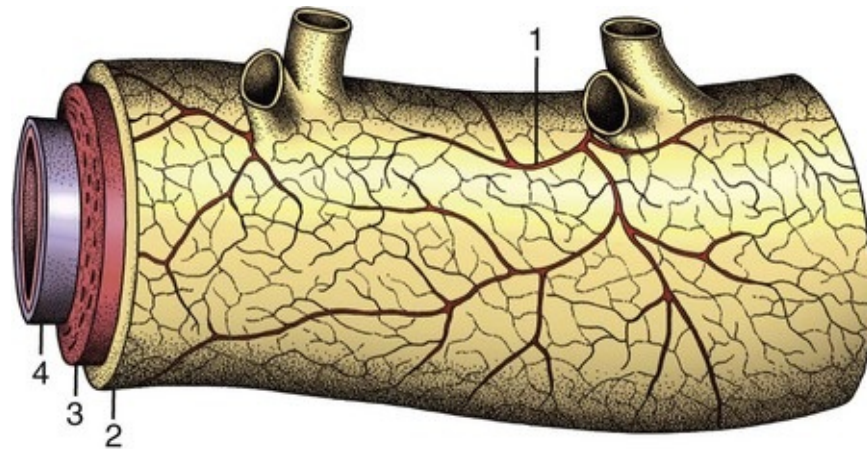


1. Vitelline vein

2. Umbilical vein
3. Caudal cardinal vein
4. Cranial cardinal vein
5. Left horn of sinus venosus
- 5'. Right horn of sinus venosus
6. Atrium
7. Ventricle
8. Truncus arteriosus

Note: Dorsal view.

↪ 3-11 Canine: Vasa Vasorum

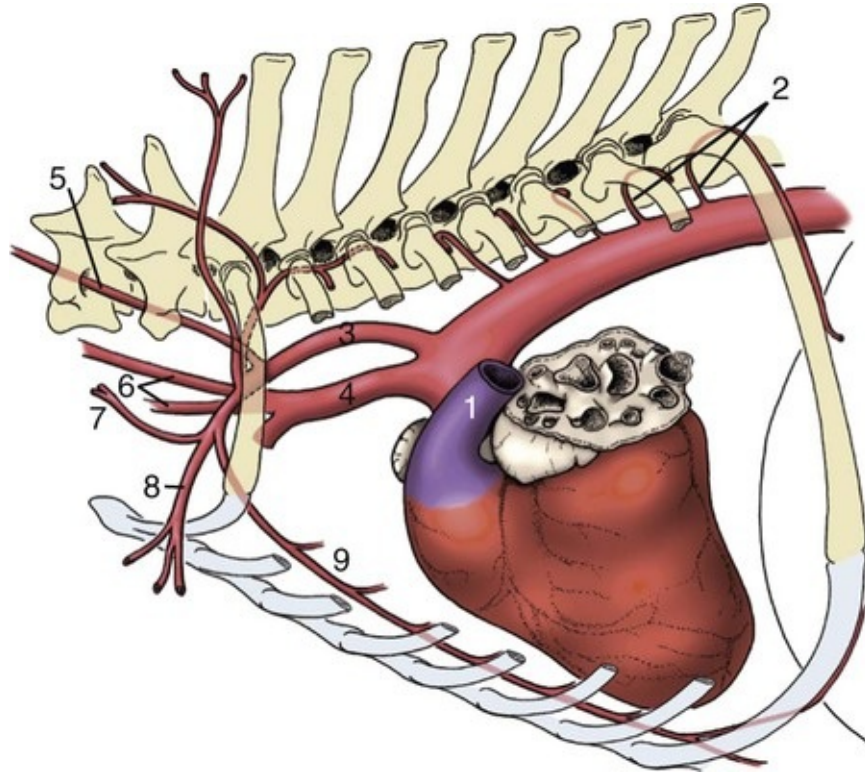


1. Vasa vasorum
2. Tunica adventitia
3. Tunica media
4. Tunica intima

Note: Vasa vasorum in the wall of a large artery.

↪ 3-12 Canine: Branching of the Aortic

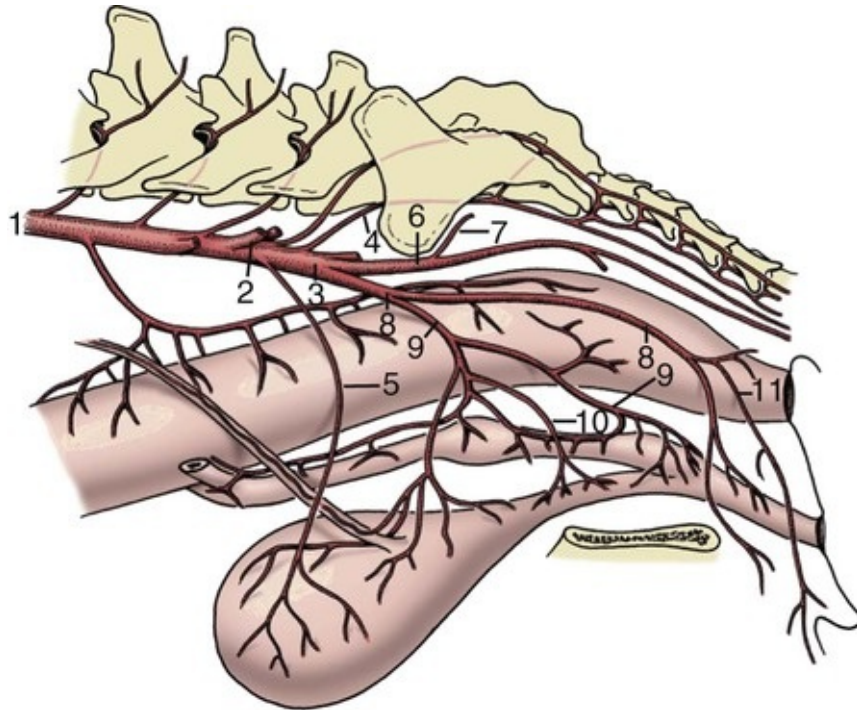
Arch



1. Pulmonary trunk
2. Dorsal intercostal arteries
3. Left subclavian artery
4. Brachiocephalic trunk
5. Vertebral artery
6. Left and right common carotid arteries
7. Superficial cervical artery
8. Axillary artery
9. Internal thoracic artery

Note: Not all arteries depicted are named.

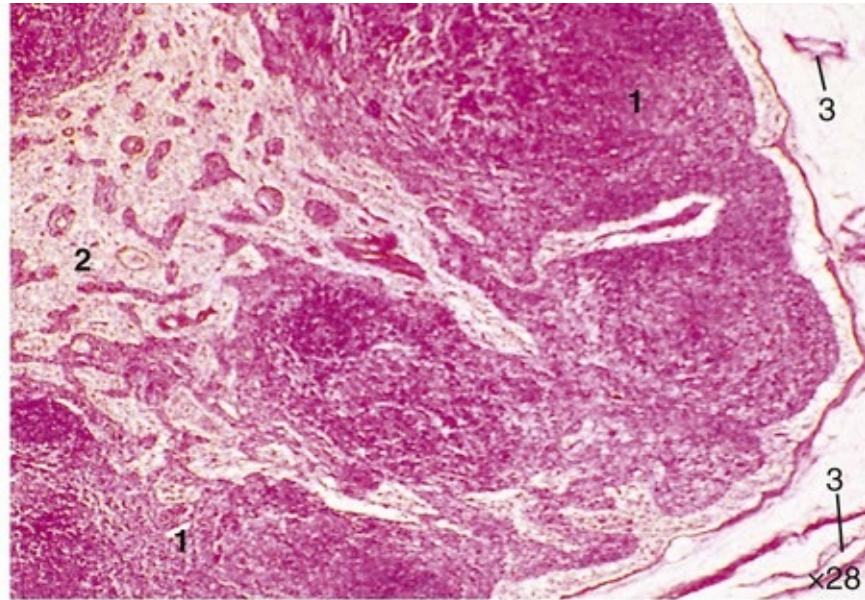
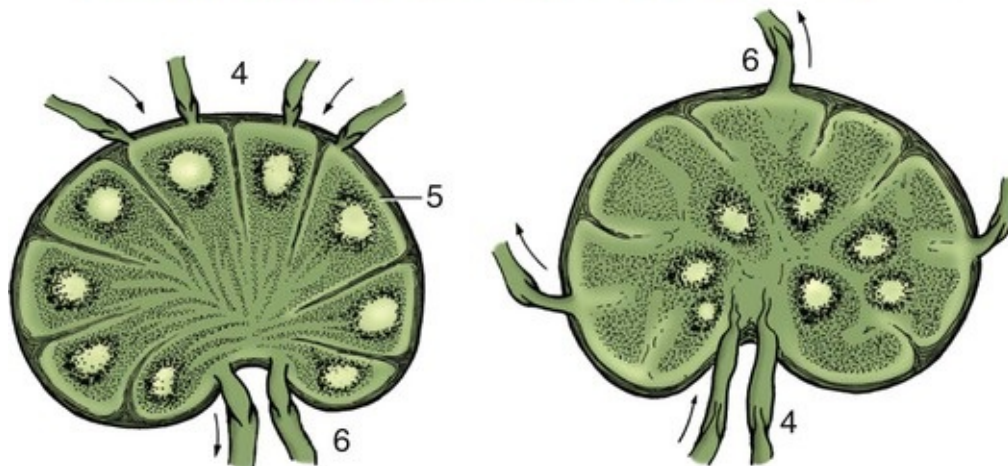
3-13 Canine: Arteries of the Female Pelvis



1. Abdominal aorta
2. External iliac artery
3. Internal iliac artery
4. Median sacral artery
5. Umbilical artery
6. Caudal gluteal artery
7. Cranial gluteal artery
8. Internal pudendal artery
9. Vaginal artery
10. Urethral artery (frequently a branch of the vaginal artery)
11. Ventral perineal artery

Note: Left lateral view.

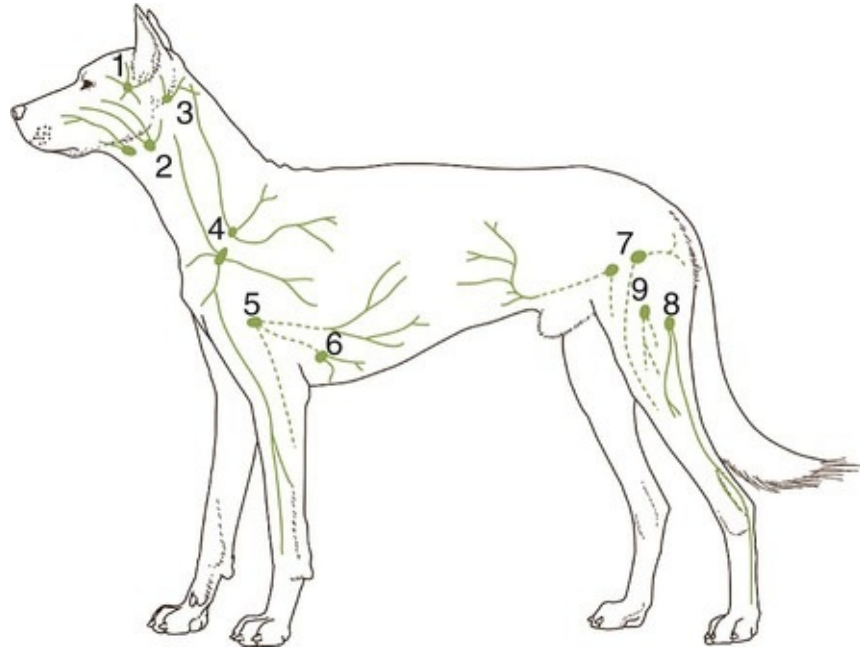
3-14 Canine: Lymph Node (Histology and Structure [Canine and Porcine])



1. Cortex with lymph nodules
2. Medulla
3. Afferent lymph vessels
4. Afferent lymphatics
5. Subcapsular sinus
6. Efferent lymphatics

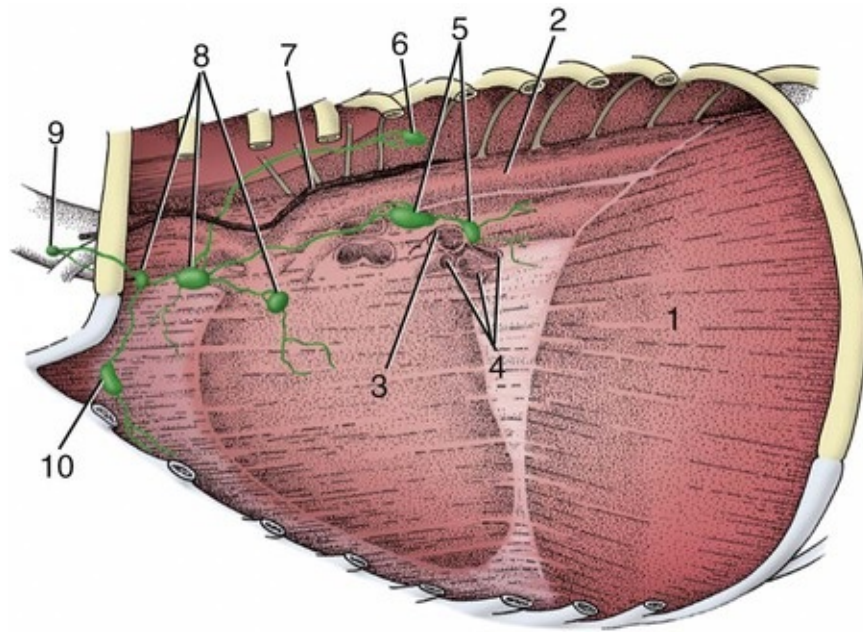
Note: The germinal centers (lymph nodules) occupy the cortical region (*left*). The germinal centers lie centrally in the pig (*right*). The direction of lymph flow is indicated in both regions (*arrows*).

3-15 Canine: Palpable Lymph Nodes



1. Parotid
2. Mandibular
3. Lateral retropharyngeal (inconstant)
4. Superficial cervical
5. Axillary
6. Accessory axillary (inconstant)
7. Superficial inguinal
8. Popliteal
9. Femoral (inconstant)

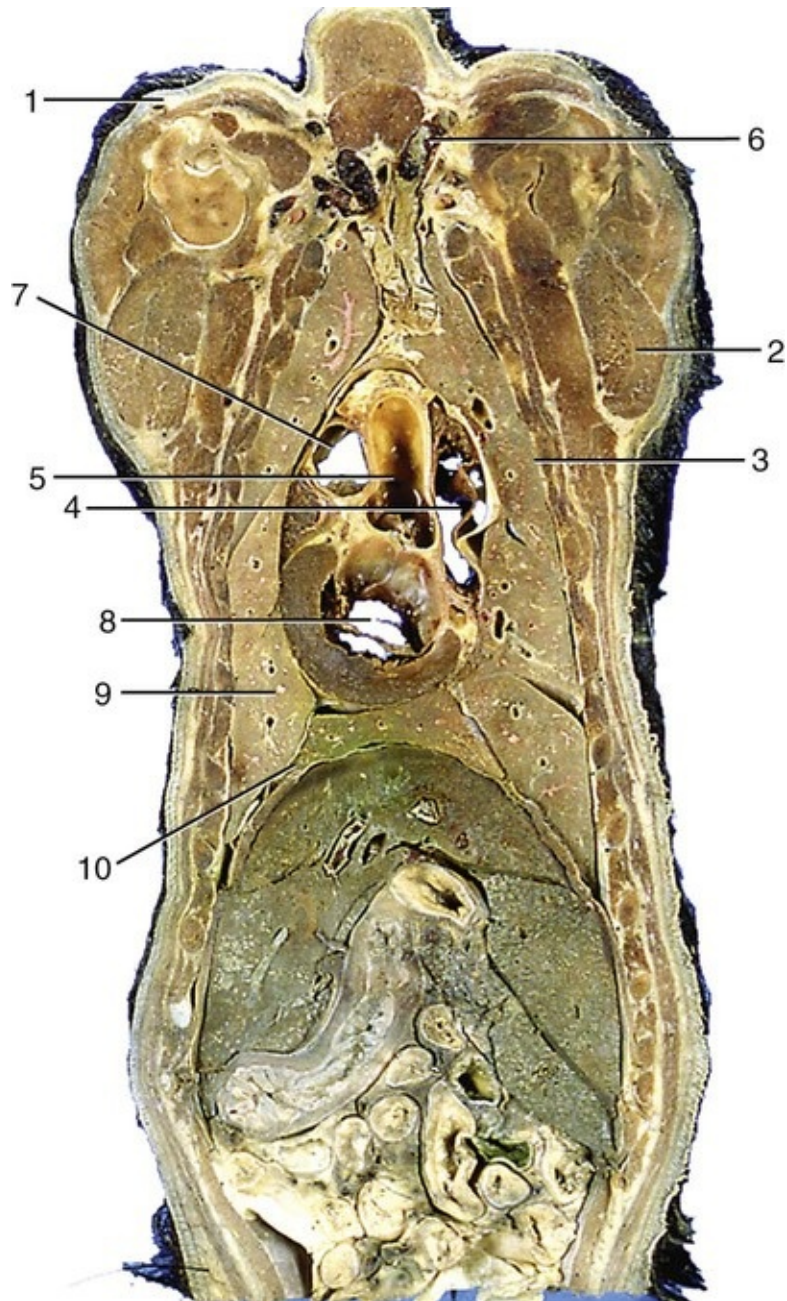
↻ 3-16 Canine: Thoracic Lymph Nodes



1. Diaphragm
2. Thoracic aorta
3. Left bronchus
4. Pulmonary vessels
5. Tracheobronchial nodes
6. Intercostal node
7. Thoracic duct
8. Cranial mediastinal nodes
9. Caudal deep cervical node
10. Sternal node

Note: The left lung is removed. The outline of the heart is visible within the mediastinum.

↻ 3-17 Canine: Trunk

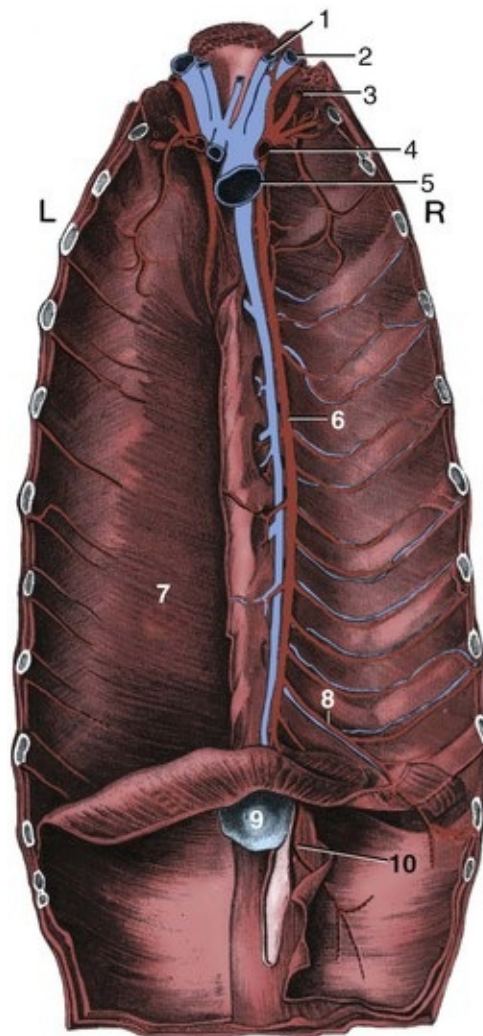


1. Cephalic vein
2. Triceps
3. Cranial, middle, caudal, and accessory lobes of the right lung
4. Right atrium
5. Aortic arch
6. Cranial vena cava
7. Pulmonary valve
8. Left atrioventricular valve

- 9. Divided cranial and caudal lobes of the left lung
- 10. Caudal mediastinum

Note: The canine trunk is level with the base of the heart. Dorsal view.

3-18 Canine: Vessels on the Floor of the Thorax

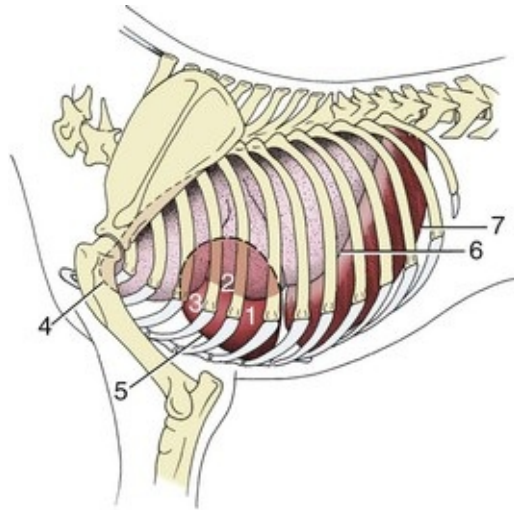
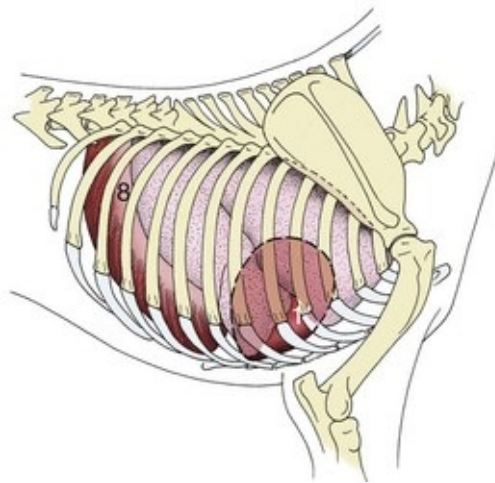


- 1. Internal jugular vein
- 2. External jugular vein

3. Vertebral artery
4. Right subclavian artery
5. Cranial vena cava
6. Internal thoracic artery
7. Transversus thoracis
8. Musculophrenic artery
9. Xiphoid cartilage
10. Cranial epigastric artery

Note: The transversus thoracis has been removed on the right.

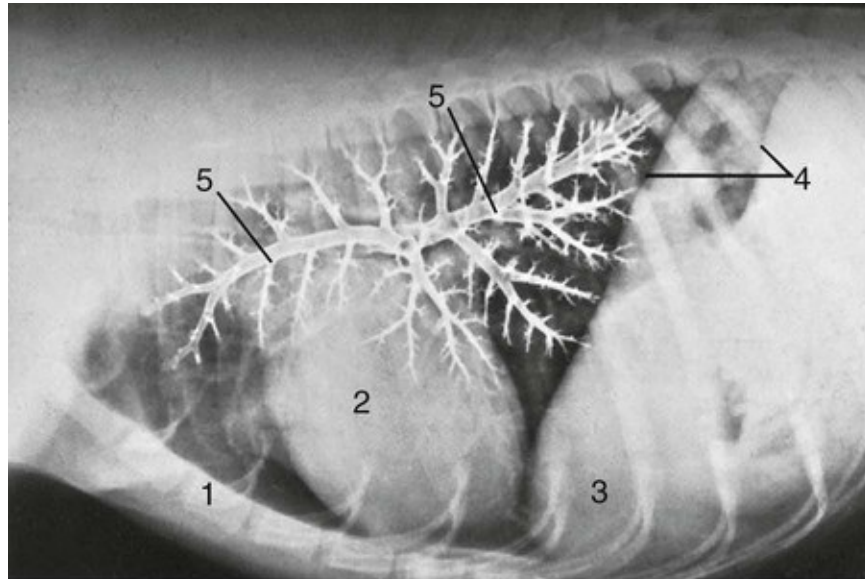
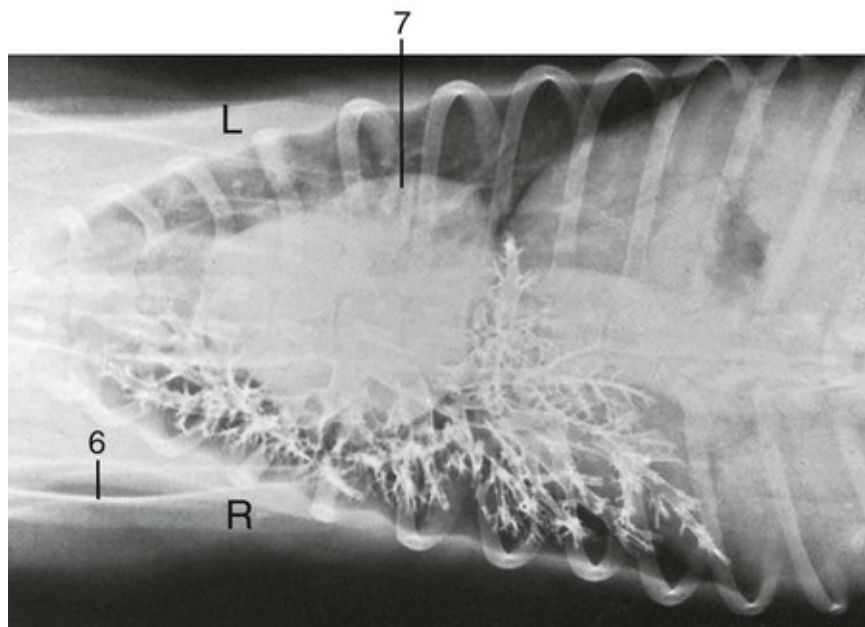
3-19 Canine: Heart and Lungs Surface Projections (Left Projection [Top] and Right Projection [Bottom])



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.

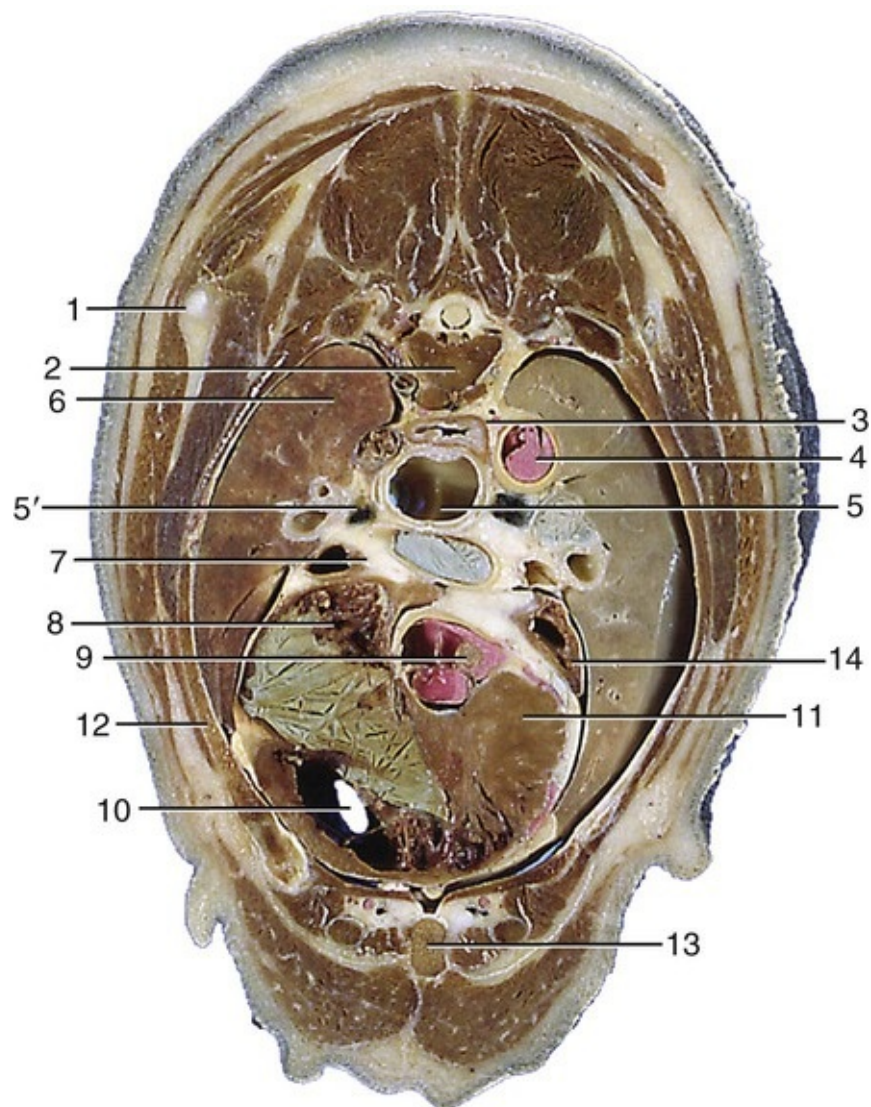
3-20 Canine: Right Lung Bronchograms (Lateral View [Top] and Ventrodorsal View [Bottom])



- 1. Sternum
- 2. Heart

3. Liver behind diaphragm
4. Paired shadows of the cranial extent of the crura of the diaphragm
5. Lobar bronchi
6. Scapula
7. Left ventricle

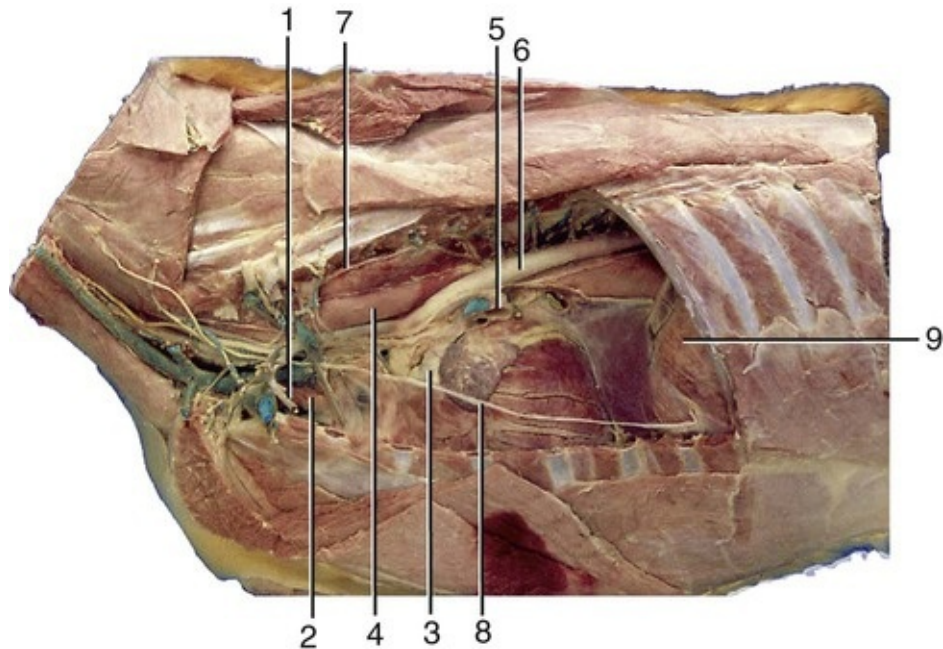
3-21 Canine: Trunk



1. Caudal angle of scapula
2. Sixth thoracic vertebra
3. Esophagus
4. Aorta
5. Tracheal bifurcation
- 5'. Large blood vessels accompanying principal bronchi, likely right and left pulmonary arteries
6. Right lung
7. Tracheobronchial lymph nodes
8. Right atrium
9. Origin of aorta
10. Right ventricle
11. Interventricular septum
12. Fifth rib
13. Sternum
14. Left auricle

Note: Craniocaudal view of transverse section of the canine trunk at the level of the sixth thoracic vertebra.

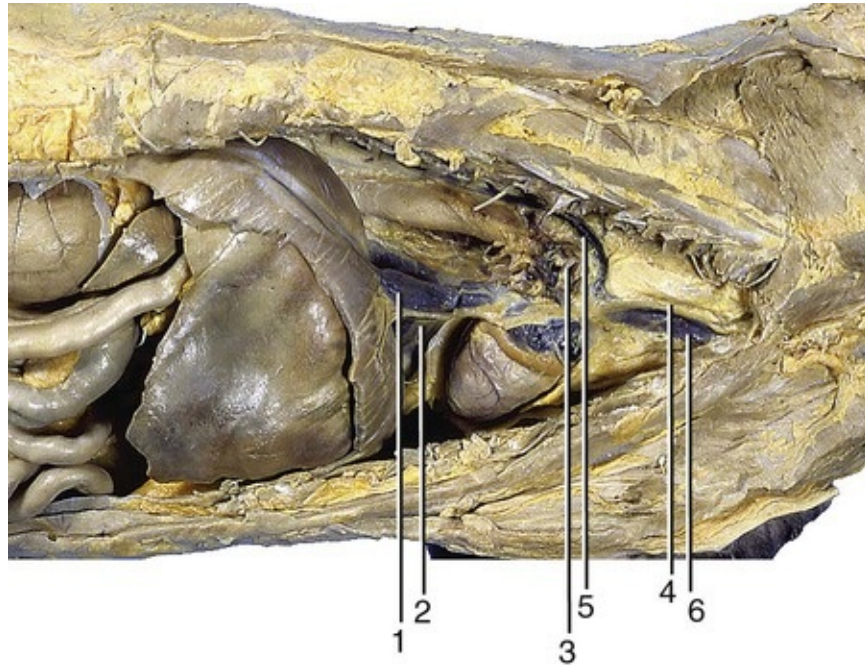
➤ 3-22 Canine: Thoracic Cavity (Left Lateral View)



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.

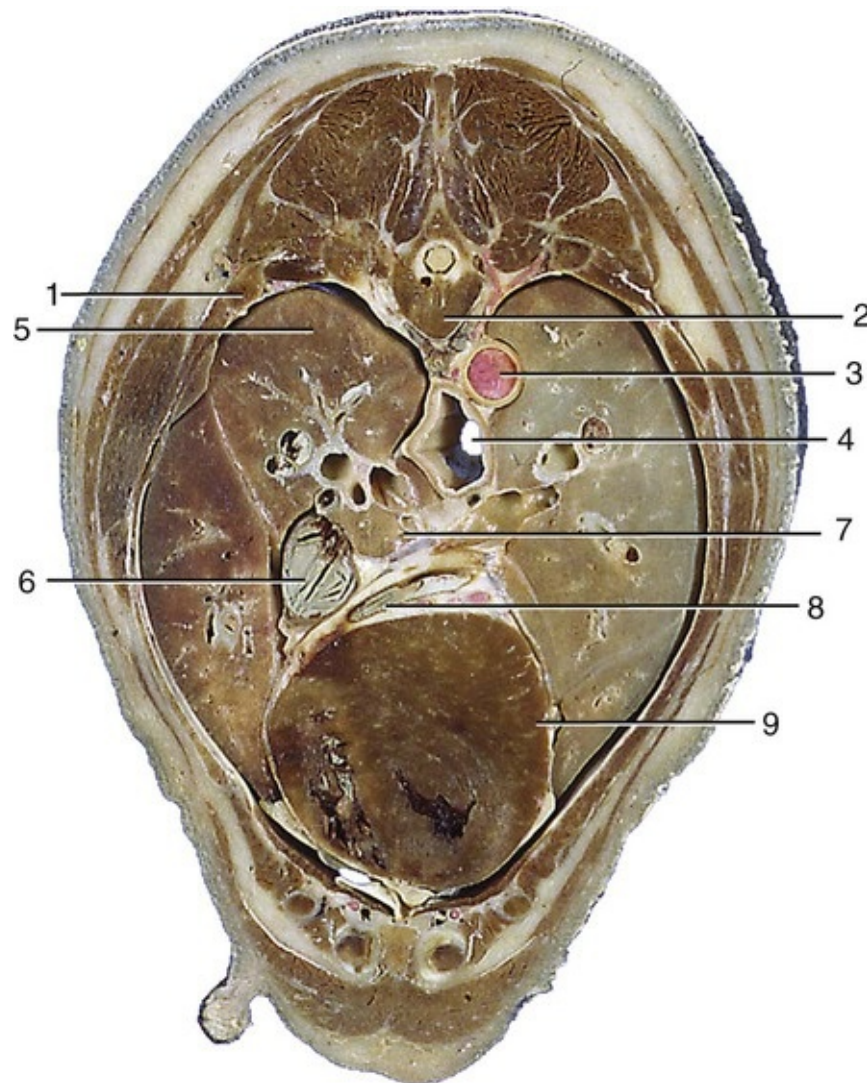
↻ 3-23 Canine: Thoracic Cavity (Right Lateral View)



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

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

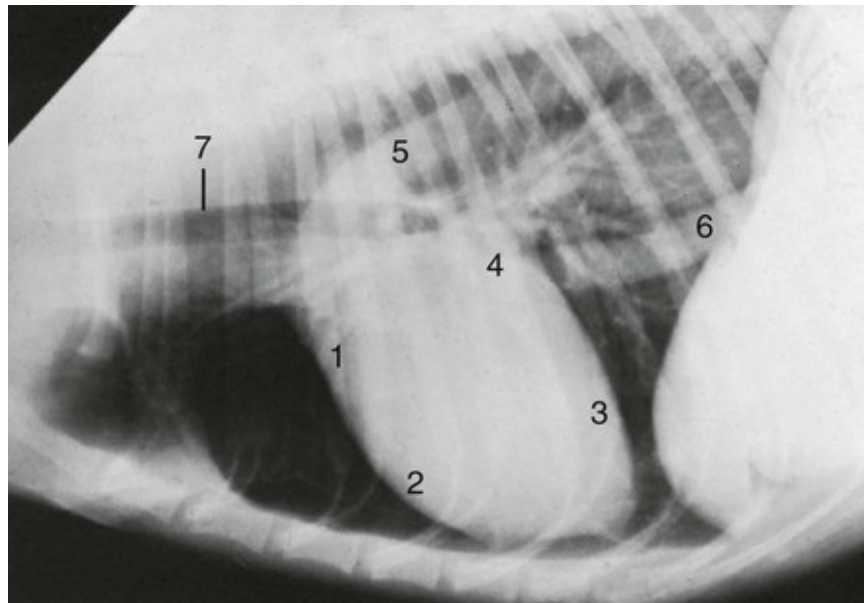
3-24 Canine: Trunk (Transverse Section at the Seventh Thoracic Vertebra)



1. Sixth rib
2. Seventh thoracic vertebra
3. Aorta
4. Esophagus
5. Right cranial lobe
6. Caudal vena cava

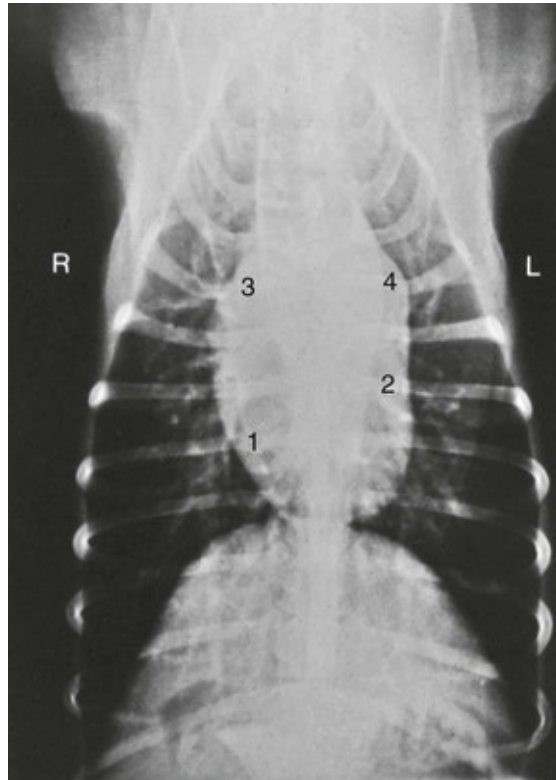
- 7. Pulmonary veins passing to left atrium
- 8. Great cardiac vein
- 9. Left ventricle

↻ **3-25 Canine: Heart (Lateral View)**



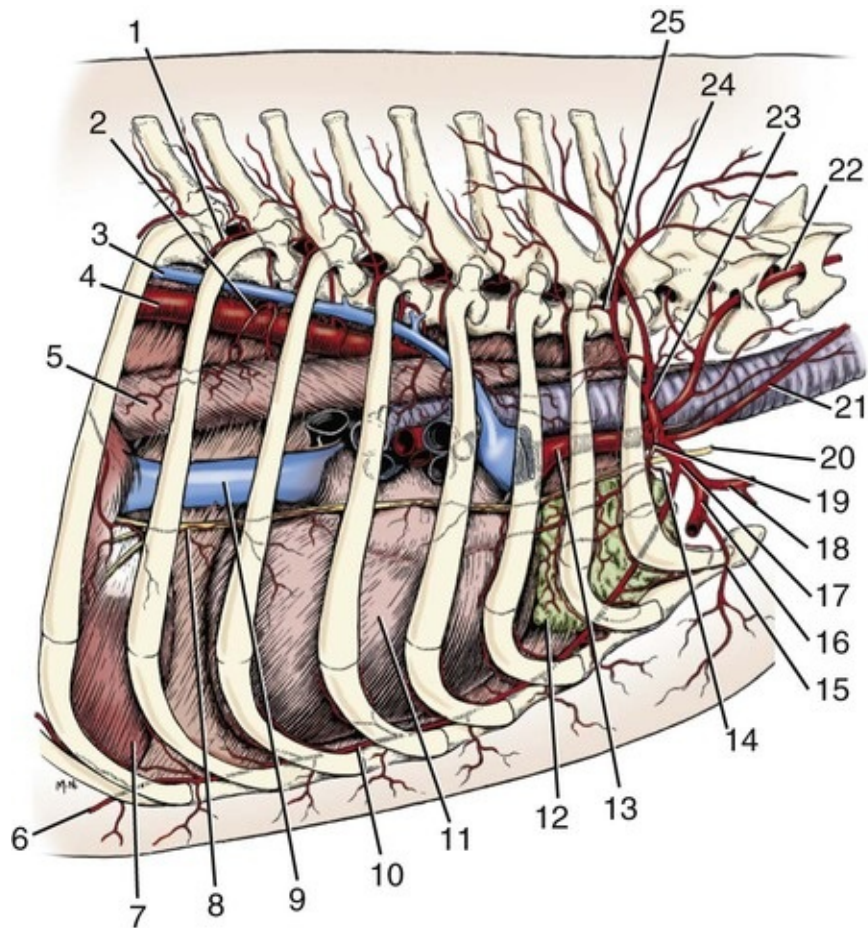
- 1. Right auricle
- 2. Right ventricle
- 3. Left ventricle
- 4. Left atrium
- 5. Aorta
- 6. Caudal vena cava
- 7. Trachea

↻ **3-26 Canine: Heart (Ventrodorsal View)**



1. Right ventricle
2. Left ventricle
3. Right atrium
4. Pulmonary trunk

↻ **3-27 Canine: Arteries of the Thorax**

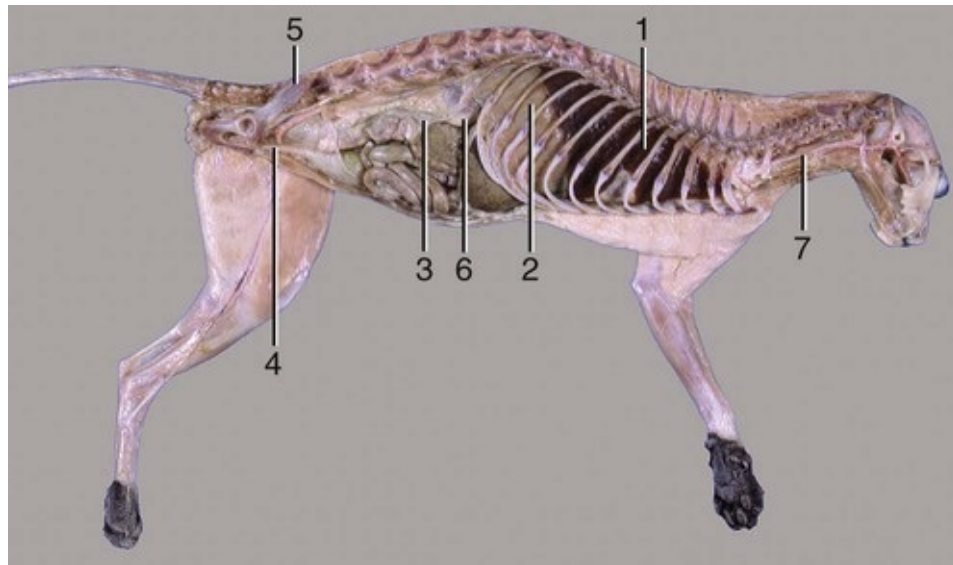


1. Intercostal artery
2. Esophageal branch
3. Azygos vein
4. Aorta
5. Esophagus
6. Cranial epigastric artery
7. Diaphragm
8. Phrenic artery
9. Caudal vena cava
10. Internal thoracic artery
11. Heart
12. Thymus
13. Brachiocephalic trunk
14. Pericardiophrenic artery
15. External thoracic artery
16. Axillary artery
17. Right subclavian artery

- 18. Superficial cervical artery
- 19. First intercostal artery
- 20. Phrenic nerve
- 21. Right common carotid artery
- 22. Vertebral artery
- 23. Costocervical trunk
- 24. Deep cervical artery
- 25. Thoracic vertebral artery

Note: Right lateral view.

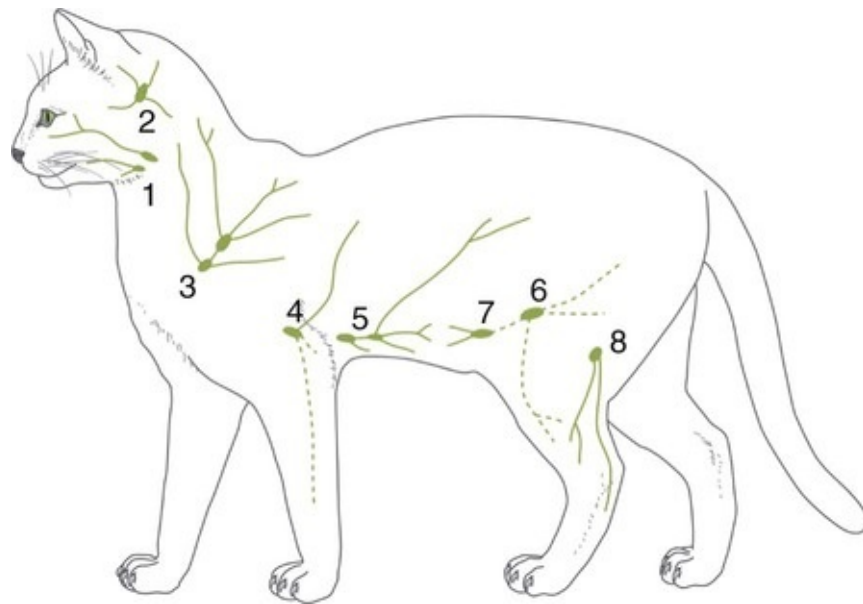
3-28 Feline: Thoracic, Abdominal, and Pelvic Cavities



- 1. Thoracic cavity (with lung)
- 2. Diaphragm
- 3. Abdominal cavity
- 4. Pelvic cavity
- 5. Sacrum
- 6. Right kidney
- 7. Esophagus

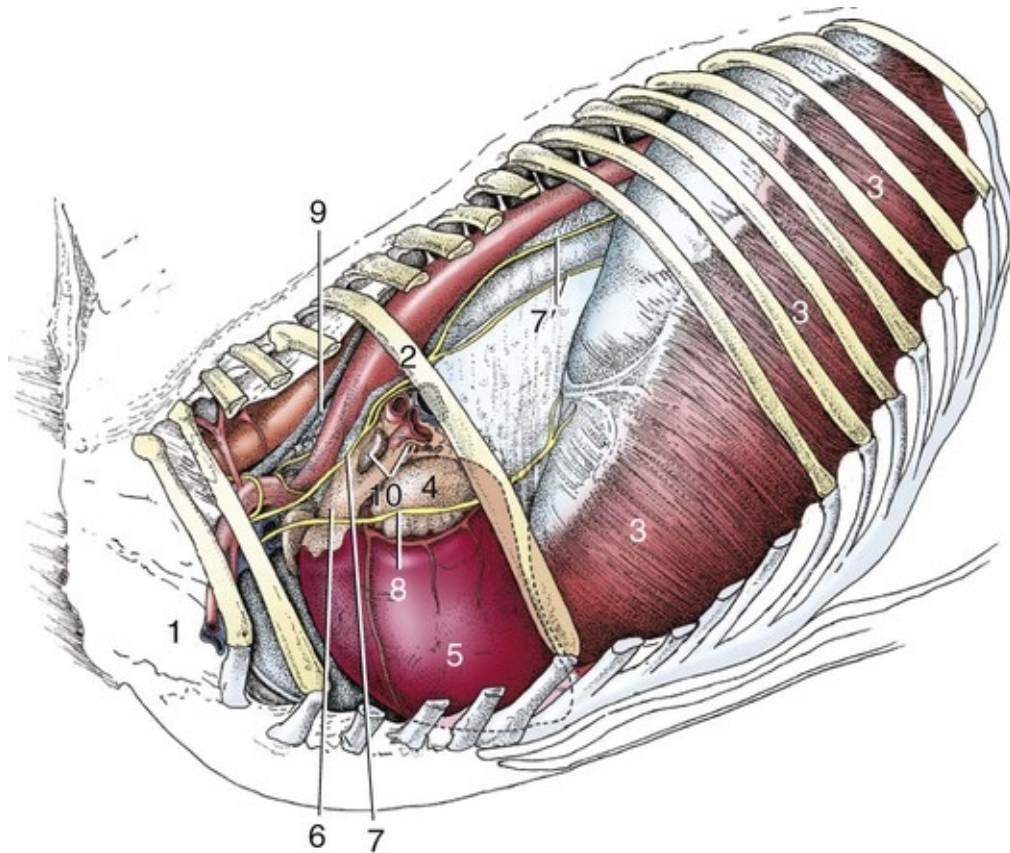
Note: View is from the right.

3-29 Feline: Palpable Lymph Nodes



1. Mandibular
2. Lateral retropharyngeal
3. Dorsal superficial cervical
4. Axillary
5. Accessory axillary
6. Superficial inguinal
7. Caudal epigastric
8. Popliteal

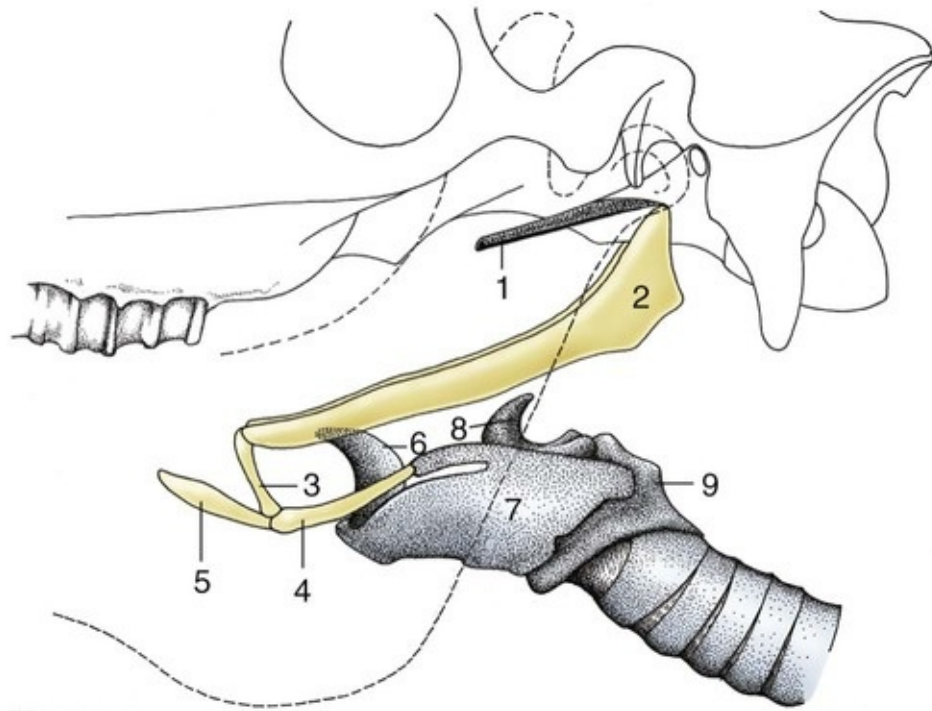
3-30 Equine: Structures within the Mediastinum



1. Axillary vessels
2. Sixth rib
3. Diaphragm
4. Left auricle
5. Left ventricle
6. Pulmonary trunk
7. Vagus
- 7'. Dorsal and ventral vagal trunks
8. Phrenic nerve
9. Thoracic duct
10. Tracheobronchial lymph nodes

Note: The mediastinal pleura cranial to the heart have been removed, exposing the cranial lobe of the right lung.

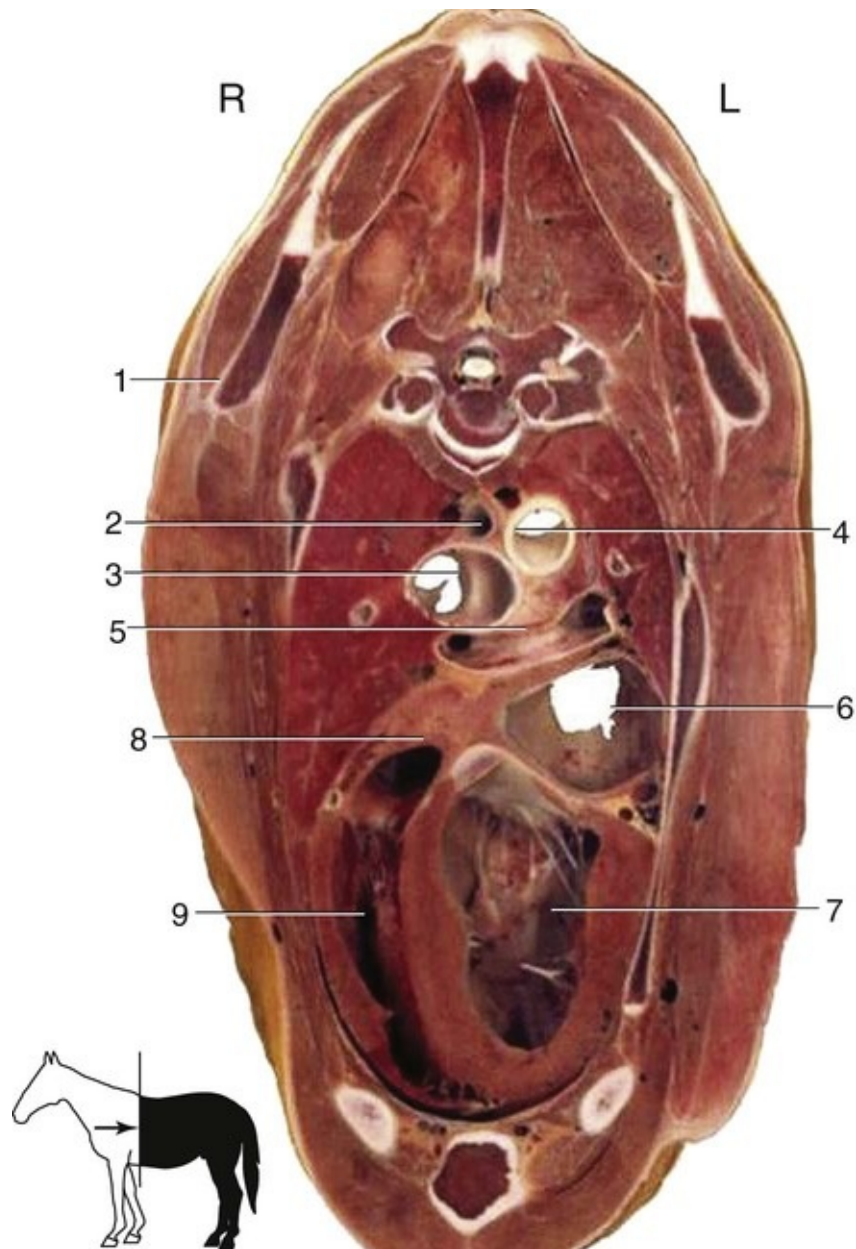
3-31 Equine: Hyoid Apparatus Suspending the Larynx from the Base of the Skull



1. Cartilage of auditory tube
2. Stylohyoid
3. Keratohyoid
4. Thyrohyoid
5. Lingual process of basihyoid
6. Epiglottic cartilage
7. Thyroid cartilage
8. Arytenoid cartilage
9. Cricoid cartilage

Note: The *broken line* indicates the mandible.

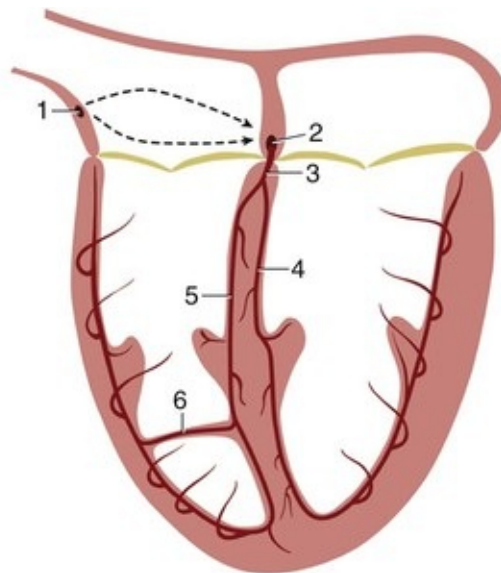
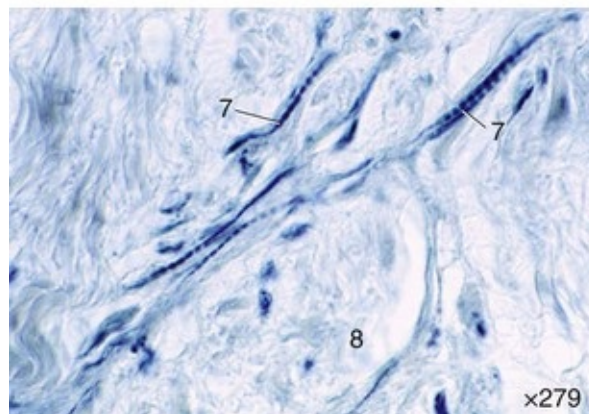
3-32 Equine: Thorax at the Fifth Thoracic Vertebra



1. Caudal angle of scapula
2. Esophagus
3. Bifurcation of the trachea
4. Aorta

- 5. Bifurcation of the pulmonary trunk
- 6. Left atrium
- 7. Left ventricle
- 8. Right atrium
- 9. Right ventricle

3-33 Equine: Conducting System of the Heart (Top) and Sinoatrial Node (Bottom)

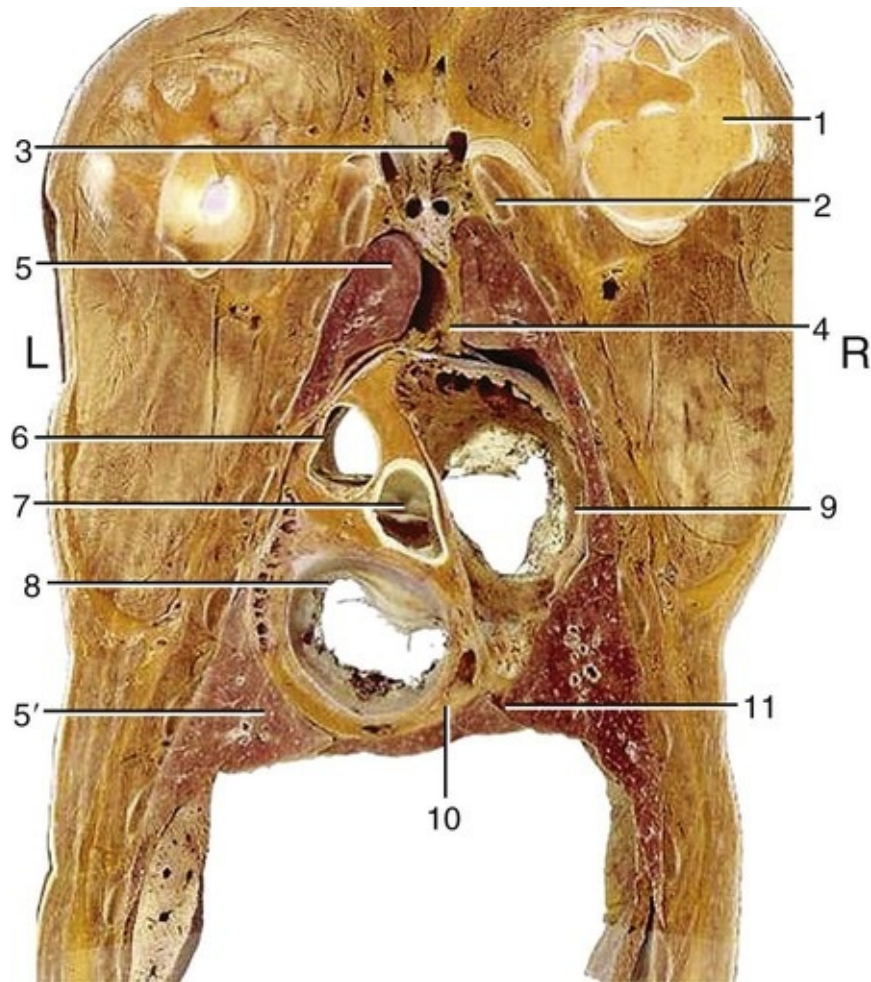


- 1. Sinuatrial node

2. Atrioventricular node
3. Atrioventricular bundle
4. Left limb
5. Right limb
6. Branch of right limb traversing the septomarginal band
7. Nodal myofibers
8. Bundle of nerve fibers

Note: Top, The *broken lines* suggest the passage of the excitation wave through the atrial wall.

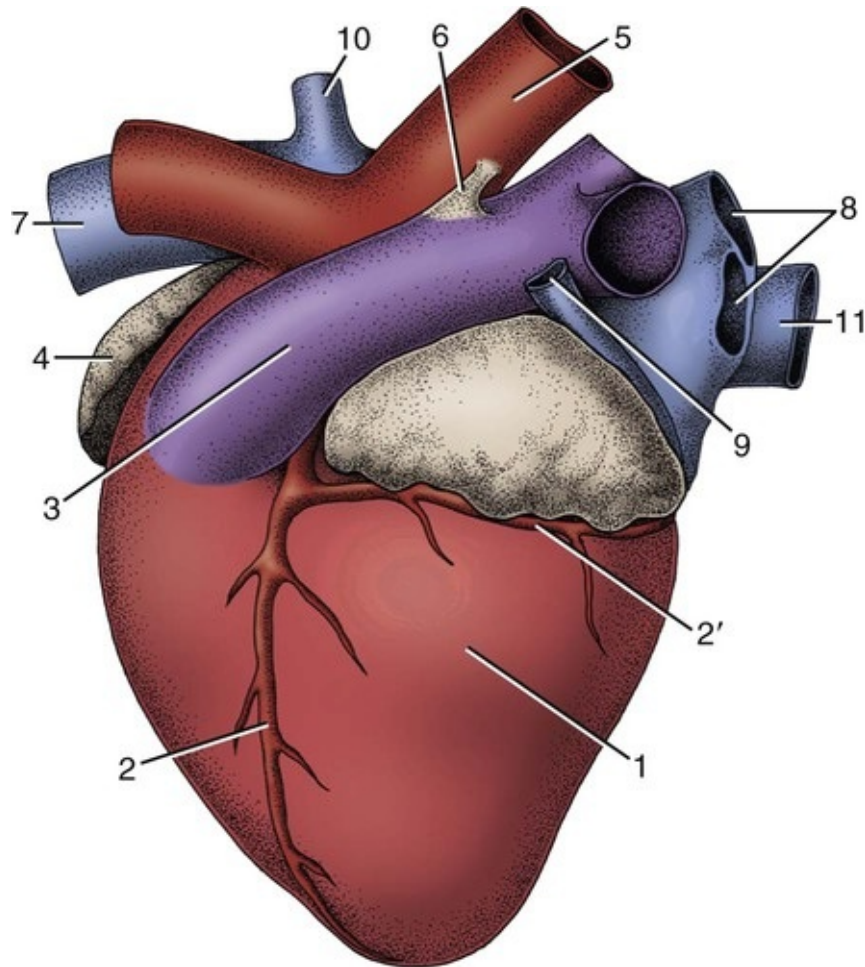
3-34 Equine: Thorax at the Level of the Atrioventricular Valves



1. Head of humerus
2. First rib
3. Formation of cranial vena cava
4. Cranial mediastinum
5. Cranial lobe of the left lung
- 5'. Caudal lobe of the left lung
6. Pulmonary valve
7. Aortic valve
8. Left atrioventricular valve
9. Right atrioventricular valve
10. Coronary sinus
11. Plica venae cavae

Note: Dorsal surface of dorsal plane section.

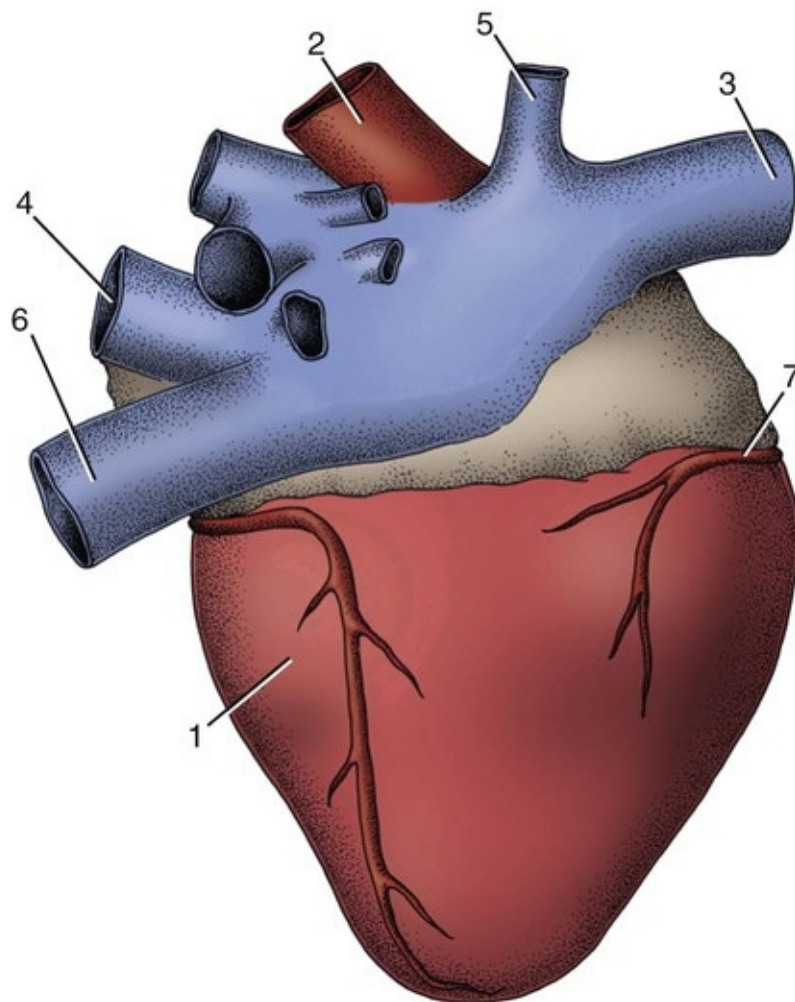
3-35 Bovine: Heart (Left View)



1. Left ventricle
2. Paraconal interventricular branch of left coronary artery
- 2'. Circumflex branch of left coronary artery
3. Pulmonary trunk
4. Right auricle
5. Aorta
6. Ligamentum arteriosum

- 7. Cranial vena cava
- 8. Left and right pulmonary veins
- 9. Left azygous vein
- 10. Right azygous vein
- 11. Caudal vena cava

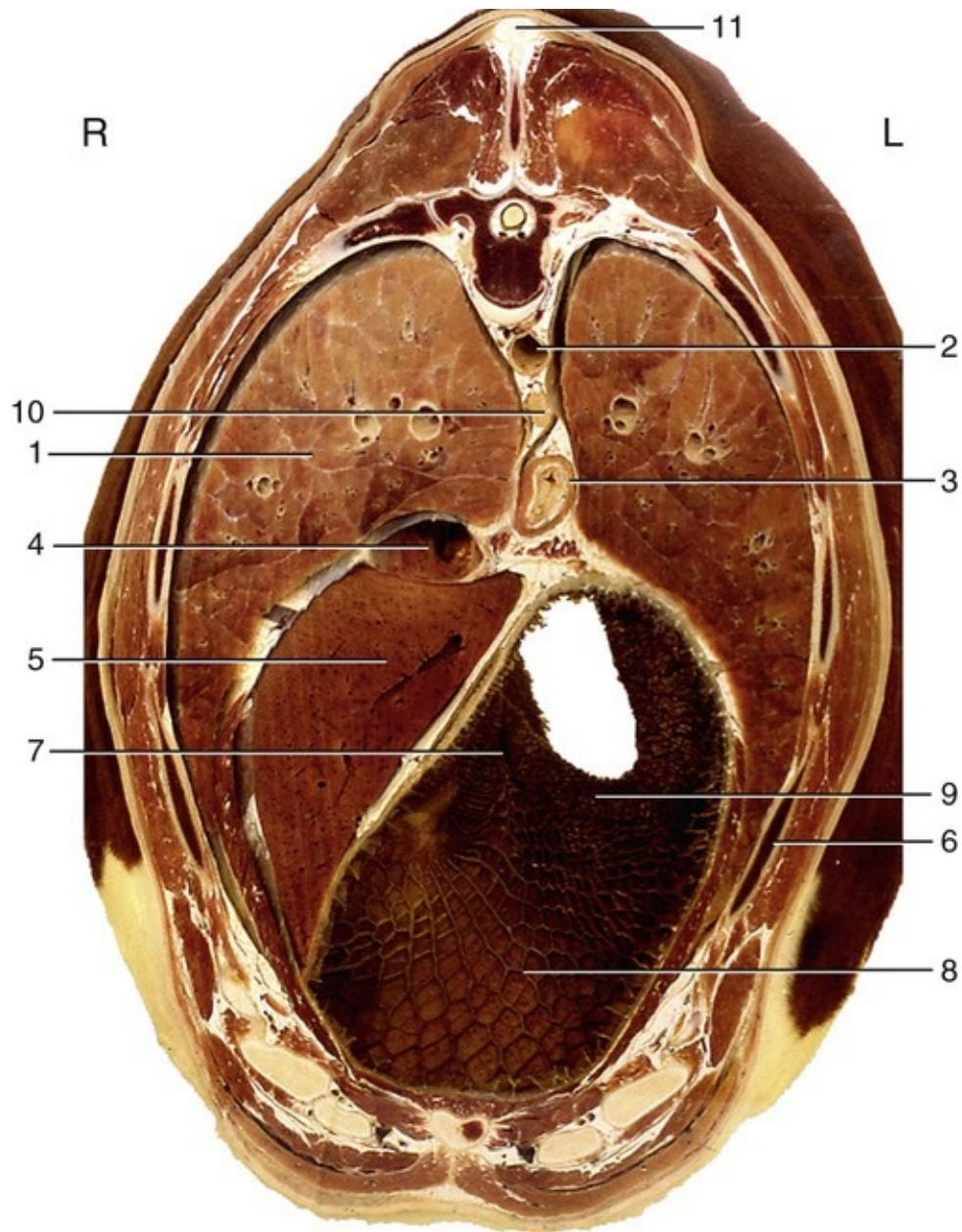
• 3-36 Bovine: Heart (Right View)



- 1. Left ventricle
- 2. Aorta
- 3. Cranial vena cava

4. Left pulmonary vein
5. Right azygous vein
6. Caudal vena cava
7. Right coronary artery

• **3-37 Bovine: Trunk at the Eighth Thoracic Vertebra**

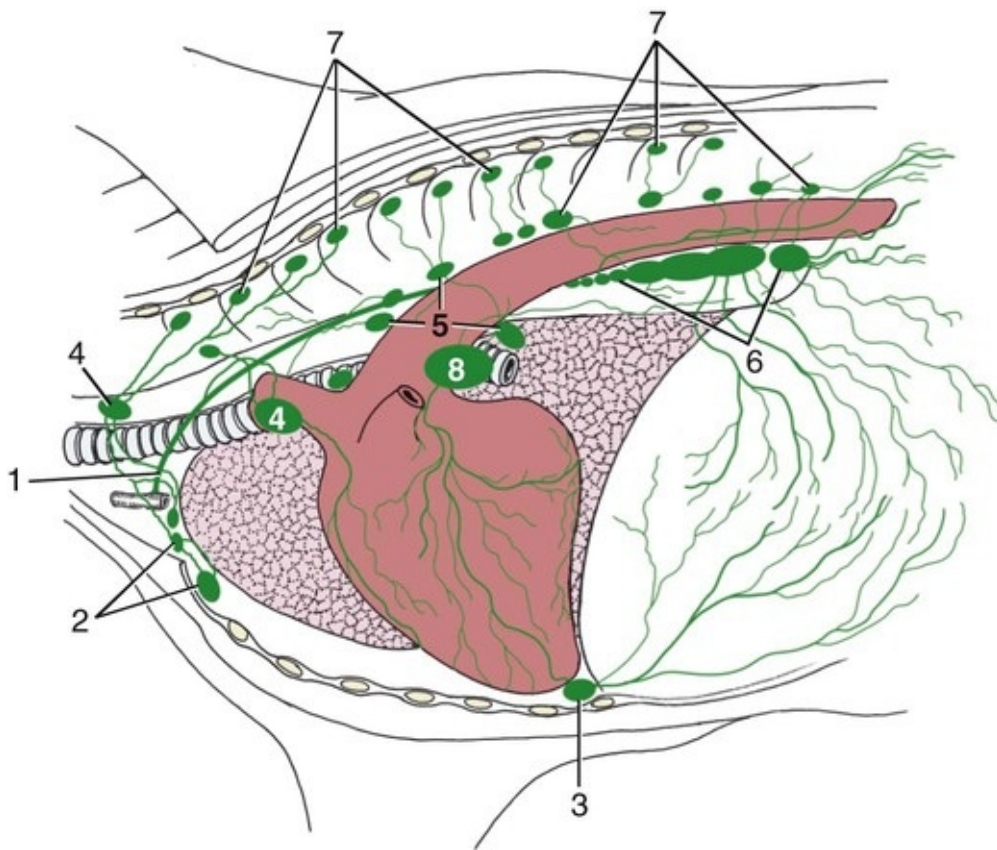


1. Caudal lobe of right lung
2. Aorta
3. Esophagus
4. Caudal vena cava
5. Liver
6. Seventh rib
7. Reticular groove
8. Reticulum
9. Ruminoreticular fold
10. Caudal mediastinal lymph node

11. Supraspinous ligament

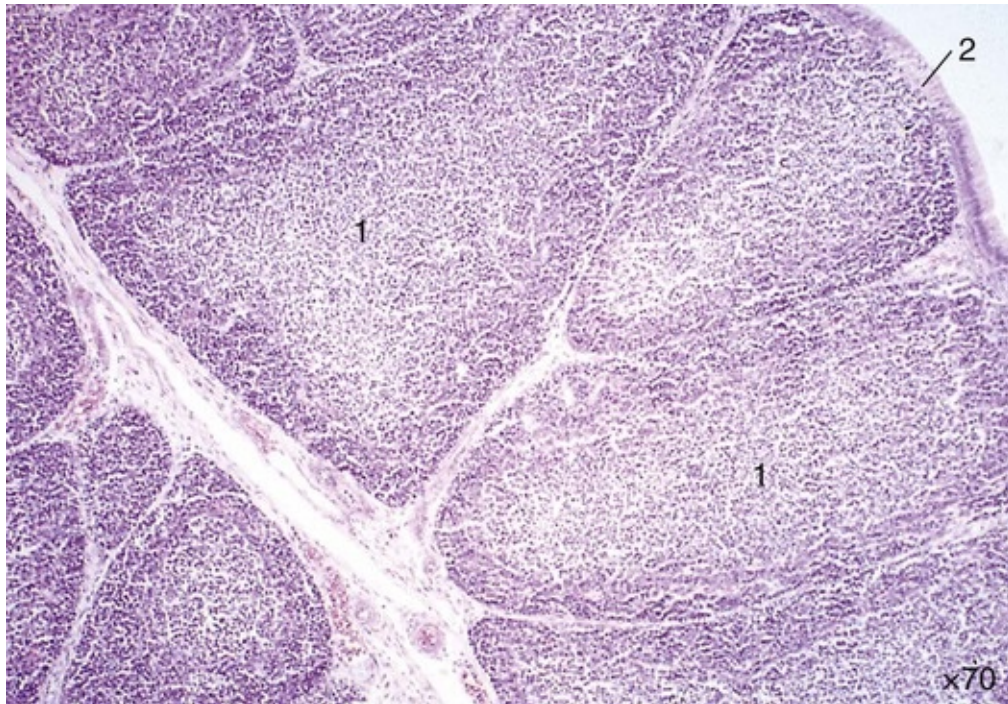
Note: Caudal surface of transverse section.

• 3-38 Bovine: Lymph Drainage, Thoracic Wall, and Mediastinum



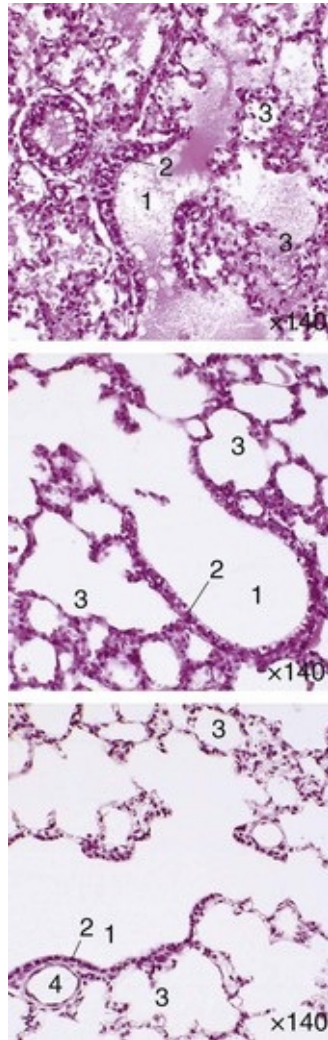
1. Thoracic duct
2. Cranial sternal lymph nodes
3. Caudal sternal lymph node
4. Cranial mediastinal lymph nodes
5. Middle mediastinal lymph nodes
6. Caudal mediastinal lymph nodes
7. Intercostal and thoracic aortic lymph nodes
8. Tracheobronchial node

• 3-39 Bovine: Thymus of Calf



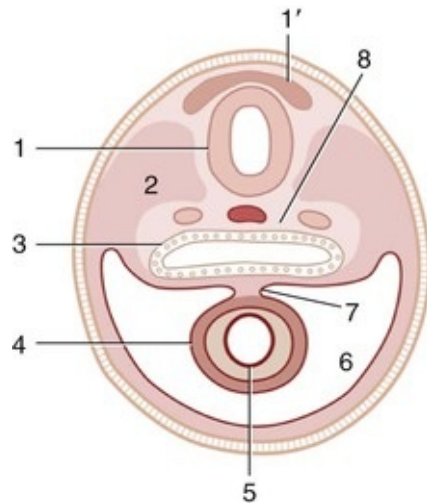
- 1. Thymic lobules
- 2. Capsule

• 3-40 Porcine: Fetus Lung (Top); 1-Day-Old Lung (Middle); Adult Lung (Bottom)



1. Terminal bronchioles
2. Bronchiolar exocrinocyte (Clara) cells
3. Alveolar sac
4. Bronchiole

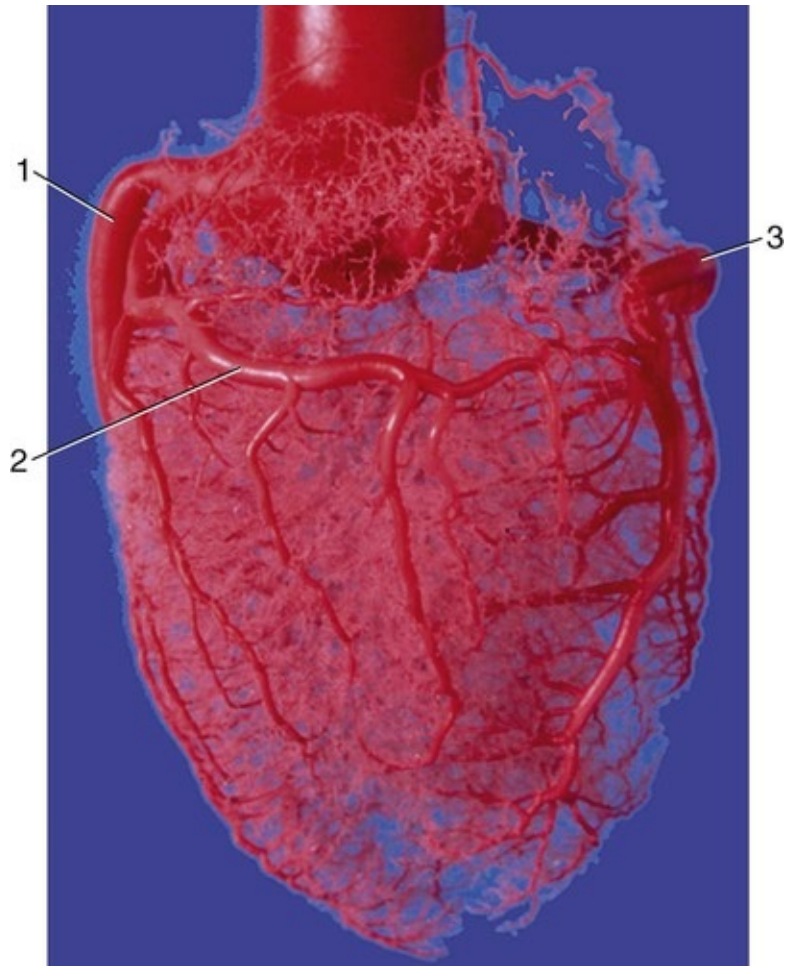
3-41 Porcine: Seven- to Eight-Somite Embryo



1. Neural tube
- 1'. Neural crest
2. Somite
3. Foregut
4. Epimyocardial wall of the fused endocardial tubes
5. Endocardial tube
6. Pericardial cavity
7. Dorsal mesocardium
8. Notochord and dorsal aortae

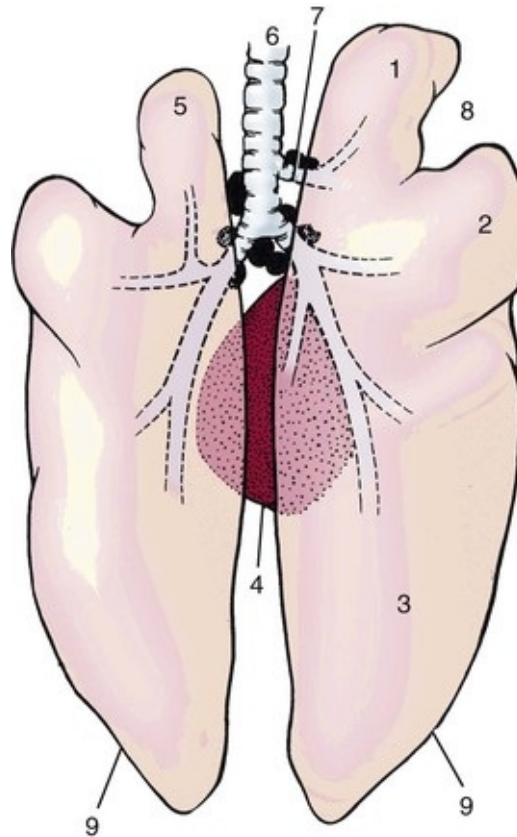
Note: Transverse section of a seven- to eight-somite embryo taken at the fifth thoracic vertebra.

➤ 3-42 Porcine: Corrosion Cast of Aorta and Coronary Circulation



1. Left coronary artery
2. Ramus circumflexus
3. Right coronary artery

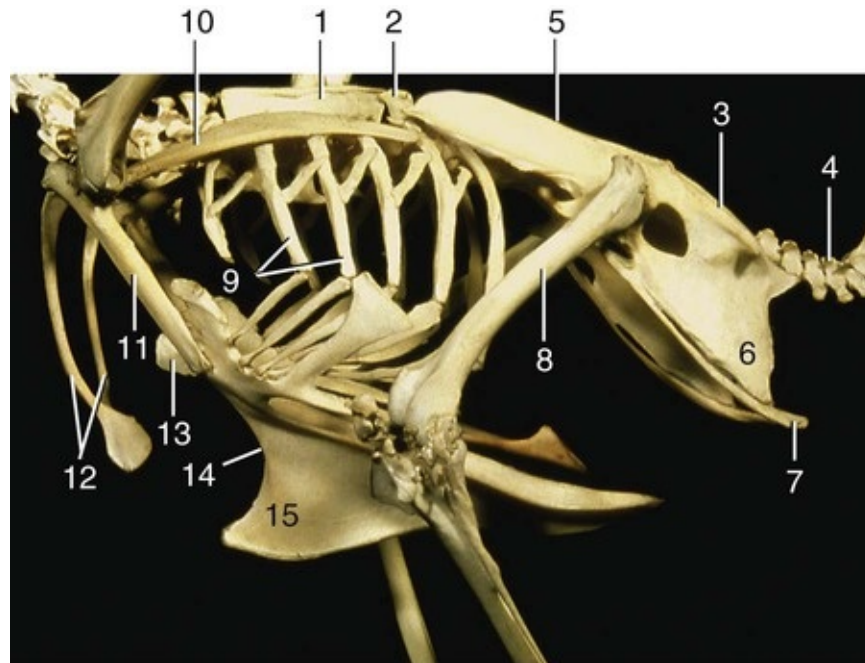
3-43 Porcine: Lungs



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

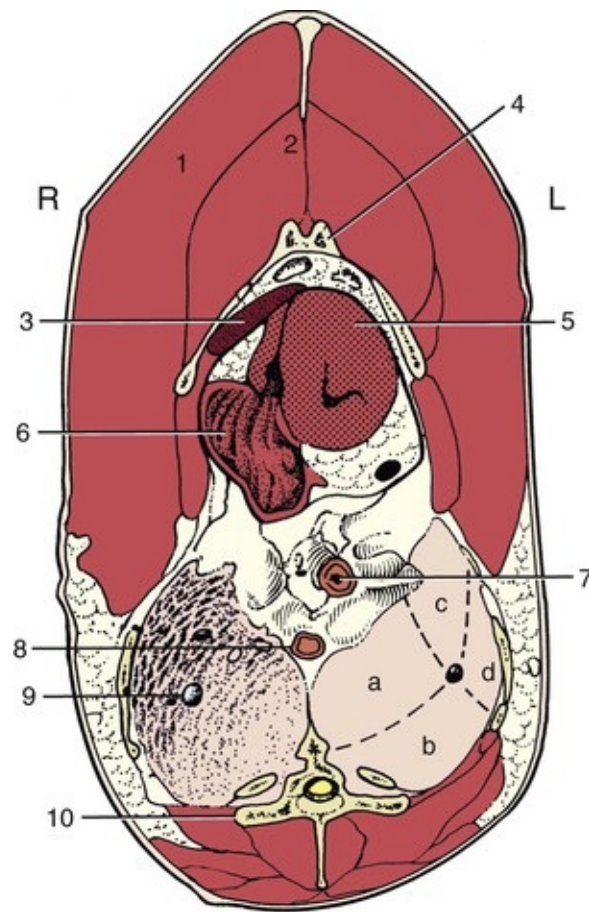
Note: Dorsal view.

3-44 Avian: Skeleton of a Chicken



1. Fused thoracic vertebrae (notarium)
2. Free thoracic vertebra
3. Synsacrum
4. Free caudal vertebrae
5. Ilium
6. Ischium
7. Pubis
8. Femur
9. Ribs
10. Scapula
11. Coracoid bone
12. Fused clavicles
13. Manubrium sterni
14. Sternum
15. Carina

3-45 Avian: Transverse Section of the Thorax



1. Pectoralis
2. Supracoracoideus
3. Liver
4. Sternum
5. Left ventricle
6. Right atrium
7. Esophagus
8. Descending aorta
9. Primary bronchus in right lung
10. Thoracic vertebra (notarium)

Note: Shown at the level of the heart and lungs. Left lung showing areas supplied by medioventral (*a*), mediodorsal (*b*), lateroventral (*c*), and laterodorsal (*d*) secondary bronchi.

The Abdomen

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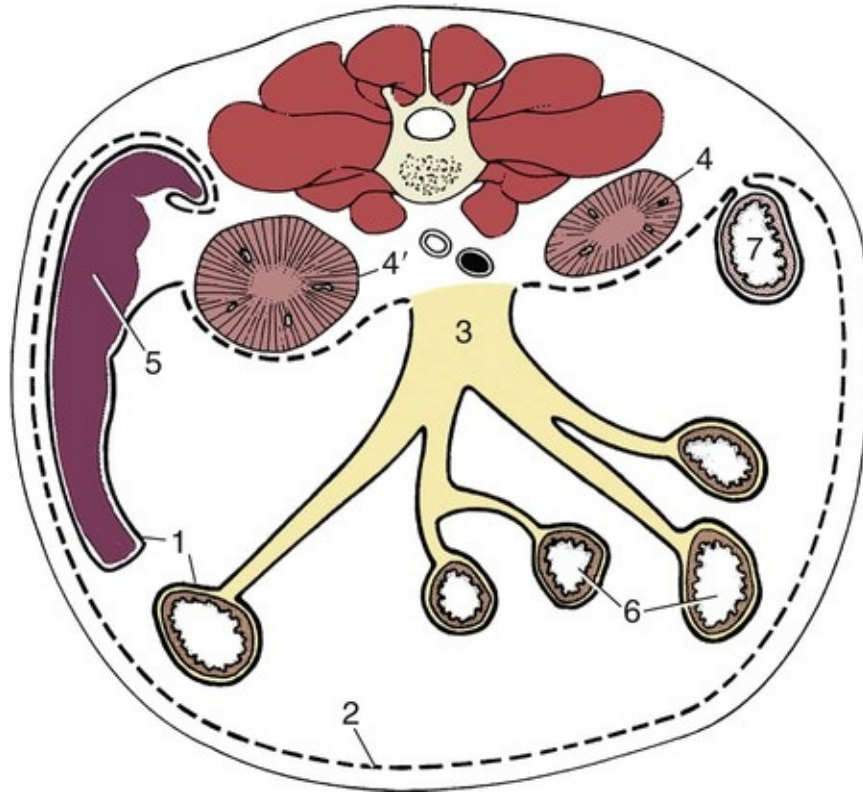
4-54 Porcine: Liver (Top) and Visceral Surface of the Liver (Bottom)

4-55 Porcine: Major Abdominal Arteries and Lymph Nodes

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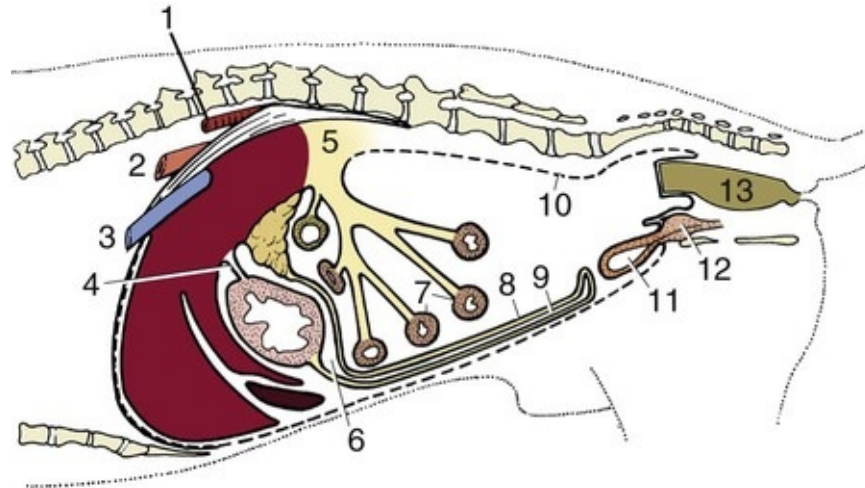
↻ 4-1 Canine: Abdomen



1. Visceral peritoneum (*continuous line*)
2. Parietal peritoneum (*broken line*)
3. Root of mesentery
4. Right kidney (retroperitoneal)
- 4'. Left kidney (retroperitoneal)
5. Spleen
6. Jejunum
7. Descending duodenum

Note: Schematic transverse section, caudal view.

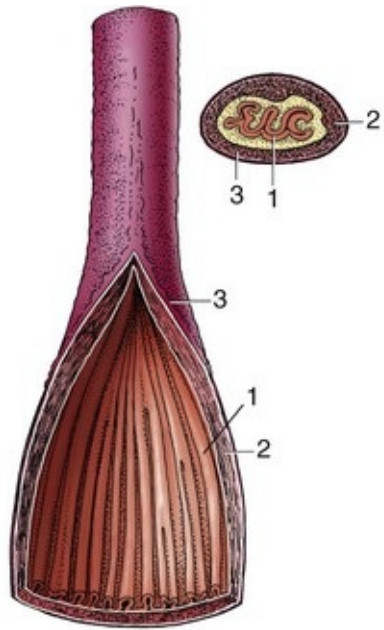
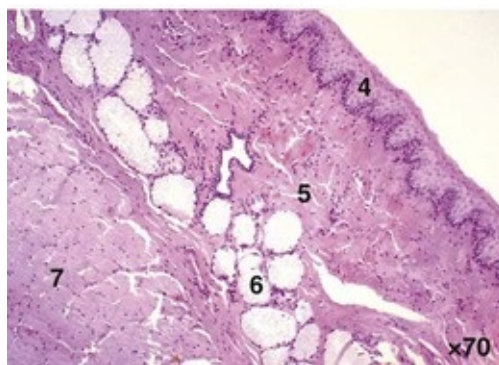
↻ 4-2 Canine: Abdominal Cavity



1. Aorta
2. Esophagus
3. Caudal vena cava
4. Lesser omentum
5. Root of mesentery
6. Omental bursa
7. Small intestine
8. Deep wall of the greater omentum
9. Superficial wall of the greater omentum
10. Parietal peritoneum
11. Bladder
12. Prostate
13. Rectum

Note: Schematic paramedian section shows the disposition of the peritoneum.

↪ 4-3 Canine: Esophagus

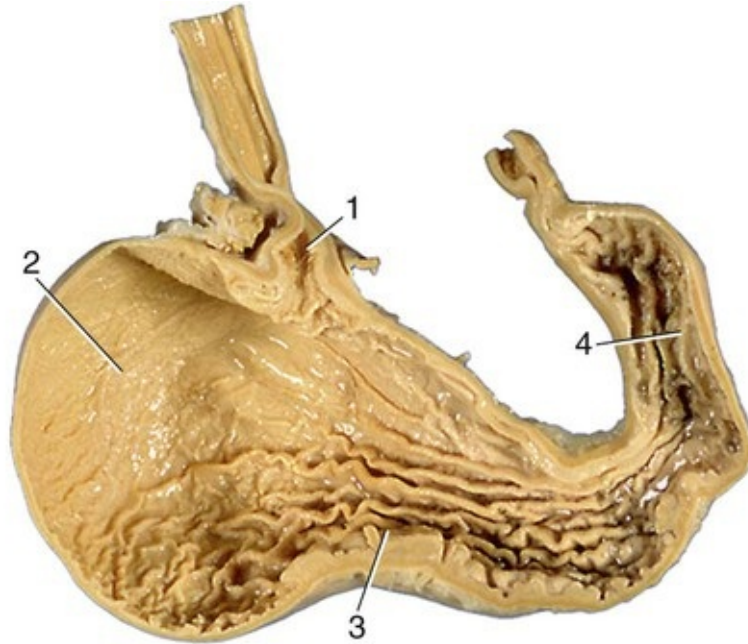
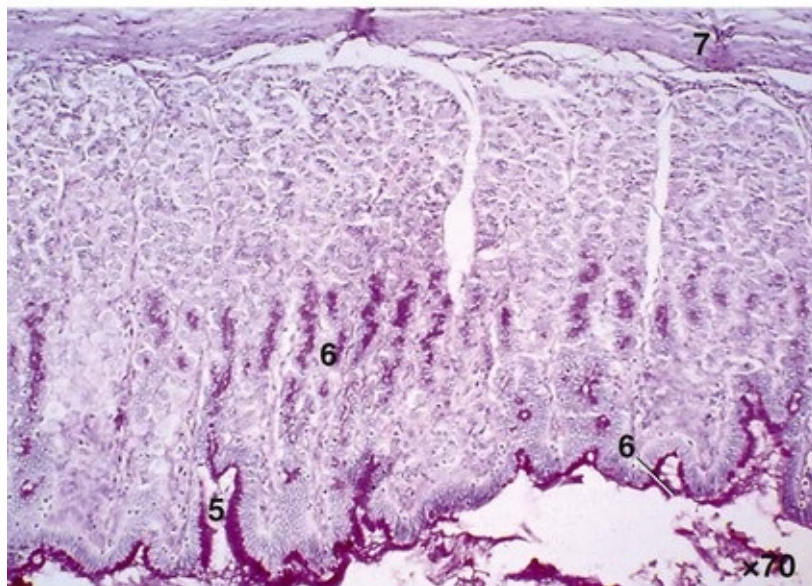


1. Mucosa
2. Muscular layer (longitudinal and circular)
3. Adventitia
4. Stratified squamous epithelium
5. Submucosa
6. Mucus-secreting tubuloacinar glands
7. Muscularis interna

Note: Top, Semischematic drawing of the structure of the esophagus sectioned longitudinally and transversely.

➤ 4-4 Canine: Interior of the Stomach (A)

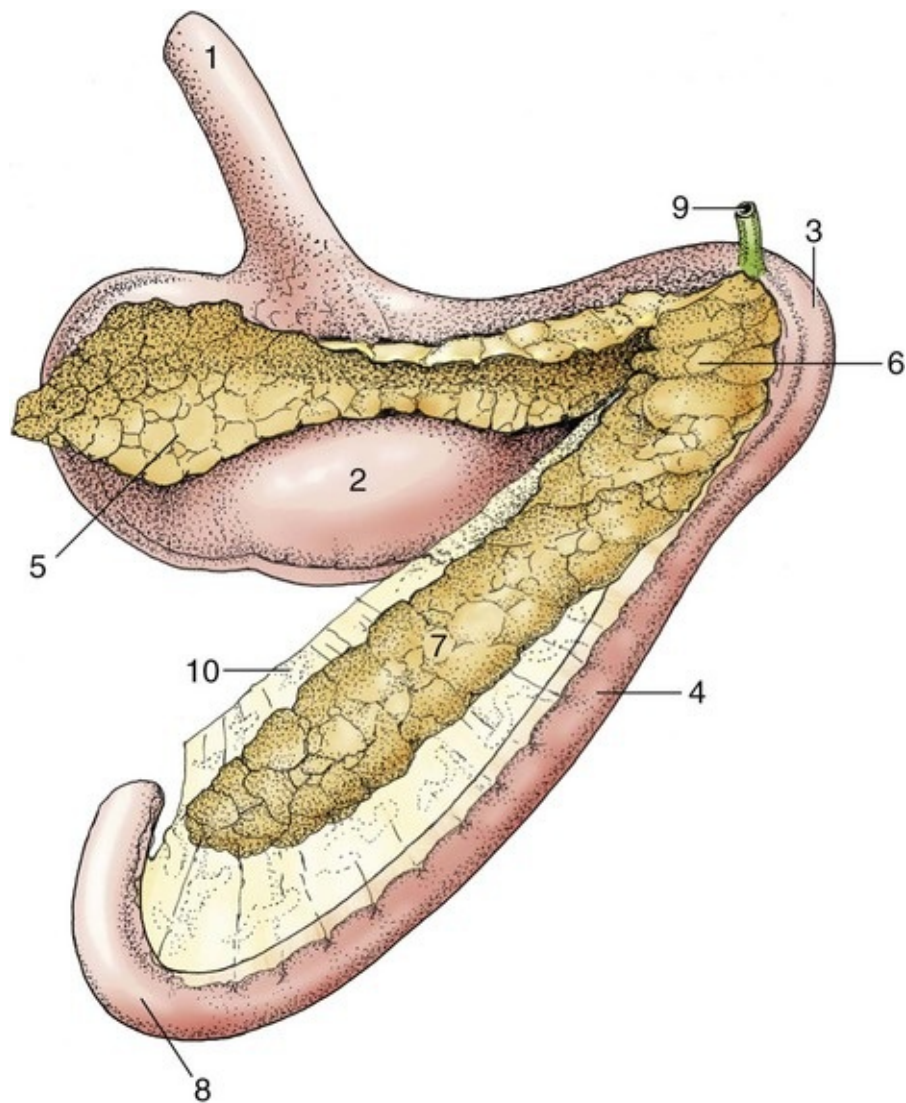
and Histology of Stomach Wall (B)



1. Cardiac opening
2. Fundus
3. Pyloric antrum
4. Pyloric canal
5. Gastric pit

- 6. Mucopolysaccharide-secreting cells
- 7. Lamina muscularis mucosae

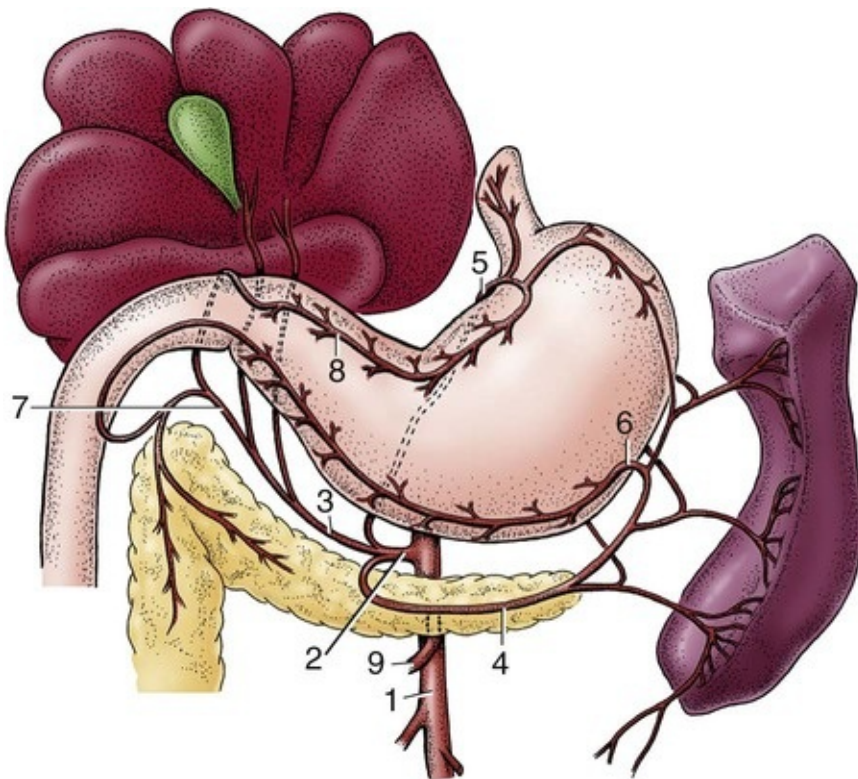
↻ 4-5 Canine: Pancreas



- 1. Esophagus
- 2. Stomach
- 3. Cranial flexure of duodenum
- 4. Descending duodenum
- 5. Left lobe of pancreas

- 6. Body
- 7. Right lobe of pancreas
- 8. Caudal flexure of duodenum
- 9. Bile duct
- 10. Mesoduodenum

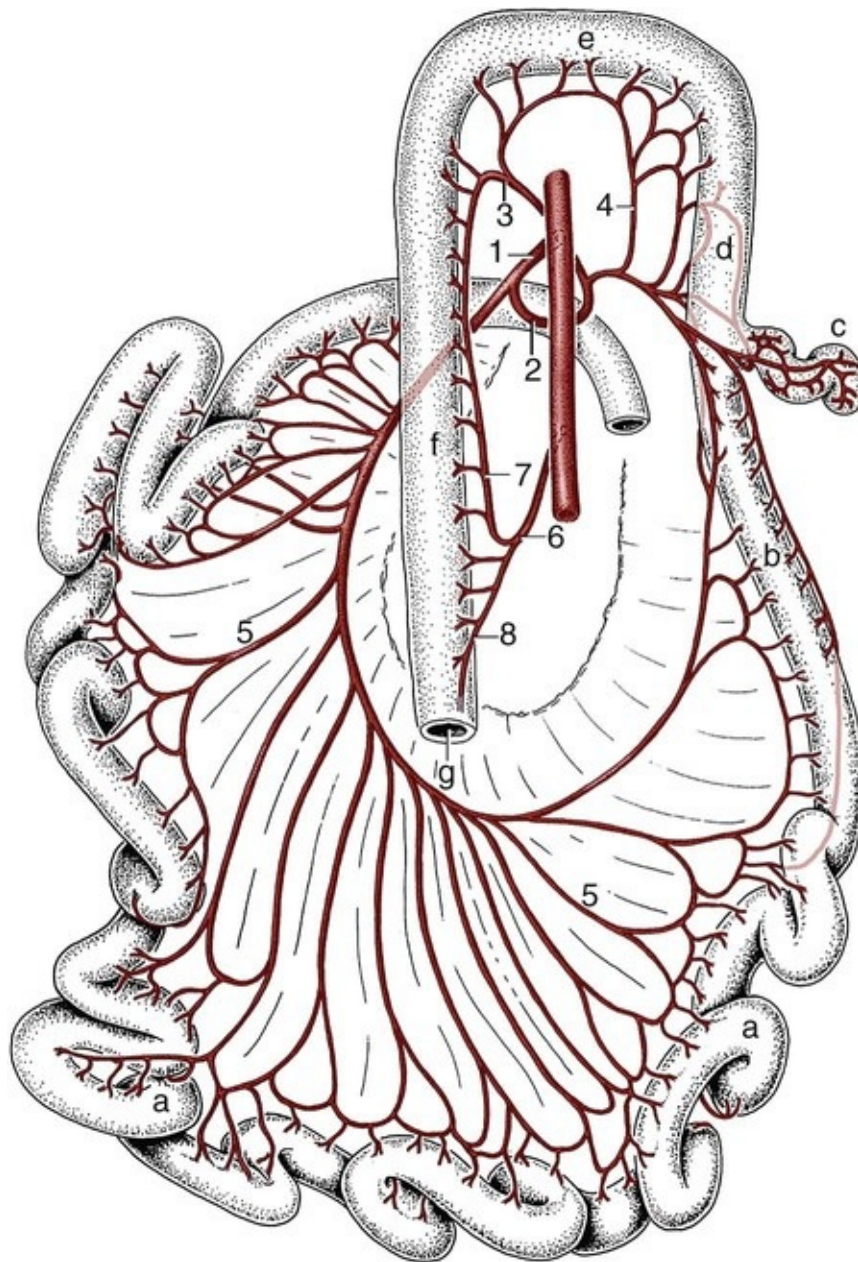
↻ 4-6 Canine: Celiac Artery



- 1. Aorta
- 2. Celiac artery
- 3. Hepatic artery
- 4. Splenic artery
- 5. Left gastric artery
- 6. Left gastroepiploic artery
- 7. Gastroduodenal artery
- 8. Right gastric artery
- 9. Cranial mesenteric artery

Note: Ventral view.

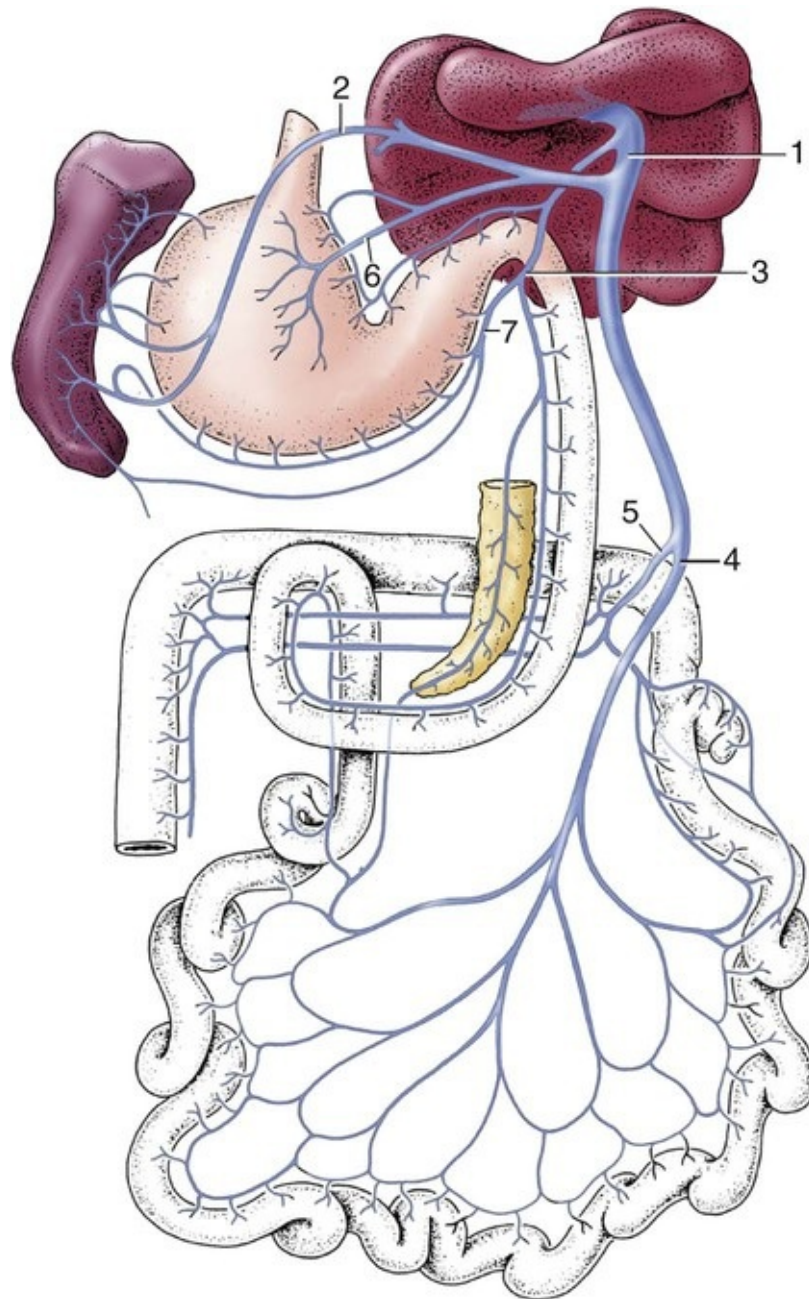
4-7 Canine: Cranial and Caudal Mesenteric Arteries



1. Cranial mesenteric artery
2. Common trunk
3. Middle colic artery
4. Right colic artery
5. Jejunal arteries
6. Caudal mesenteric artery
7. Left colic artery
8. Cranial rectal artery

Note: Distribution of the cranial and caudal mesenteric arteries to the intestines (dorsal view). *a*, Jejunum; *b*, ileum; *c*, cecum; *d*, ascending colon; *e*, transverse colon; *f*, descending colon; *g*, rectum.

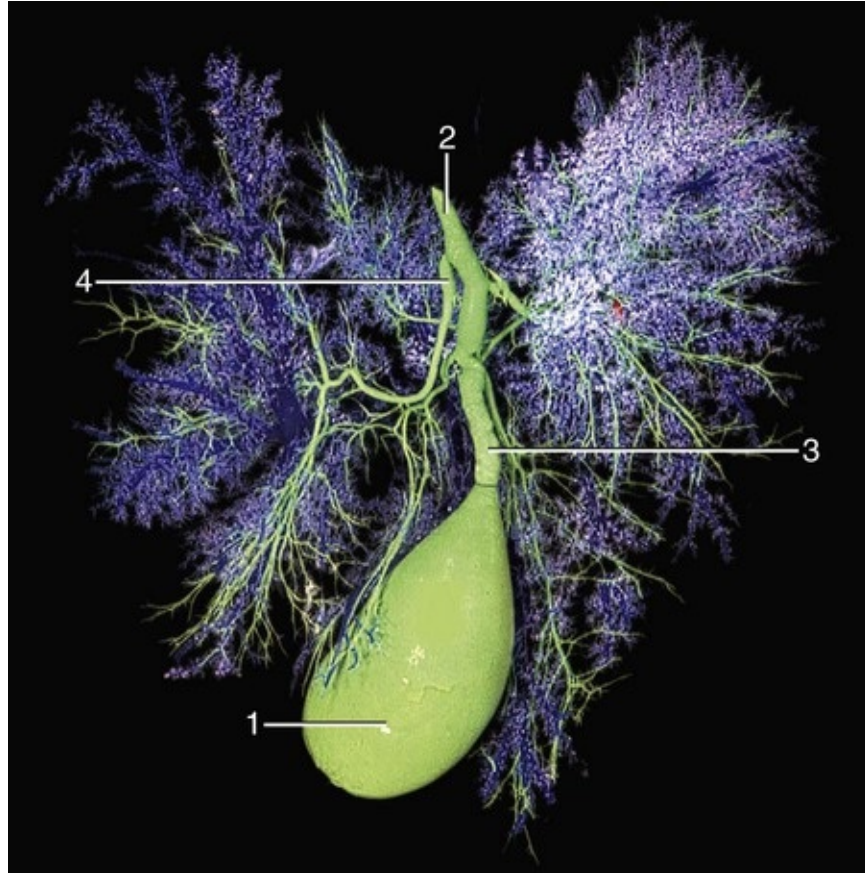
↻ **4-8 Canine: Formation of the Portal Vein**



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

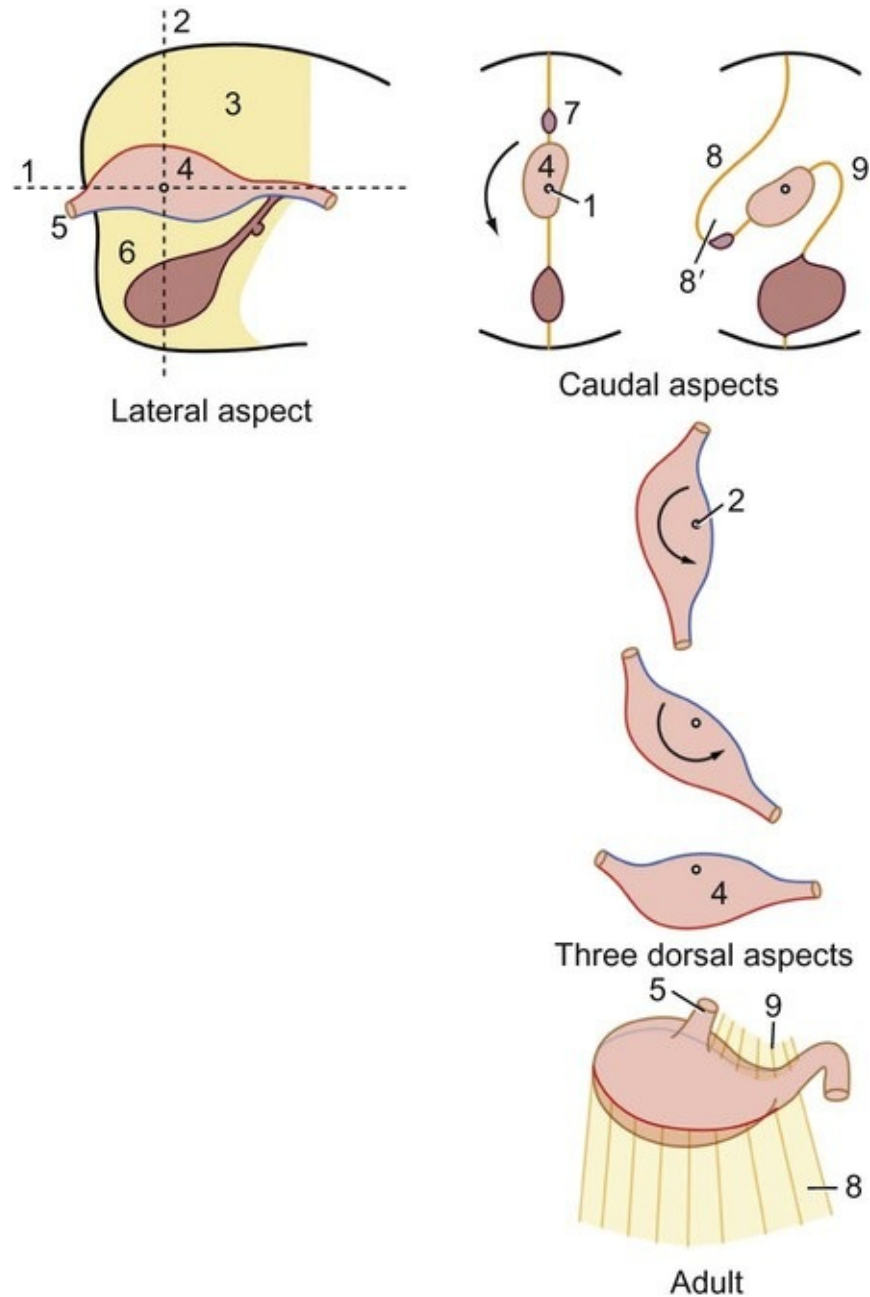
Note: Semischematic dorsal view.

↪ 4-9 Canine: Bile Drainage System



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

↪ 4-10 Canine: Developing Simple Stomach

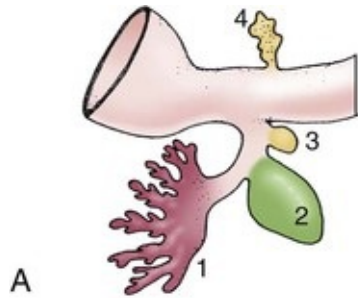
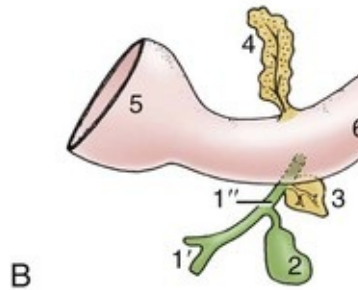
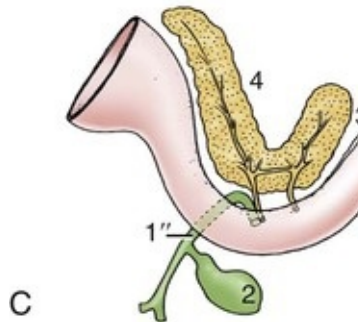


1. Longitudinal axis
2. Dorsoventral (vertical) axis
3. Dorsal mesogastrium
4. Stomach primordium
5. Esophagus
6. Ventral mesogastrium
7. Developing spleen

- 8. Greater omentum
- 8'. Omental bursa
- 9. Lesser omentum

Note: The reorientation of the developing simple stomach rotates counterclockwise (as seen from behind) around a longitudinal axis (caudal aspects) and continues counterclockwise (as seen from above) around a dorsoventral axis (three dorsal aspects).

↻ 4-11 Canine: Development of the Pancreas

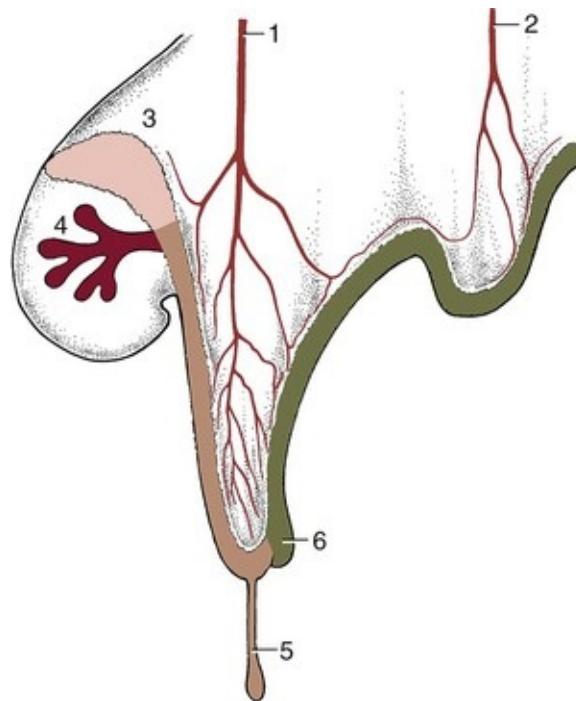


- 1. Liver primordium
- 1'. Hepatic ducts
- 1''. Bile duct
- 2. Gallbladder
- 3. Ventral primordium of the pancreas
- 4. Dorsal primordium of the pancreas
- 5. Stomach
- 6. Duodenum

Note: **A**, Early stage. **B**, Later stage shows separate duct systems in the two primordia. **C**, Two primordia have fused after the migration of the ventral pancreas. The dorsal pancreas now drains mainly via the

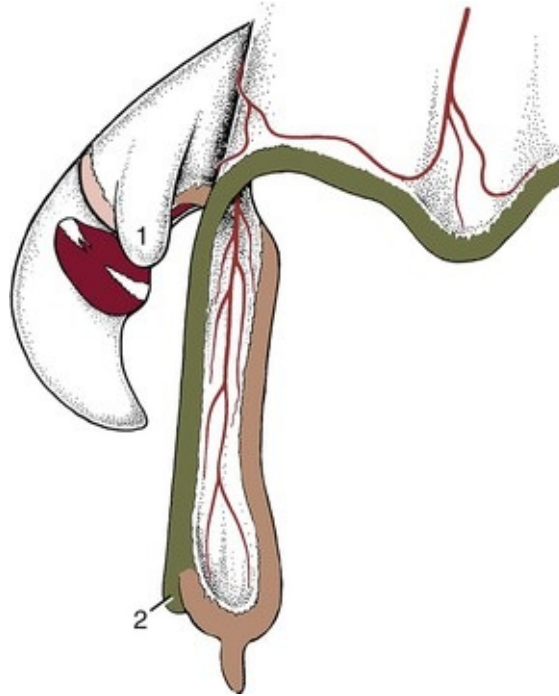
ventral duct system.

↻ 4-12 Canine: Growth and Rotation of the Midgut (Stage One, Lateral View)



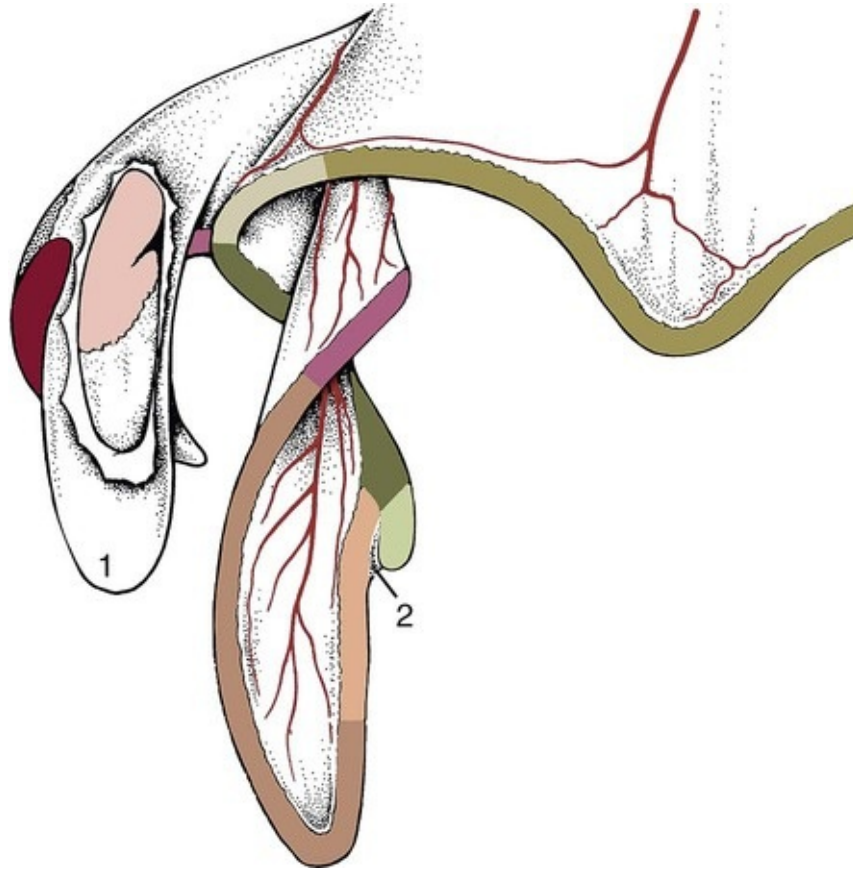
1. Cranial mesenteric artery
2. Caudal mesenteric artery
3. Dorsal mesogastrium
4. Ventral mesogastrium with developing liver
5. Vitelline duct
6. Cecal primordium

↻ 4-13 Canine: Growth and Rotation of the Midgut (Stage Two, Lateral View)



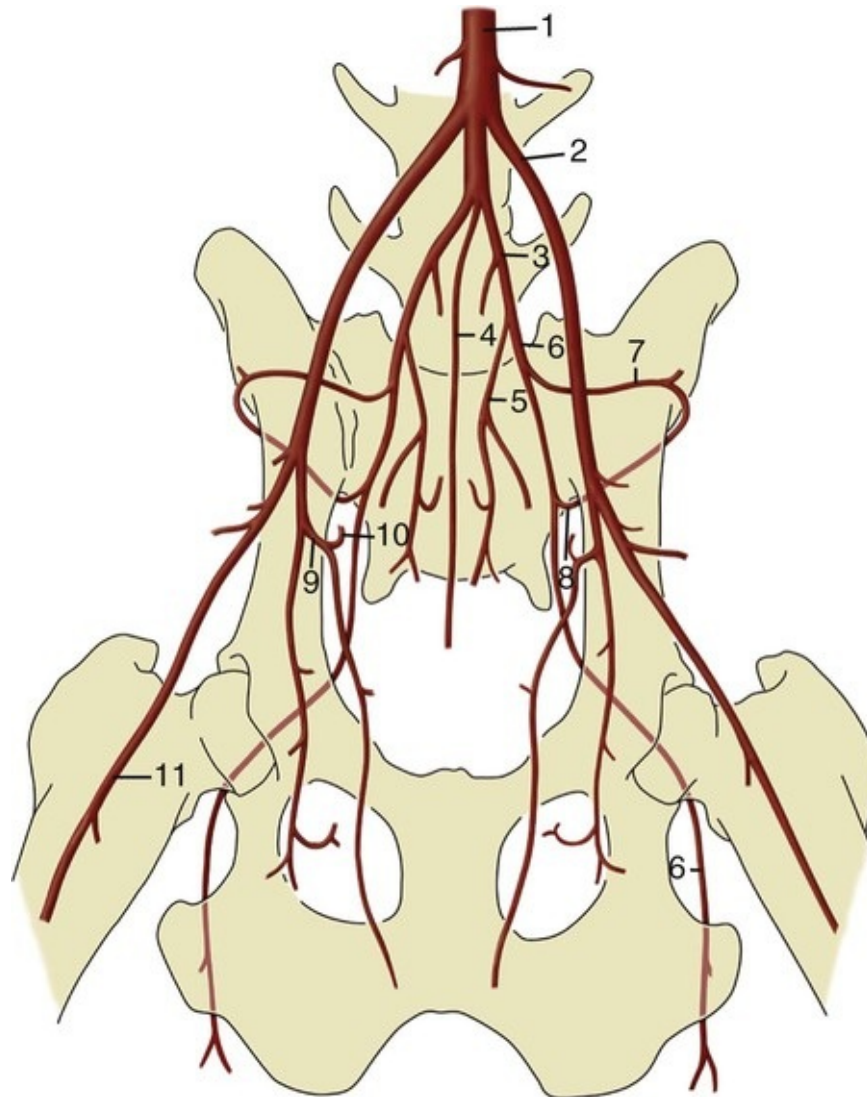
1. Greater omentum, fenestrated to expose stomach
(see Flash Card 4-14)
2. Cecal primordium

4-14 Canine: Growth and Rotation of the Midgut (Stage Three, Lateral View)



1. Greater omentum, fenestrated to expose the stomach
2. Ileocecal fold

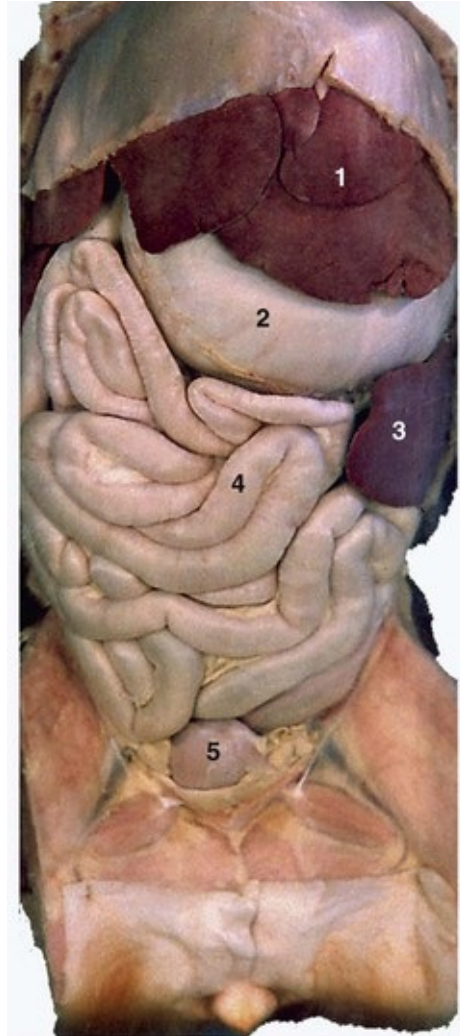
4-15 Canine: Termination of the Abdominal Aorta



1. Aorta
2. External iliac artery
3. Internal iliac artery
4. Median sacral artery
5. Internal pudendal artery
6. Caudal gluteal artery
7. Iliolumbar artery
8. Cranial gluteal artery
9. Deep femoral artery
10. Pudendoepigastric trunk
11. Femoral artery

Note: Ventral view.

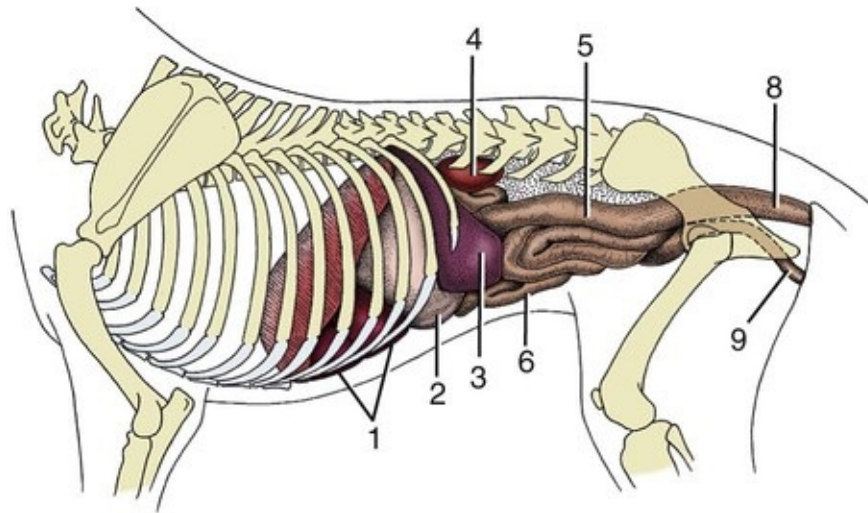
↻ 4-16 Canine: Abdominal Viscera



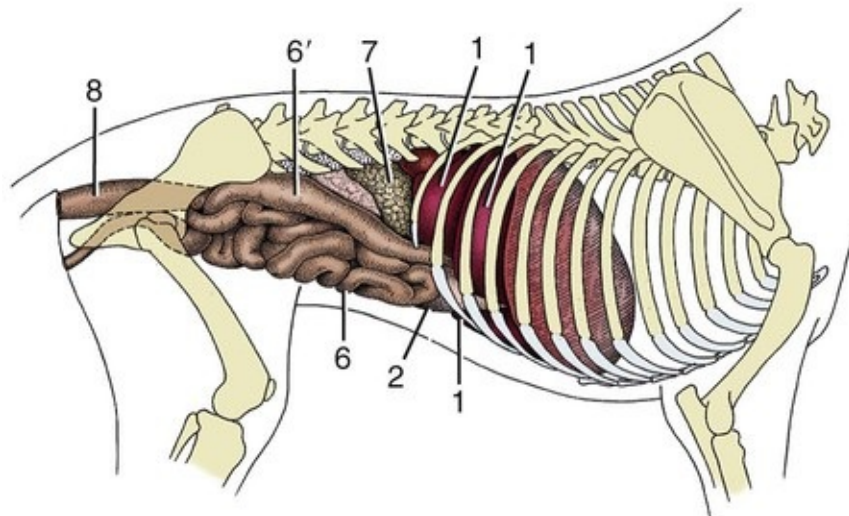
1. Liver
2. Stomach
3. Spleen
4. Small intestine
5. Bladder

↻ 4-17 Canine: Abdominal Walls

Left canine abdominal wall



Right canine abdominal wall

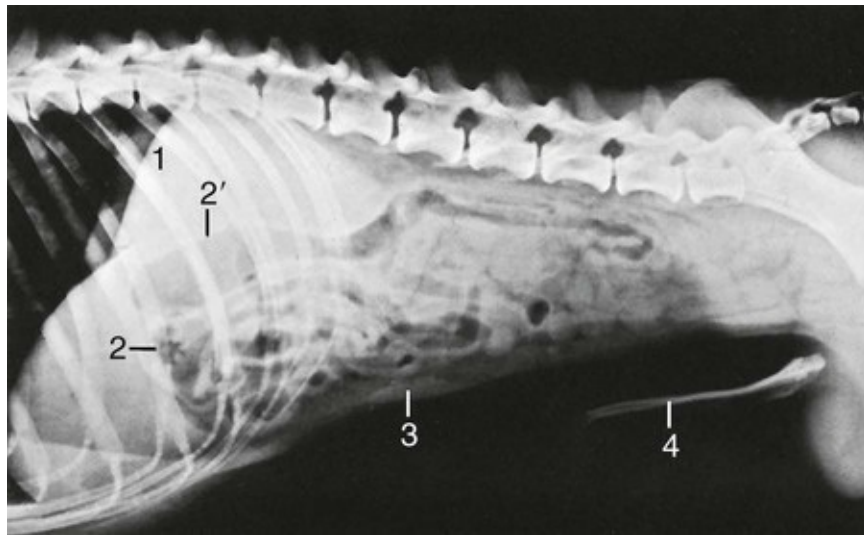


1. Liver
2. Stomach
3. Spleen
4. Left kidney
5. Descending colon
6. Small intestine
- 6'. Descending duodenum
7. Pancreas

- 8. Rectum
- 9. Female urogenital tract

Note: Visceral projections.

↻ 4-18 Canine: Abdomen (Lateral View)



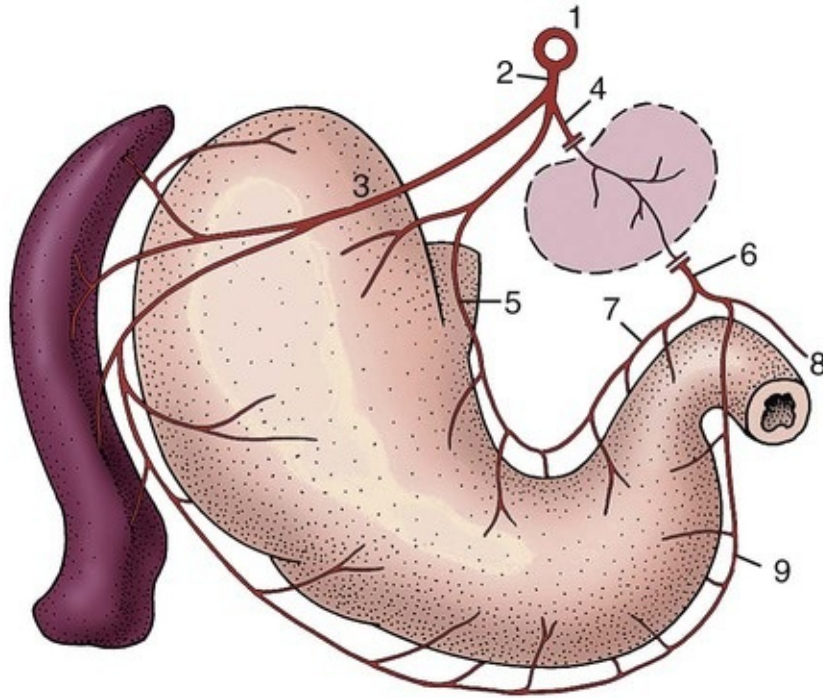
- 1. Liver
- 2. Pyloric part of stomach
- 2'. Descending duodenum
- 3. Spleen
- 4. Os penis

↻ 4-19 Canine: Abdomen (Ventrodorsal View)



1. Cecum
2. Fundus of stomach
3. Left kidney
4. Bladder

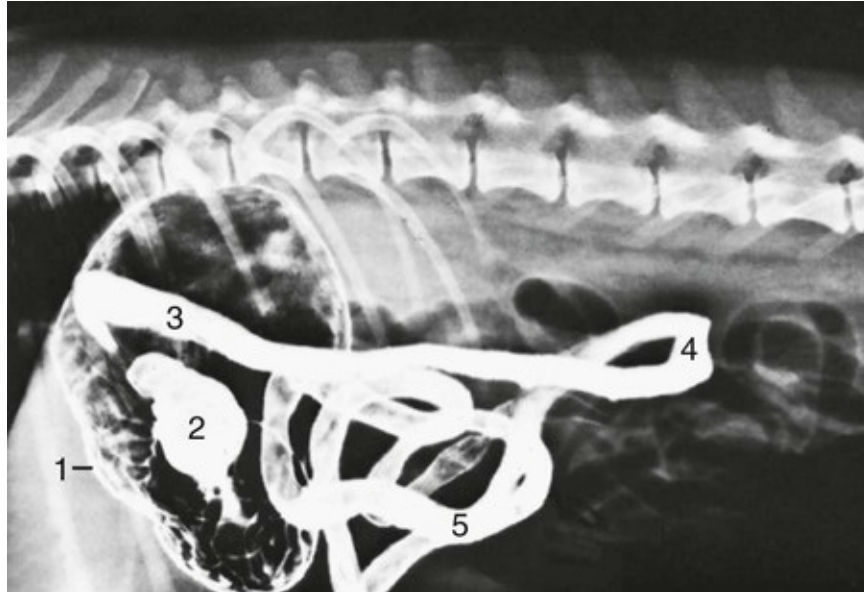
4-20 Canine: Blood Supply of the Stomach and Spleen



1. Aorta
2. Celiac artery
3. Splenic artery
4. Hepatic artery
5. Left gastric artery
6. Gastroduodenal artery
7. Right gastric artery
8. Cranial pancreaticoduodenal artery
9. Right gastroepiploic artery

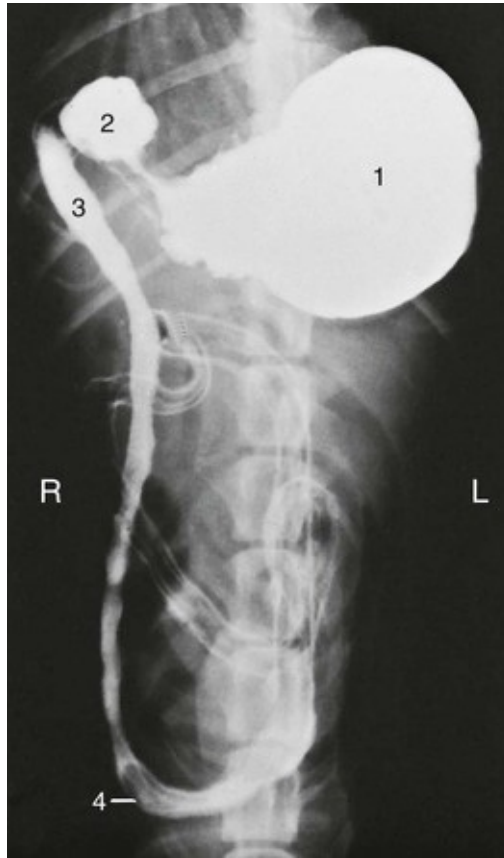
Note: Caudal view; schematic drawing.

↻ **4-21 Canine: Abdomen after Administration of Barium Suspension (Lateral View)**



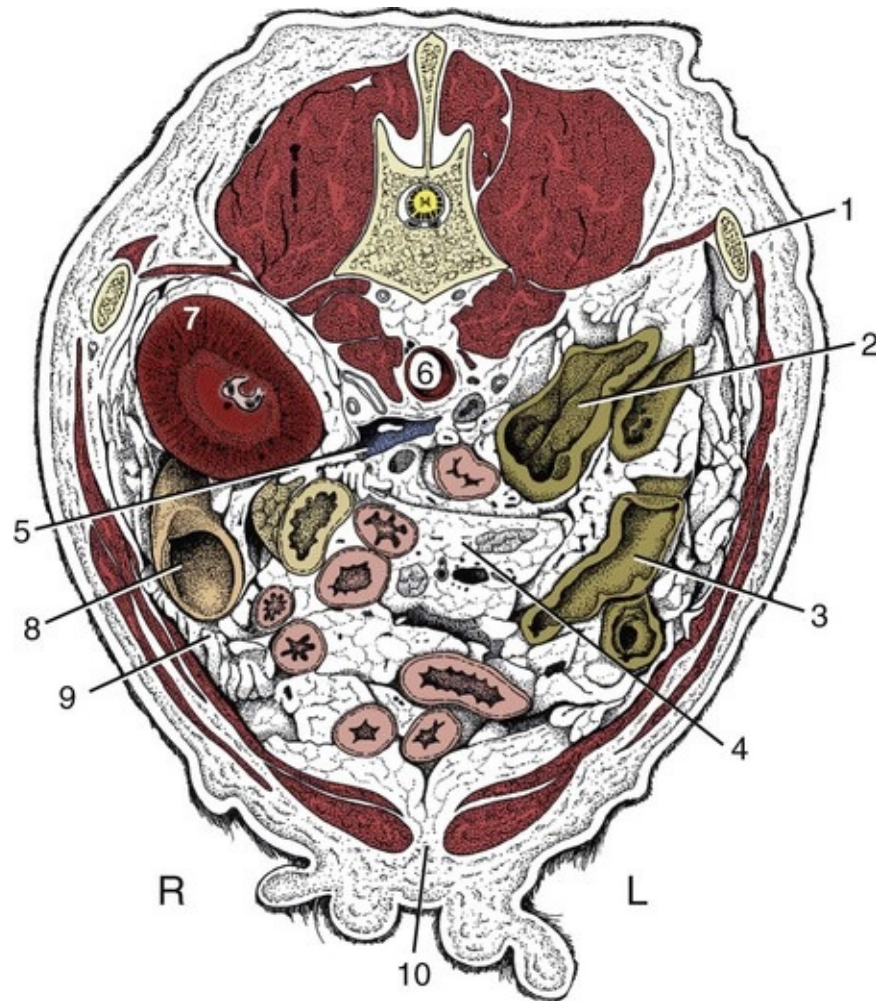
1. Stomach
2. Pyloric part
3. Descending duodenum
4. Caudal flexure of the duodenum
5. Jejunum

4-22 Canine: Abdomen after Administration of a Barium Suspension (Ventrodorsal View)



1. Stomach
2. Pyloric part
3. Descending duodenum
4. Caudal flexure of the duodenum

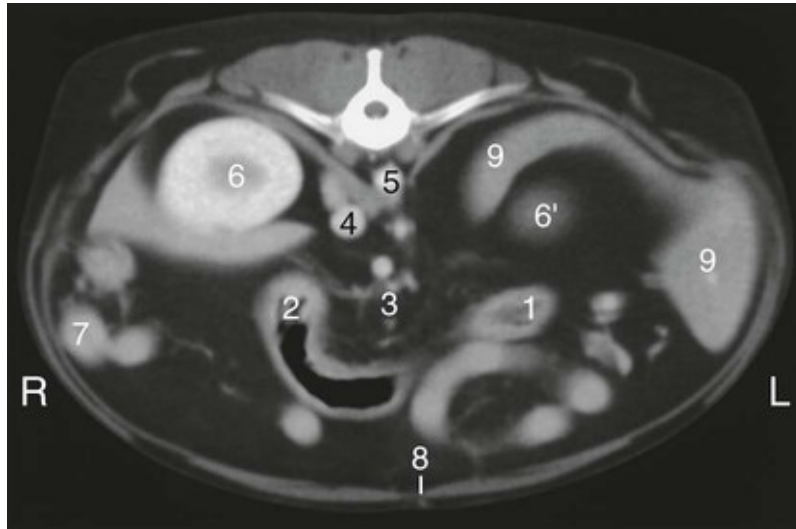
4-23 Canine: Abdomen at the Level of the First Lumbar Vertebra



1. Last rib
2. Descending colon
3. Transverse colon
4. Lymph nodes and blood vessels in the mesentery;
ventral to them is the jejunum
5. Caudal vena cava
6. Aorta, between crura of the diaphragm
7. Right kidney
8. Descending duodenum and pancreas
9. Greater omentum
10. Linea alba

Note: Cranial view.

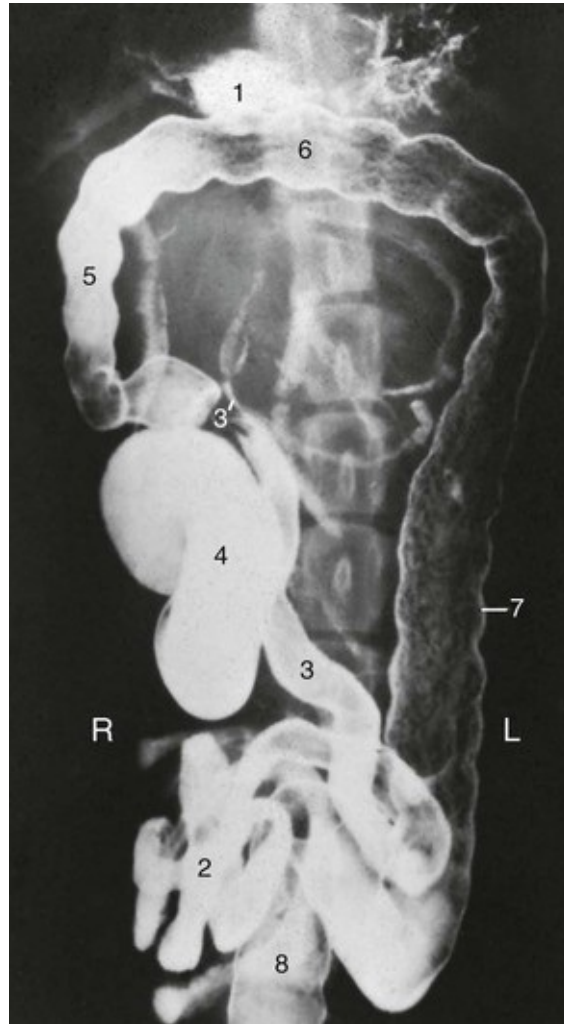
4-24 Canine: Abdomen at Level of the First Lumbar Vertebra



1. Descending colon
2. Transverse colon
3. Lymph nodes and blood vessels in the mesentery;
ventral to them is the jejunum
4. Caudal vena cava
5. Aorta, between the crura of the diaphragm
6. Right kidney
- 6'. Cranial pole of the left kidney
7. Descending duodenum and pancreas
8. Linea alba
9. Spleen

Note: Cranial view. The dog was lying on its back during the computed tomography (CT) procedure. This CT image is slightly more caudal than the illustration Flash Card 4-23.

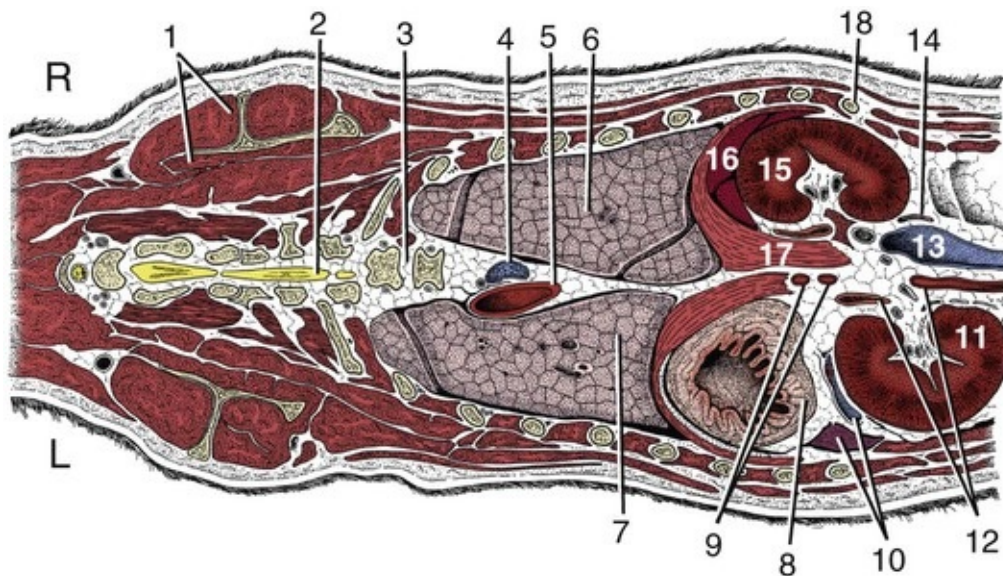
4-25 Canine: Abdomen after Administration of a Barium Suspension (Ventrodorsal View)



1. Residue of barium in the stomach
2. Jejunum
3. Ileum
- 3'. Ileocolic junction
4. Cecum
5. Ascending colon

6. Transverse colon
7. Descending colon
8. Rectum

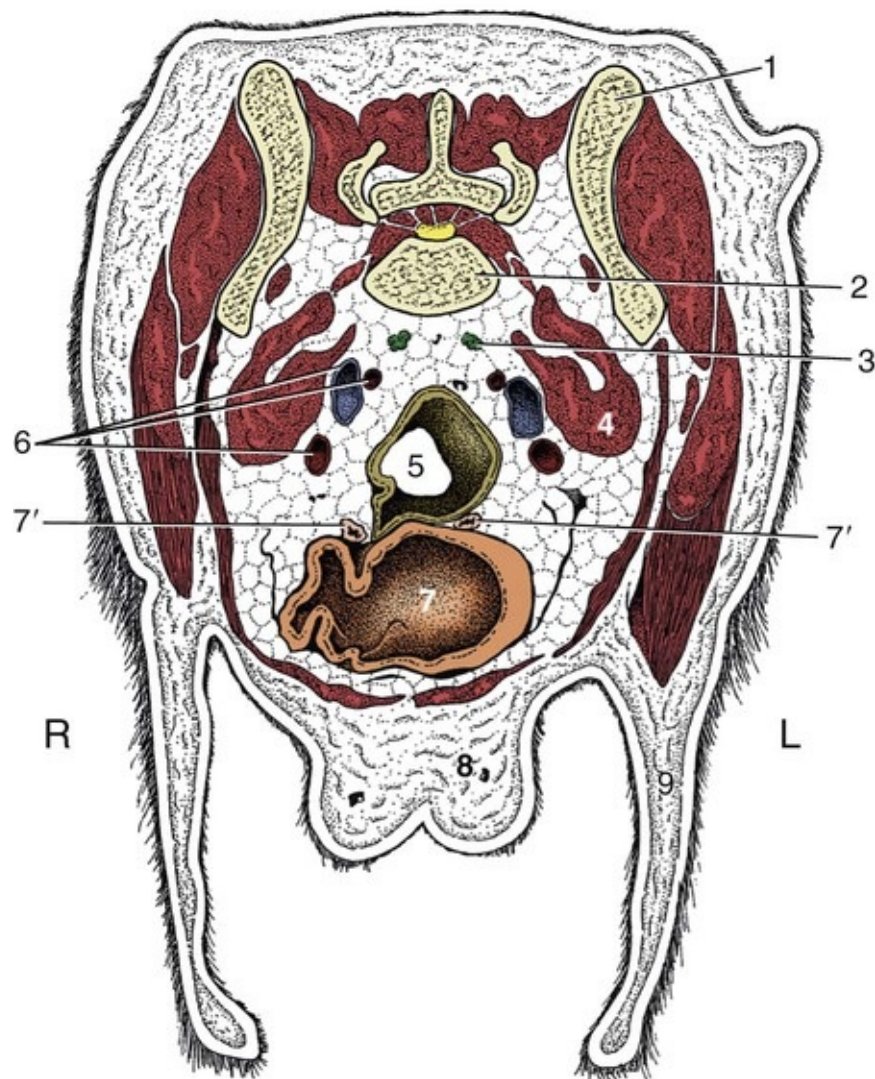
↪ 4-26 Canine: Trunk (Dorsal Section at the Level of the Kidneys)



1. Supraspinatus and scapula
2. Spinal cord
3. Sixth and seventh thoracic vertebrae
4. Right azygous vein
5. Thoracic aorta
6. Right lung
7. Left lung
8. Fundus of stomach
9. Celiac and cranial mesenteric arteries
10. Splenic vessels and spleen
11. Left kidney
12. Left adrenal gland and abdominal aorta
13. Caudal vena cava
14. Right ureter
15. Right kidney (The right adrenal gland is shown medial to the cranial pole.)
16. Liver

- 17. Right crus of diaphragm
- 18. Last rib

4-27 Canine: Abdomen at the Level of the Seventh Lumbar Vertebra

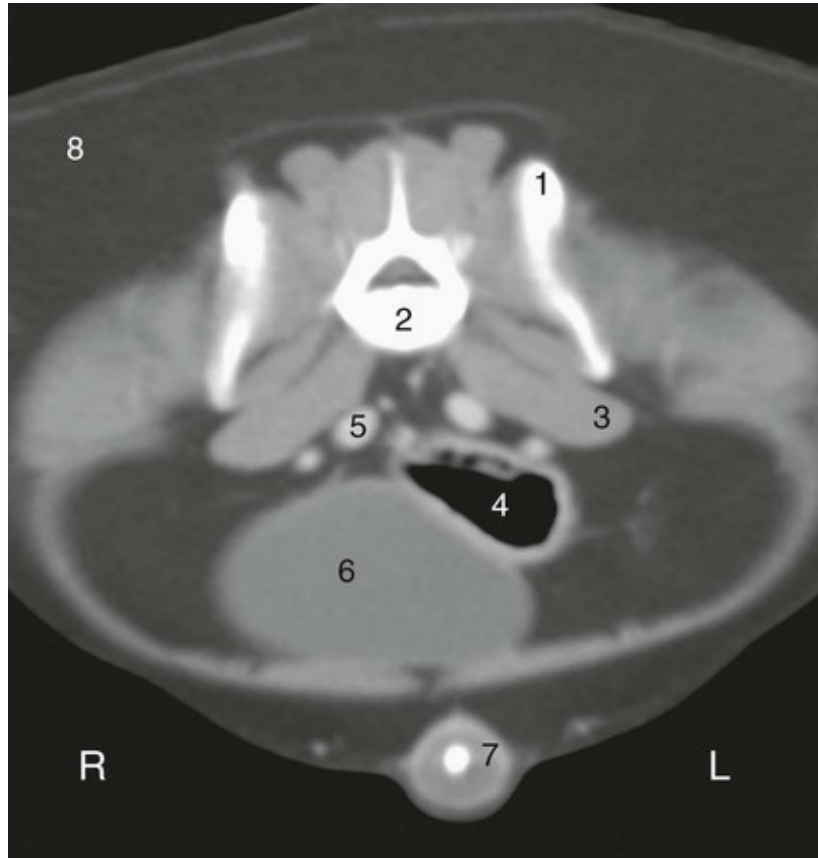


- 1. Wing of ilium
- 2. Seventh lumbar vertebra

3. Sacral lymph nodes
4. Iliopsoas
5. Descending colon
6. Internal iliac artery (most dorsal), external iliac vein, and external iliac artery
7. Bladder
- 7'. Uterine horns
8. Mammary gland

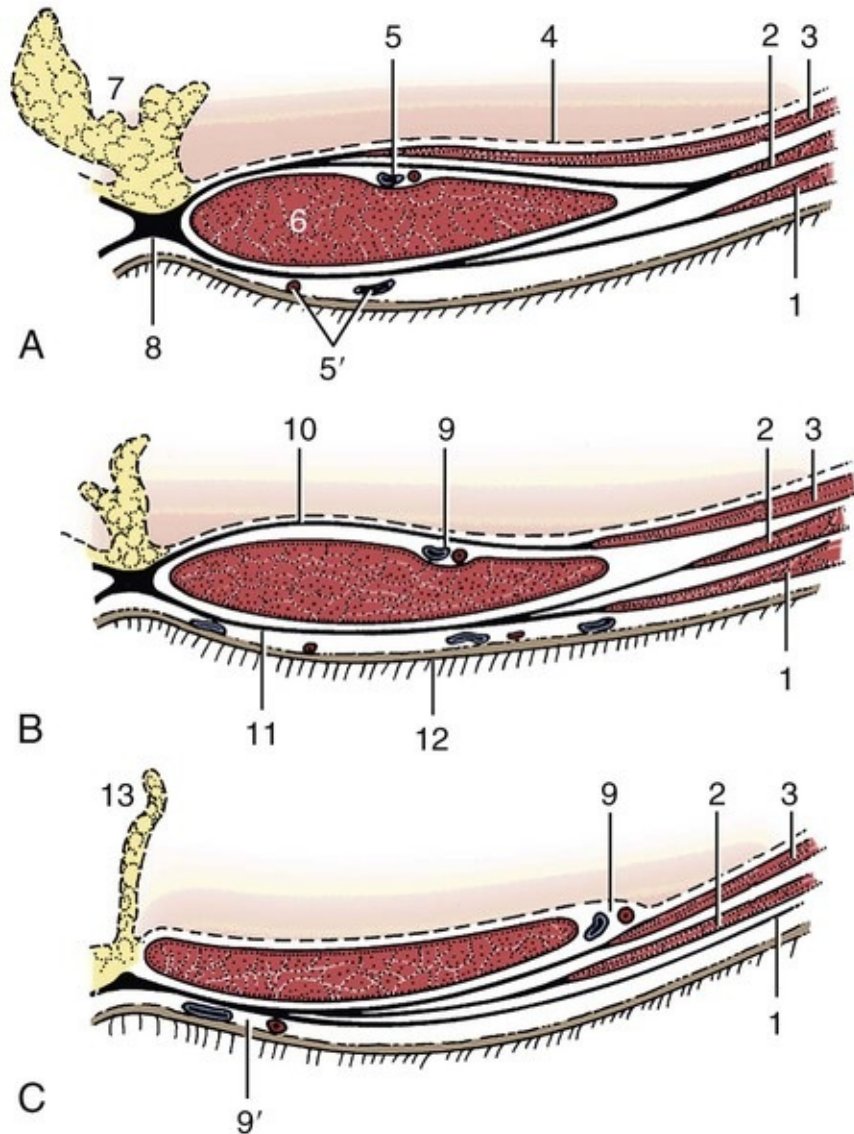
Note: Transverse section.

↻ 4-28 Canine: CT Image of the Abdomen at the Level of the Seventh Lumbar Vertebra



1. Wing of ilium
2. Seventh lumbar vertebra
3. Iliopsoas
4. Descending colon
5. Internal iliac artery (most dorsal), external iliac vein, and external iliac artery
6. Bladder
7. Penis with os penis
8. Fat

↪ **4-29 Canine: Rectus Sheath**

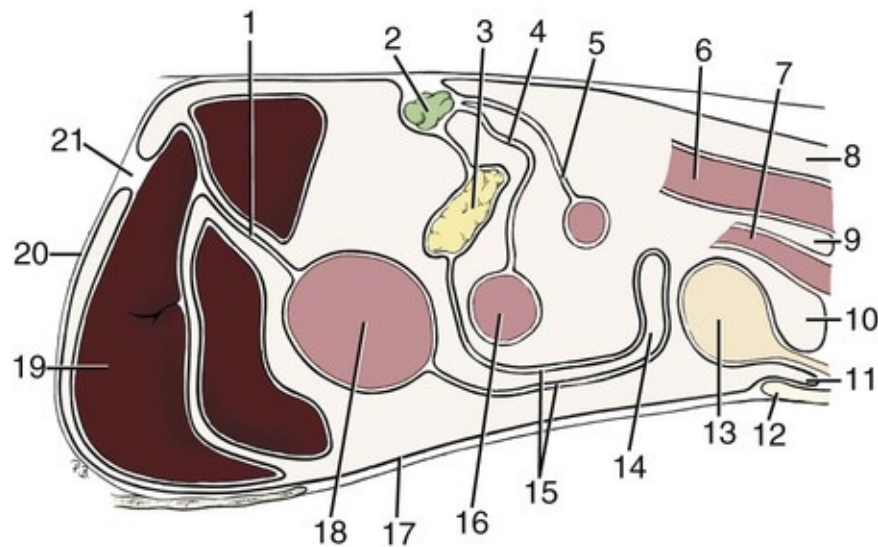


1. External abdominal oblique
2. Internal abdominal oblique
3. Transversus abdominis
4. Peritoneum
5. Cranial epigastric vessels
- 5'. Cranial superficial epigastric vessels
6. Rectus abdominis
7. Fat-filled falciform ligament
8. Linea alba
9. Caudal epigastric vessels

- 9'. Caudal superficial epigastric vessels
- 10. Internal lamina of the rectus sheath
- 11. External lamina of the rectus sheath
- 12. Skin
- 13. Median ligament of the bladder

Note: Transverse sections taken cranial **(A)** and caudal **(B)** to the umbilicus and near the pubis **(C)**.

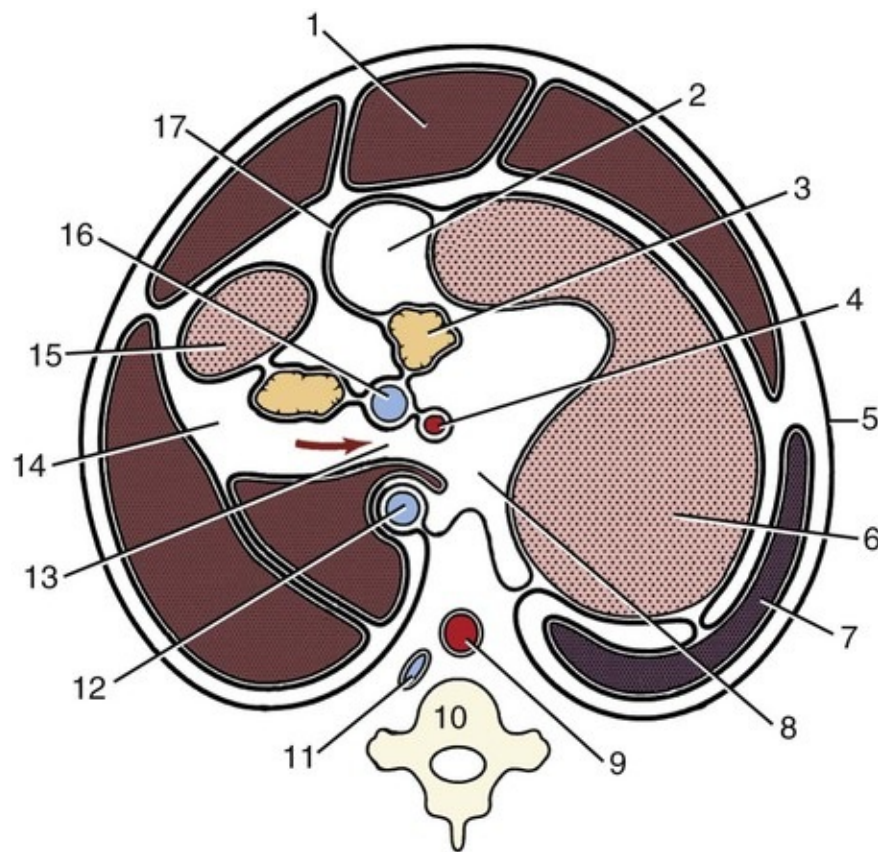
4-30 Canine: Peritoneal Reflections, Sagittal Section



1. Lesser omentum
2. Lymph nodes
3. Left lobe, pancreas
4. Transverse mesocolon
5. Mesentery
6. Descending colon
7. Uterus
8. Pararectal fossa
9. Rectogenital pouch
10. Vesicogenital pouch
11. Pubovesical pouch
12. Symphysis
13. Bladder
14. Omental bursa
15. Greater omentum, deep and superficial leaves
16. Transverse colon
17. Parietal peritoneum
18. Stomach

- 19. Liver
- 20. Diaphragm
- 21. Coronary ligament

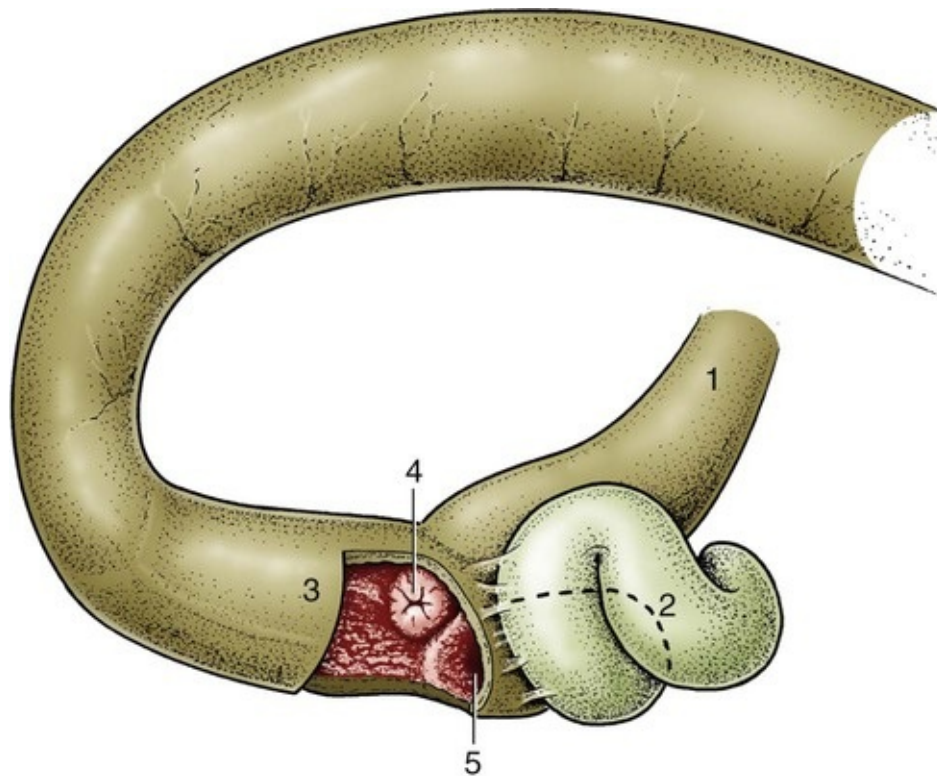
4-31 Canine: Peritoneal Schema, Transverse Section through the Epiploic Foramen



1. Liver
2. Omental bursa
3. Pancreas
4. Hepatic artery
5. Parietal peritoneum
6. Stomach
7. Spleen
8. Omental bursa
9. Aorta
10. Twelfth thoracic vertebra

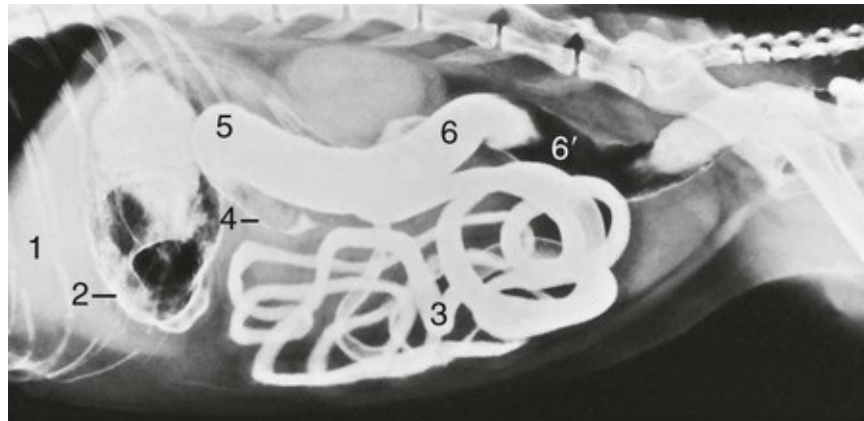
- 11. Azygos vein
- 12. Caudal vena cava
- 13. Epiploic foramen
- 14. Peritoneal cavity
- 15. Duodenum
- 16. Portal vein
- 17. Greater omentum

↻ 4-32 Canine: Ileocolic Junction and Its Relation to the Cecum



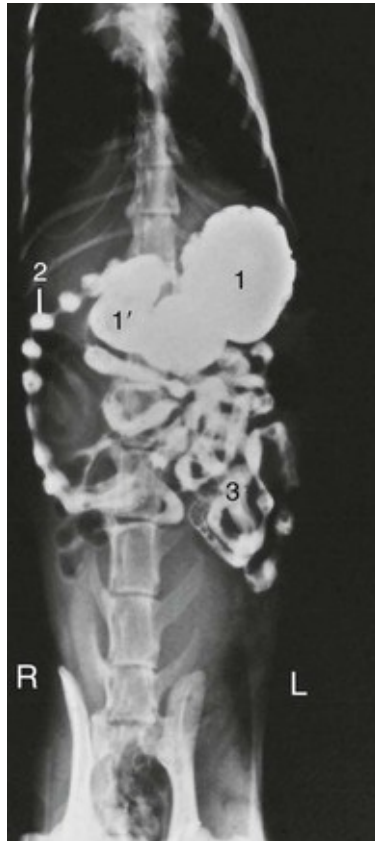
- 1. Ileum
- 2. Cecum
- 3. Ascending colon
- 4. Ileal orifice surrounded by annular fold
- 5. Cecocolic orifice

4-33 Feline: Abdomen after Administration of a Barium Suspension (Lateral View)



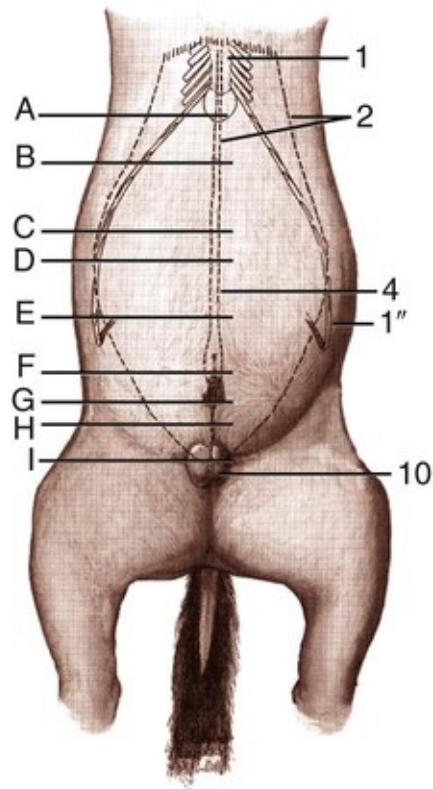
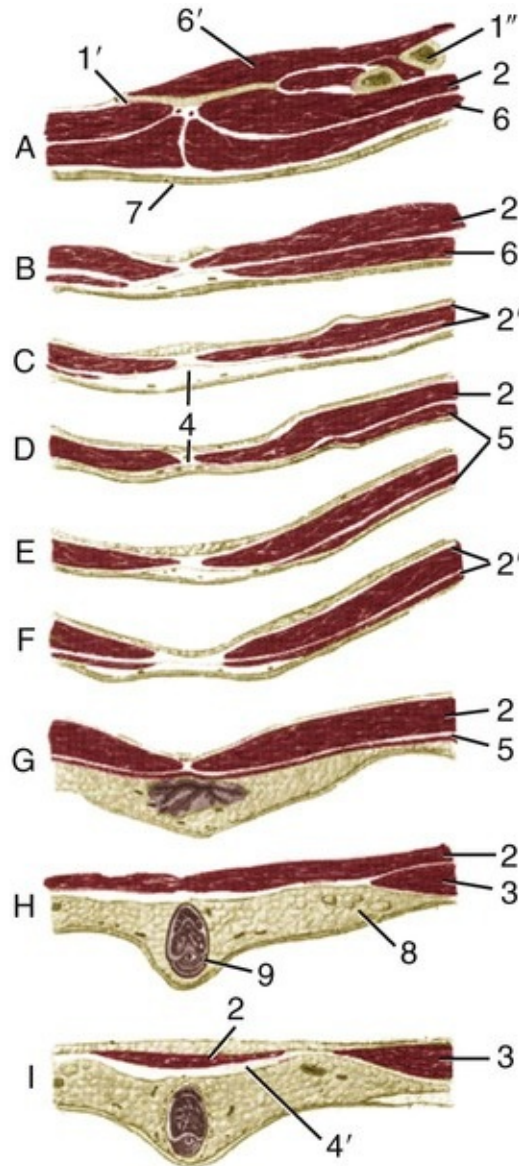
1. Liver
2. Gas and barium in stomach
3. Jejunum
4. Ascending colon
5. Transverse colon
6. Descending colon
- 6'. Gas in descending colon

4-34 Feline: Abdomen after Administration of a Barium Suspension (Ventrodorsal View)



1. Fundus
- 1'. Pyloric part of stomach
2. Descending duodenum—the striking “string-of-pearls” appearance (characteristic of cats) is due to segmental peristalsis
3. Jejunum

4-35 Equine: Structures of the Abdominal Floor

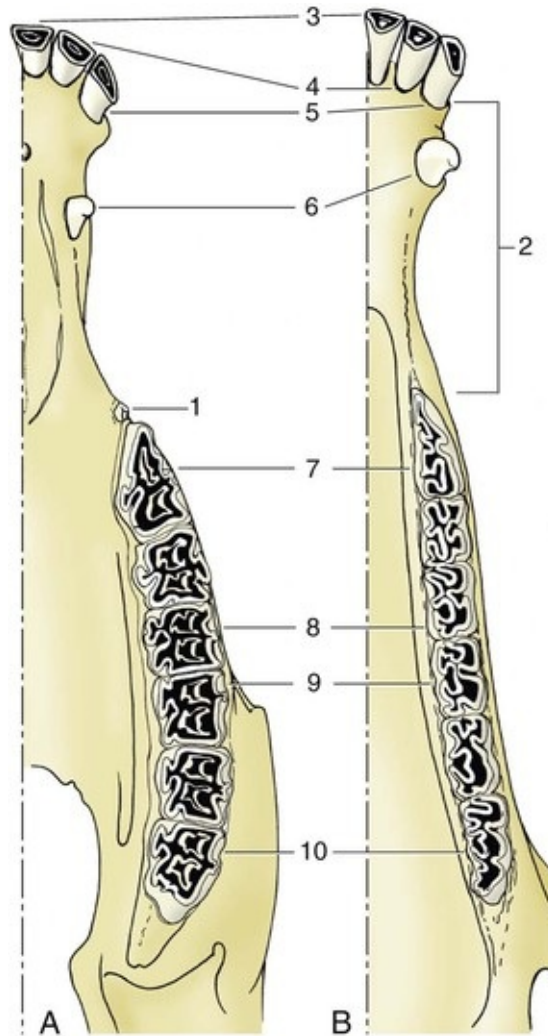


1. Sternum
- 1'. Xiphoid cartilage
- 1''. Costal arch
2. Rectus abdominis
- 2'. Rectus sheath
3. Internal oblique
4. Linea alba
- 4'. Prepubic tendon
5. Cutaneus trunci

6. Pectoralis ascendens
- 6'. Diaphragm
7. Skin
8. Superficial inguinal lymph nodes
9. Penis
10. Scrotum

Note: Changes in the structure of the abdominal floor is shown by means of a series of transverse sections (A through I) of a gelding.

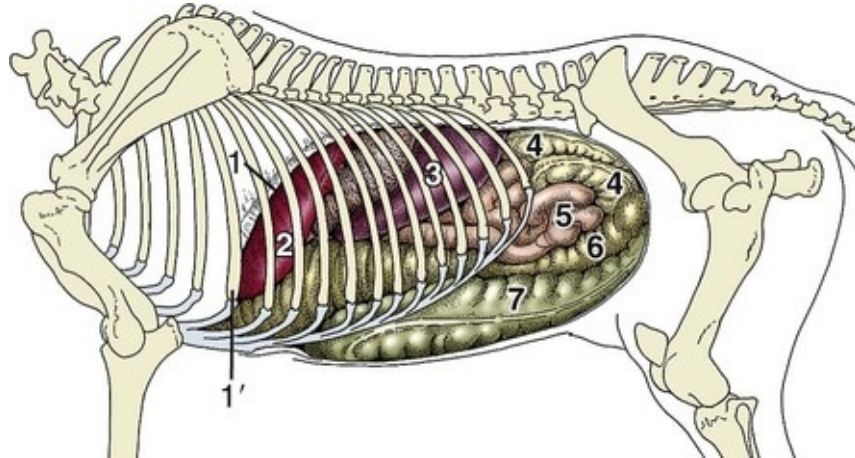
4-36 Equine: Permanent Dentition of the Upper and Lower Jaws



1. Wolf tooth
2. Diastema
3. First incisors
4. Second incisors
5. Third incisors
6. Canines
7. Second premolars
8. Fourth premolars
9. First molars
10. Third molars

4-37 Equine Visceral Projections: Left

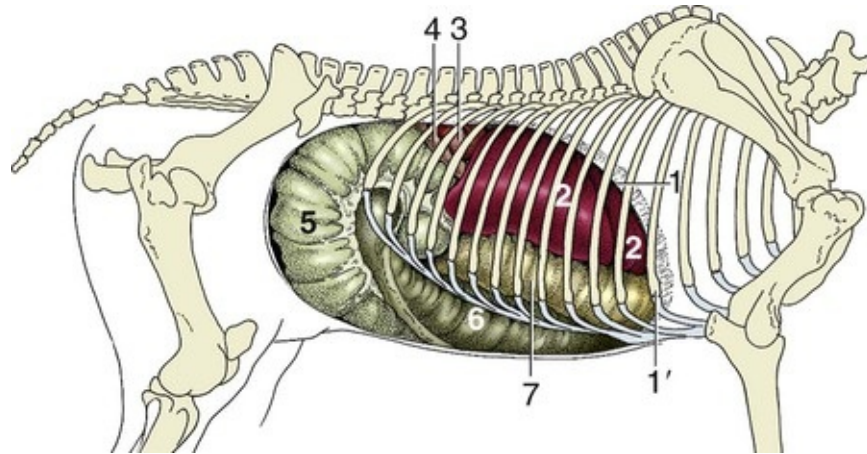
Abdominal Wall



- 1. Cut edge of diaphragm
- 1'. Sixth rib
- 2. Liver
- 3. Spleen
- 4. Descending colon (banded)
- 5. Jejunum (smooth)
- 6. Left dorsal colon
- 7. Left ventral colon

Note: Visceral projections include the diaphragm.

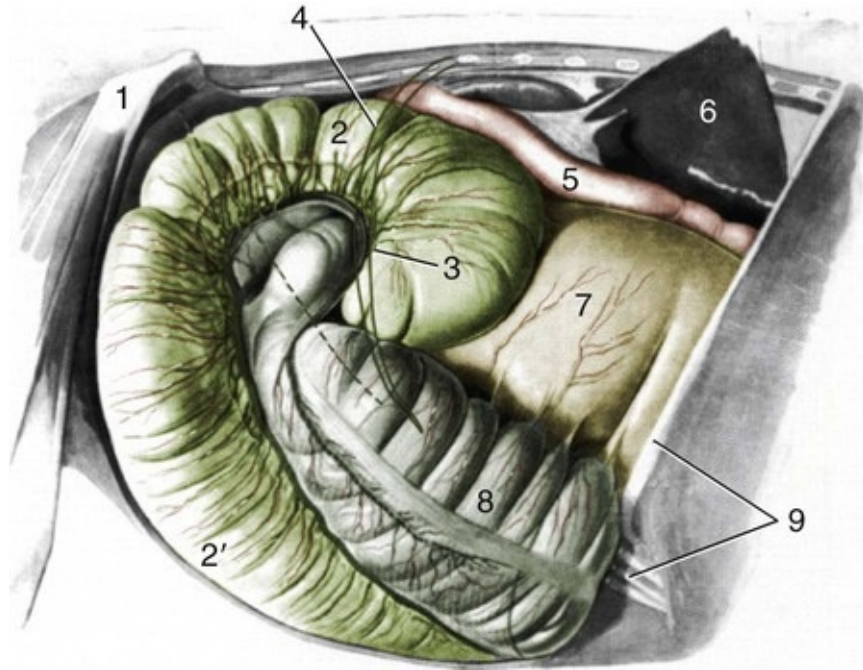
4-38 Equine Visceral Projections: Right Abdominal Wall



1. Cut edge of diaphragm
- 1'. Sixth rib
2. Liver
3. Right kidney
4. Descending duodenum
5. Body of cecum
6. Right ventral colon
7. Right dorsal colon

Note: Visceral projections include the diaphragm.

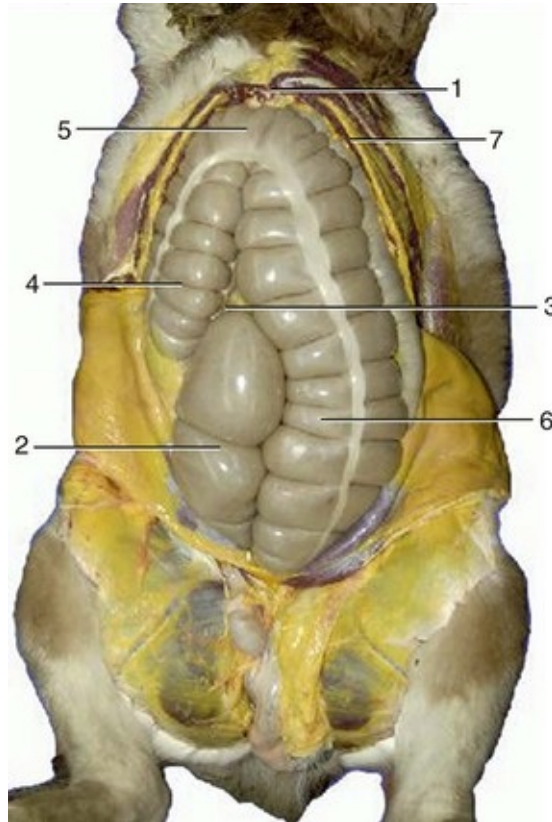
4-39 Equine: Cecum and Related Organs



1. Coxal tuber
2. Base of cecum
- 2'. Body of cecum
3. Position of cecocolic orifice
4. Position of last rib
5. Descending duodenum
6. Right lobe of liver (elevated)
7. Right dorsal colon
8. Right ventral colon
9. Tenth rib and costal arch

Note: Cecum and related organs lie against the right abdominal wall and flank. The position of the cranial branch of the deep circumflex iliac artery that crosses the flank is indicated (*broken line*).

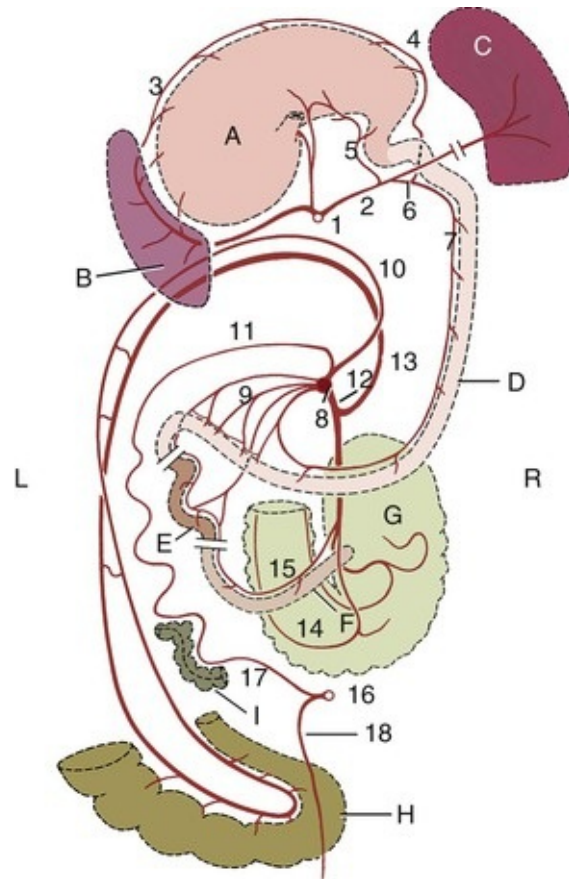
4-40 Equine Visceral Projections: Ventral Abdominal Wall



1. Xiphoid cartilage
2. Body of cecum
3. Apex of cecum
4. Right ventral colon
5. Sternal flexure
6. Left ventral colon
7. Diaphragmatic flexure

Note: The position of the apex of the cecum can vary.

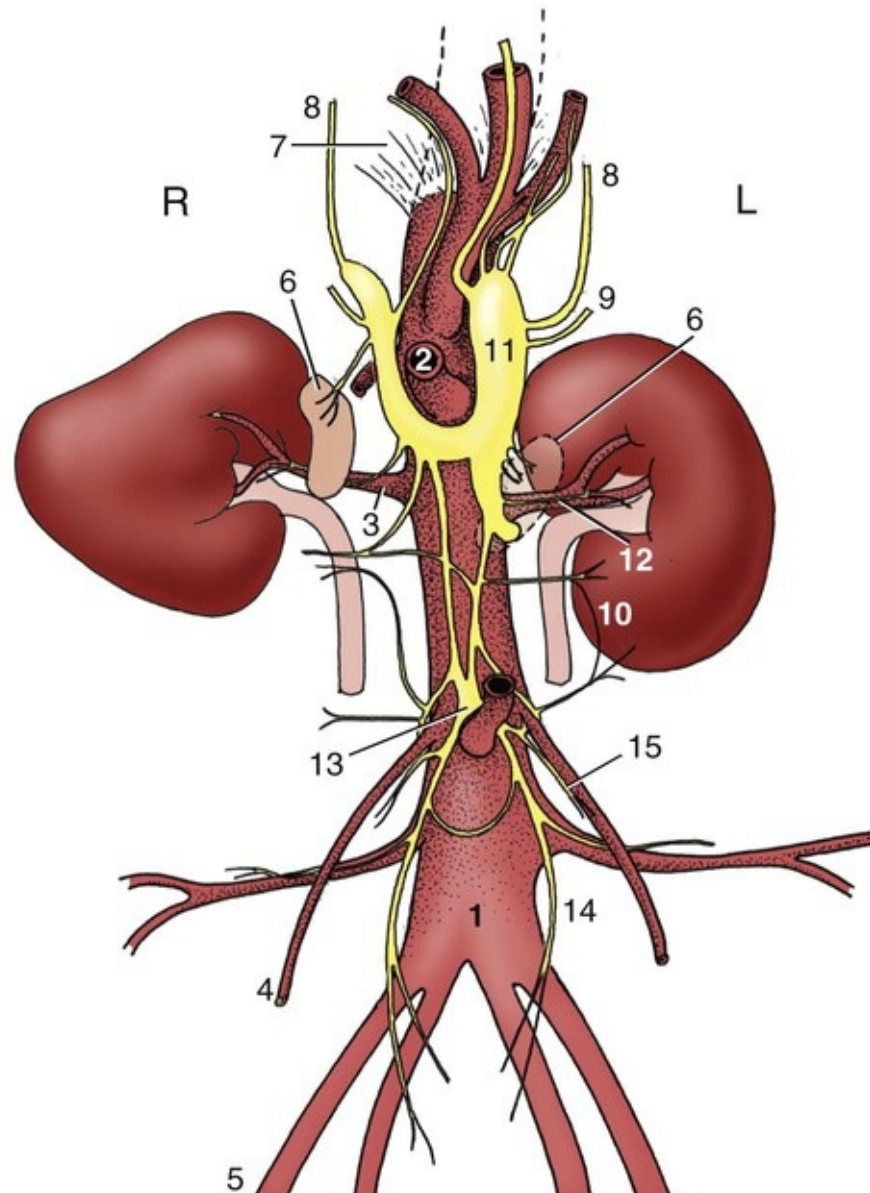
4-41 Equine: Major Arteries of the Gastrointestinal Tract



1. Celiac artery
2. Hepatic artery
3. Left gastroepiploic artery
4. Right gastroepiploic artery
5. Right gastric artery
6. Gastroduodenal artery
7. Cranial pancreaticoduodenal artery
8. Cranial mesenteric artery
9. Jejunal arteries
10. Right colic artery
11. Middle colic artery
12. Ileocolic artery
13. Colic branch of ileocolic artery
14. Medial cecal artery
15. Mesenteric ileal artery
16. Caudal mesenteric artery
17. Left colic artery
18. Cranial rectal artery

Note: Dorsal view. The structures have been stretched craniocaudally for clarity. *A*, stomach; *B*, spleen; *C*, liver; *D*, duodenum; *E*, jejunum; *F*, ileum; *G*, cecum; *H*, pelvic flexure; *I*, descending colon.

• 4-42 Equine: Abdominal Autonomic Nerves and Branches of the Abdominal Aorta

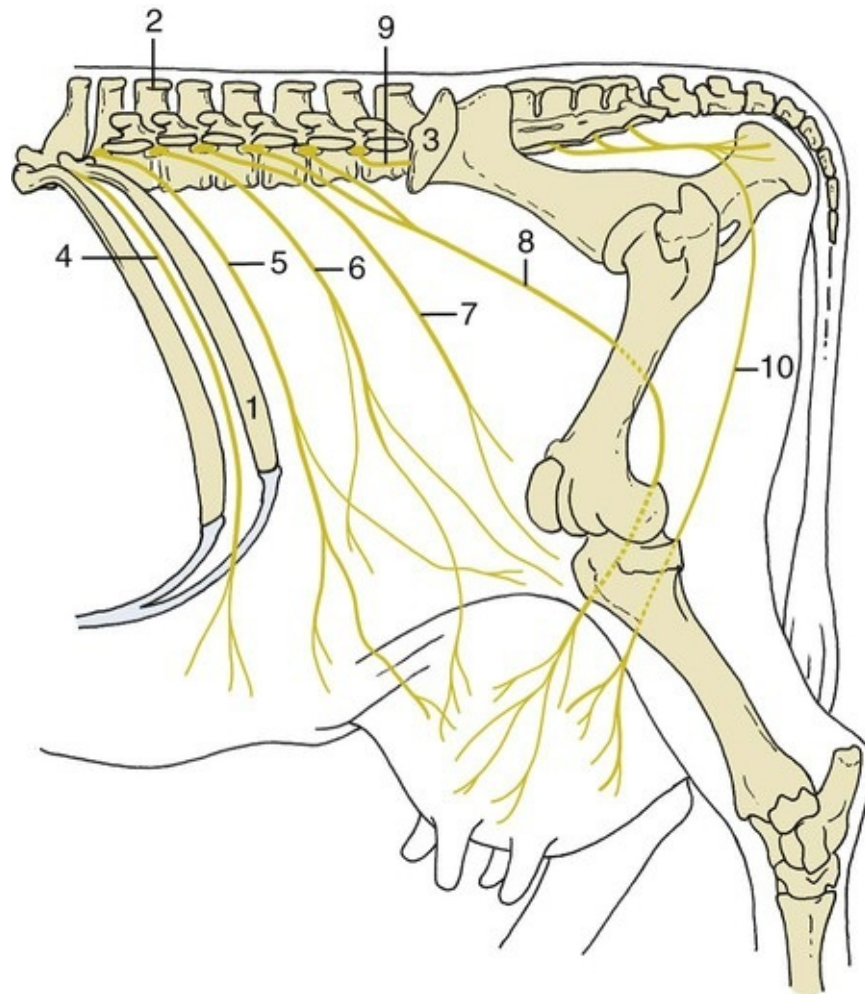


1. Aorta
2. Cranial mesenteric artery
3. Renal artery
4. Testicular (ovarian) artery
5. External iliac artery
6. Adrenal glands
7. Crus of diaphragm
8. Major splanchnic nerves
9. Minor splanchnic nerves
10. Lumbar splanchnic nerves
11. Combined celiac and cranial mesenteric ganglia

- 12. Renal plexus
- 13. Caudal mesenteric ganglion
- 14. Hypogastric nerve
- 15. Testicular (ovarian) plexus

Note: Ventral view.

• 4-43 Bovine: Nerves to the Flank and Udder

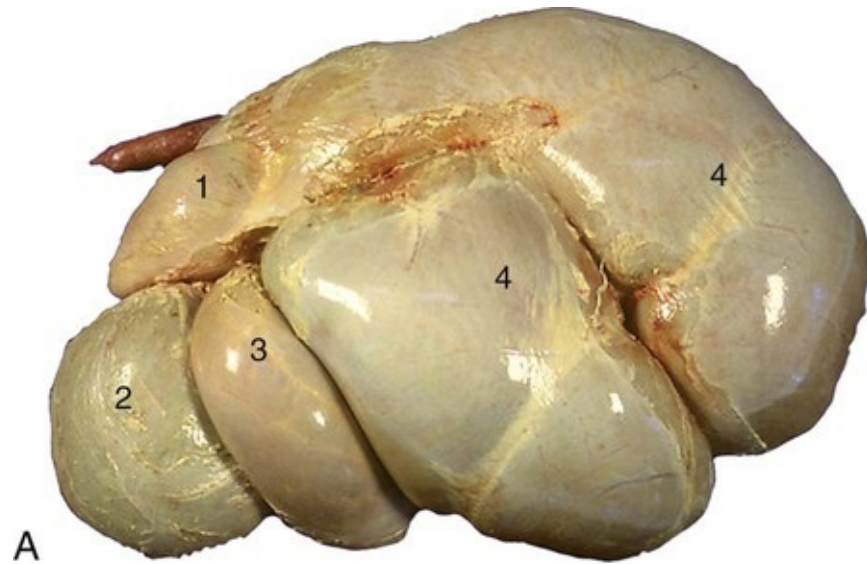
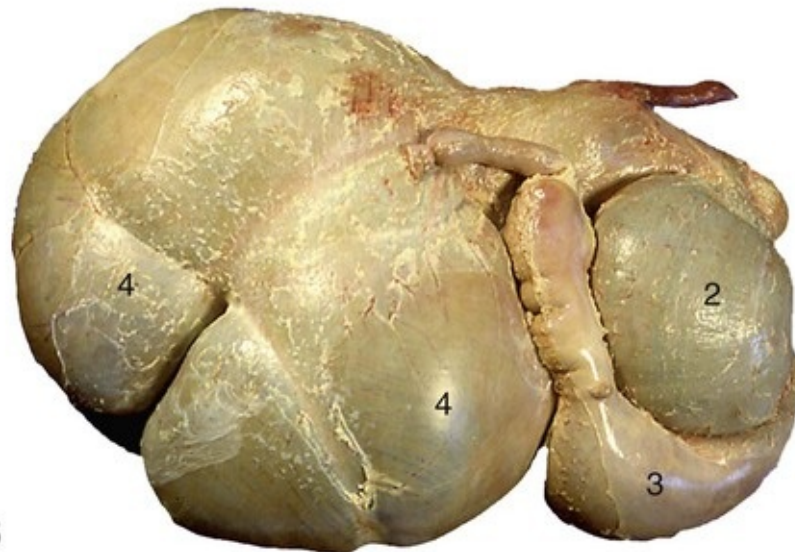


- 1. Last rib
- 2. Spinous process of second lumbar vertebra

3. Coxal tuber
4. Twelfth intercostals nerve (T12)
5. Costoabdominal nerve (T13)
6. Iliohypogastric nerve (L1)
7. Ilioinguinal nerve (L2)
8. Genitofemoral nerve (L3, L4)
9. L5 nerve
10. Ventral perineal nerve

Note: Simplified topographic illustration. The dorsal branches of the spinal nerves to the upper part of the flank are not shown.

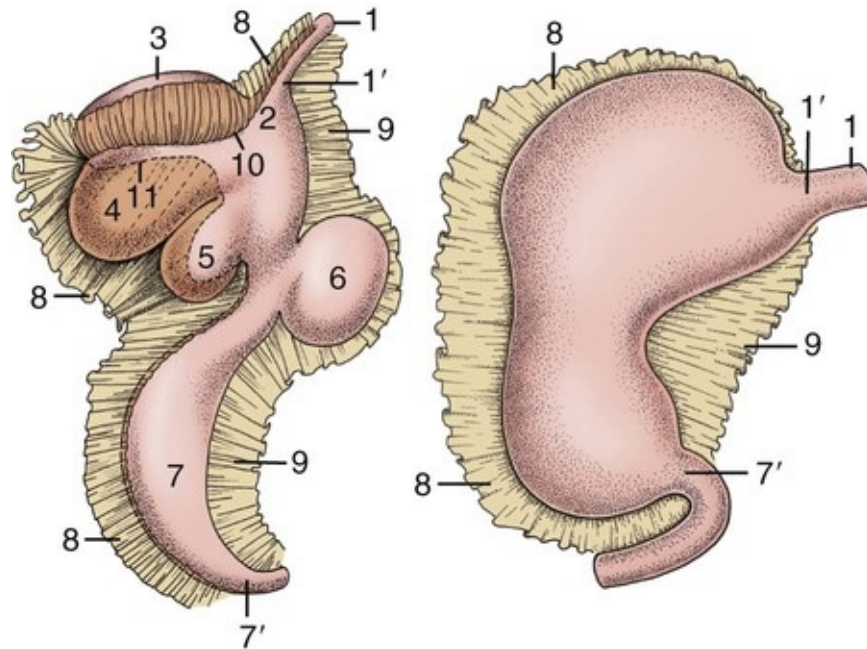
• 4-44 Bovine: Stomach



- B**
1. Reticulum
 2. Omasum
 3. Abomasum
 4. Rumen

Note: **A**, Left side. **B**, Right side.

4-45 Bovine: Greater and Lesser Omenta

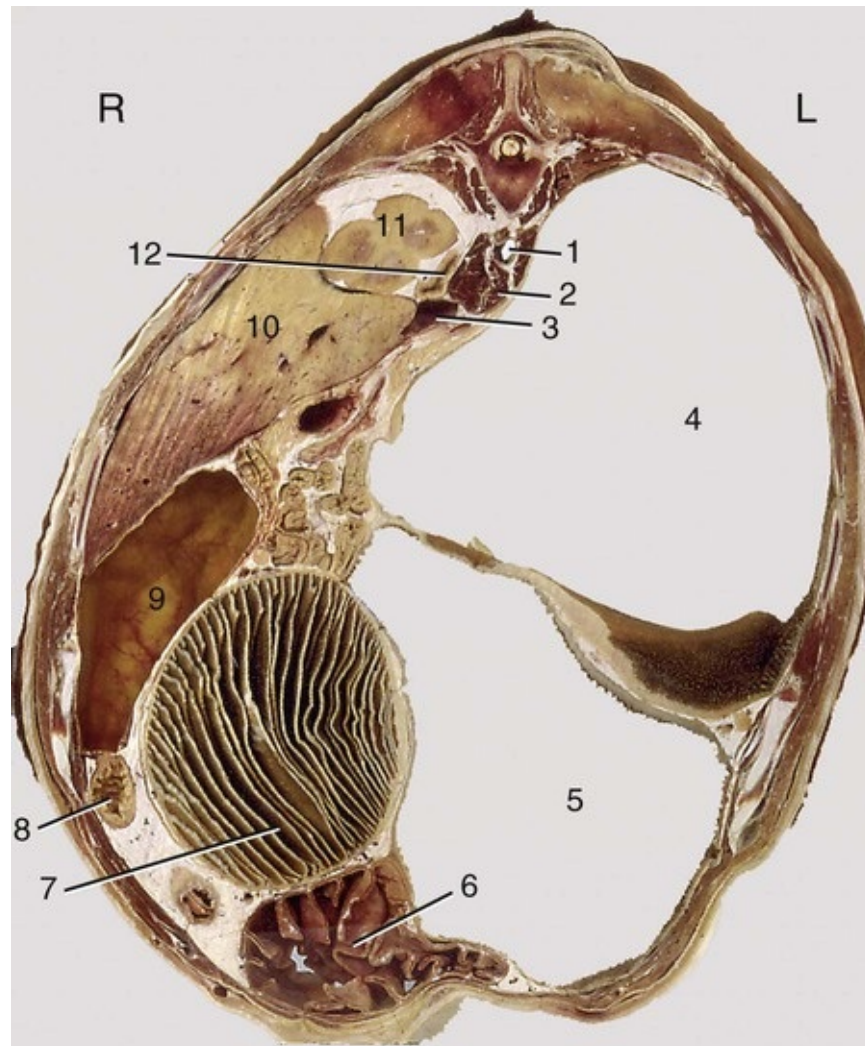


1. Esophagus
- 1'. Cardia
2. Atrium ruminis
3. Dorsal sac of the rumen
4. Ventral sac of the rumen
5. Reticulum
6. Omasum
7. Abomasum
- 7'. Pylorus
8. Greater omentum
9. Lesser omentum
10. Part of the greater curvature corresponding to the right longitudinal groove of the rumen
11. Part of the greater curvature corresponding to the left longitudinal groove of the rumen

Note: The attachments of the greater and lesser omenta are depicted on the developing ruminant stomach. The simple stomach (*right*) shows the correspondence of its parts to the compartments of the

ruminant stomach.

• 4-46 Bovine: Trunk at the Thirteenth Thoracic Vertebra

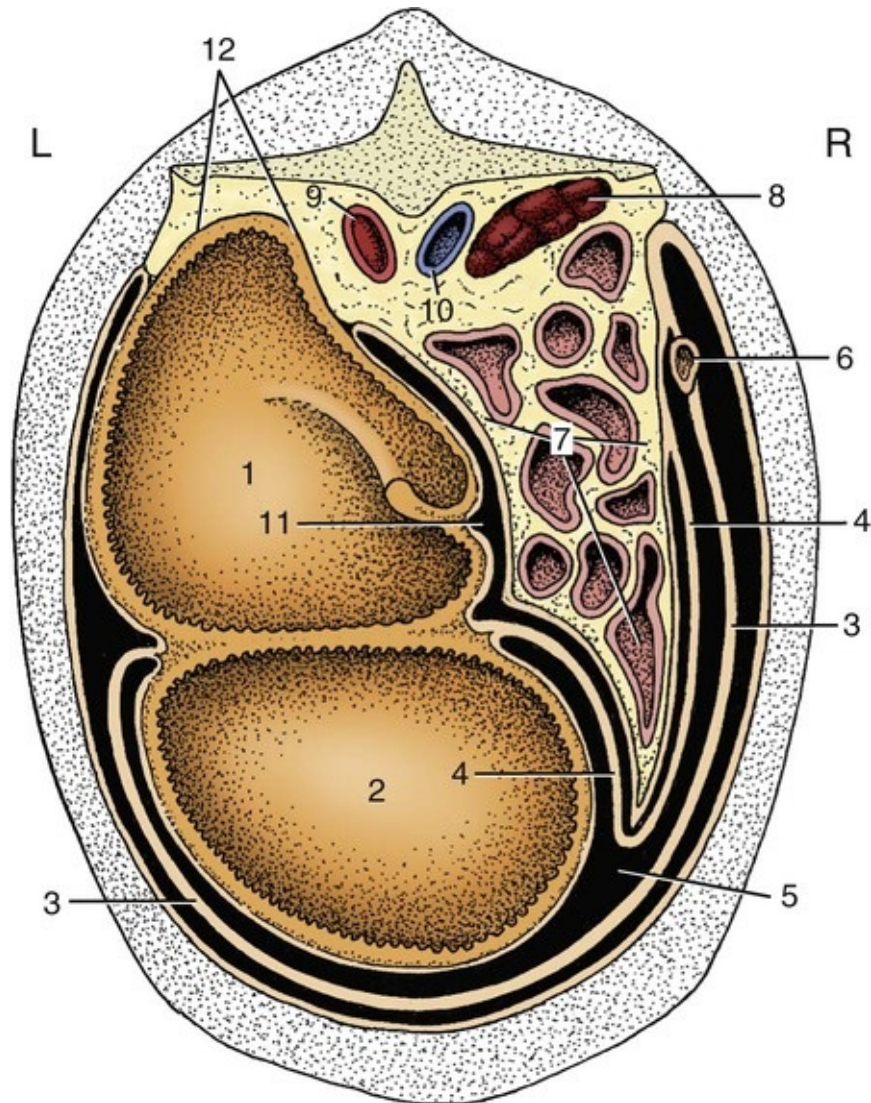


1. Aorta
2. Right crus of the diaphragm
3. Caudal vena cava
4. Doral sac of the rumen
5. Ventral sac of the rumen
6. Abomasum

7. Omasum
8. Duodenum
9. Gallbladder
10. Liver
11. Cranial pole of the right kidney
12. Right adrenal gland

Note: Transverse section, cranial view.

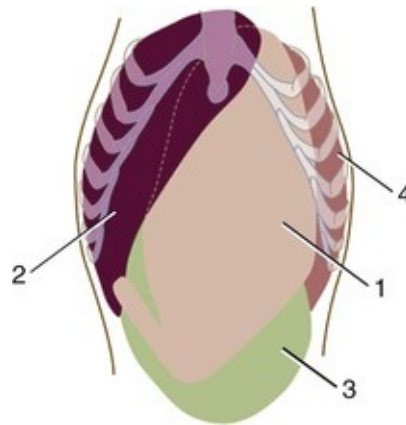
• 4-47 Bovine: Disposition of the Greater Omentum



1. Dorsal sac of the rumen
2. Ventral sac of the rumen
3. Superficial wall of the greater omentum
4. Deep wall of the greater omentum
5. Omental bursa
6. Descending duodenum
7. Intestinal mass
8. Right kidney
9. Aorta
10. Caudal vena cava
11. Supraomental recess
12. Retroperitoneal attachment of the rumen

Note: Schematic transverse section of the abdominal cavity.

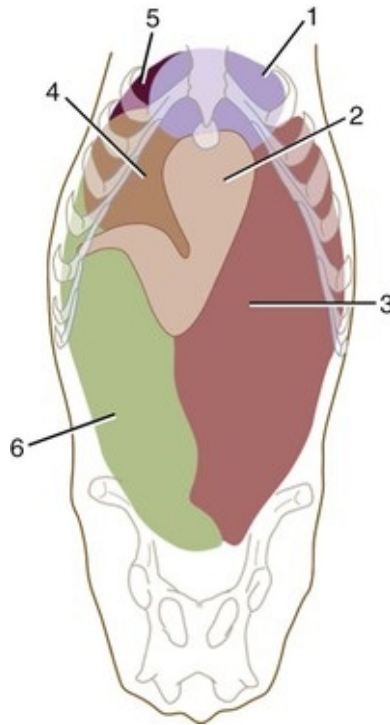
• 4-48 Bovine: Abdominal Viscera of a Newborn Calf



- 1. Abomasum
- 2. Liver
- 3. Intestinal mass
- 4. Rumen

Note: Ventral view, based on the reconstruction of a transverse section of an animal frozen in the standing position.

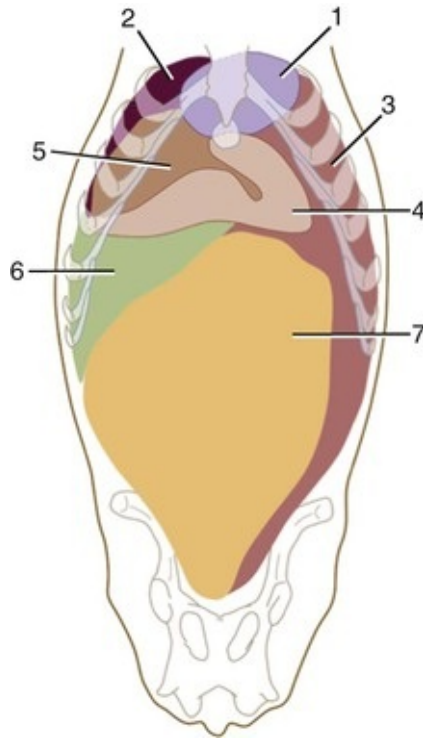
• 4-49 Bovine: Abdominal Viscera of a 5-Year-Old Cow



1. Reticulum
2. Abomasum
3. Rumen
4. Omasum
5. Liver
6. Intestinal mass

Note: Ventral view, based on the reconstruction of a transverse section of an animal frozen in the standing position.

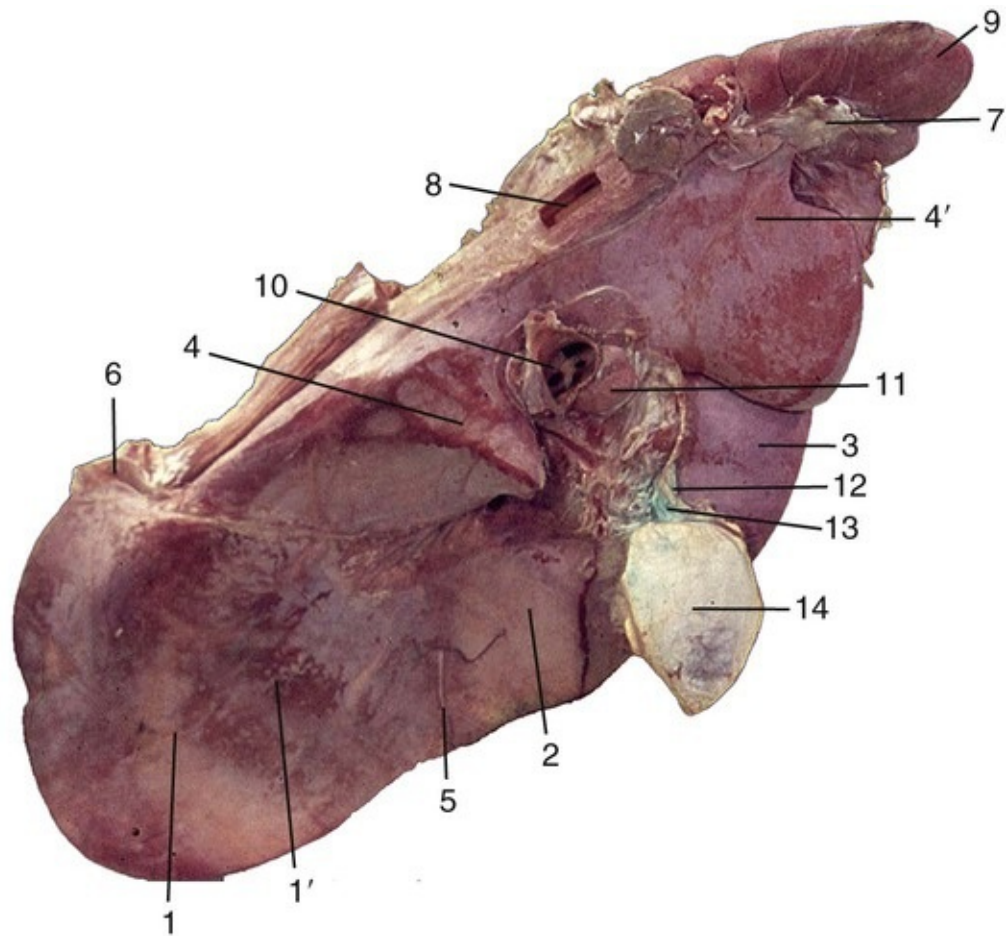
4-50 Bovine: Abdominal Viscera of a 6-Year-Old Pregnant Cow



1. Reticulum
2. Liver
3. Rumen
4. Abomasum
5. Omasum
6. Intestinal mass
7. Uterus

Note: Based on the reconstruction of a transverse section of an animal frozen in the standing position.

• 4-51 Bovine: Visceral Surface of the Liver

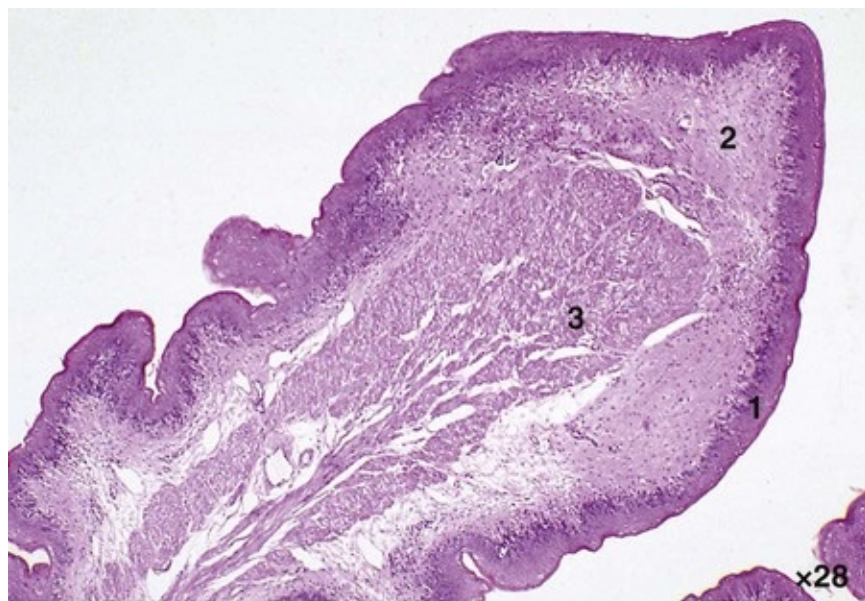
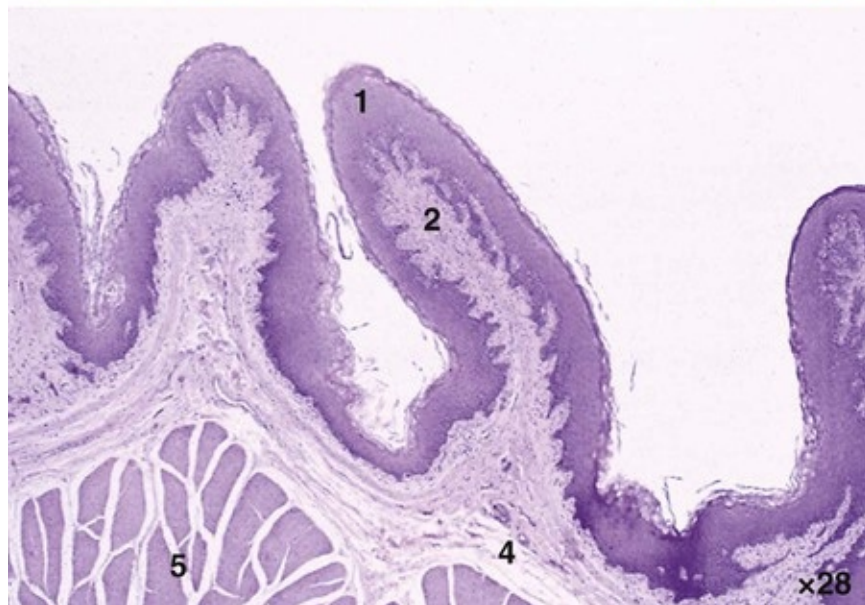


1. Left lobe
- 1'. Omasal impression
2. Quadrate lobe
3. Right lobe
4. Papillary process of the caudate lobe
- 4'. Caudate process of the caudate lobe
5. Round ligament
6. Left triangular ligament
7. Right triangular ligament
8. Caudal vena cava
9. Right kidney
10. Portal vein
11. Hepatic lymph node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

13. Cystic duct

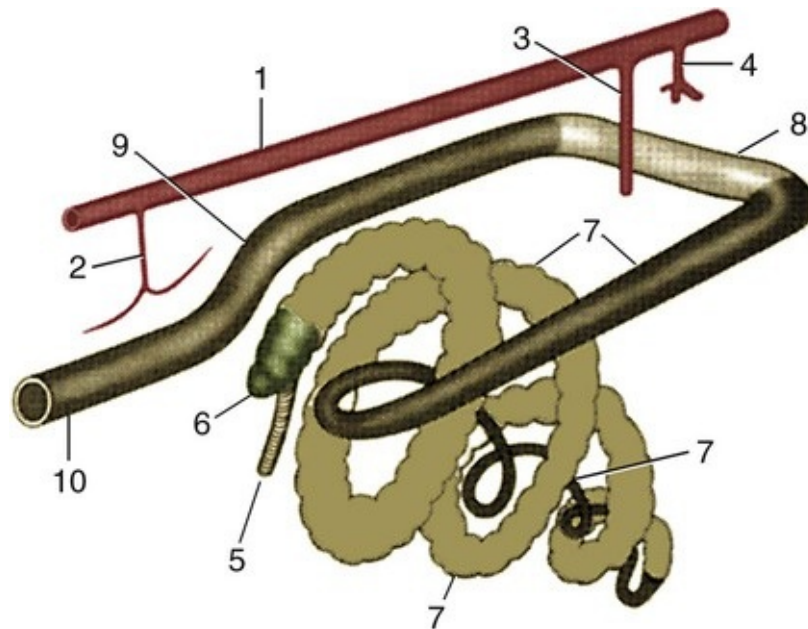
14. Gallbladder

4-52 Ruminant: Reticulum (Top) and Rumen (Bottom) of the Goat



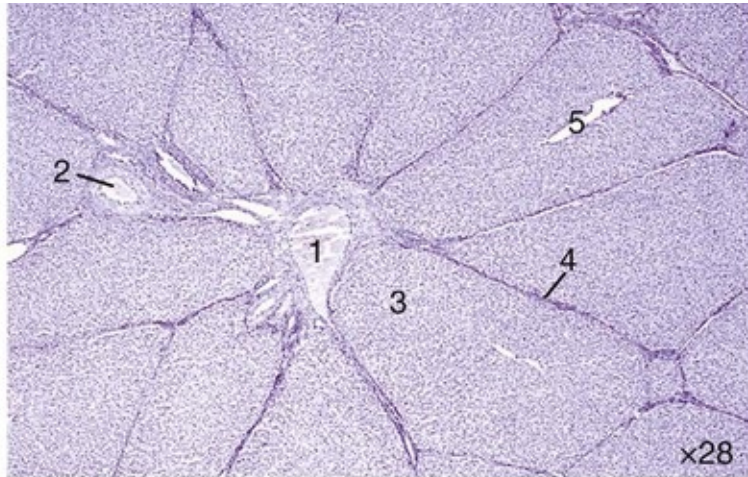
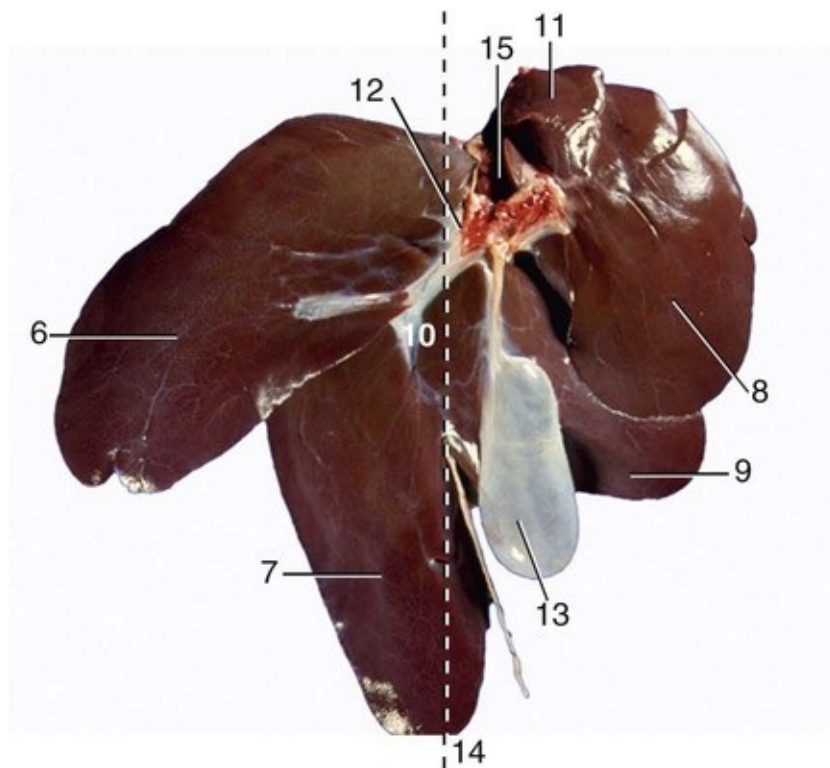
1. Stratified squamous epithelium
2. Lamina propria
3. Lamina muscularis mucosae
4. Submucosa
5. Muscularis interna

➤ 4-53 Porcine: Large Intestine



1. Aorta
2. Caudal mesenteric artery
3. Cranial mesenteric artery
4. Celiac artery
5. Ileum
6. Cecum
7. Ascending colon
8. Transverse colon
9. Descending colon
10. Rectum

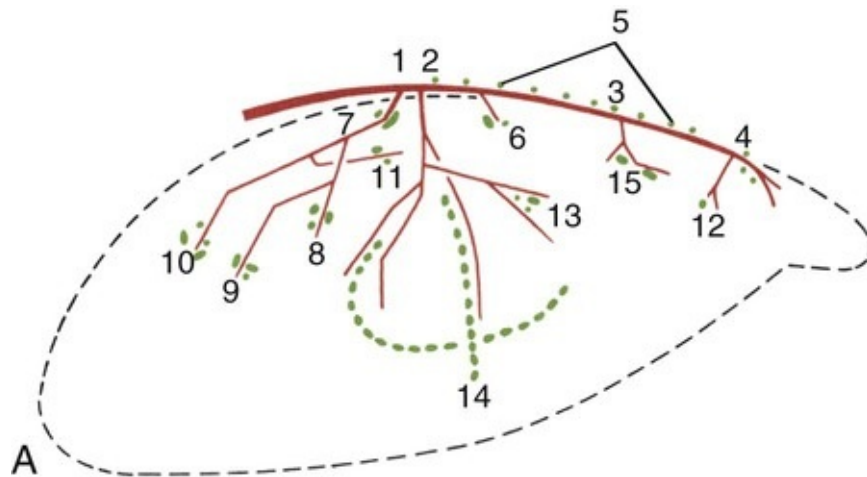
4-54 Porcine: Liver (Top) and Visceral Surface of the Liver (Bottom)



1. Central vein
2. Interlobular artery
3. Hepatic lobule

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

➤ **4-55 Porcine: Major Abdominal Arteries and Lymph Nodes**

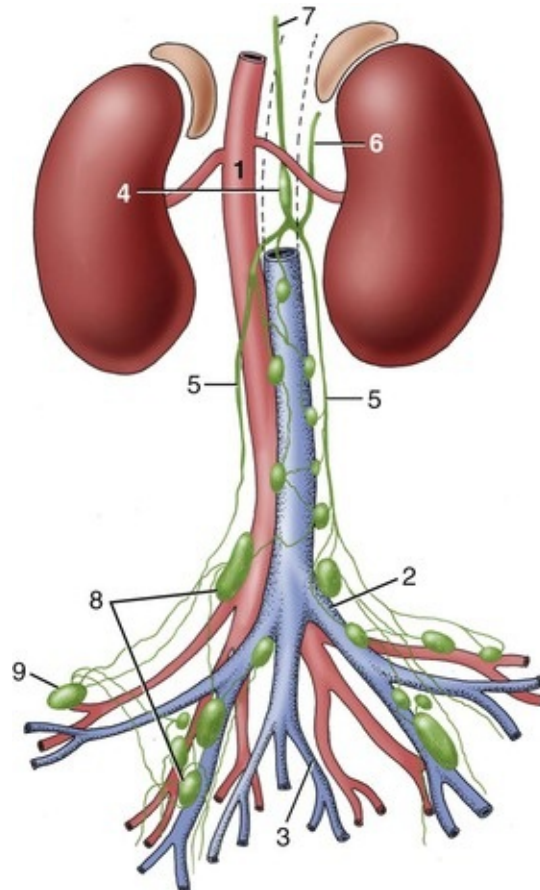


1. Celiac artery
2. Cranial mesenteric artery
3. Caudal mesenteric artery
4. Deep circumflex iliac artery
5. Lumbar aortic nodes
6. Renal nodes
7. Celiac nodes
8. Splenic nodes
9. Gastric nodes
10. Hepatic nodes
11. Pancreaticoduodenal nodes
12. Lateral iliac nodes
13. Ileocolic nodes

- 14. Colic nodes
- 15. Caudal mesenteric nodes

Note: **A**, Schema of the major abdominal arteries and lymph nodes.
B, Part of the jejunum, showing the inclusion of jejunal lymph nodes in the mesentery.

➤ 4-56 Porcine: Lymph Nodes of the Sublumbar Area

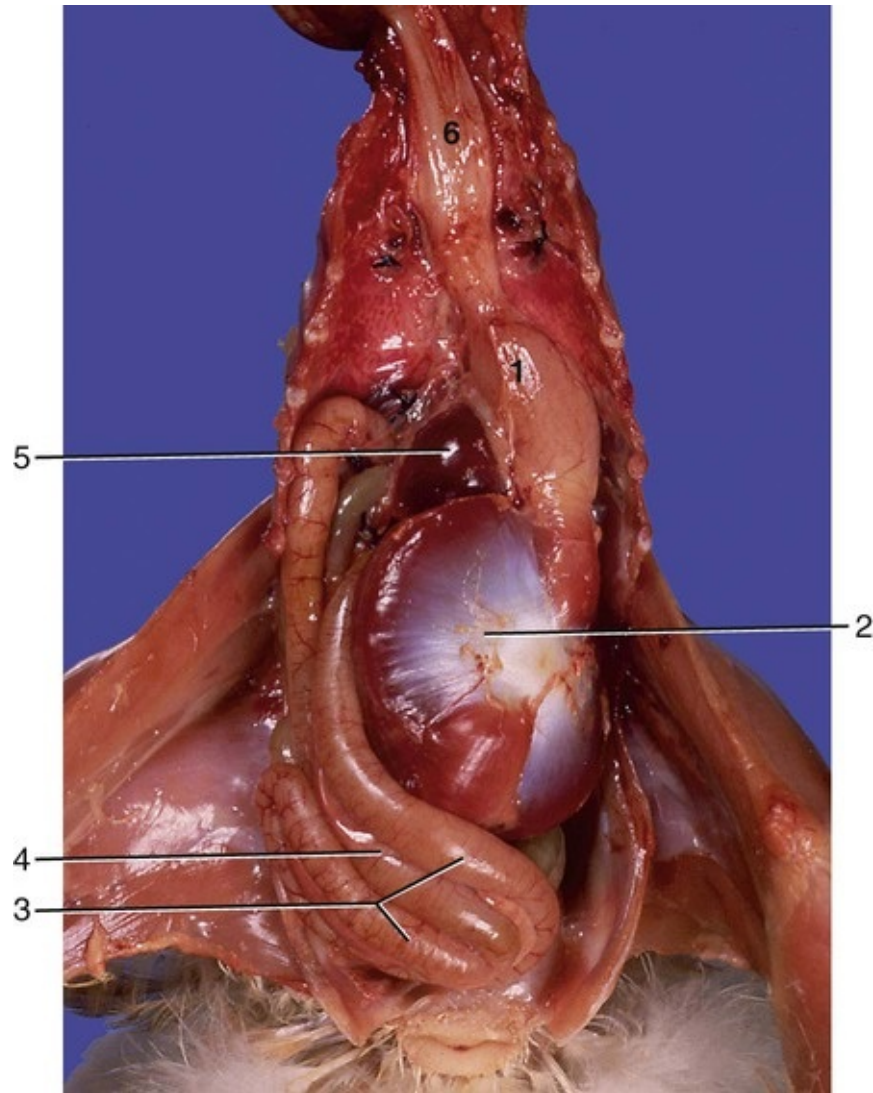


- 1. Aorta
- 2. External iliac vein
- 3. Internal iliac vein
- 4. Cisterna chyli

5. Lumbar trunks and lumbar aortic nodes
6. Intestinal trunk
7. Thoracic duct
8. Medial iliac nodes
9. Lateral iliac node

Note: Ventral view.

2 4-57 Avian: Stomach and Duodenal Loop



1. Proventriculus
2. Gizzard
3. Duodenal loop
4. Pancreas
5. Spleen
6. Esophagus

Note: The pancreas is within the loop.

The Pelvis and Reproductive Organs

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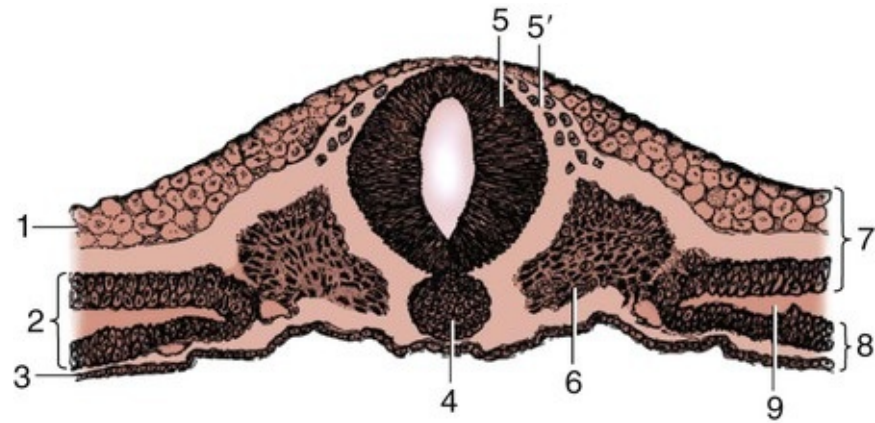
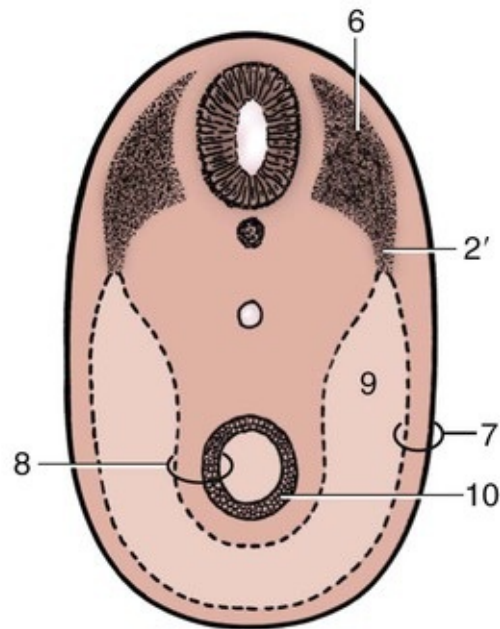
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↻ 5-1 Canine: Embryos Showing the Lateral Mesoderm and Celom

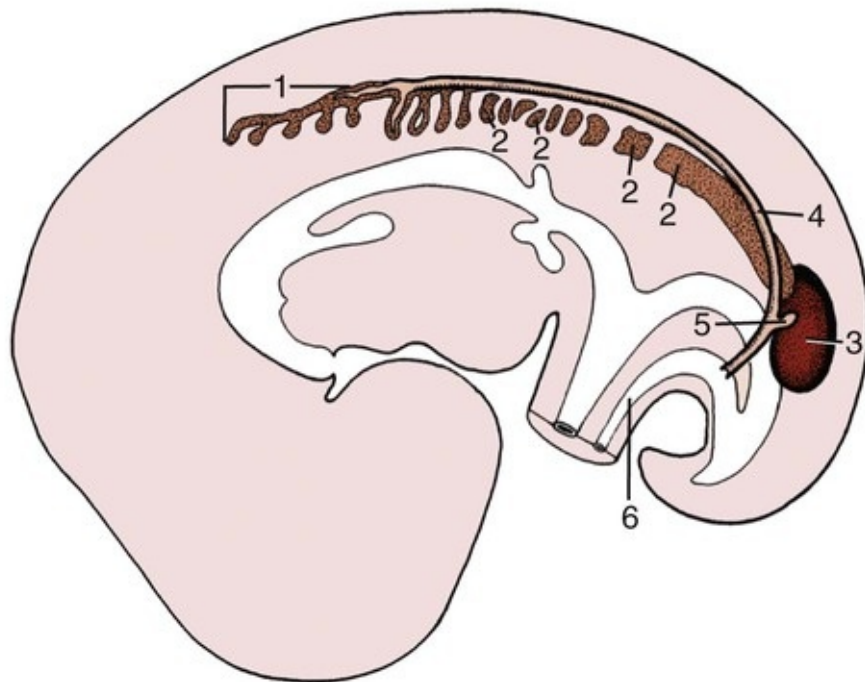


1. Ectoderm
2. Lateral plate of mesoderm
- 2'. Intermediated mesoderm
3. Endoderm
4. Notochord
5. Neural tube
- 5'. Neural crest cells
6. Somite
7. Somatopleure
8. Splanchnopleure
9. Celom

10. Primitive gut

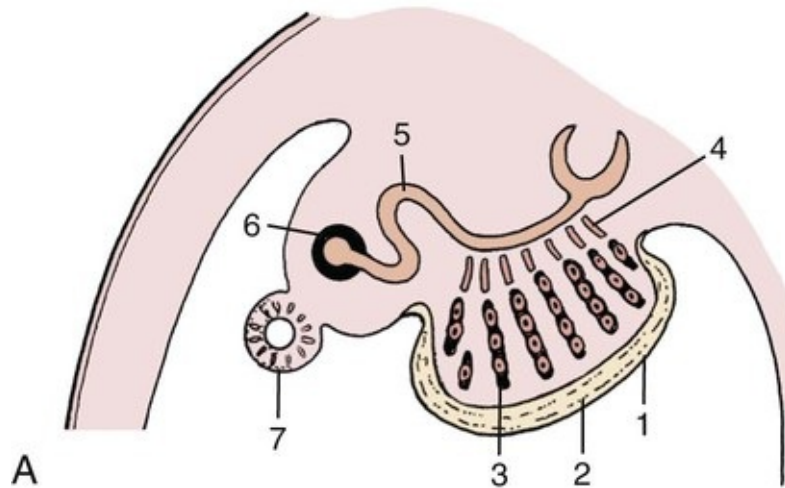
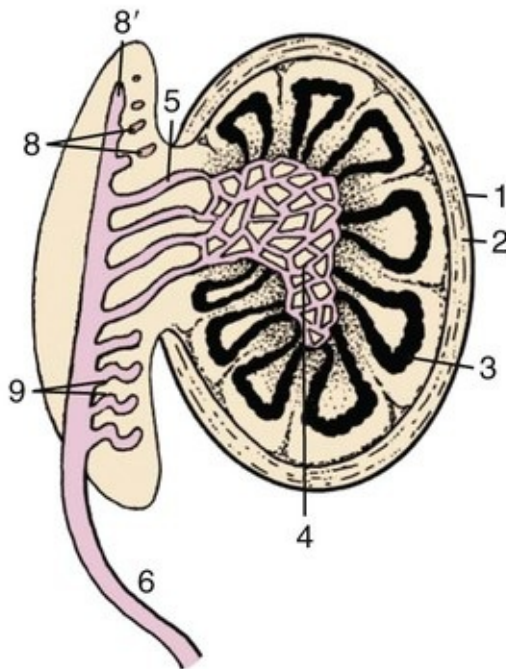
Note: Transections of an early discoidal embryo (*top*) and of an older ventrally closed one (*bottom*) shows the splitting of the lateral mesoderm and the development of the celom.

↻ 5-2 Canine: Intermediate Mesoderm



1. Pronephros
2. Mesonephros, segmented cranially but continuous caudally
3. Metanephros
4. Pronephric (later mesonephric) duct
5. Ureteric bud
6. Urachus

5-3 Canine: Development of the Testis

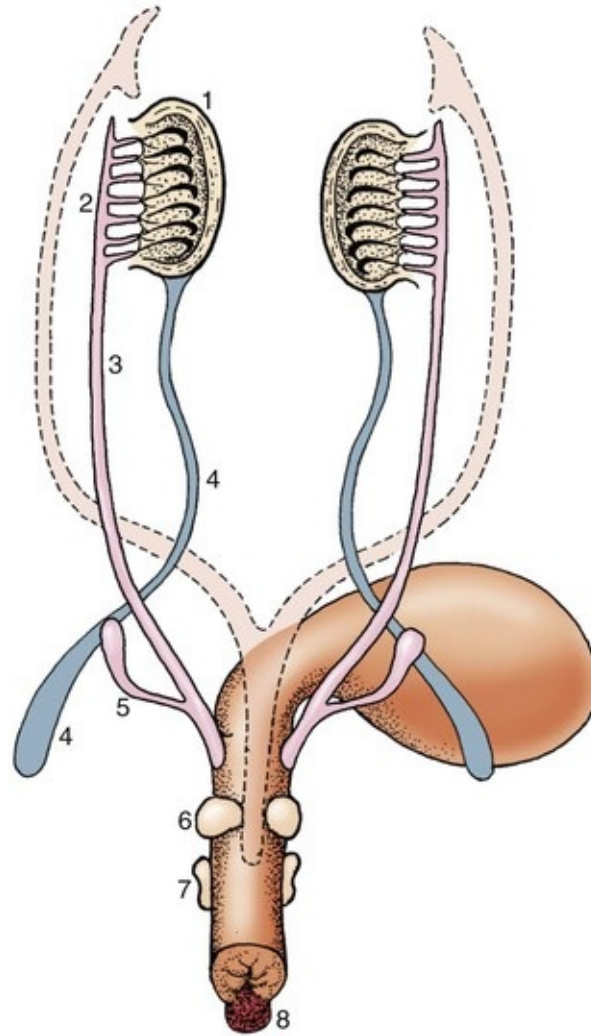


- B
1. Celom epithelium
 2. Tunica albuginea
 3. Epithelial cords, seminiferous tubules
 4. Rete testis

5. Mesonephric tubules, efferent ductules
6. Mesonephric (later deferent) duct
7. Paramesonephric duct
8. Cranial remnant of mesonephric tubules (aberrant ductules)
- 8'. Remnant of mesonephric duct (appendix of epididymis)
9. Caudal remnant (paradidymis)

Note: Two stages in the development of the testis. **A**, The epithelial cords are isolated from the surface epithelium by the formation of the tunica albuginea. **B**, The epithelial cords become seminiferous tubules, and the mesonephros is gradually transformed into part of the epididymis.

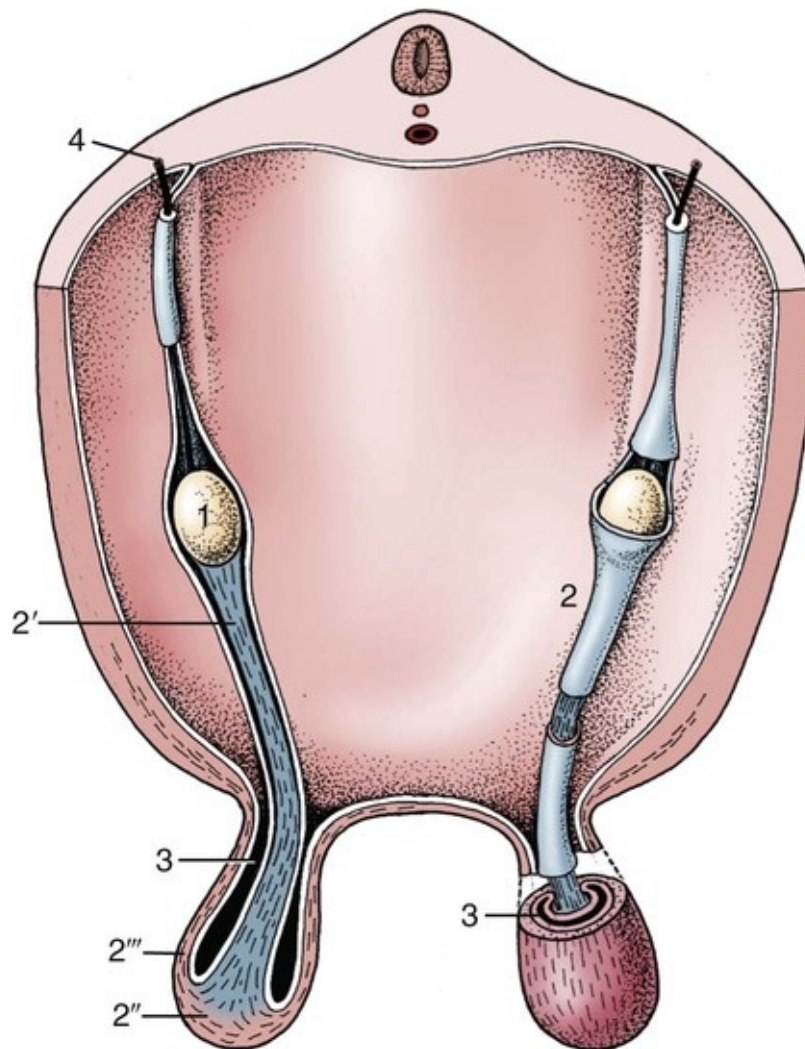
➤ 5-4 Canine: Urogenital Sinus



1. Testis
2. Epididymis
3. Deferent duct
4. Gubernaculum
5. Vesicular gland
6. Prostate
7. Bulbourethral gland
8. Genital tubercle

Note: Differentiation of the urogenital sinus. The budding of the prostate and bulbourethral glands and the enlargement of the genital tubercle are noted. The regressed paramesonephric ducts are indicated (*broken lines*).

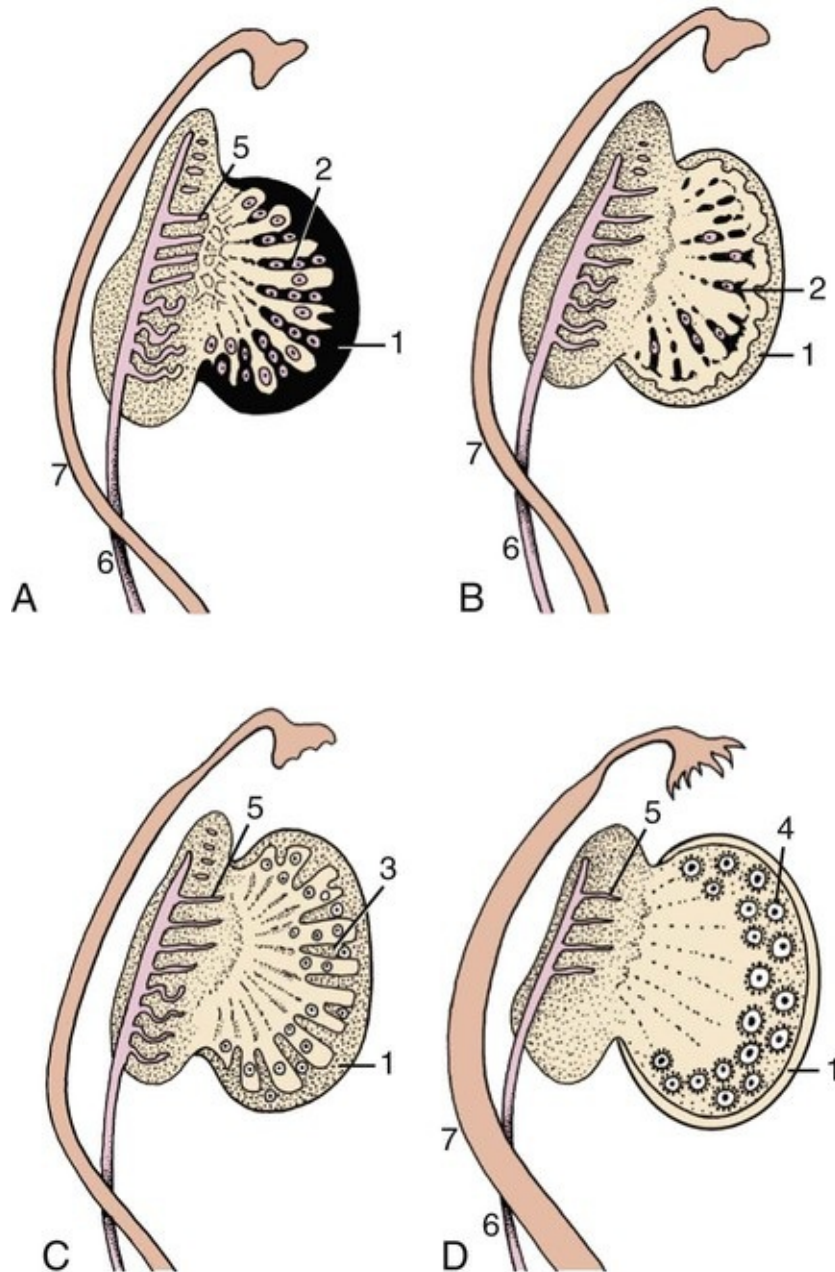
5-5 Canine: Schematic of the Testis and Gubernaculum with the Peritoneal Fold in Which Descent Takes Place



- 1. Testis
- 2. Gubernaculum
- 2'. Pars propria
- 2''. Pars infravaginalis
- 2'''. Pars vaginalis
- 3. Vaginal process

4. Testicular artery

5-6 Canine: Development of the Ovary



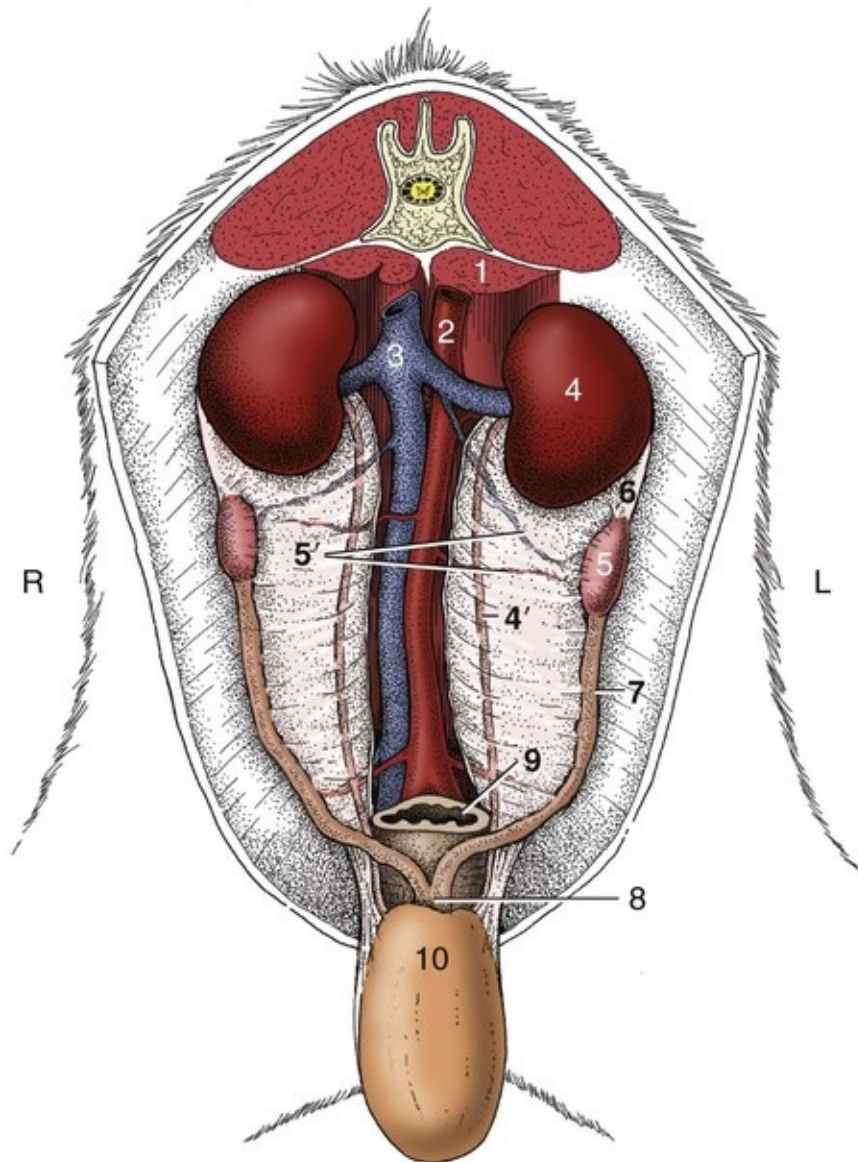
1. Celomic epithelium

2. Epithelial cords, penetrating (**A**) and regressing

(B)

3. Second formation of sex cords **(C)**
4. Primitive follicles
5. Remnants of mesonephric tubules
6. Mesonephric duct
7. Paramesonephric duct **(D)**

➤ **5-7 Canine: Ovaries and Uterus In Situ (Ventral View)**

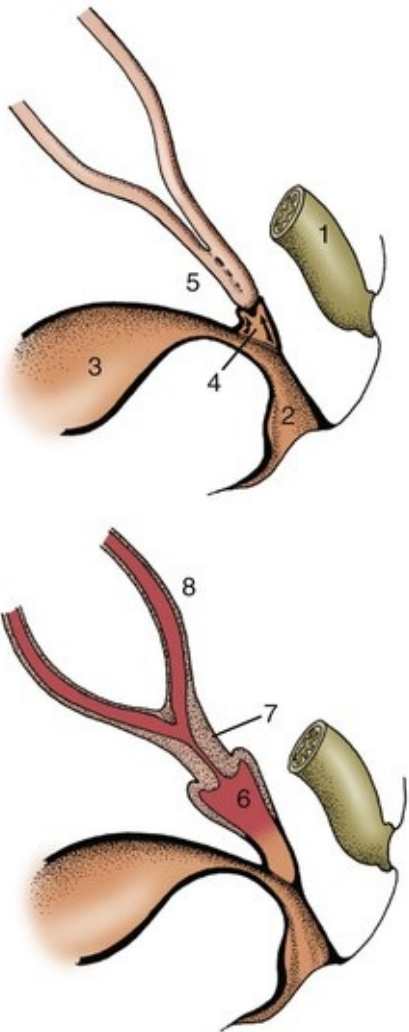


1. Psoas muscles
2. Aorta
3. Caudal vena cava
4. Left kidney and ureter
5. Ovary
- 5'. Ovarian vessels
6. Suspensory ligament of ovary
7. Uterine horn
8. Body of uterus

9. Rectum

10. Bladder (reflected caudally)

5-8 Canine: Formation of the Vagina



1. Rectum

2. Caudal part of urogenital sinus (vestibule)

3. Cranial part of urogenital sinus (bladder, urethra)

4. Bud from urogenital sinus

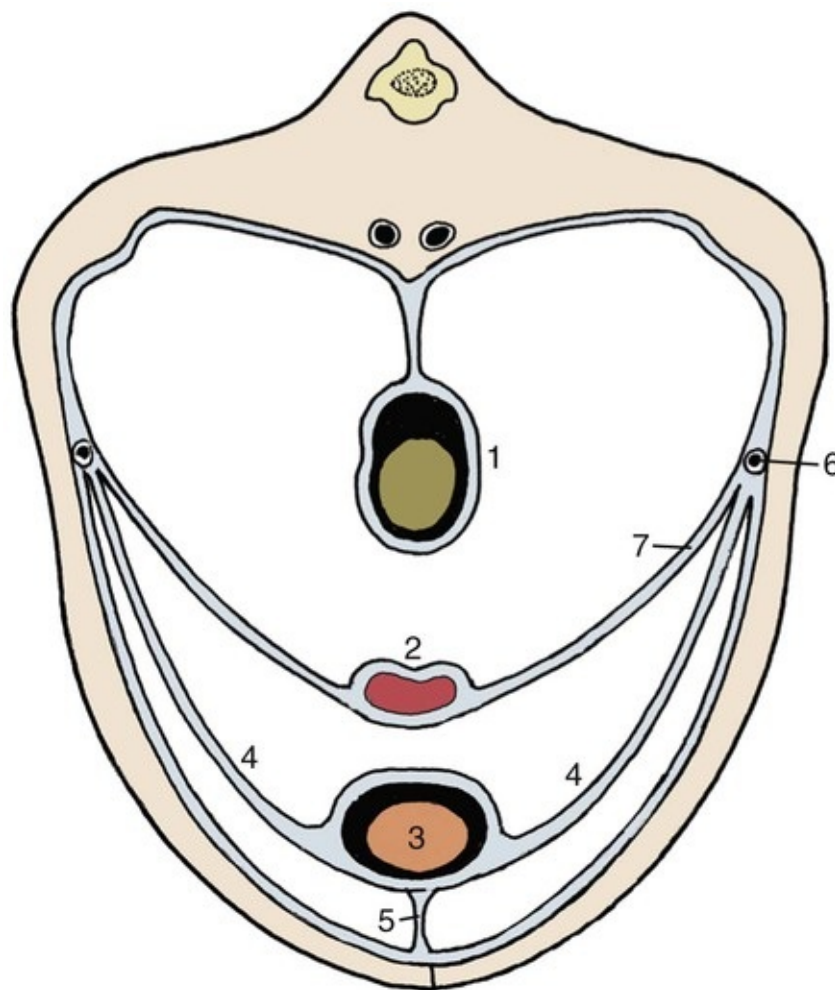
5. Fused paramesonephric ducts

6. Vagina

- 7. Cervix uteri
- 8. Uterine horn

Note: The fusion of the combined paramesonephric ducts with a bud from the urogenital sinus forms the vagina.

↪ 5-9 Canine: Peritoneal Disposition



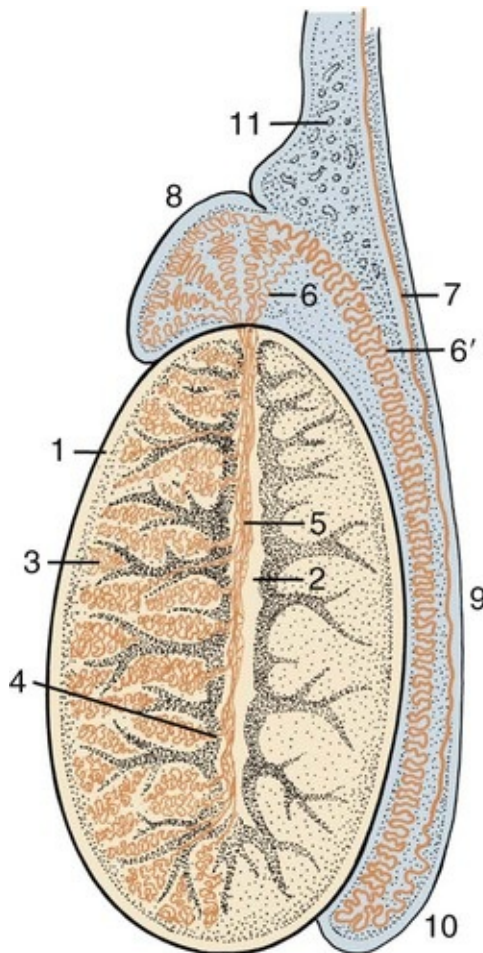
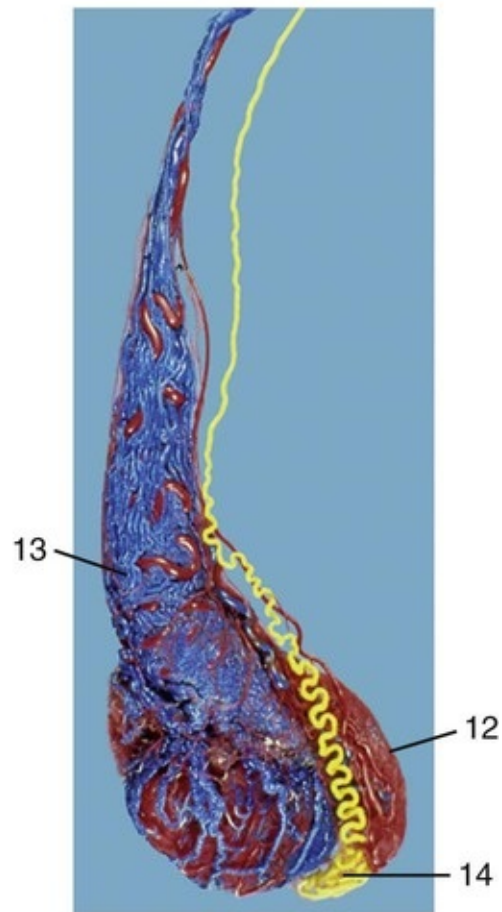
- 1. Colon
- 2. Uterus
- 3. Bladder
- 4. Lateral vesical ligaments
- 5. Median vesical ligament

6. Ureter

7. Broad ligament of uterus (mesometrium)

Note: Peritoneal disposition in the caudal part of the abdomen.

5-10 Canine: Testis and Epididymis (Left) and Corrosion Cast of the Deferent Duct (Right)



1. Tunica albuginea

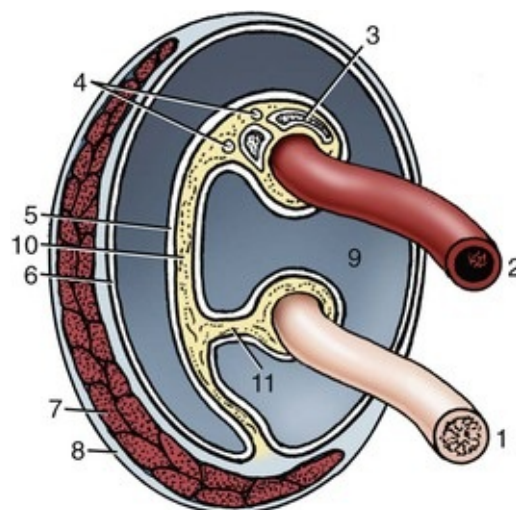
2. Mediastinum

3. Seminiferous tubules

4. Straight tubules
5. Rete testis
6. Efferent ductules
- 6'. Epididymal duct
7. Deferent duct
8. Head of epididymis
9. Body of epididymis
10. Tail of epididymis
11. Pampiniform plexus
12. Testicular artery (*red*)
13. Pampiniform plexus (*blue*)
14. Deferent duct (*yellow*)

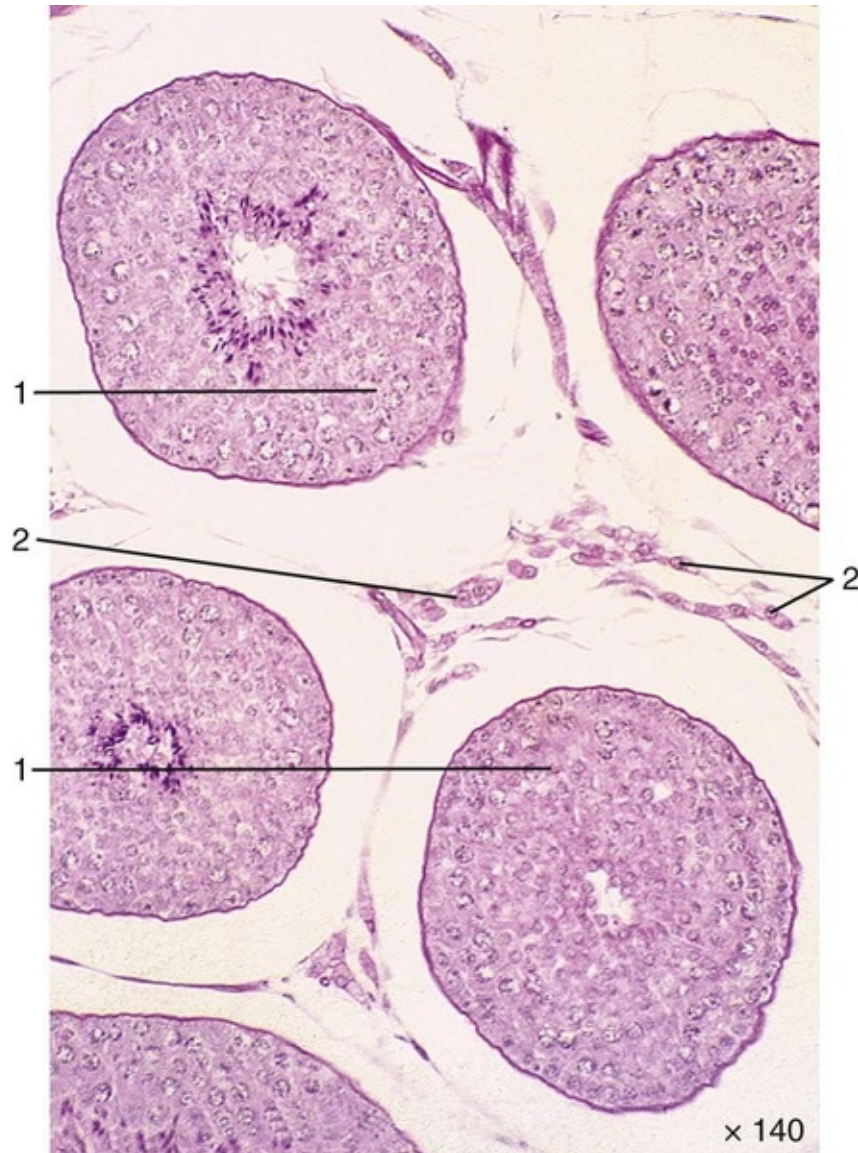
Note: Schematic illustrates the longitudinal section of a testis and epididymis.

↻ 5-11 Canine: Schematic of the Spermatic Cord and Its Immediate Investments (Transverse Section)



1. Deferent duct
2. Testicular artery (coiled)
3. Pampiniform plexus
4. Testicular nerves and lymph vessels
5. Visceral layer of vaginal tunic
6. Parietal layer of vaginal tunic
7. Cremaster muscle
8. External spermatic fascia
9. Vaginal cavity
10. Mesorchium
11. Mesoductus

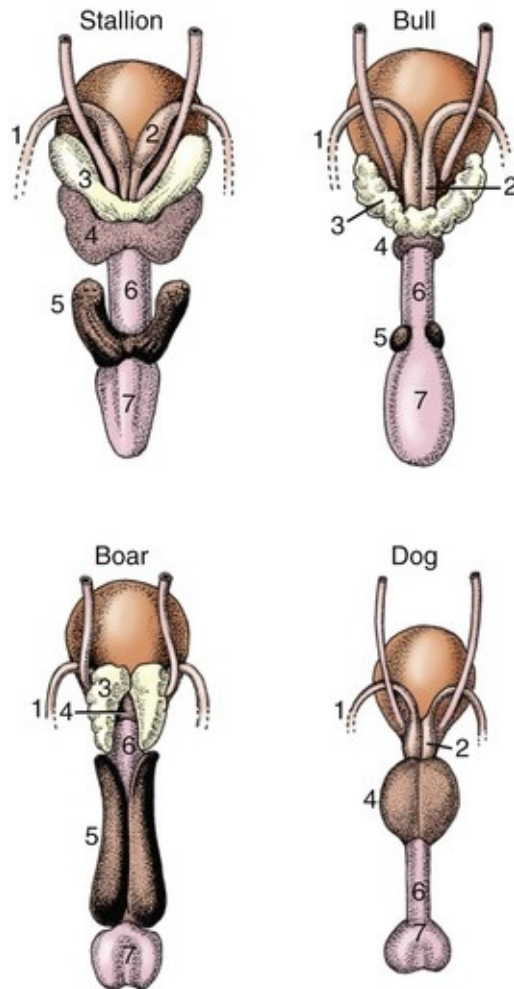
➤ 5-12 Canine: Testis



1. Seminiferous tubules (showing spermatogenesis)
2. Interstitial tissue with androgen producing (Leydig) cells

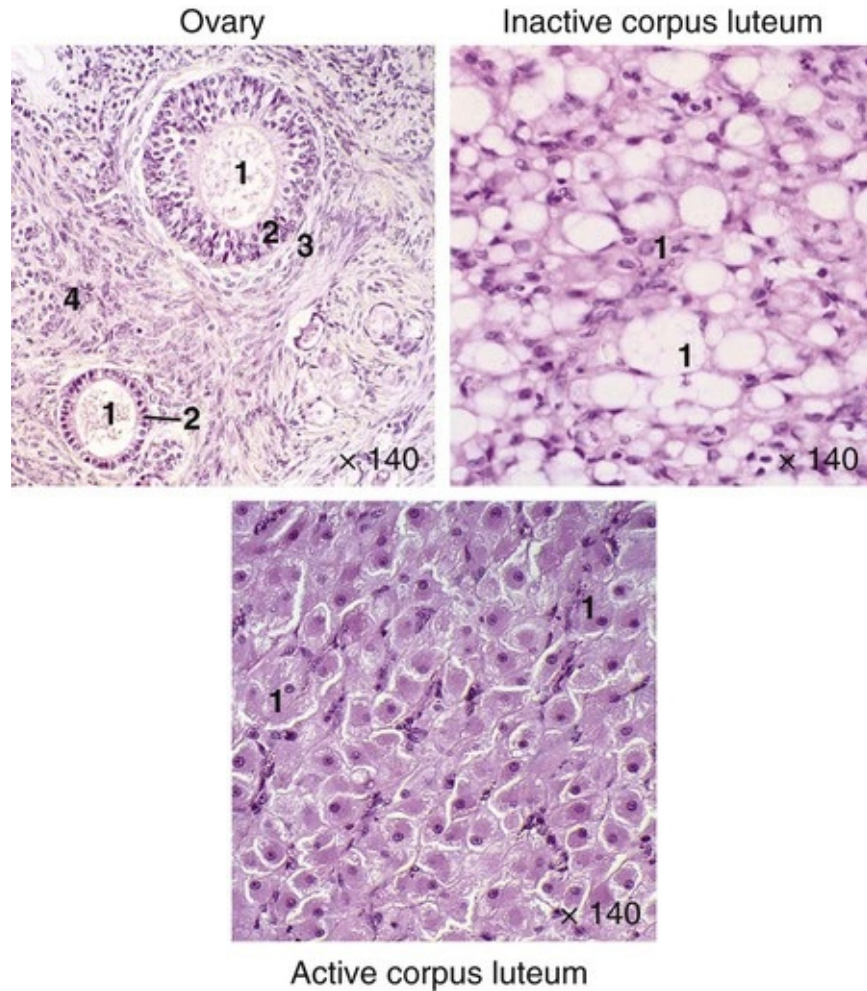
5-13 Canine: Accessory Reproductive Glands

Q: Is this a dorsal or ventral view? Why?

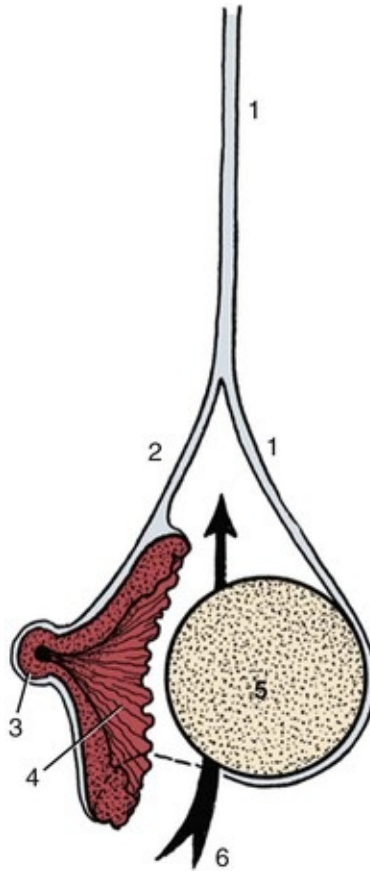


1. Deferent duct
2. Ampullary gland
3. Vesicular gland
4. Body of prostate
5. Bulbourethral gland
6. Urethra
7. Bulb of penis

↻ **5-14 Canine: Functional Changes in the Female Tract**

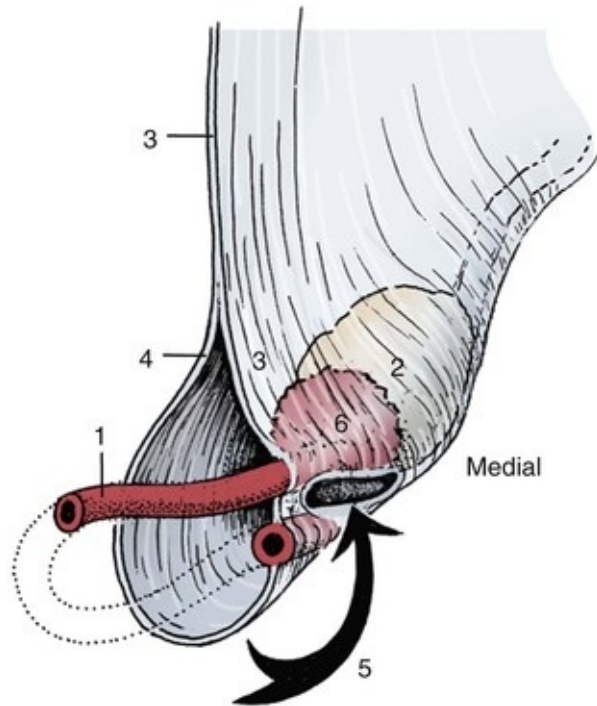


5-15 Canine: Ovary and Its Suspensory System



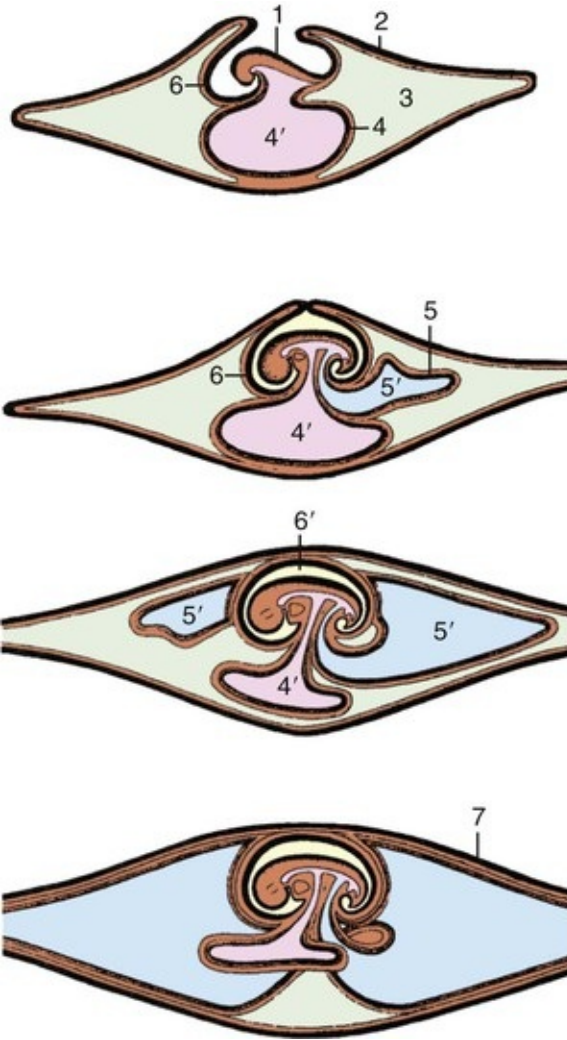
1. Mesovarium
2. Mesosalpinx
3. Abdominal opening of uterine tube
4. Infundibulum
5. Ovary
6. Arrow in the ovarian bursa

5-16 Canine: Bursa with Constricted Entrance and Entrapped Ovary



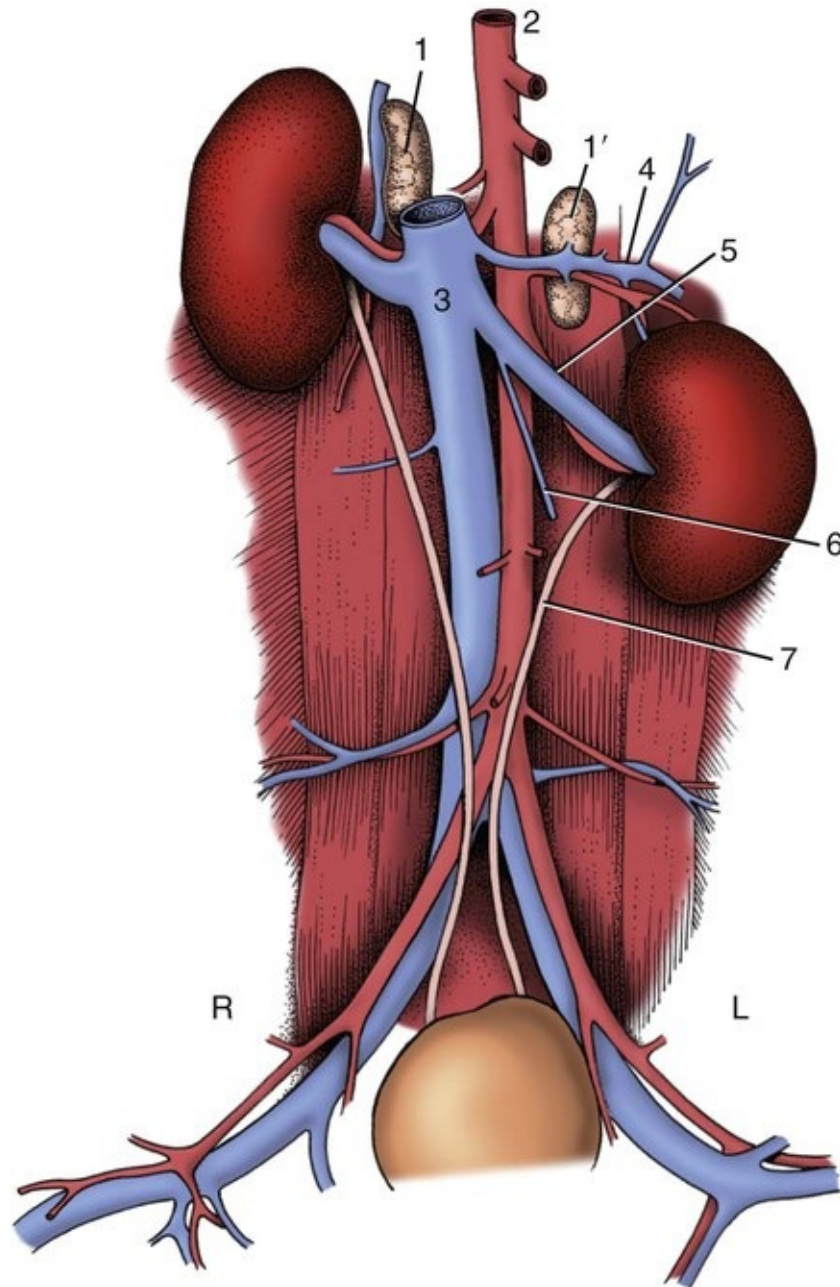
1. Uterine tube
2. Ovary
3. Mesovarium
4. Mesosalpinx
5. Arrow entering the ovarian bursa
6. Infundibulum

5-17 Canine: Schematic of the Formation of Extraembryonic Membranes



1. Embryo
2. Chorion
3. Extraembryonic celom
4. Yolk sac
- 4'. Yolk sac cavity
5. Allantois
- 5'. Allantoic cavity
6. Amnion
- 6'. Amniotic cavity
7. Chorioallantois

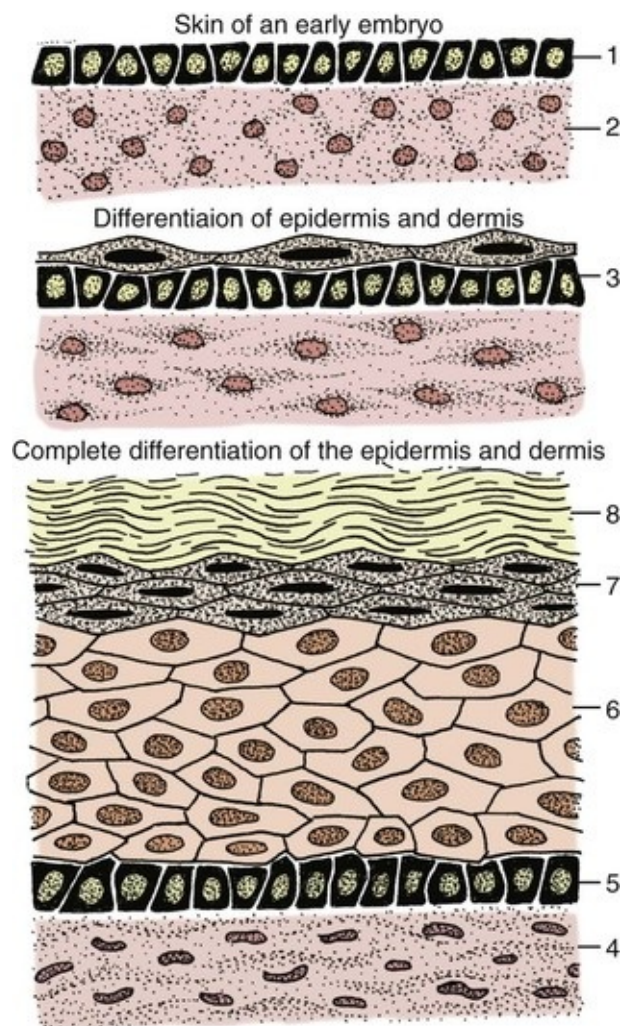
5-18 Canine: Topography of Adrenal Glands



- 1. Right adrenal gland
- 1'. Left adrenal glands
- 2. Aorta

3. Caudal vena cava
4. Phrenicoabdominal vessels
5. Renal vessels
6. Ovarian vein
7. Ureter

↻ 5-19 Canine: Development of the Skin

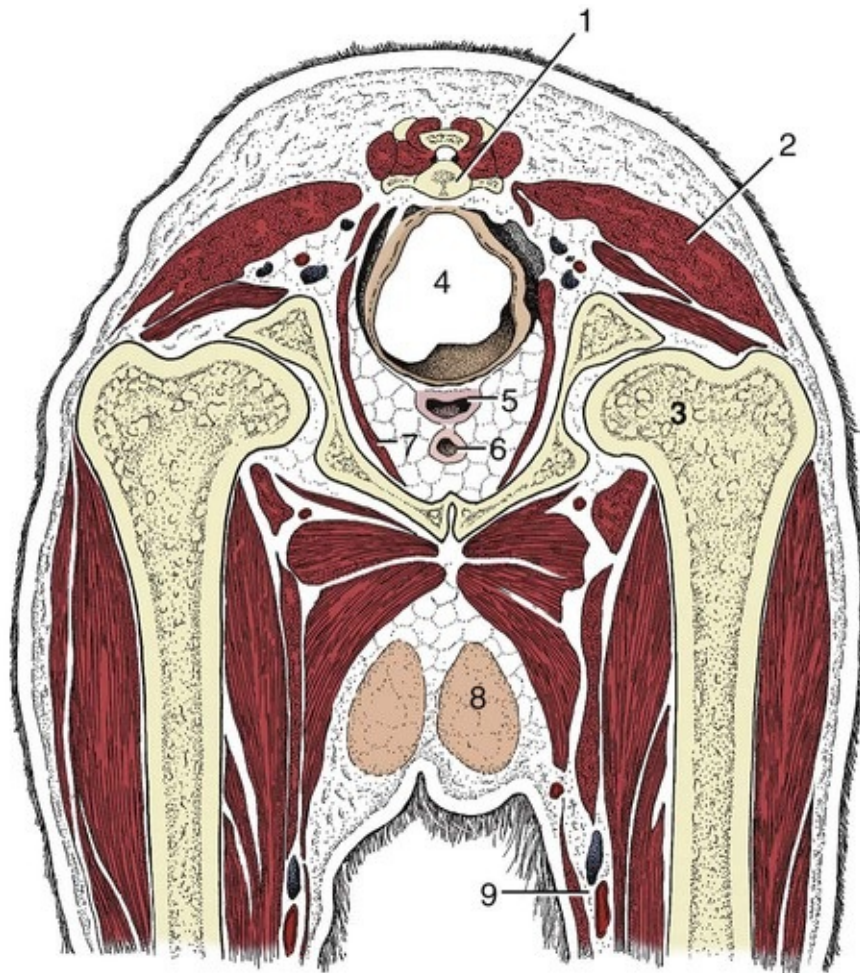


1. Ectoderm
2. Mesoderm (mesenchyme)

3. Primitive stratum basale
4. Dermis
5. Stratum basale
6. Stratum spinosum
7. Stratum granulosum
8. Stratum corneum

Note: *Top*, Skin of an early embryo. *Middle*, Differentiation of epidermis and dermis. *Bottom*, Complete differentiation of the epidermis and dermis.

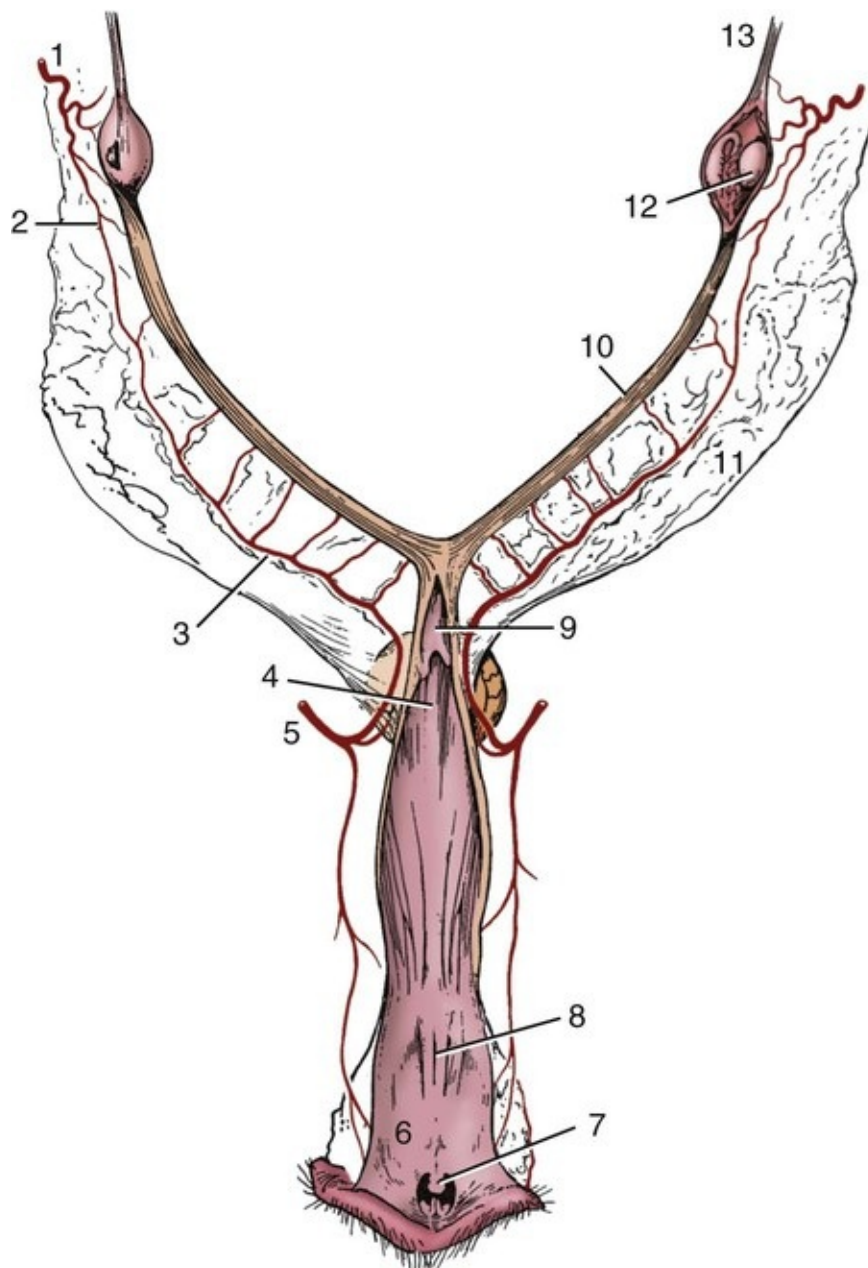
5-20 Canine: Pelvis (Transverse Section at the Level of the Hip Joint)



1. Caudal vertebra
2. Superficial gluteal muscle
3. Head of the femur in the acetabulum
4. Rectum suspended by a short mesorectum
5. Vagina
6. Urethra
7. Levator ani
8. Inguinal mammary gland

9. Femoral artery and vein

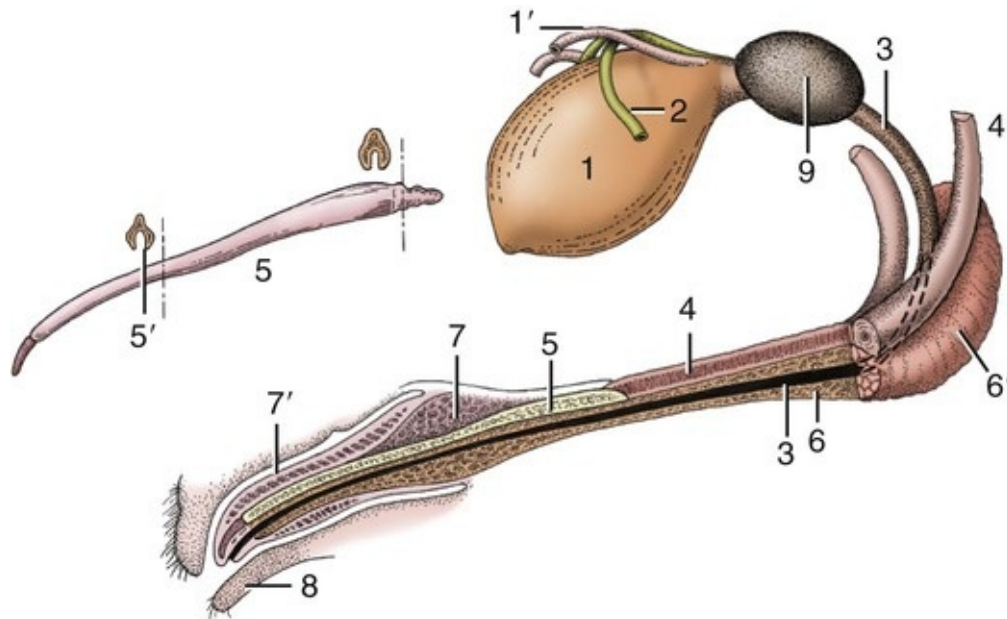
5-21 Canine: Reproductive Organs of the Bitch



1. Ovarian artery
2. Uterine branch of ovarian artery
3. Uterine artery
4. Dorsomedian fold continuing the cervix
5. Vaginal artery
6. Vestibule
7. Clitoris
8. External urethral orifice
9. Cervix
10. Right uterine horn
11. Broad ligament
12. Right ovary
13. Suspensory ligament of ovary

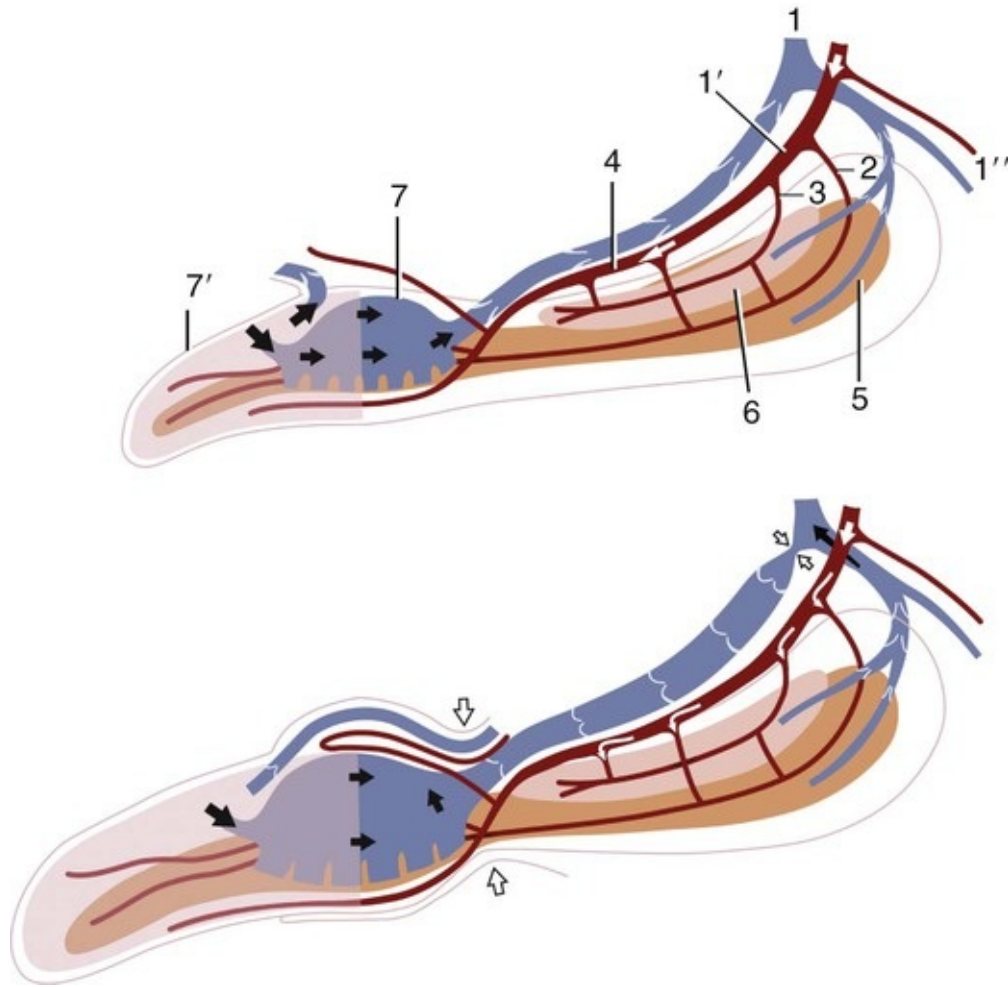
Note: Blood supply of the reproductive organs of the bitch (dorsal view). The right ovarian bursa and the caudal parts of the tract have been opened.

↻ 5-22 Canine: Bladder, Urethra, and Penis



1. Bladder
- 1'. Left ureter
2. Left deferent duct
3. Urethra
4. Corpus cavernosum
- 4'. Left crus
5. Os penis
- 5'. Urethral groove
6. Corpus spongiosum
- 6'. Bulb of penis
7. Bulbus glandis
- 7'. Pars longa glandis
8. Prepuce
9. Prostate

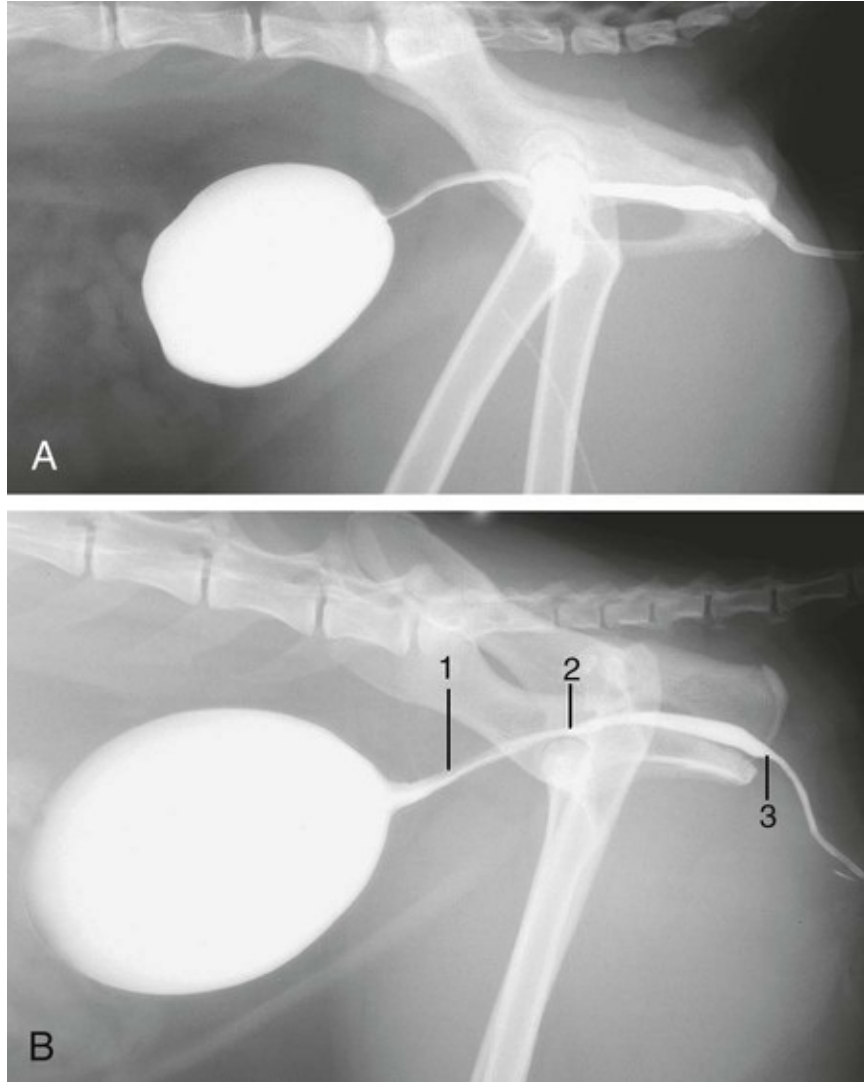
↪ **5-23 Canine: Quiescent (Top) and Erect (Bottom) Penis**



1. Internal pudendal vessels
- 1'. Artery of the penis
- 1". Perineal branches
2. Artery of the bulb
3. Deep artery of the penis
4. Dorsal artery of the penis
5. Corpus spongiosum
6. Corpus cavernosum
7. Bulbus glandis
- 7'. Pars longa glandis

Note: Arrows indicate blood flow.

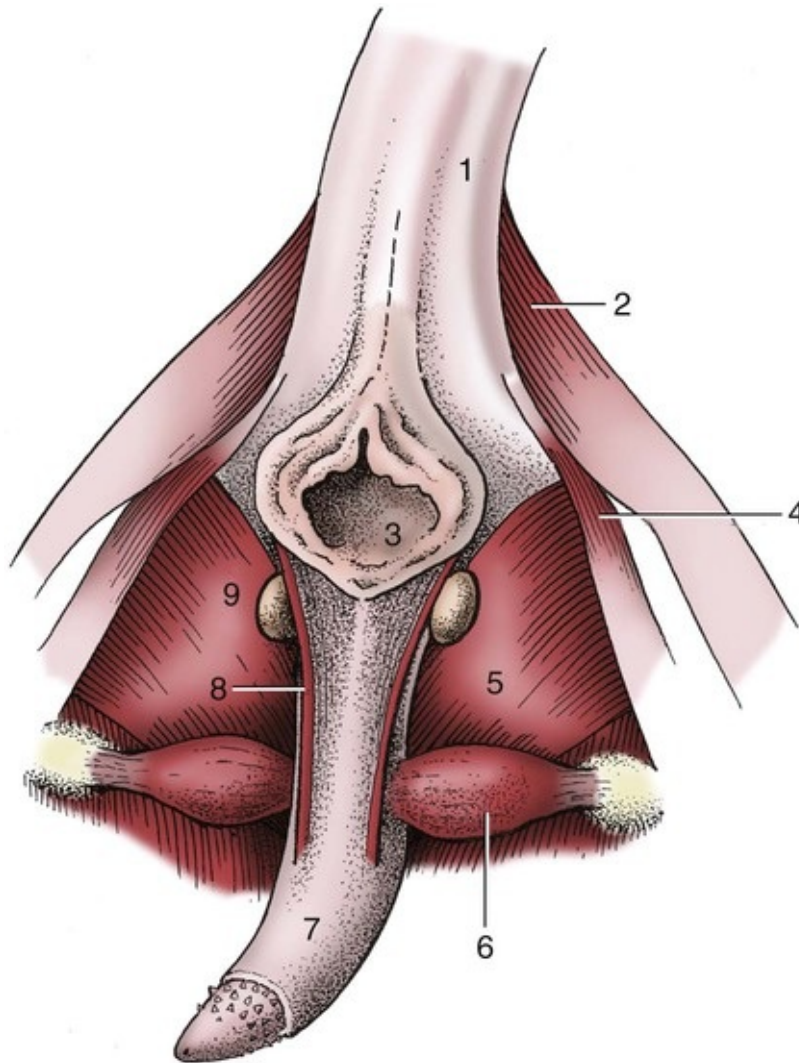
5-24 Feline: Bladder



1. Preprostatic urethra: Urethral crest (*upper gray part*); lumen filled with contrast medium (*lower white part*)
2. Seminal colliculus (*slight dorsal dip*)
3. Isthmus, narrowing of lumen

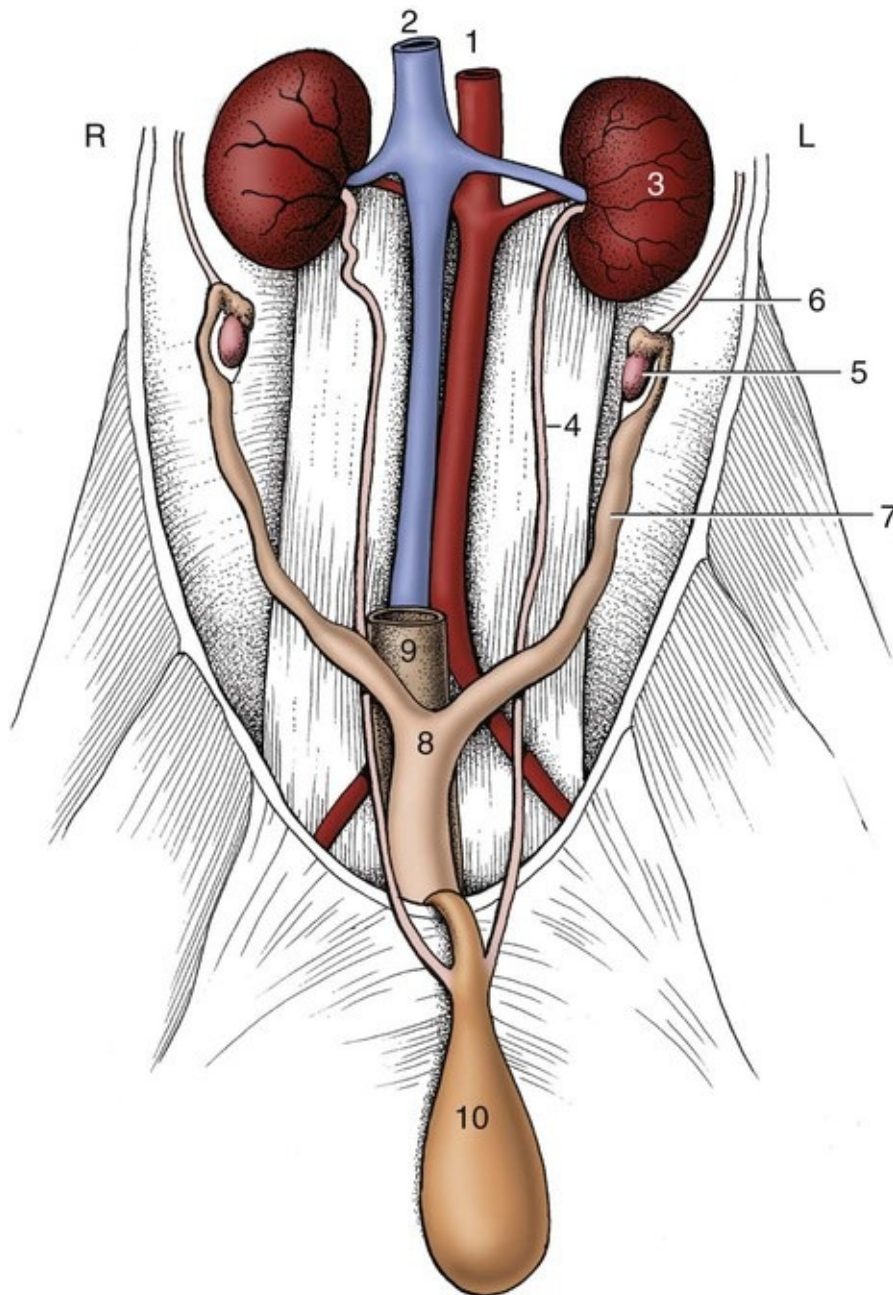
Note: Radiographs of the feline bladder when moderately **(A)** and significantly **(B)** full.

5-25 Feline: Penis In Situ (Caudal View)



1. Tail (raised)
2. Gluteofemoralis
3. Anus
4. Coccygeus
5. Internal obturator
6. Ischiocavernosus
7. Penis
8. Left retractor penis
9. Left bulbourethral gland

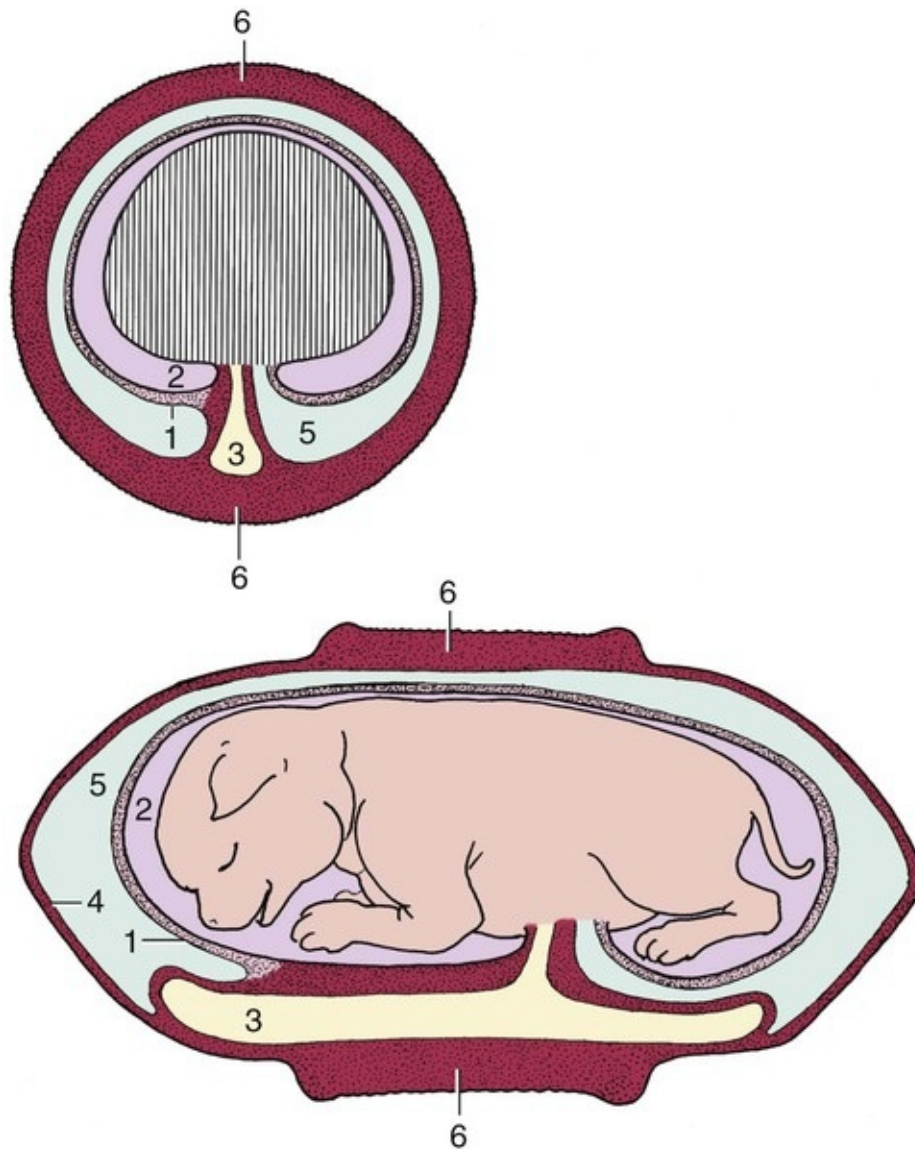
5-26 Feline: Ovaries and Uterus In Situ (Ventral View)



1. Aorta
2. Caudal vena cava
3. Left kidney

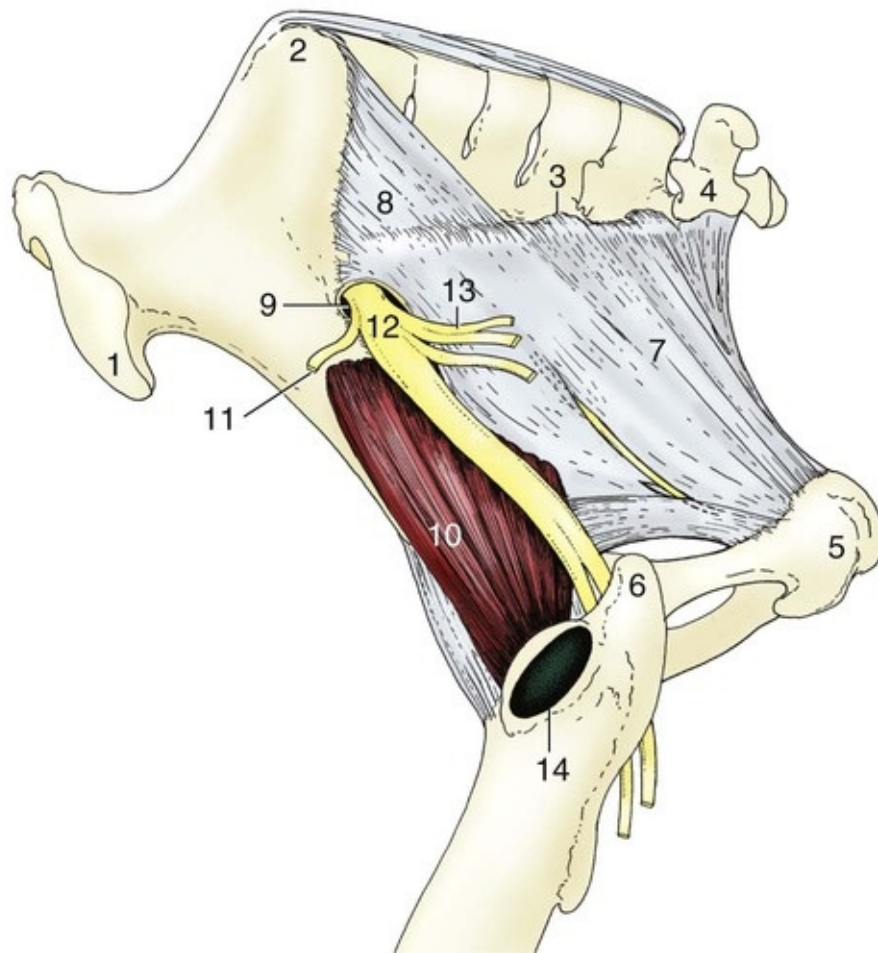
4. Ureter
5. Ovary
6. Suspensory ligament of ovary
7. Uterine horn
8. Body of uterus
9. Rectum
10. Bladder (reflected caudally)

5-27 Feline: Schematic of Fetal Membranes (Transverse and Longitudinal Section)



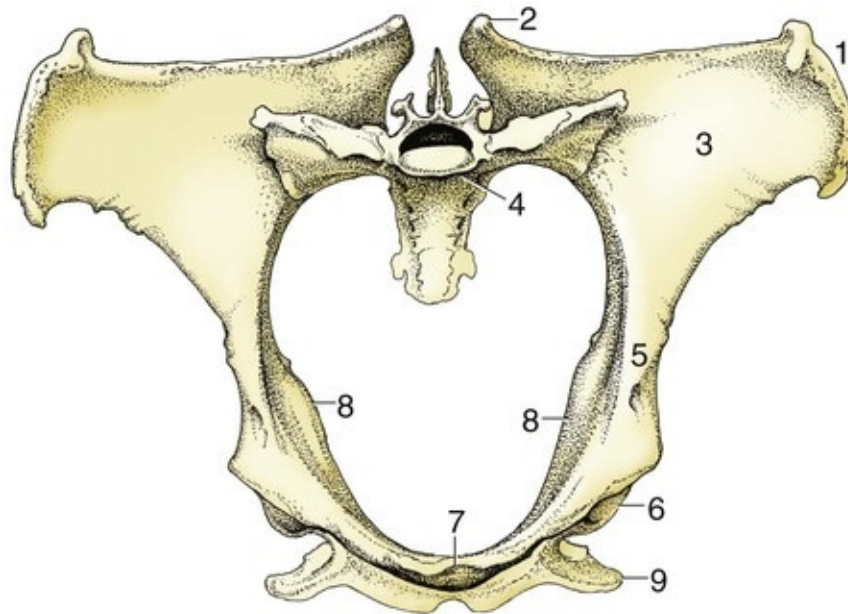
1. Amnion
2. Amniotic cavity
3. Yolk sac
4. Chorioallantois
5. Allantoic cavity
6. Zonary placenta

5-28 Equine: Bony Pelvis and Sacrosciatic Ligament (Lateral View)



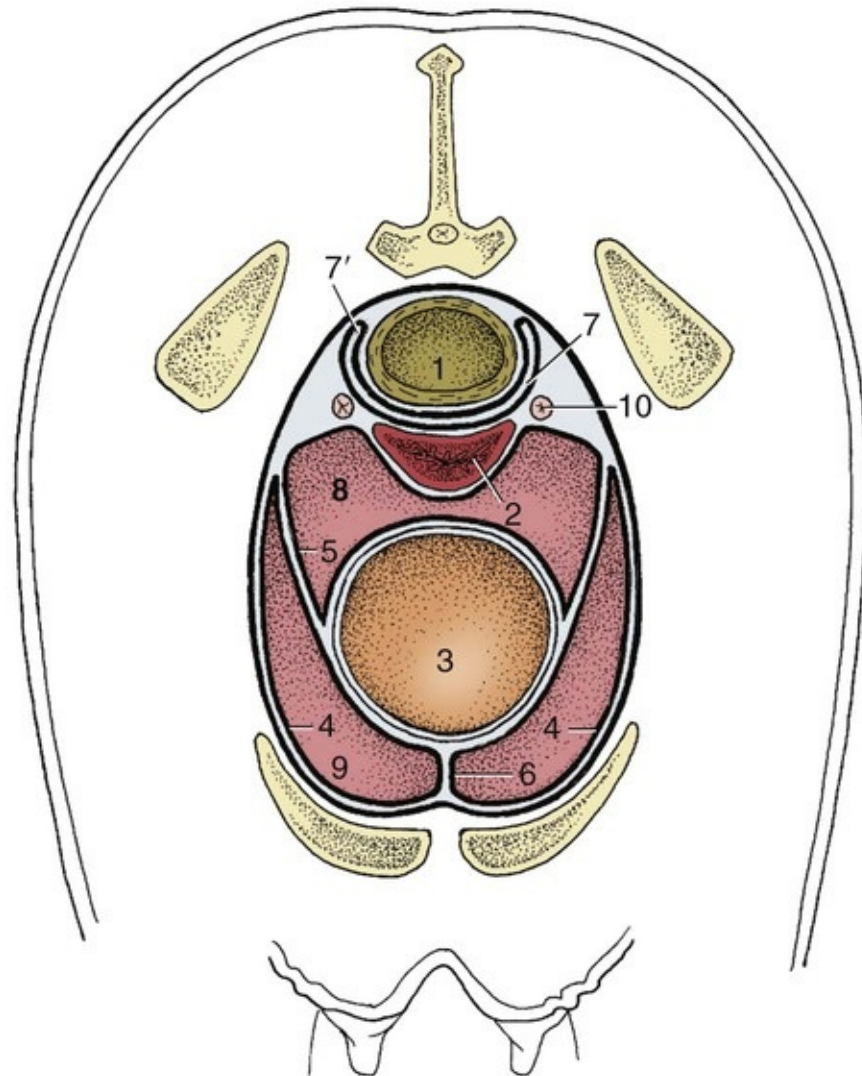
1. Coxal tuber
2. Sacral tuber
3. Lateral border of sacrum
4. First caudal vertebra
5. Ischial tuber
6. Caudal part of greater trochanter
7. Sacrosciatic ligament
8. Dorsal sacroiliac ligament
9. Greater sciatic foramen
10. Gluteus profundus
11. Cranial gluteal nerve
12. Sciatic nerve
13. Caudal gluteal nerve
14. Trochanteric bursa

5-29 Equine: Pelvis of the Mare (Cranial View)



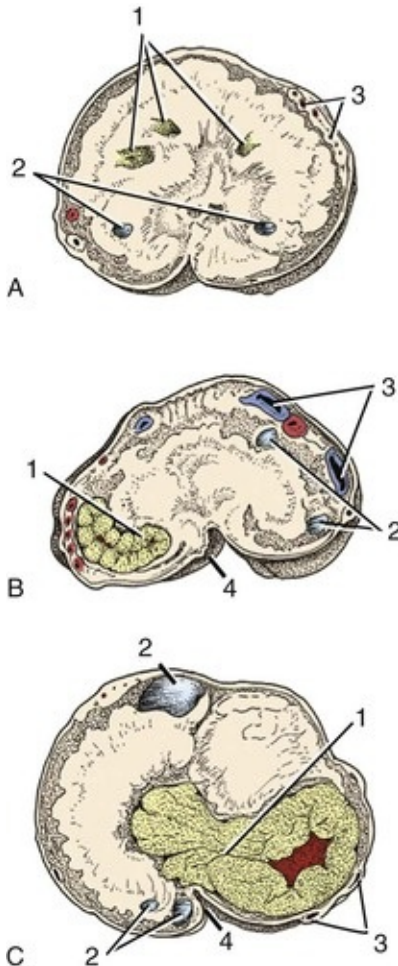
1. Coxal tuber
2. Sacral tuber
3. Wing of ilium
4. Promontory
5. Shaft of ilium
6. Acetabulum
7. Brim of pubis
8. Ischial spines
9. Ischial tuber

5-30 Equine: Disposition of the Peritoneum in the Pelvis of the Mare



1. Rectum
2. Vagina
3. Bladder
4. Parietal peritoneum
5. Lateral ligament of bladder
6. Median ligament of bladder
7. Rectogenital pouch
- 7'. Pararectal fossa
8. Vesicogenital pouch
9. Pubovesical pouch
10. Ureter

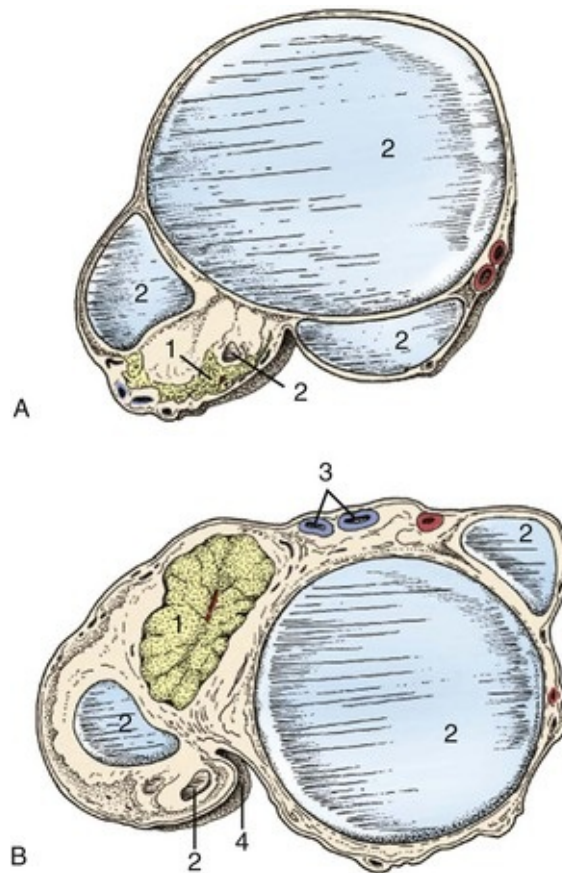
5-31 Equine: Sections of the Ovaries in Various Functional States



- 1. Corpora lutea
- 2. Follicles
- 3. Blood vessels
- 4. Ovulation fossa

Note: **A**, Ovary with corpora lutea and small follicles. **B**, Ovary with developing corpus luteum. **C**, Ovary with fully developed corpus luteum.

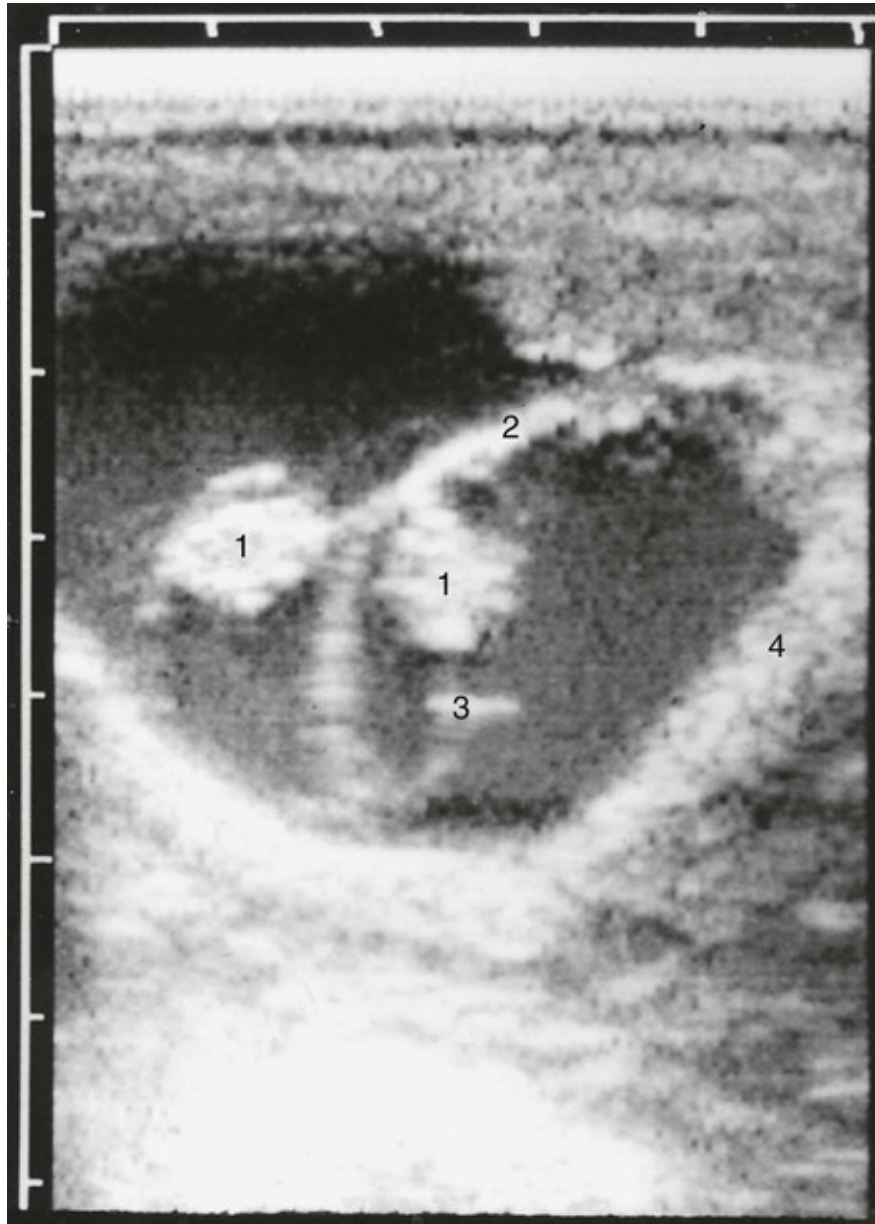
5-32 Equine: Sections of the Ovaries in Various Functional States



- 1. Corpora lutea
- 2. Follicles
- 3. Blood vessels
- 4. Ovulation fossa

Note: **A**, Ovary with mature follicle. **B**, Ovary with follicles of various sizes and a rather large corpus luteum. The corpus luteum of the mare does not protrude from the ovary as in other species.

5-33 Equine: 31-Day-Old Twin Embryos



1. Twin embryos
2. Junction of the two conceptuses
3. Developing allantoic membrane
4. Uterine wall

Note: Ultrasound image. The scale is in centimeters.

5-34 Equine: Pelvic Urethra and

Accessory Reproductive Glands

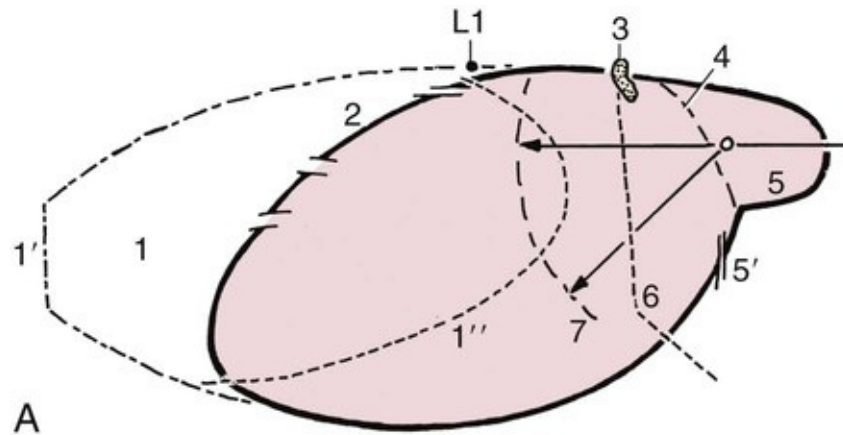


1. Genital fold
2. Ampulla of deferent duct
3. Vesicular gland
4. Prostate
5. Urethralis

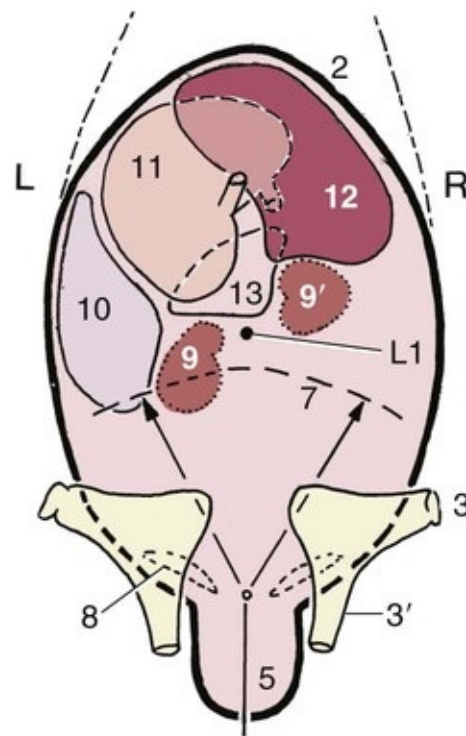
6. Bulbourethral gland
7. Bladder
8. Lateral ligament of bladder
9. Bulbospongiosus
10. Ischiocavernosus

Note: Dorsal view of the pelvic urethra and accessory reproductive glands (in situ).

• **5-35 Equine: Abdominal Pelvic Cavities**



A



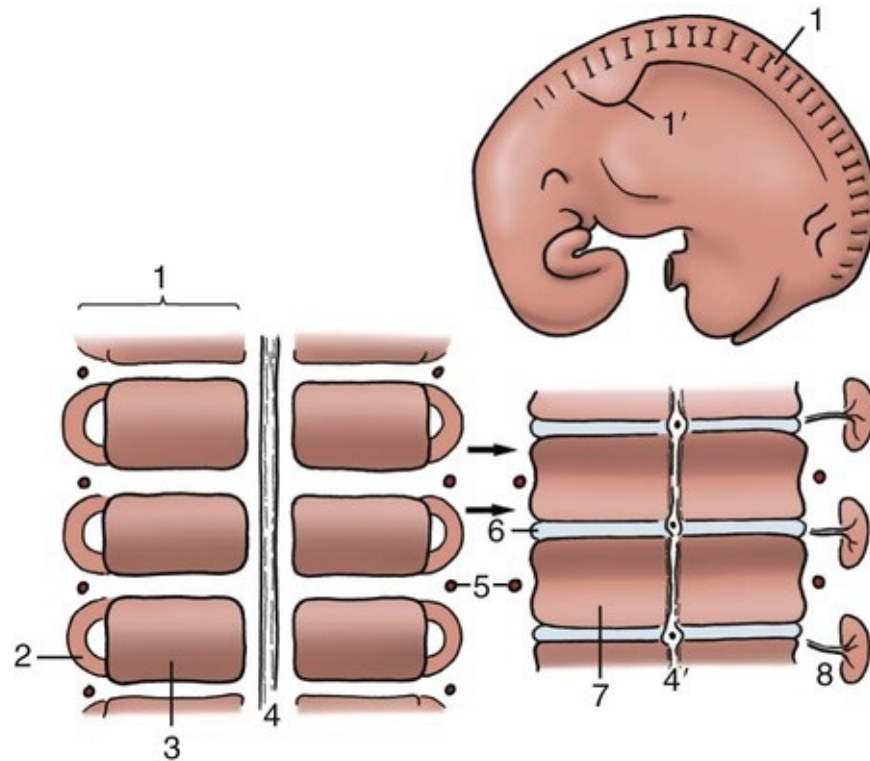
B

1. Thoracic cavity
- 1'. Thoracic inlet
- 1''. Costal arch
2. Diaphragm
3. Coxal tuber
- 3'. Shaft of ilium
4. Terminal line

5. Pelvic cavity
- 5'. Inguinal canal
6. Thigh and stifle
7. Approximate range in rectal palpation in the median plane **(A)** and directly ventral to the kidneys **(B)**
8. Deep inguinal ring
9. Left kidney
- 9'. Right kidney
10. Spleen
11. Stomach
12. Liver
13. Pancreas

Note: Left lateral **(A)** and dorsal **(B)** outline indicate the scope of rectal exploration. The dorsal outline encloses a ring of the relatively fixed organs (9, 9', 10, 11, 12) with the pancreas (13) in the center.

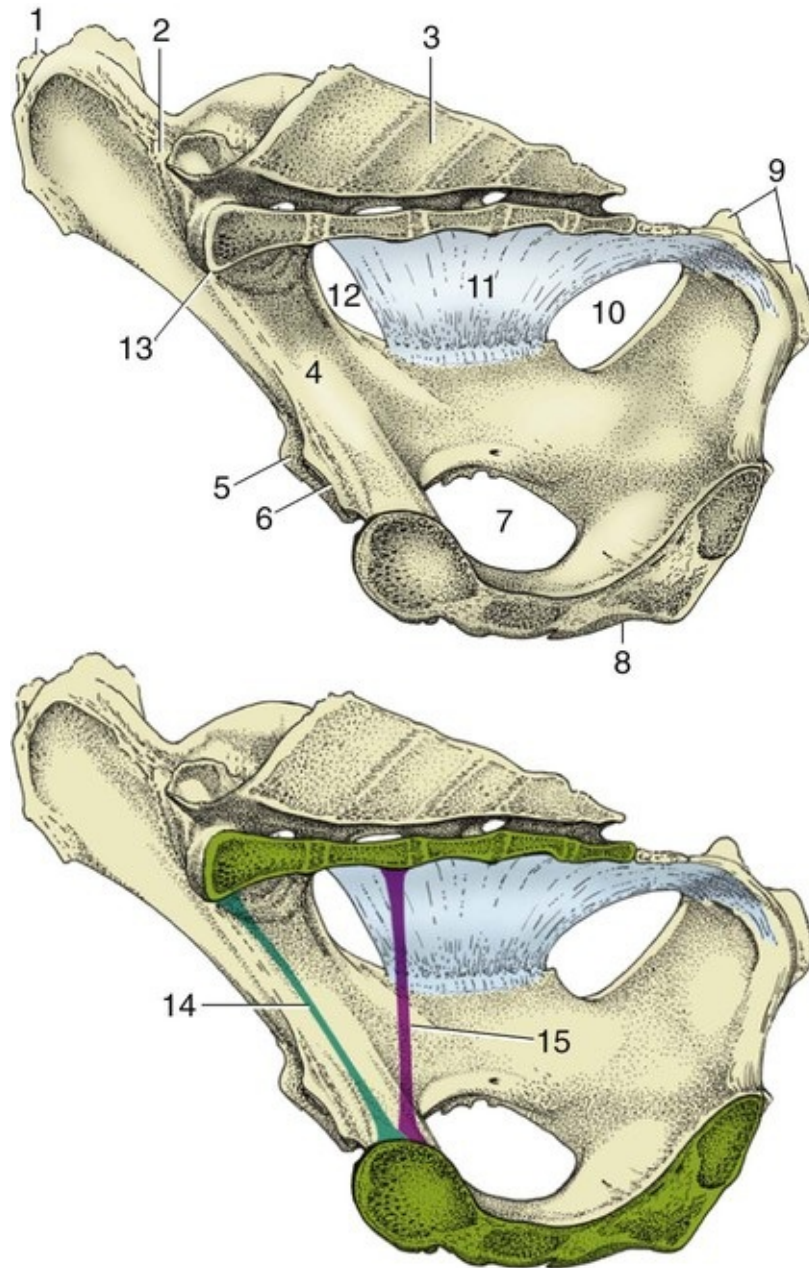
• 5-36 Bovine: Paraxial Mesoderm in an Embryo



1. Somite
- 1'. Forelimb bud
2. Myotome
3. Sclerotome
4. Notochord
- 4'. Notochord giving rise to the nucleus pulposus in the center of the intervertebral disc
5. Intersegmental artery
6. Intervertebral disc
7. Body of vertebra
8. Myotome with segmental nerve

Note: Segmentation of the paraxial mesoderm is shown in a 10-mm bovine embryo (*top*) together with two stages in the development of the vertebrae and related vessels and nerves. The formation of each vertebra from two pairs of adjacent somites is noted (*arrows*).

• 5-37 Bovine: Bony Pelvis

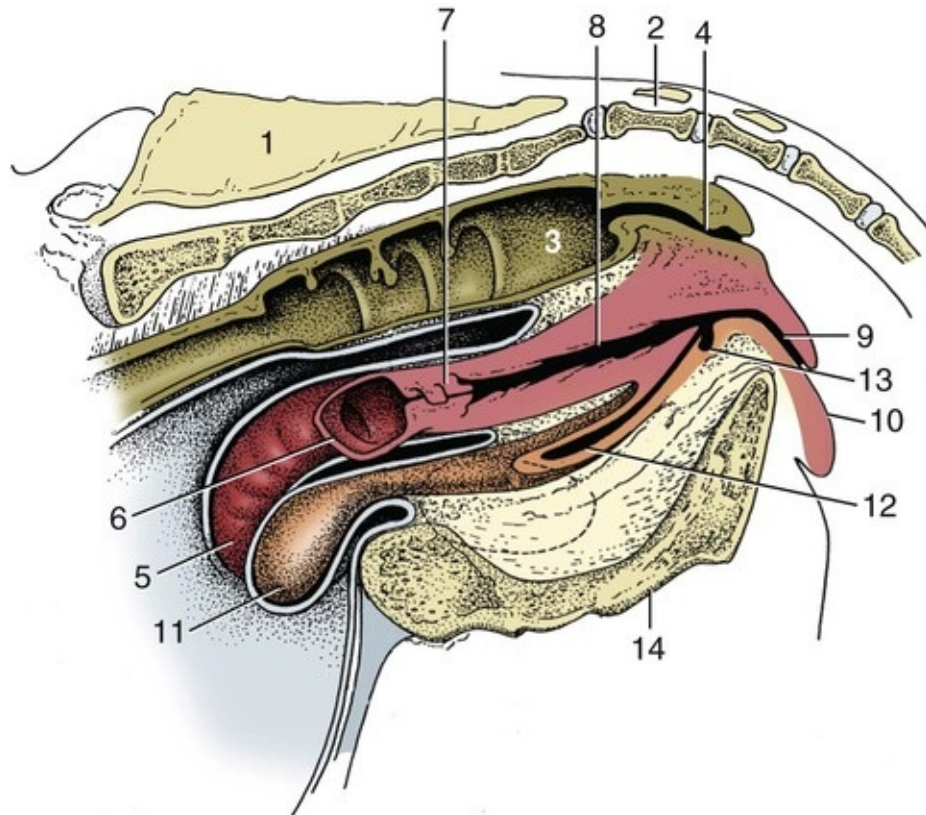


1. Coxal tuber
2. Sacroiliac joint
3. Sacrum
4. Shaft of ilium
5. Cranial border of acetabulum

- 6. Pecten ossis pubis
- 7. Obturator foramen
- 8. Symphysis
- 9. Ischial tuber
- 10. Lesser sciatic foramen
- 11. Sacrosciatic ligament
- 12. Greater sciatic foramen
- 13. Promontory
- 14. Conjugate
- 15. Vertical diameter

Note: Median section. The roof and floor of the pelvic cavity are indicated in *green*.

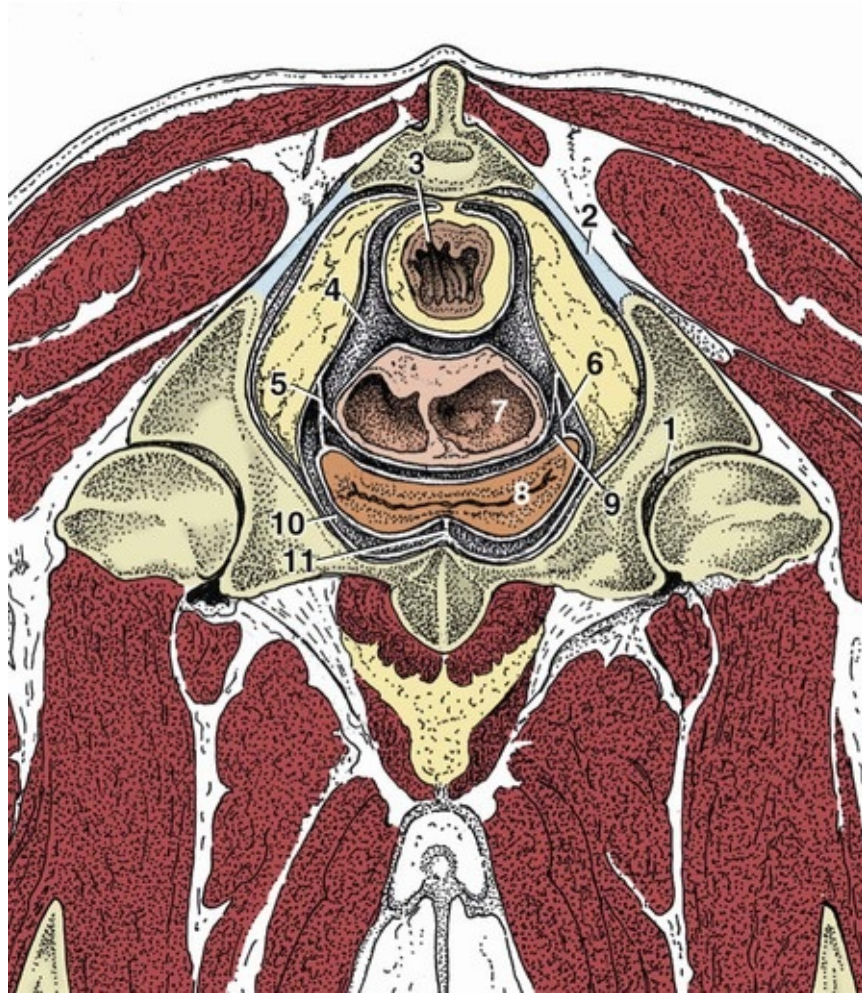
• 5-38 Bovine: Pelvis (Median Section)



1. Sacrum
2. First caudal vertebra
3. Rectum
4. Anal canal
5. Right uterine horn
6. Left uterine horn (mostly removed)
7. Cervix
8. Vagina
9. Vestibule
10. Vulva
11. Bladder
12. Urethra
13. Suburethral diverticulum
14. Symphysis

• **5-39 Bovine: Pelvis at the Hip Joint**

Q: Name the muscles in this figure.

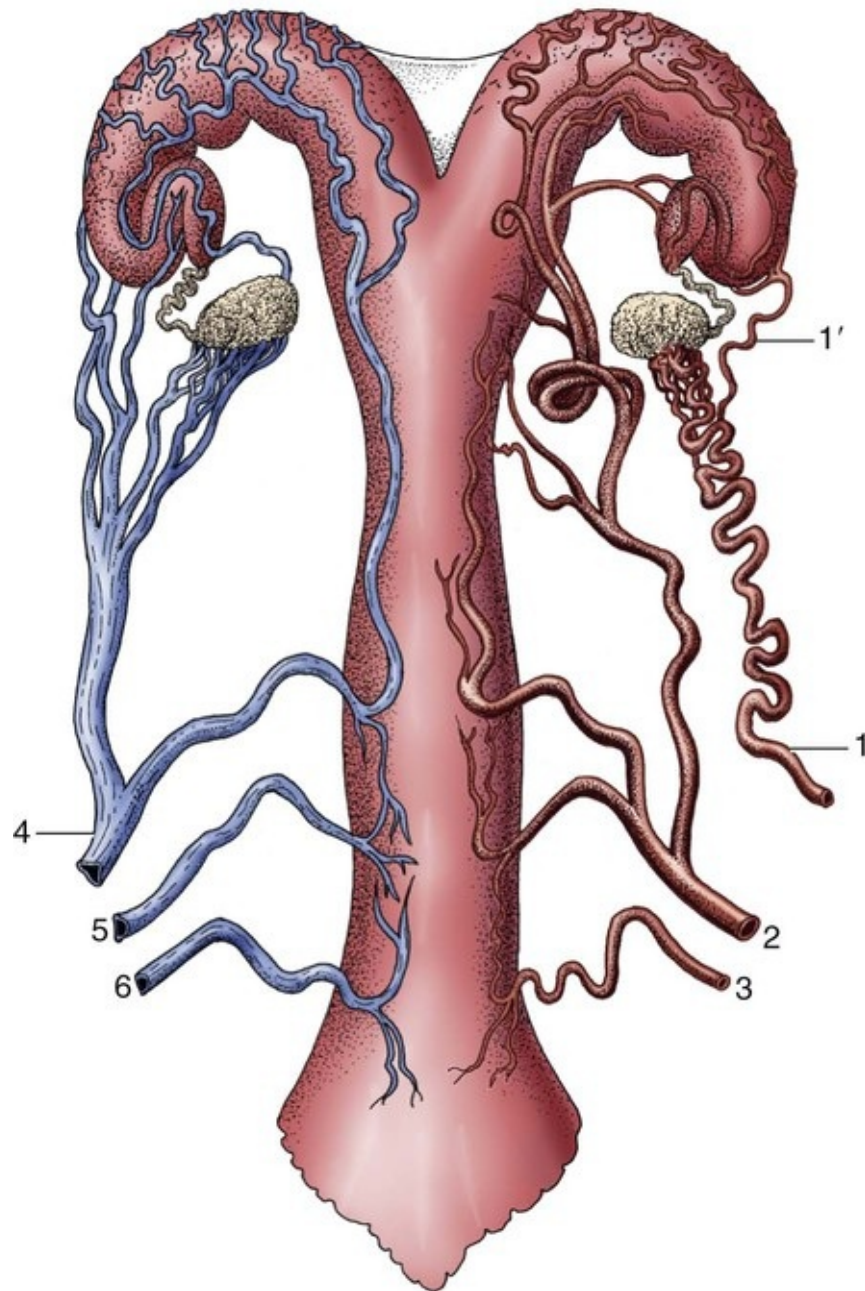


1. Hip joint
2. Sacrosciatic ligament
3. Rectum
4. Rectogenital pouch
5. Broad ligament of uterus
6. Lateral ligament of bladder
7. Uterus sectioned where the two horns are conjoined
8. Bladder
9. Vesicogenital pouch
10. Pubovesical pouch
11. Median ligament of bladder

Note: Transverse section of the bovine pelvis at the level of the hip joint (cranial surface). A large amount of retroperitoneal fat is evident

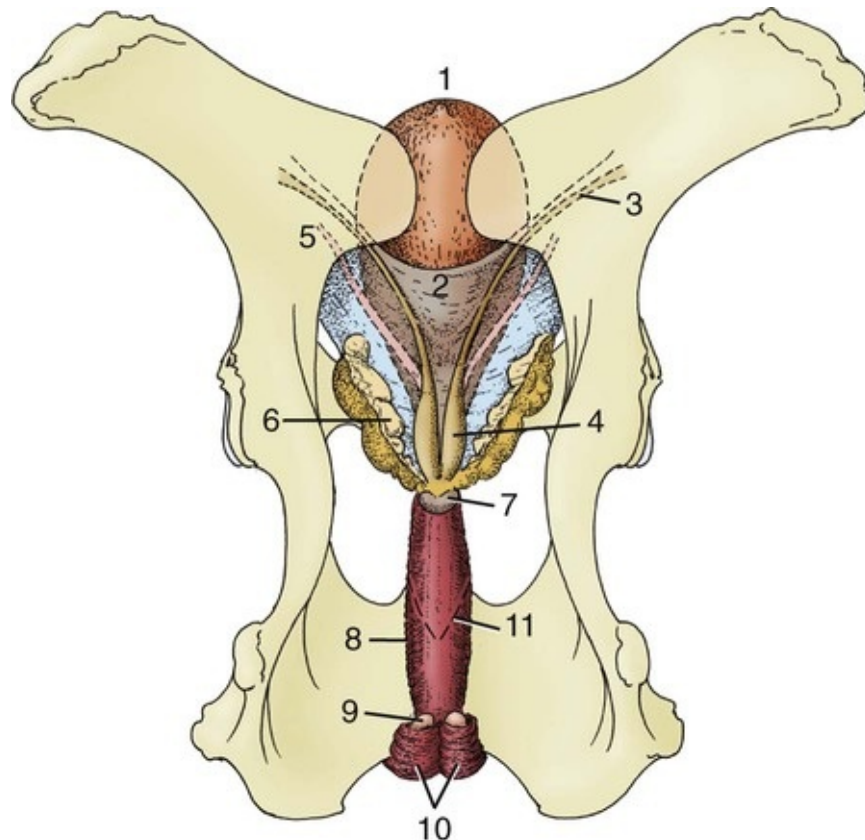
in the pelvis.

• **5-40 Bovine: Blood Supply to the Reproductive Tract (Semischematic Ventral View)**



1. Ovarian artery
- 1'. Uterine branch
2. Uterine artery
3. Vaginal artery
4. Ovarian vein
5. Accessory vaginal vein
6. Vaginal vein

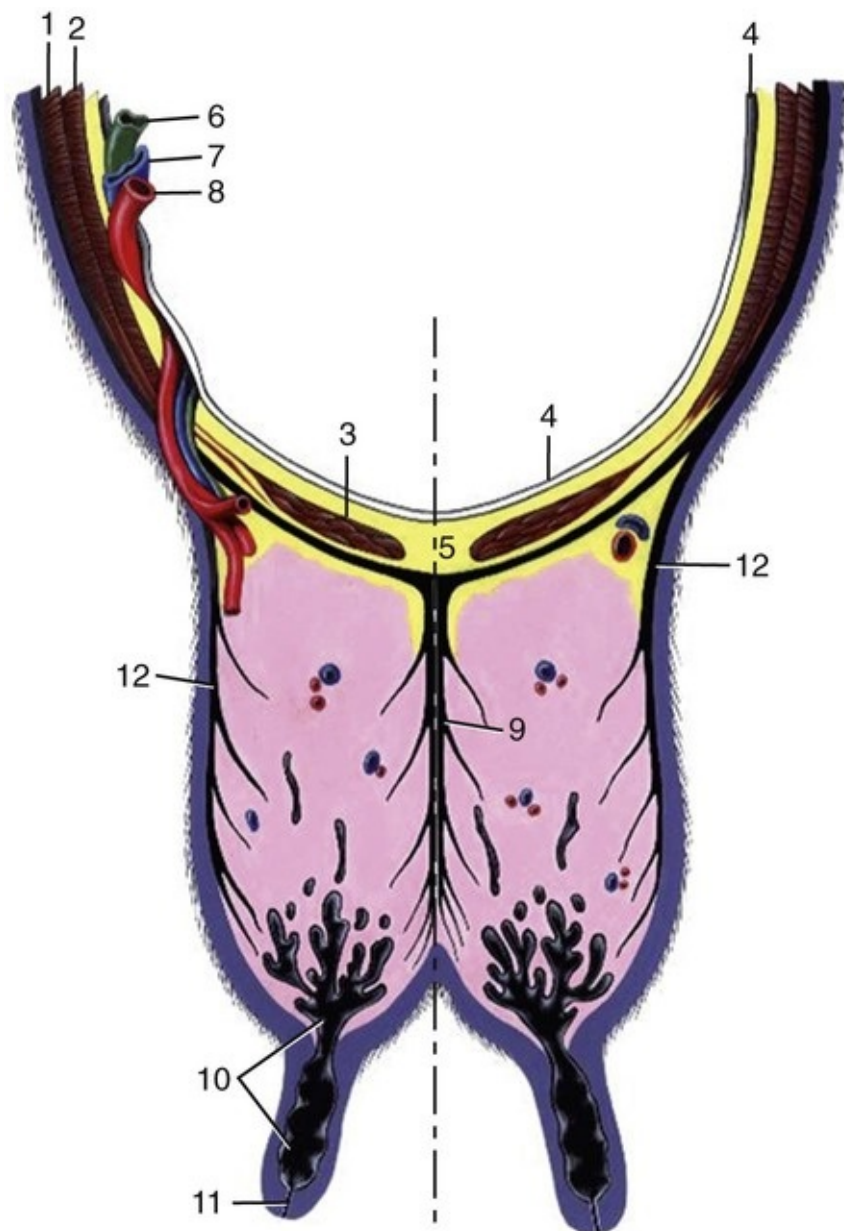
• 5-41 Bovine: Pelvis and Related Urogenital Organs of a Bull (Dorsal View)



1. Bladder
2. Genital fold
3. Right deferent duct
4. Ampulla of deferent duct
5. Left ureter
6. Vesicular gland
7. Body of prostate
8. Urethralis (surrounding urethra)
9. Bulbourethral gland
10. Bulbospongiosus
11. Caudal extent of the rectogenital pouch (*broken*)

line)

• 5-42 Bovine: Abdominal Floor and Cranial Quarters of the Udder

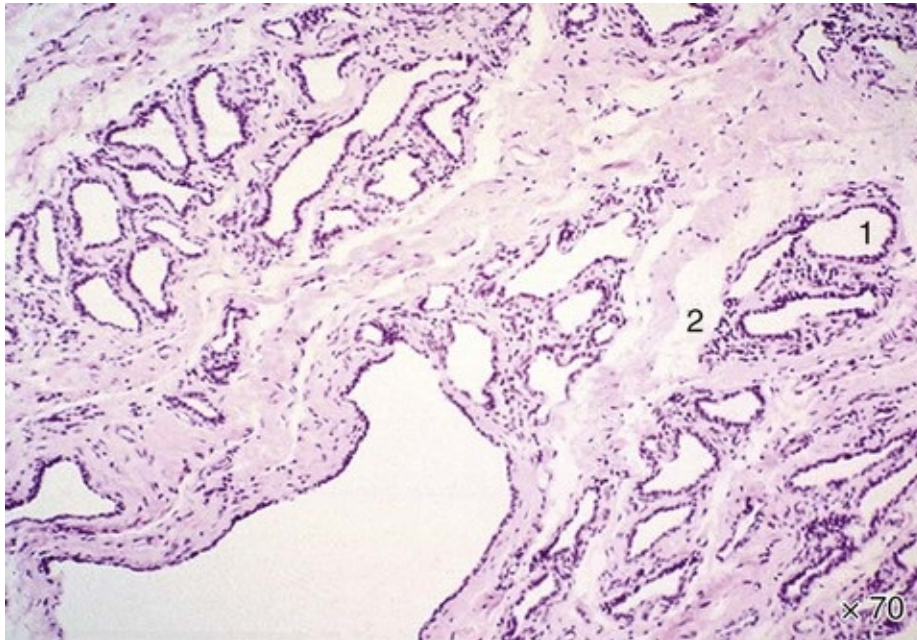
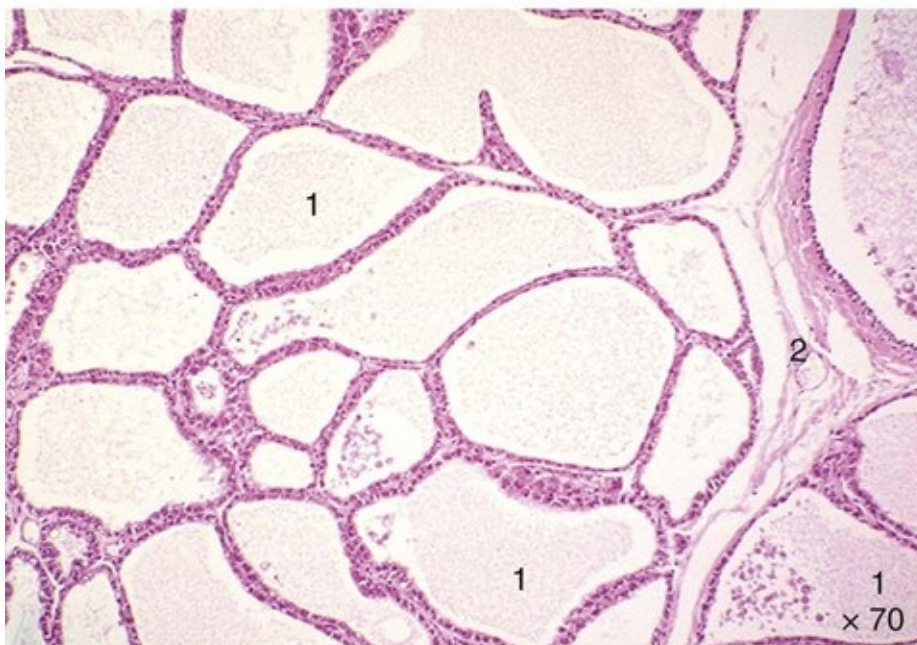


1. External abdominal oblique

2. Internal abdominal oblique
3. Rectus abdominis
4. Peritoneum
5. Linea alba
6. Lymph vessel
7. External pudendal vein
8. External pudendal (mammary) artery
9. Medial lamina of suspensory apparatus
10. Lactiferous sinus
11. Papillary duct
12. Lateral laminae of suspensory apparatus

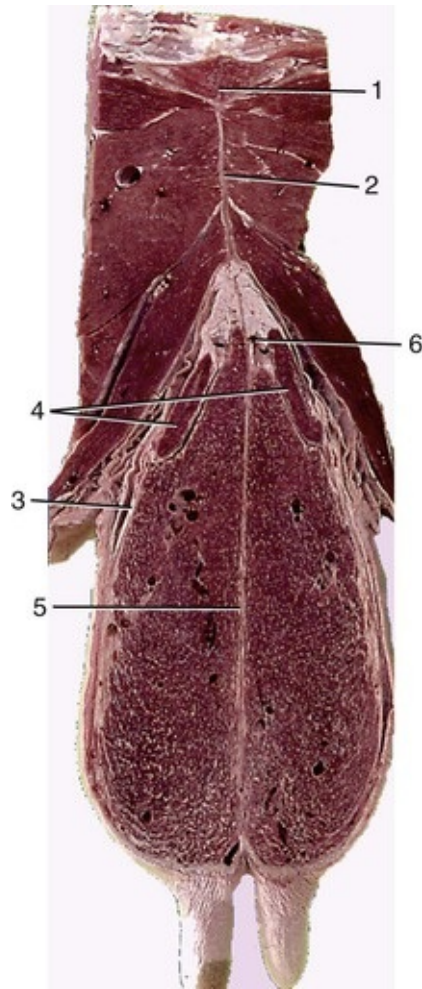
Note: Transverse section.

• **5-43 Bovine: Nonlactating (Top) and Lactating (Bottom) Mammary Glands; a Compound Tubuloalveolar Gland**



1. Alveolus
2. Interlobular septum

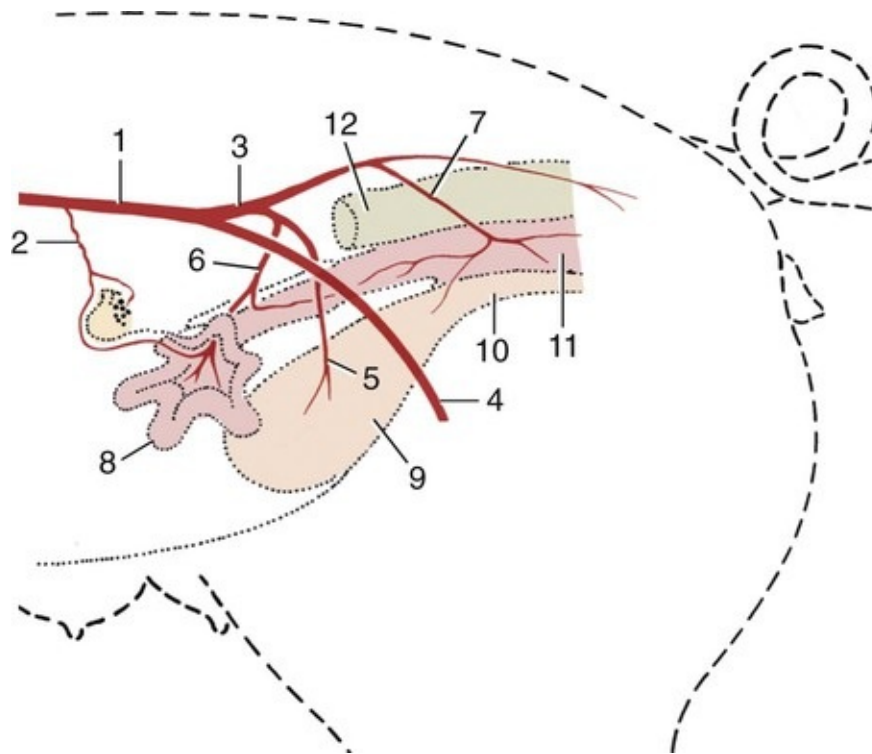
5-44 Bovine: Pelvic Floor and Caudal Quarters of the Udder



1. Pelvic symphysis
2. Symphyseal tendon
3. Lateral suspensory laminae
4. Mammary (superficial inguinal) lymph node
5. Medial suspensory laminae
6. Tributary of external pudendal vein

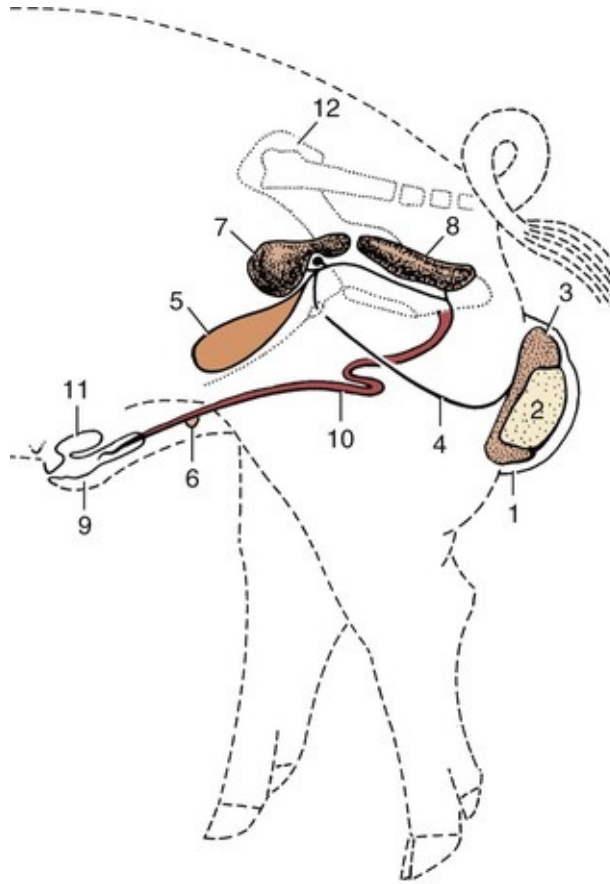
Note: Transverse section.

5-45 Porcine: Principal Arteries Supplying the Left Side of the Female Reproductive Tract



1. Aorta
2. Ovarian artery with the cranial uterine branch
3. Internal iliac artery
4. External iliac artery continued by the femoral artery into the left thigh
5. Umbilical artery
6. Left uterine artery crossing the medial surface of the external iliac
7. Vaginal artery with the caudal uterine branch
8. Left uterine horn
9. Bladder
10. Urethra
11. Vagina
12. Rectum

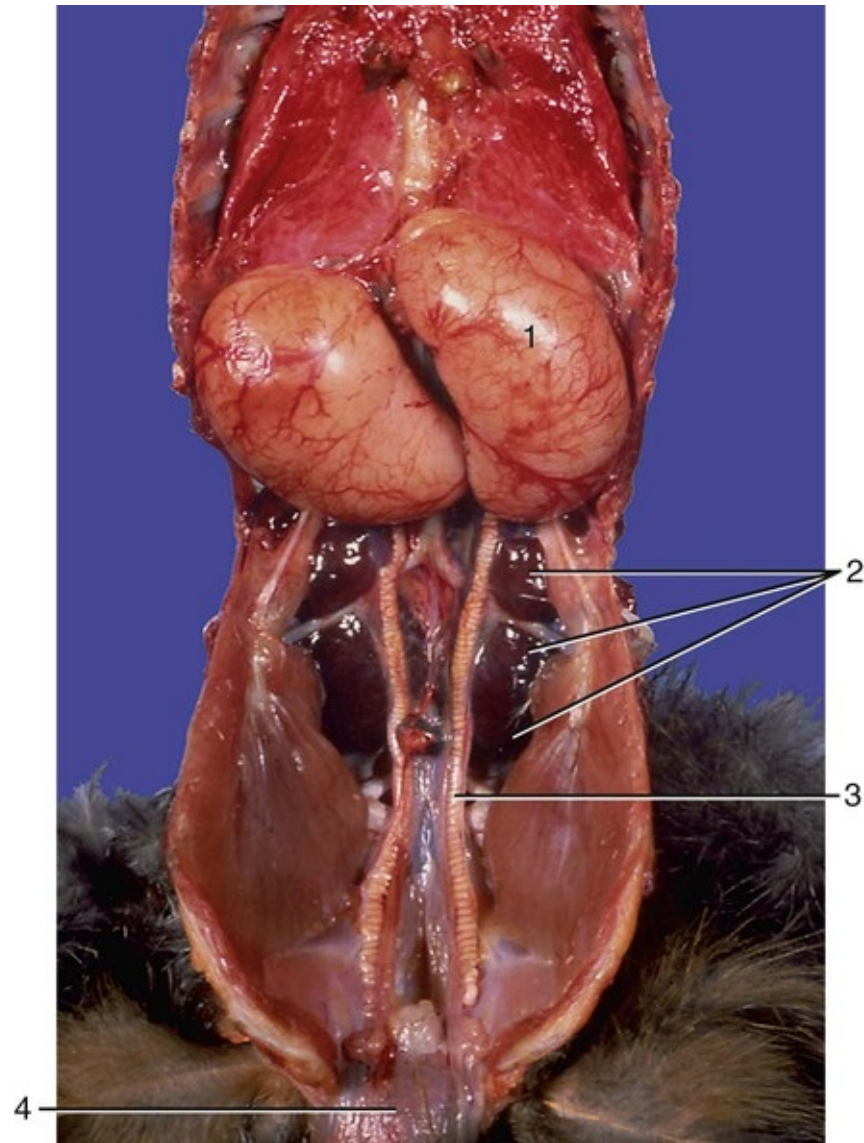
5-46 Porcine: Reproductive Organs of a Boar



1. Scrotum
2. Left testis
3. Tail of epididymis
4. Deferent duct
5. Bladder
6. Rudimentary teat
7. Vesicular gland covering the small body of the prostate
8. Bulbourethral gland
9. Prepuce
10. Penis
11. Preputial diverticulum
12. Right hip bone

5-47 Avian: Male Reproductive Organs

(Ventral View)



1. Testis (breeding condition)
2. Kidney (three lobes)
3. Deferent duct
4. Cloaca

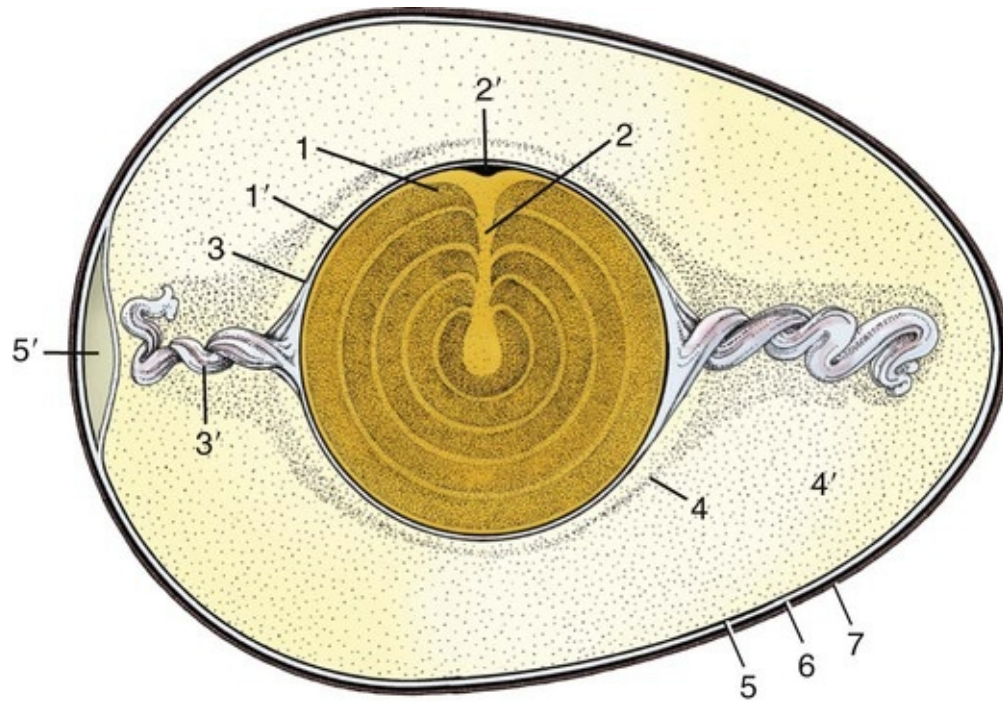
5-48 Avian: Reproductive Organs of a

Female Chicken (Ventral View)



1. Ovary with follicles in different stages of maturation
2. Oviduct or shell gland
3. Uterus (with an egg within)
4. Colon
5. Cloaca

5-49 Avian: Fertilized Egg



1. Yolk
- 1'. Yolk membrane
2. Latebra
- 2'. Germinal disc
3. Chalaziferous layer
- 3'. Chalaza
4. Thin albumen
- 4'. Dense albumen
5. Internal and external shell membranes
- 5'. Air cell
6. Shell
7. Cuticle

The Forelimb

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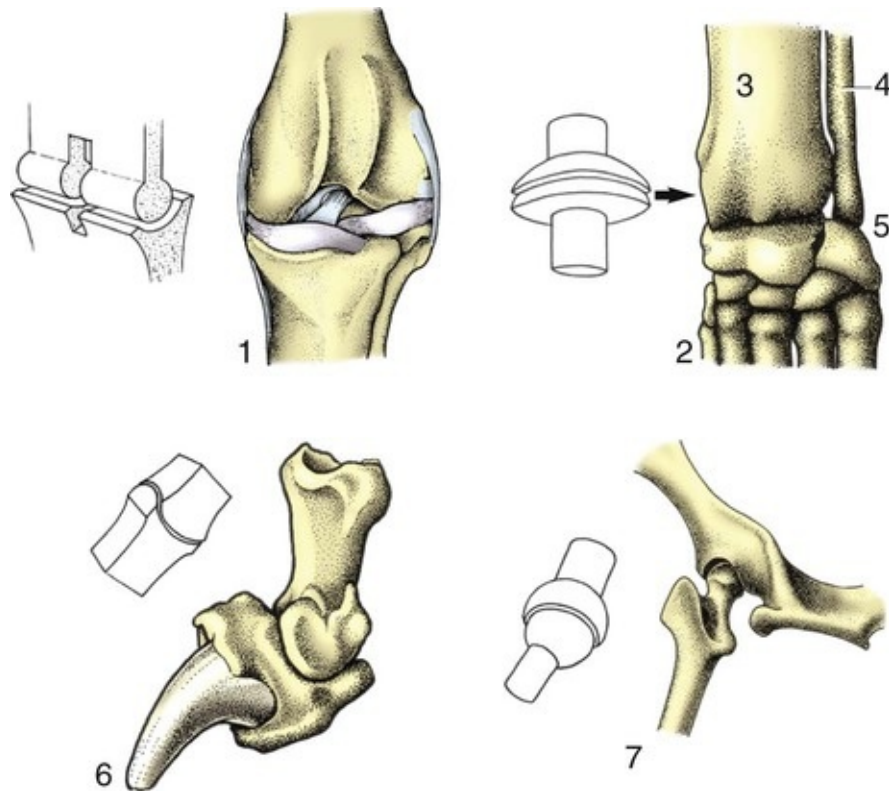
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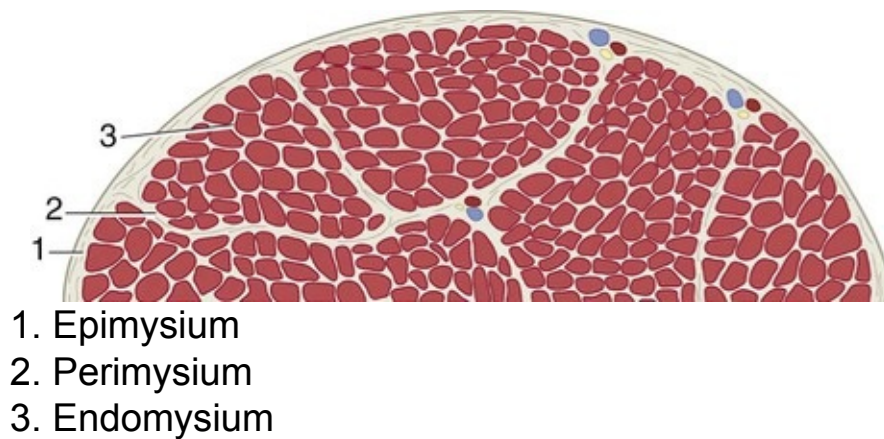
↪ 6-1 Canine: Synovial Joints



1. Condylar joint: Canine femorotibial joint (stifle)

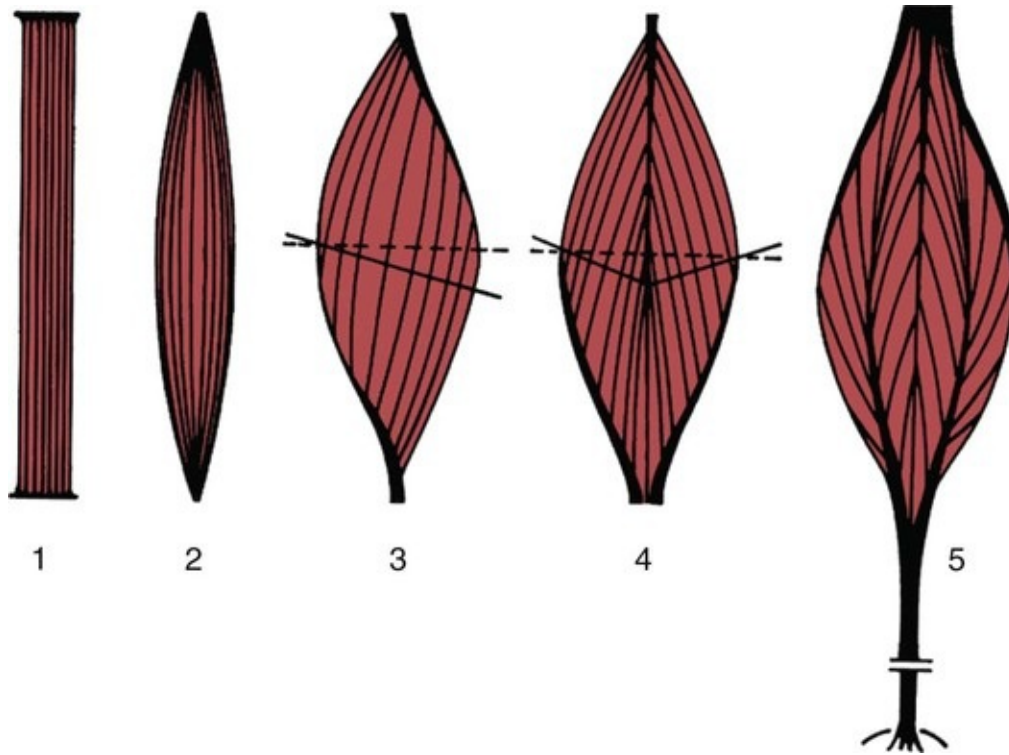
2. Ellipsoidal joint: Canine carpus
3. Radius
4. Ulna
5. Proximal row of the carpal bones
6. Saddle joint: Canine distal interphalangeal joint
7. Spheroidal joint: Canine hip joint (caudodorsal view)

↪ 6-2 Canine: Transection of a Skeletal Muscle



Note: The fibrous tissue has been emphasized in this skeletal muscle.

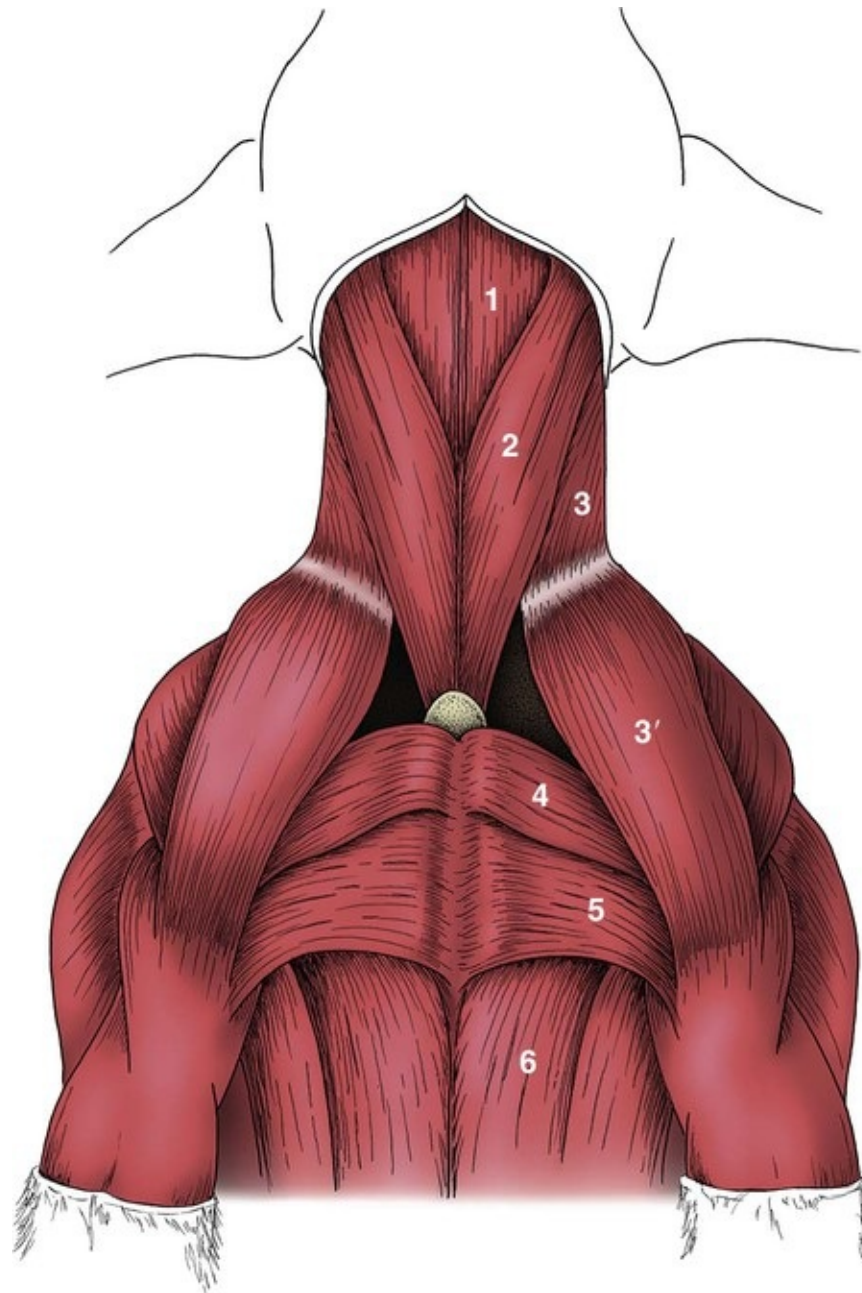
↪ 6-3 Canine: Architecture of Skeletal Muscles



1. Strap muscle
2. Spindle-shaped muscle
3. Pennate muscle
4. Bipennate muscle
5. Multipennate muscle

Note: The anatomical transverse sections (*broken lines*) and the physiological transverse sections (*solid lines*) are both represented.

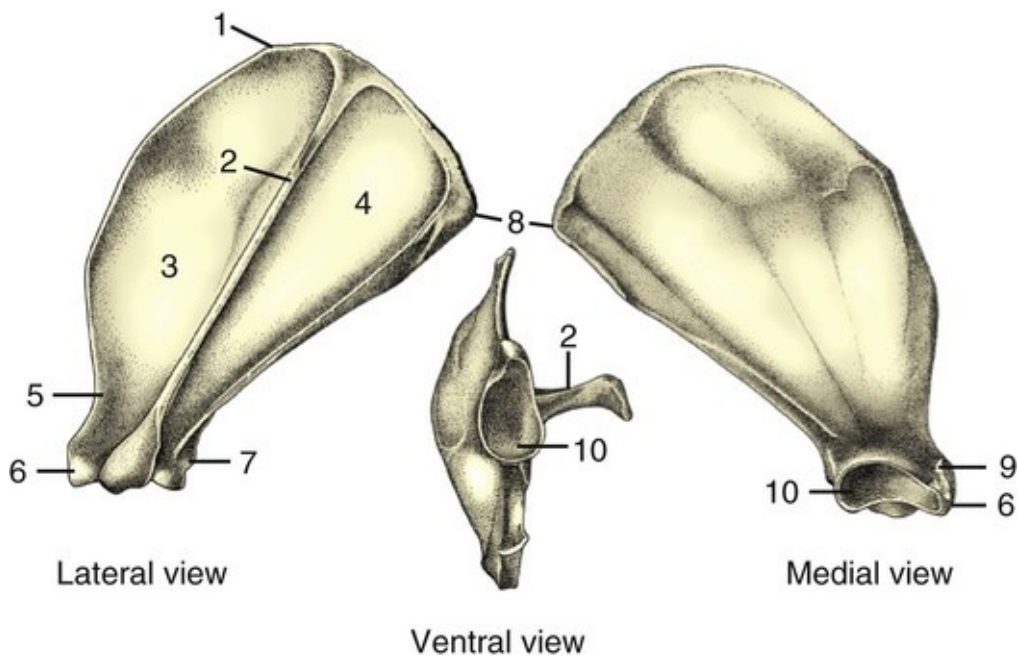
↪ 6-4 Canine: Ventral Muscles of the Neck and Thorax



1. Combined sternohyoideus and sternothyroideus
2. Sternocephalicus
3. Cleidocephalicus, cervical part
- 3'. Brachiocephalicus, cleidobrachialis
4. Pectoralis descendens
5. Pectoralis transversus
6. Pectoralis profundus

↻ 6-5 Canine: Left Scapula

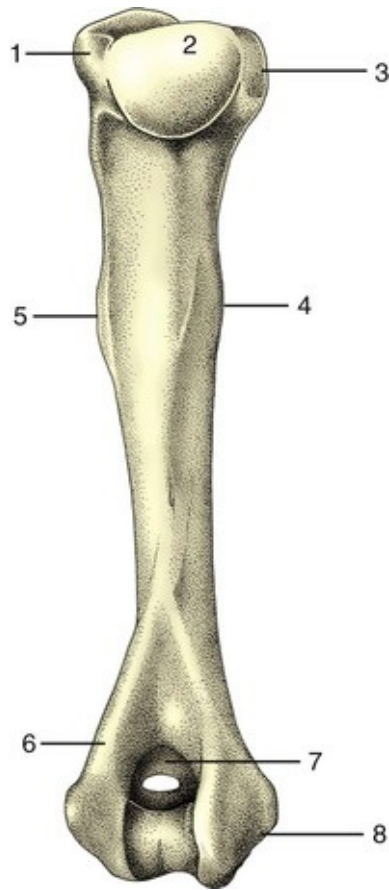
Q: Which muscle originates from 6?



- 1. Cranial angle
- 2. Spine
- 3. Supraspinous fossa
- 4. Infraspinous fossa
- 5. Neck
- 6. Supraglenoid tubercle
- 7. Infraglenoid tubercle
- 8. Caudal angle
- 9. Coracoid process
- 10. Glenoid cavity

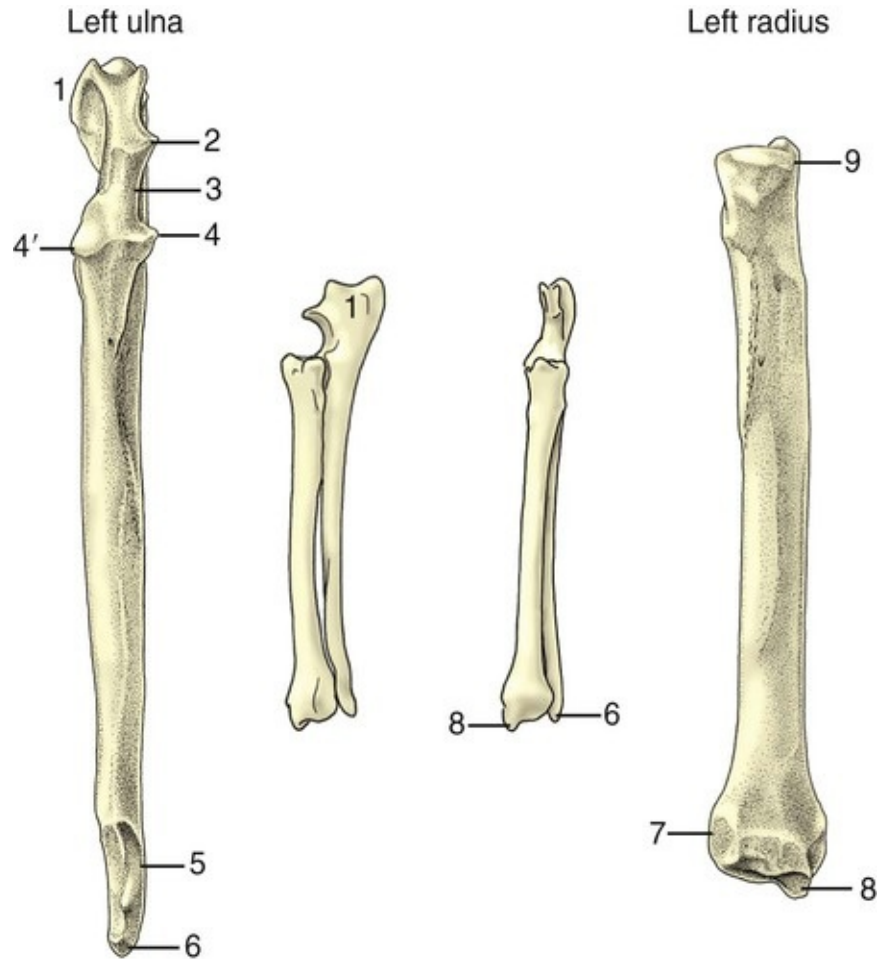
A: Biceps brachii.

↻ 6-6 Canine: Left Humerus (Caudal View)



1. Greater tubercle
2. Head
3. Lesser tubercle
4. Teres (major) tuberosity
5. Deltoid tuberosity
6. Lateral supracondylar crest
7. Olecranon fossa (with supratrochlear foramen in the dog)
8. Medial epicondyle

↪ 6-7 Canine: Left Ulna and Radius

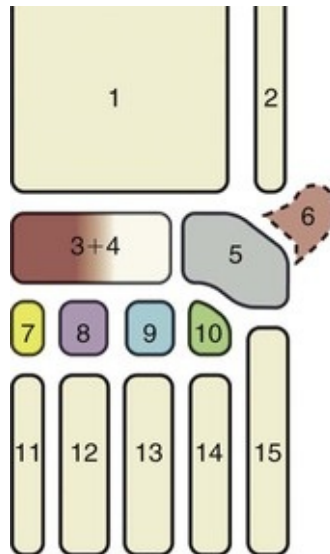


1. Olecranon
2. Anconeal process
3. Trochlear notch
4. Lateral coronoid process
- 4'. Medial coronoid process
5. Distal articular facet for radius
6. Lateral styloid process (with facet for the ulnar carpal bone)
7. Articular facet for ulna
8. Medial styloid process
9. Articular circumference

Note: In sequence from the left: cranial view of the ulna, craniolateral and cranial views of the radius and ulna, and caudal view

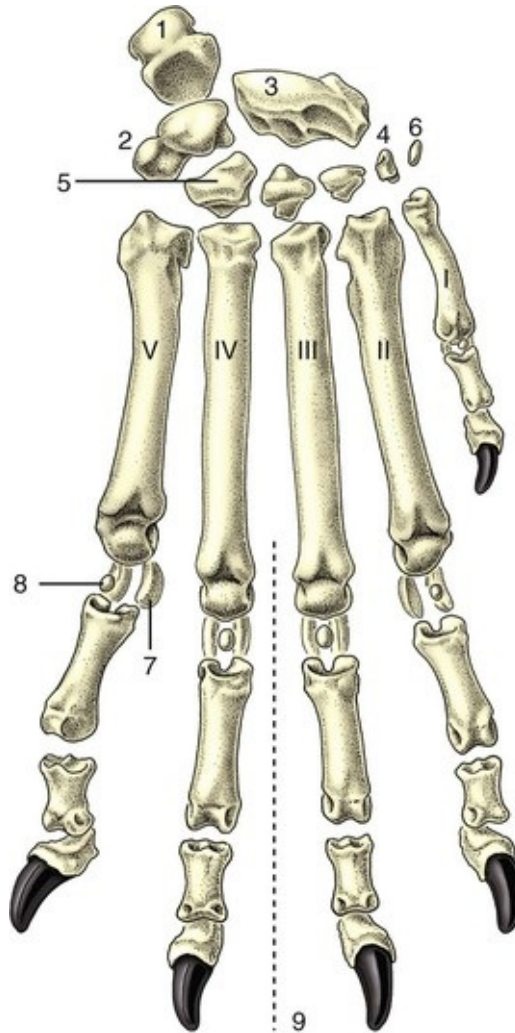
of the radius alone.

↻ 6-8 Canine: Carpal Skeleton



1. Radius
2. Ulna
3. Radial carpal bone
4. Intermediate carpal bone
5. Ulnar carpal bone
6. Accessory carpal bone
7. First carpal bone
8. Second carpal bone
9. Third carpal bone
10. Fourth carpal bone
11. First metacarpal bone
12. Second metacarpal bone
13. Third metacarpal bone
14. Fourth metacarpal bone
15. Fifth metacarpal bone

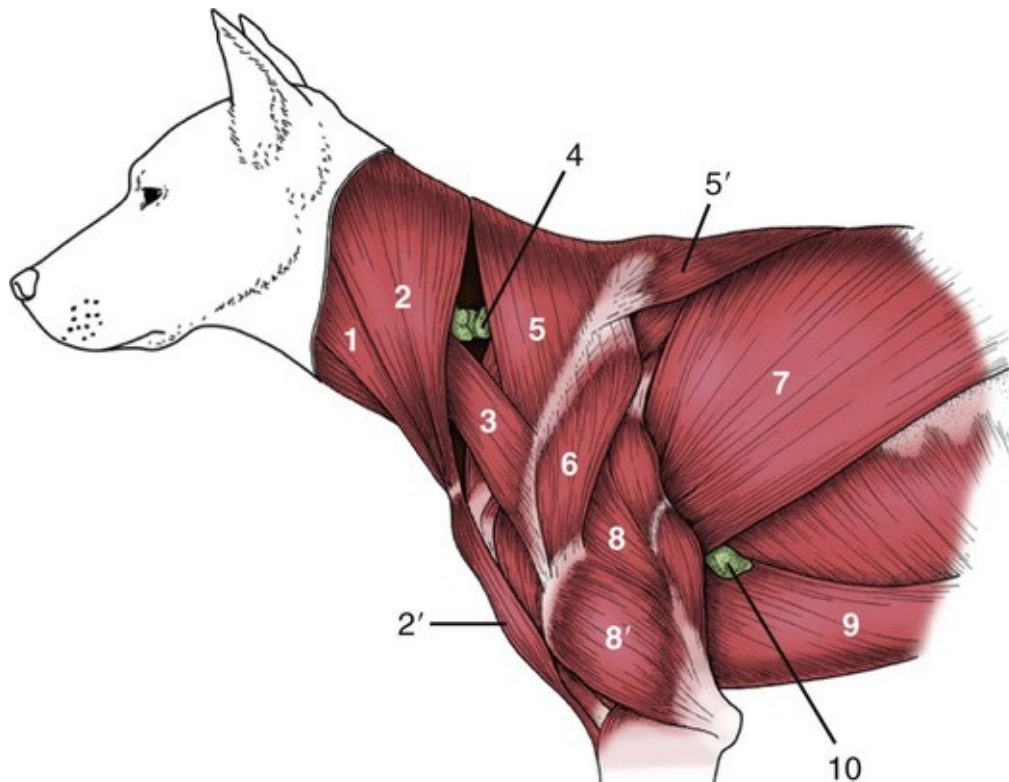
6-9 Canine: Right Manus (Dorsal View)



1. Accessory carpal
2. Ulnar carpal
3. Radial carpal (intermedioradial in the dog)
4. First of the distal row of carpal bones
5. Fourth of the distal row of carpal bones
6. Sesamoid bone
7. Proximal sesamoid bones
8. Dorsal sesamoid bone
9. Axis of manus

Note: The metacarpal bones (*Roman numerals*) are identified.

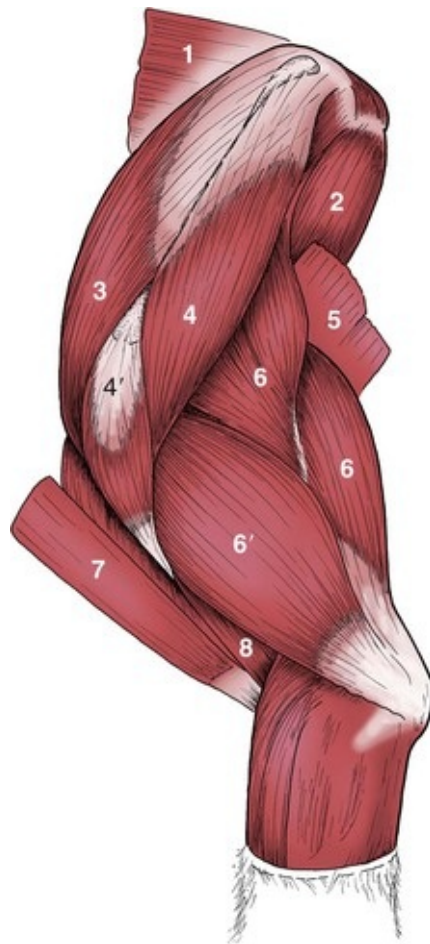
6-10 Canine: Superficial Muscles of the Shoulder and Arm



1. Sternocephalicus
2. Brachiocephalicus; cleidocephalicus, cervical part
- 2'. Brachiocephalicus, cleidobrachialis
3. Omotransversarius
4. Superficial cervical lymph node
5. Cervical part of the trapezius
- 5'. Thoracic part of the trapezius
6. Deltoideus
7. Latissimus dorsi
8. Long head of triceps

- 8'. Lateral head of triceps
- 9. Pectoralis profundus (ascendens)
- 10. Accessory axillary lymph node

↻ 6-11 Canine: Intrinsic Muscles of the Left Shoulder and Arm (Lateral View)

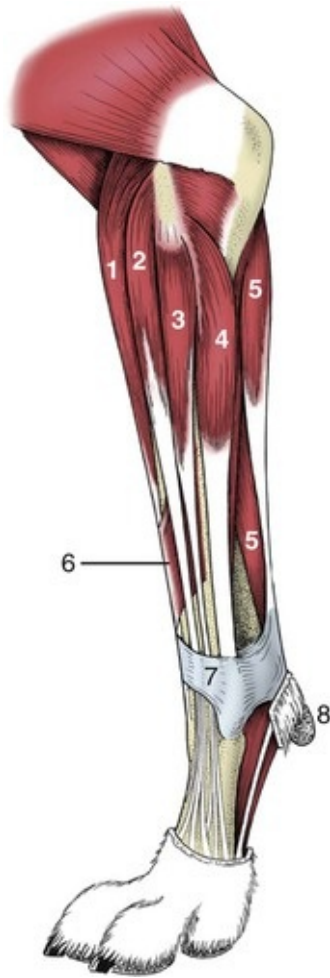


- 1. Rhomboideus
- 2. Teres major
- 3. Supraspinatus
- 4. Scapular part of deltoideus

- 4'. Acromial part of deltoideus
- 5. Latissimus dorsi
- 6. Long head of triceps
- 6'. Lateral head of triceps
- 7. Brachiocephalicus, cleidobrachialis
- 8. Brachialis

6-12 Canine: Muscles of the Left Forearm (Lateral View)

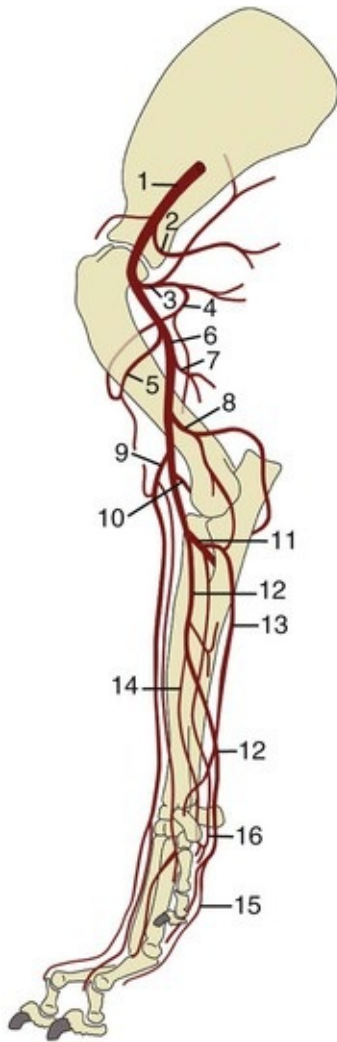
Q: Which nerve supplies 1, 2, and 3?



1. Extensor carpi radialis
2. Common digital extensor
3. Lateral digital extensor
4. Ulnaris lateralis
5. Flexor carpi ulnaris
6. Abductor digiti I longus
7. Extensor retinaculum
8. Carpal pad

A: Radial nerve.

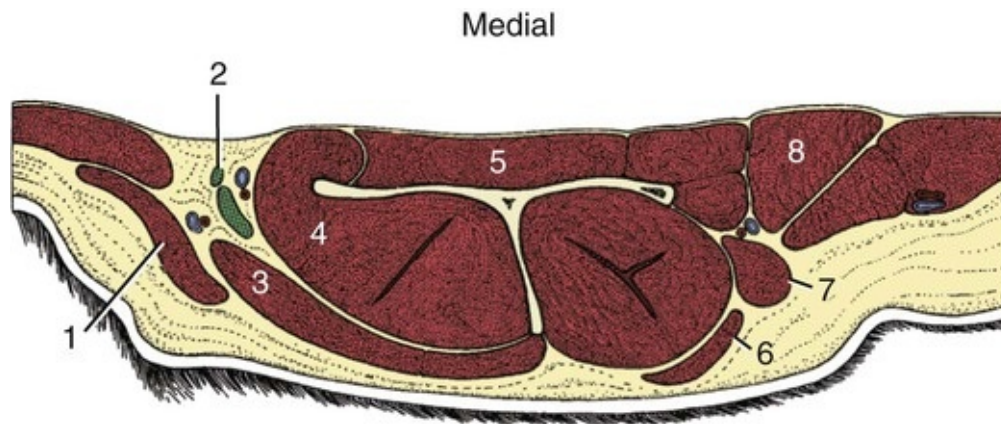
➤ **6-13 Canine: Arteries of the Forelimb**



1. Axillary artery
2. Lateral thoracic artery
3. Subscapular artery
4. Caudal circumflex humeral artery
5. Cranial circumflex humeral artery
6. Brachial artery
7. Deep brachial artery
8. Collateral ulnar artery
9. Superficial brachial artery
10. Transverse cubital artery
11. Common interosseous artery
12. Median artery
13. Ulnar artery
14. Radial artery

- 15. Superficial palmar arch
- 16. Deep palmar arch

↻ 6-14 Canine: Left Forelimb (Dorsal View)



- 1. Cleidocephalicus, cervical part
- 2. Superficial cervical lymph nodes
- 3. Omotransversarius
- 4. Supraspinatus
- 5. Subscapularis
- 6. Deltoideus
- 7. Long head of the triceps
- 8. Teres major

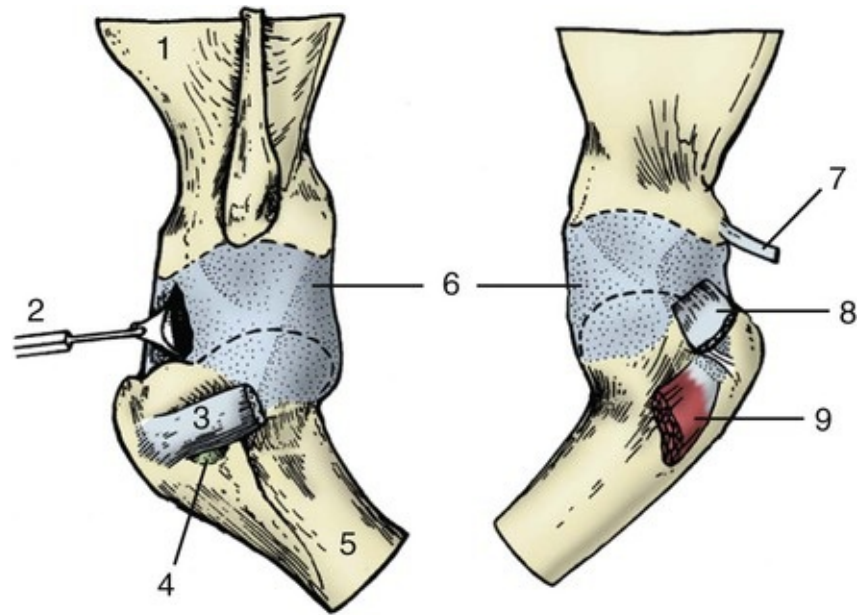
Note: Transverse section at the level of the scapula.

↻ 6-15 Canine: Shoulder Joints (Lateral [Left] and Craniocaudal [Right] Views)



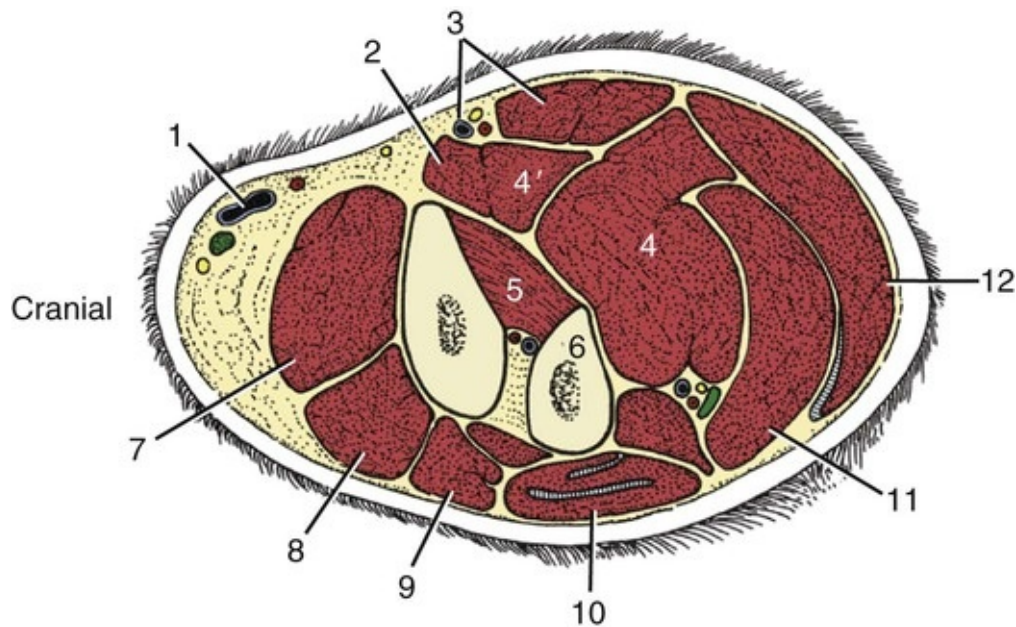
- 1. Scapular spine
- 1'. Acromion
- 2. Supraglenoid tubercle
- 3. Greater tubercle of the humerus
- 4. Head of the humerus

6-16 Canine: Left Shoulder Joint (Lateral [Left] and Medial [Right] Views)



1. Scapula
2. Joint capsule opened to expose biceps tendon
3. Tendon of infraspinatus
4. Infraspinatus bursa
5. Humerus
6. Joint capsule (stretched by pulling bones apart)
7. Tendon of coracobrachialis
8. Tendon of subscapularis (reflected ventrally)
9. Biceps tendon emerging from intertubercular groove

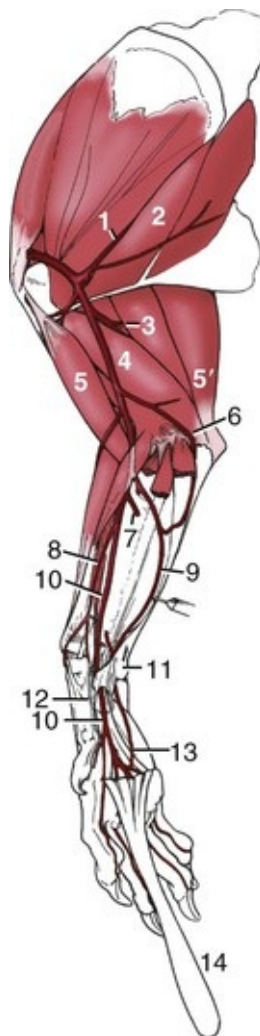
6-17 Canine: Left Forelimb (Transverse Section Distal to the Elbow Joint)



1. Cephalic vein and branches of superficial radial nerve
2. Pronator teres
3. Median vessels and nerve, and flexor carpi radialis
4. Humeral head of the deep digital flexor
- 4'. Radial head of the deep digital flexor
5. Pronator quadratus
6. Ulna
7. Extensor carpi radialis
8. Common digital extensor
9. Lateral digital extensor
10. Ulnaris lateralis
11. Flexor carpi ulnaris; its small ulnar head lies on its caudal, and the ulnar vessels and nerve on its

cranial aspect
12. Superficial digital flexor

6-18 Canine: Arteries of the Right Forelimb



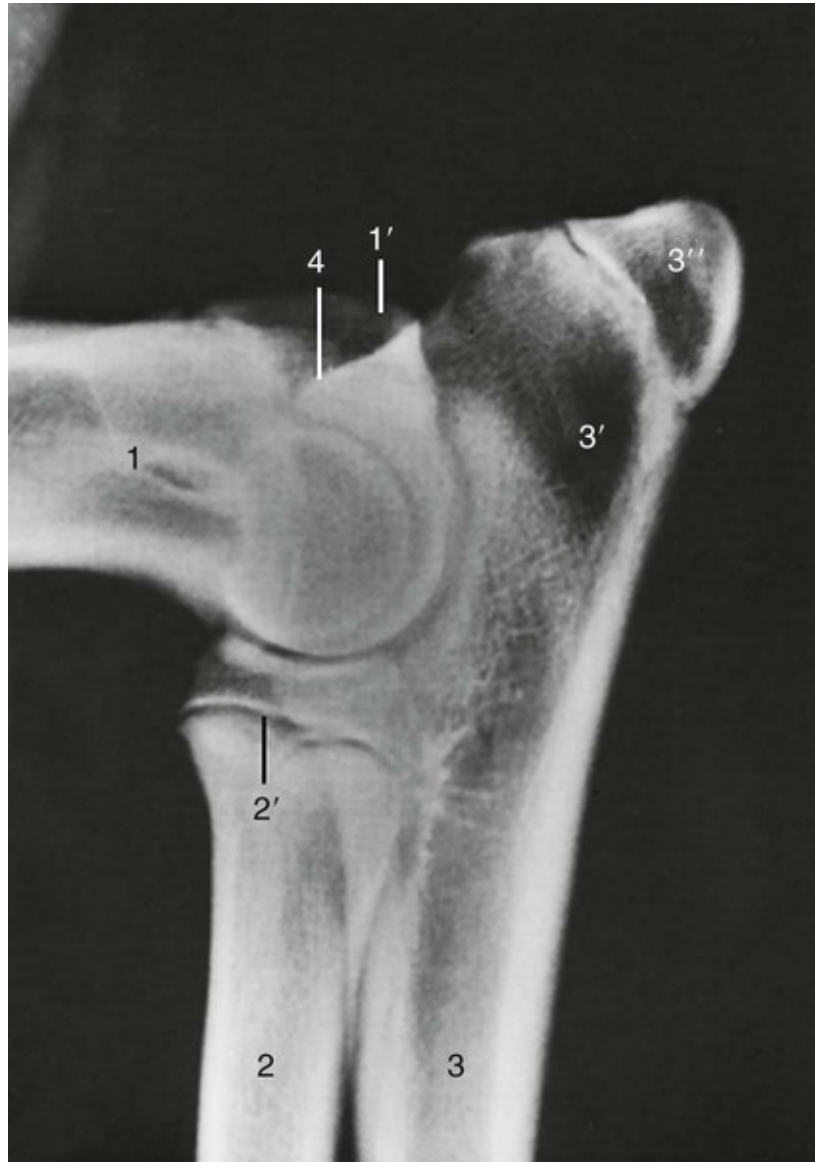
1. Subscapular artery
2. Teres major
3. Deep brachial artery

4. Brachial artery
5. Biceps
- 5'. Triceps
6. Collateral ulnar artery
7. Deep antebrachial artery
8. Radial artery
9. Ulnar artery
10. Median artery
11. Accessory carpal bone
12. Deep palmar arch
13. Superficial palmar arch
14. Superficial digital flexor, reflected

Note: The topography of the major arteries of the right canine forelimb is illustrated in the medial view. The caudomedial muscles of the forearm have been removed.

➤ **6-19 Canine: Elbow Joint (Lateral View)**

Q: What is the action of muscles on digits that originate from 1?



- 1. Humerus
- 1'. Medial epicondyle
- 2. Radius
- 2'. Proximal epiphysial cartilage
- 3. Ulna
- 3'. Olecranon
- 3''. Apophysis of tuber olecrani
- 4. Anconeal process

A: Extension.

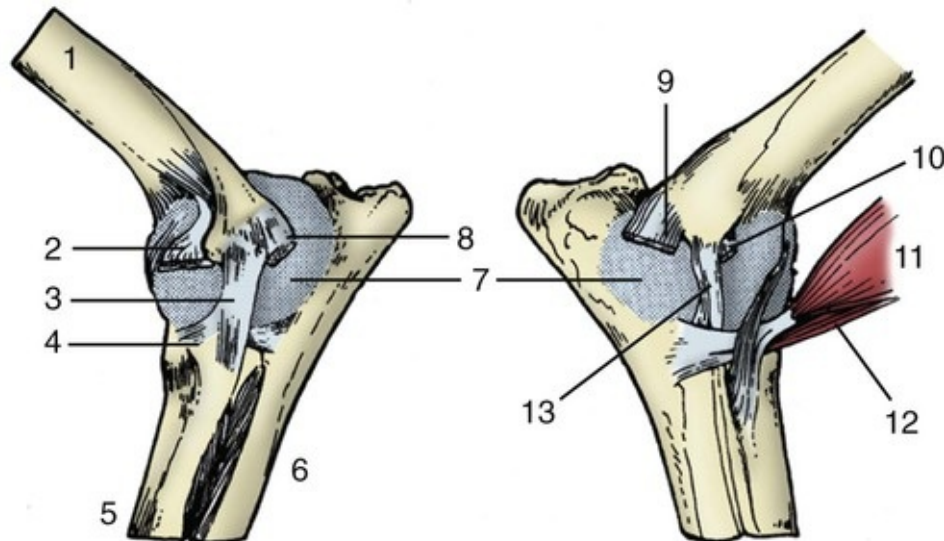
6-20 Canine: Elbow Joint (Craniocaudal View)



1. Supratrochlear foramen
2. Radius
3. Ulna
- 3'. Olecranon
4. Medial coronoid process

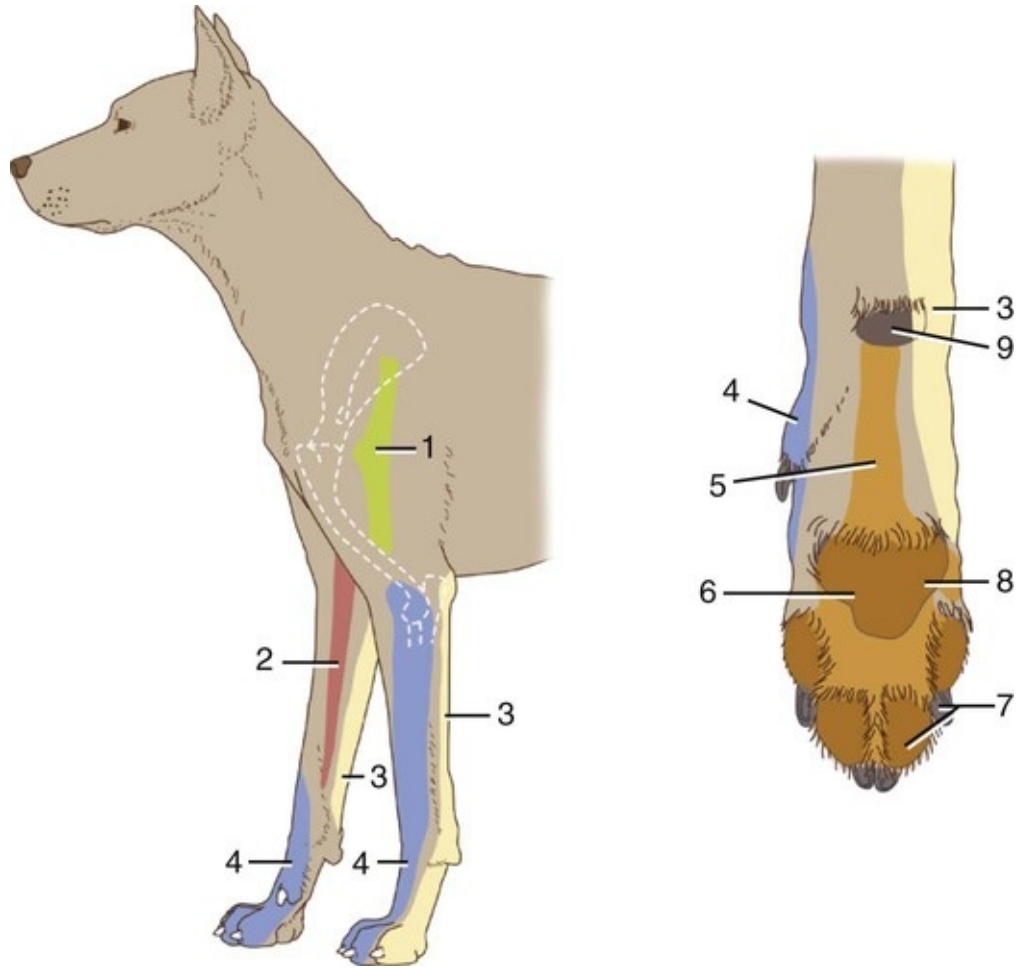
6-21 Canine: Left Elbow Joint (Lateral

[Left] and Medial [Right] Views)



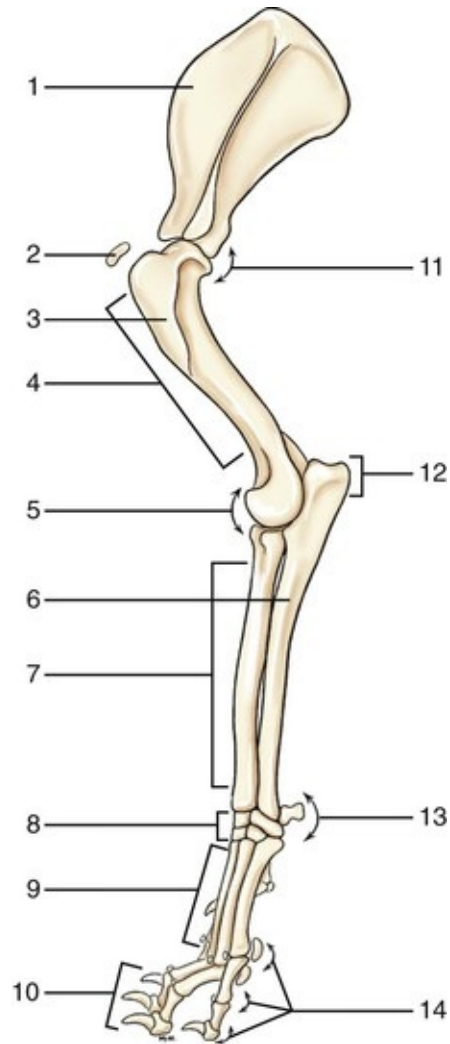
1. Humerus
2. Stump of extensor carpi radialis and common digital extensor
3. Lateral collateral ligament
4. Annular ligament of radius
5. Radius
6. Ulna
7. Joint capsule
8. Stump of ulnaris lateralis
9. Common stump of carpal and digital flexors
10. Stump of pronator teres
11. Biceps
12. Brachialis
13. Medial collateral ligament

↪ 6-22 Canine: Autonomous Zones of the Cutaneous Innervation of the Forelimb



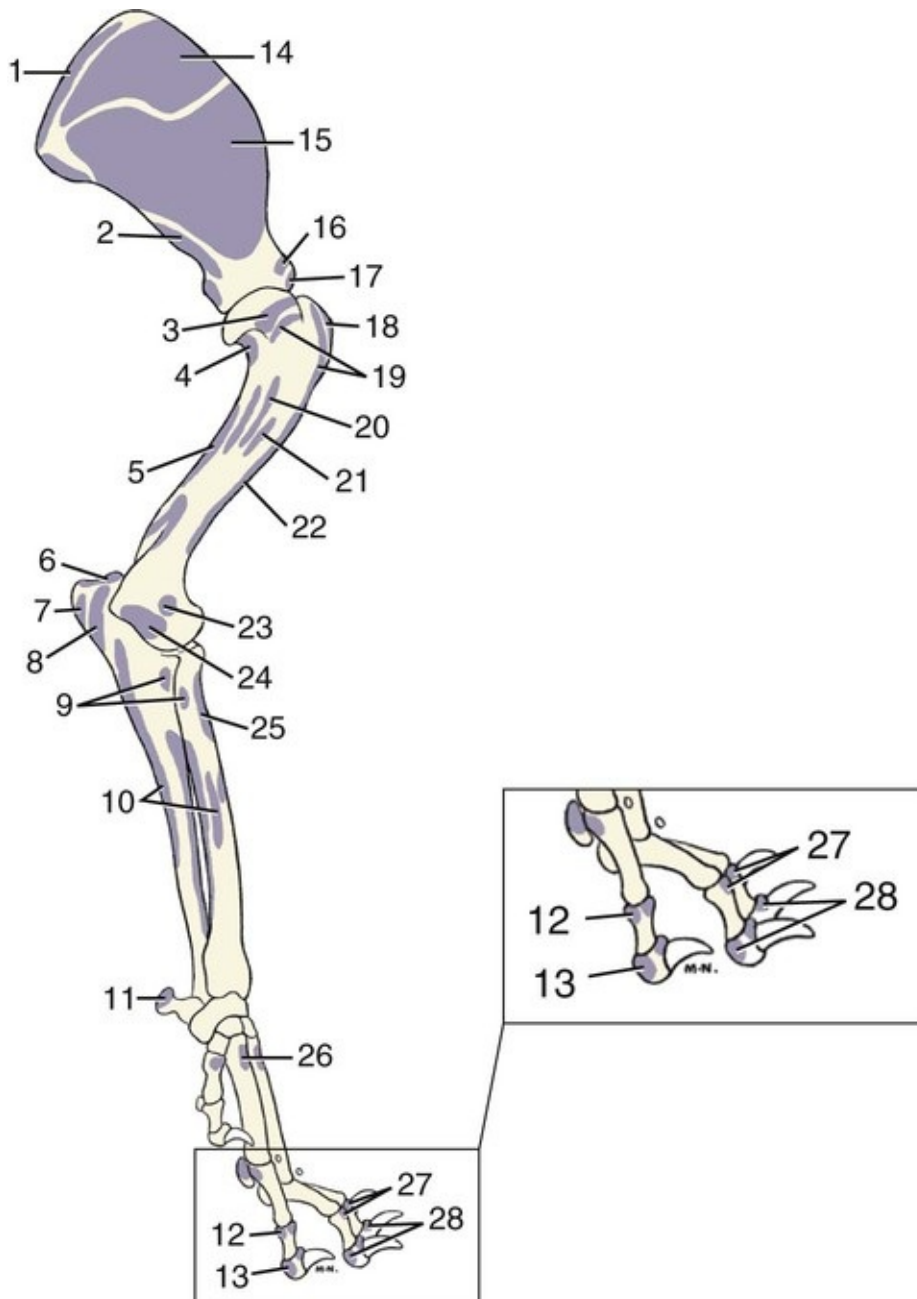
1. Axillary nerve
2. Musculocutaneous nerve
3. Ulnar nerve
4. Radial nerve
5. Median nerve
6. Mixture of median and ulnar nerves
7. Digital pads
8. Metacarpal pad
9. Carpal pad

↪ **6-23 Canine: Left Forelimb and Flexor Surfaces of the Joints**



1. Scapula
2. Clavicle (collarbone)
3. Humerus
4. Brachium (arm)
5. Flexor surface
6. Radius and ulna
7. Antebrachium (forearm)
8. Carpus
9. Metacarpus
10. Digits
11. Flexor surface of the shoulder joint
12. Elbow joint
13. Flexor surface of the carpal joints
14. Flexor surface of the digital joints

↻ 6-24 Canine: Left Forelimb

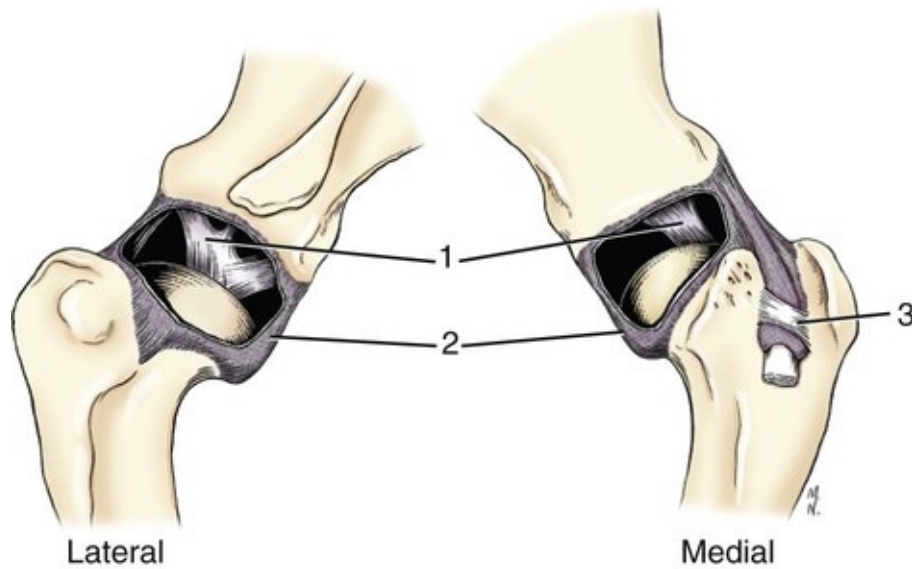


1. Rhomboideus
2. Triceps, long head
3. Subscapularis

4. Triceps, accessory head
5. Brachialis
6. Triceps
7. Tensor fasciae antebrachii
8. Flexor carpi ulnaris
9. Biceps and brachialis
10. Deep digital flexor
11. Flexor carpi ulnaris
12. Superficial digital flexor
13. Deep digital flexor
14. Serratus ventralis
15. Subscapularis
16. Coracobrachialis
17. Biceps
18. Supraspinatus
19. Deep pectoral
20. Triceps, medial head
21. Teres major and latissimus dorsi
22. Superficial pectoral
23. Pronator teres
24. Flexors of carpus and digits
25. Supinator
26. Extensor carpi radialis
27. Lateral digital extensor
28. Lateral and common digital extensors

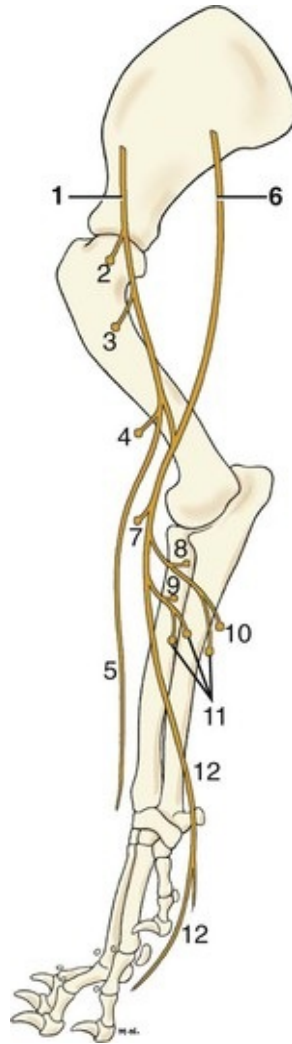
Note: Medial view of muscle attachments.

➤ 6-25 Canine: Capsule of the Left Shoulder Joint



- Lateral Medial
1. Medial and lateral glenohumeral ligaments
 2. Joint capsule
 3. Transverse humeral retinaculum

↻ **6-26 Canine: Distribution of
Musculocutaneous and Median Nerves,
Right Forelimb (Medial View)**



1. **Musculocutaneous nerve**

2. Coracobrachialis

3. Biceps brachii

4. Brachialis

5. Skin of the medial antebrachium

6. **Median nerve**

7. Pronator teres

8. Flexor carpi radialis

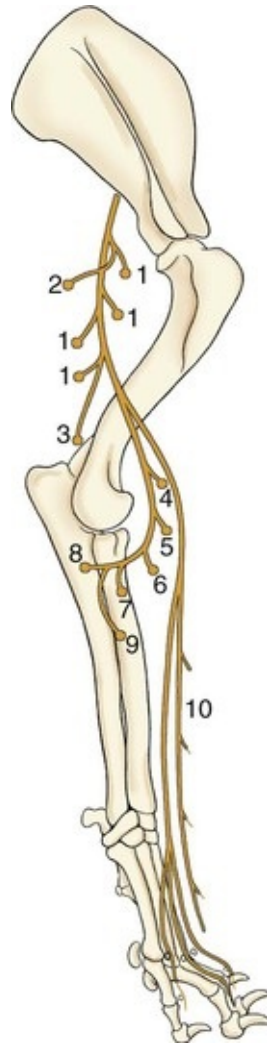
9. Pronator quadratus

10. Superficial digital flexor

11. Deep digital flexor, humeral, ulnar, and radial heads

12. Skin of the caudal antebrachium and palmar paw

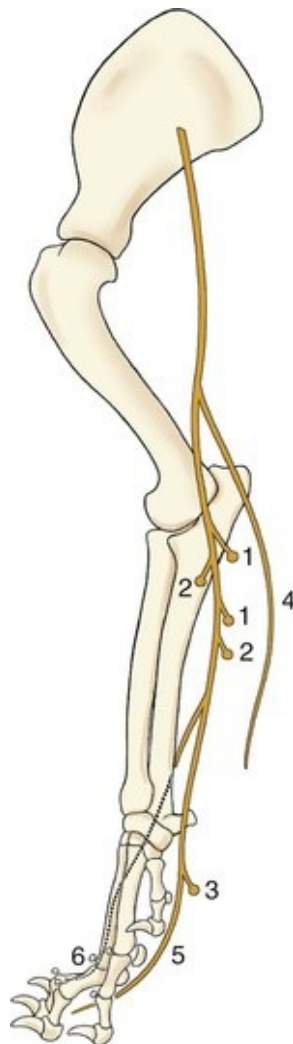
6-27 Canine: Distribution of the Radial Nerve, Right Forelimb (Lateral View)



1. Triceps brachii
2. Tensor fasciae antebrachii
3. Anconeus
4. Extensor carpi radialis
5. Supinator
6. Common digital extensor
7. Lateral digital extensor
8. Ulnaris lateralis
9. Abductor digiti I longus

10. Skin of the cranial and lateral antebrachium and dorsal paw

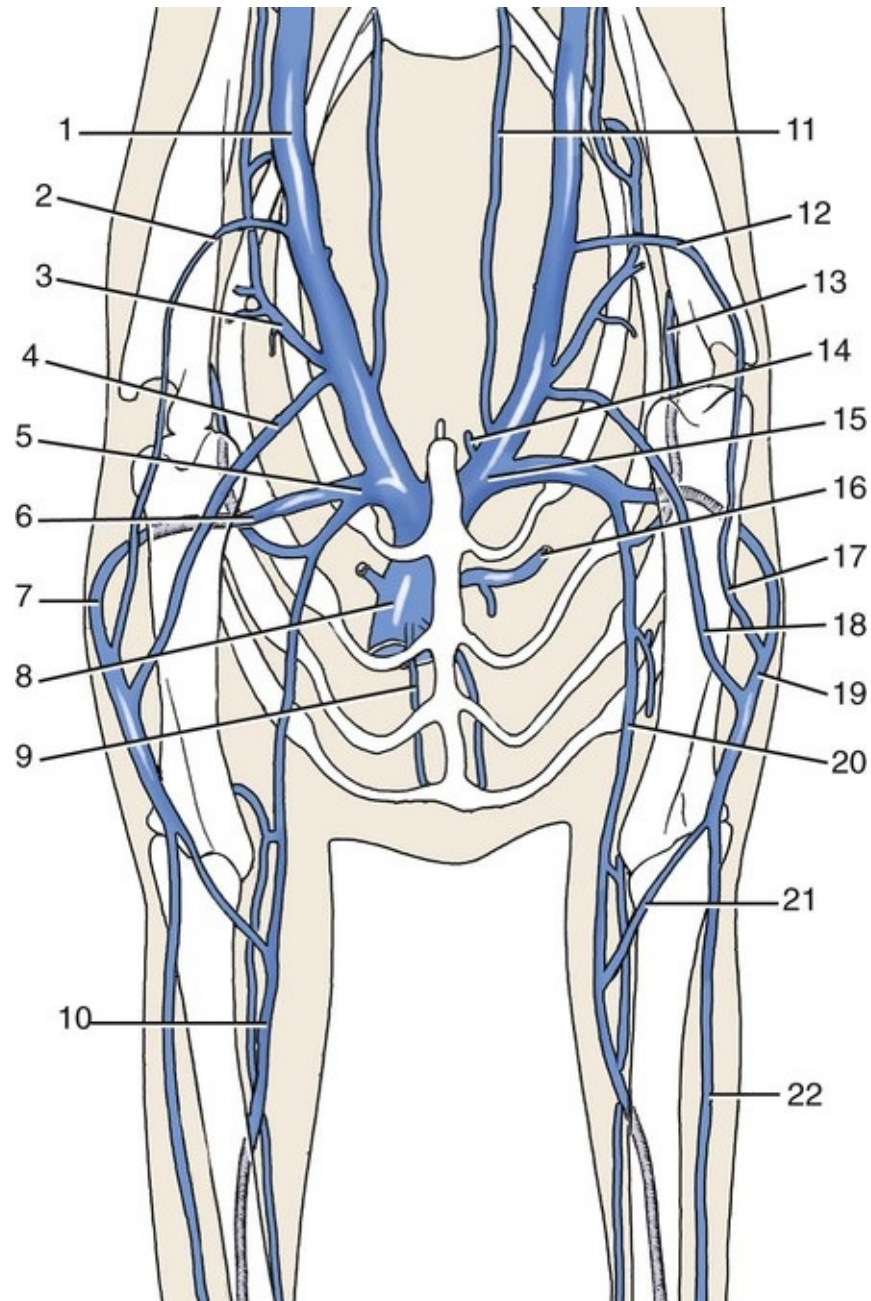
↻ 6-28 Canine: Distribution of the Ulnar Nerve, Right Forelimb (Medial View)



1. Flexor carpi ulnaris, ulnar and humeral heads
2. Deep digital flexor, ulnar and humeral heads
3. Interossei
4. Skin of caudal antebrachium

5. Skin of palmar paw
6. Skin of fifth metacarpal, lateral surface of digit

↻ **6-29 Canine: Veins of the Neck, Thoracic Inlet, and Proximal Forelimb**

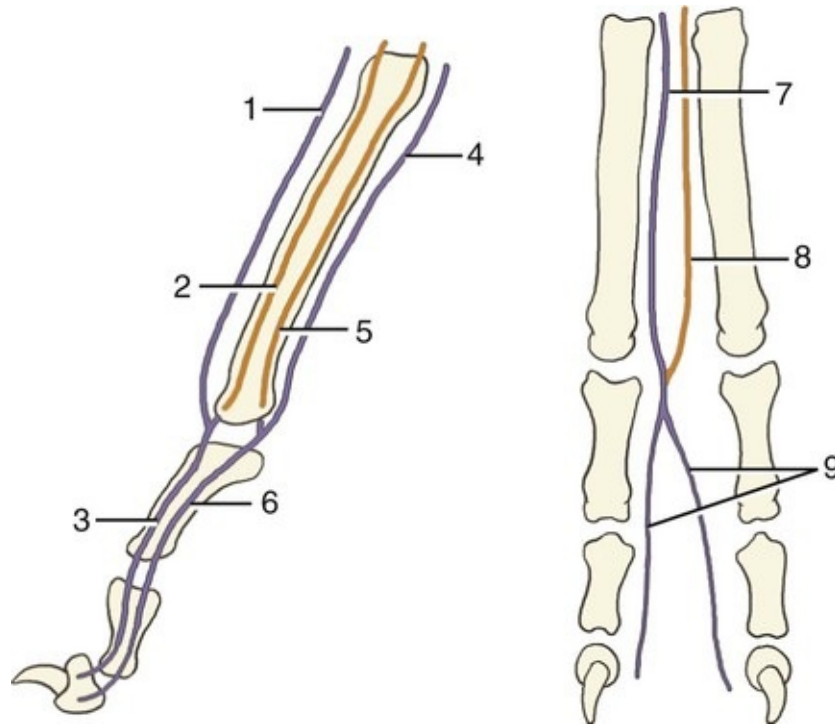


1. External jugular
2. Omobrachial
3. Superficial cervical
4. Cephalic
5. Subclavian
6. Axillary
7. Axillobrachial
8. Cranial vena cava
9. Internal thoracic

10. Median
11. Internal jugular
12. Omobrachial
13. Subscapular
14. Caudal thyroid
15. Left brachiocephalic
16. Costocervical
17. Omobrachial
18. Cephalic
19. Axillobrachial
20. Brachial
21. Median cubital
22. Cephalic

Note: Cranial aspect.

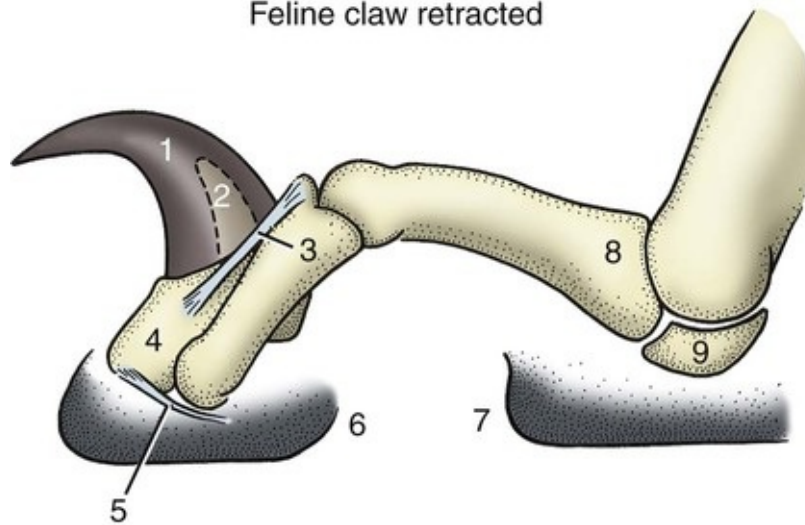
↻ **6-30 Canine: Blood Supply and Innervation Digits**



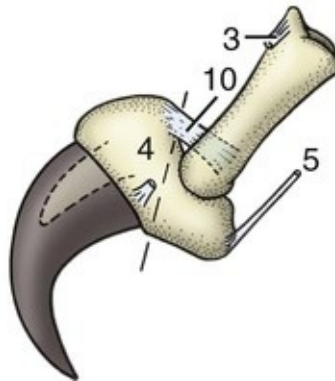
1. Dorsal common digital artery, vein, nerve
2. Dorsal metapodial artery, vein, nerve
3. Axial dorsal digital artery, vein, nerve
4. Palmar/plantar common digital artery, vein, nerve
5. Palmar/plantar metapodial artery, vein, nerve
6. Axial palmar/plantar digital artery, vein, nerve
7. Dorsal common digital artery, vein, nerve
8. Dorsal metapodial artery, vein, nerve
9. Axial dorsal digital artery, vein, nerve

6-31 Feline: Claw

Feline claw retracted



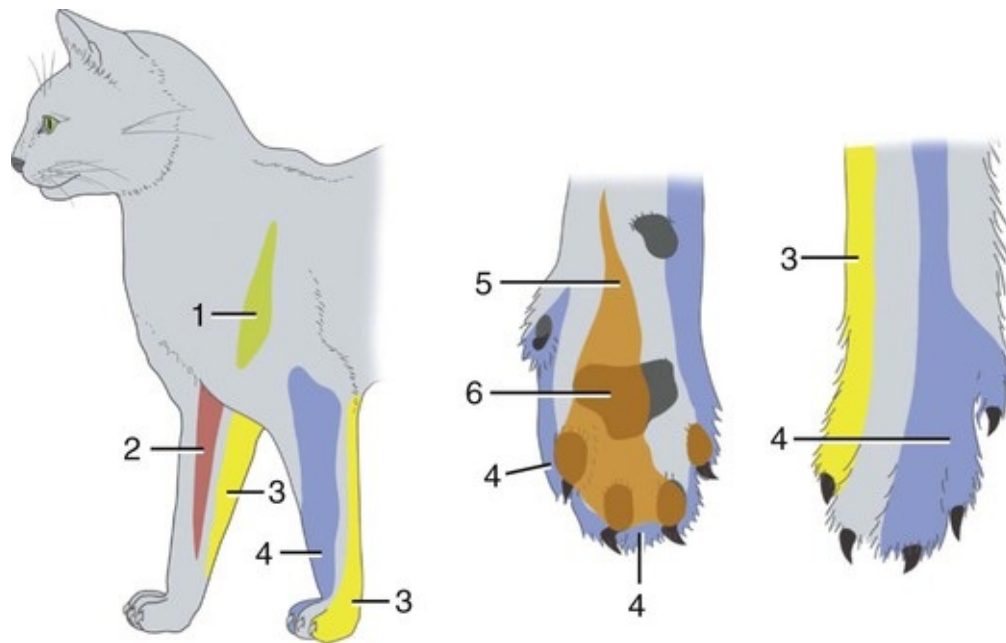
Feline claw protruded



1. Claw
2. Unguicular process of distal phalanx
3. Medial dorsal elastic ligament
4. Distal phalanx
5. Deep digital flexor tendon
6. Digital pad
7. Metacarpal pad
8. Proximal phalanx
9. Proximal sesamoid bone
10. Lateral dorsal elastic ligament

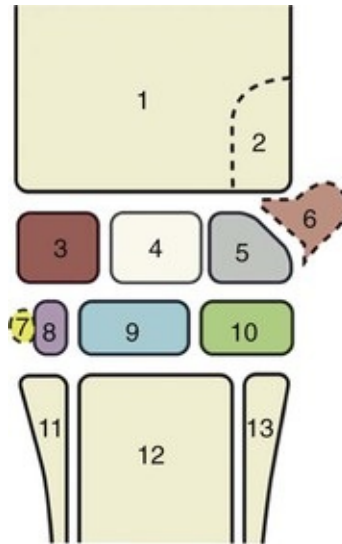
Note: Fully retracted and protruded illustrations show the division (*broken line*) of the distal phalanx in declawing. The arrangement of the elastic ligaments has been greatly simplified.

6-32 Feline: Autonomous Zones of the Cutaneous Innervation of the Forelimb



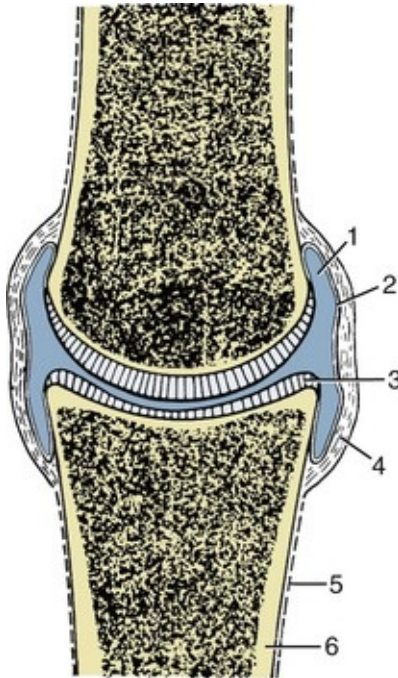
1. Axillary nerve
2. Musculocutaneous nerve
3. Ulnar nerve
4. Radial nerve
5. Median nerve
6. Mixture of median and ulnar nerves

6-33 Equine: Carpal Skeleton



1. Radius
2. Ulna
3. Radial carpal bone
4. Intermediate carpal bone
5. Ulnar carpal bone
6. Accessory carpal bone
7. First carpal bone
8. Second carpal bone
9. Third carpal bone
10. Fourth carpal bone
11. Second metacarpal bone
12. Third metacarpal bone
13. Fourth metacarpal bone

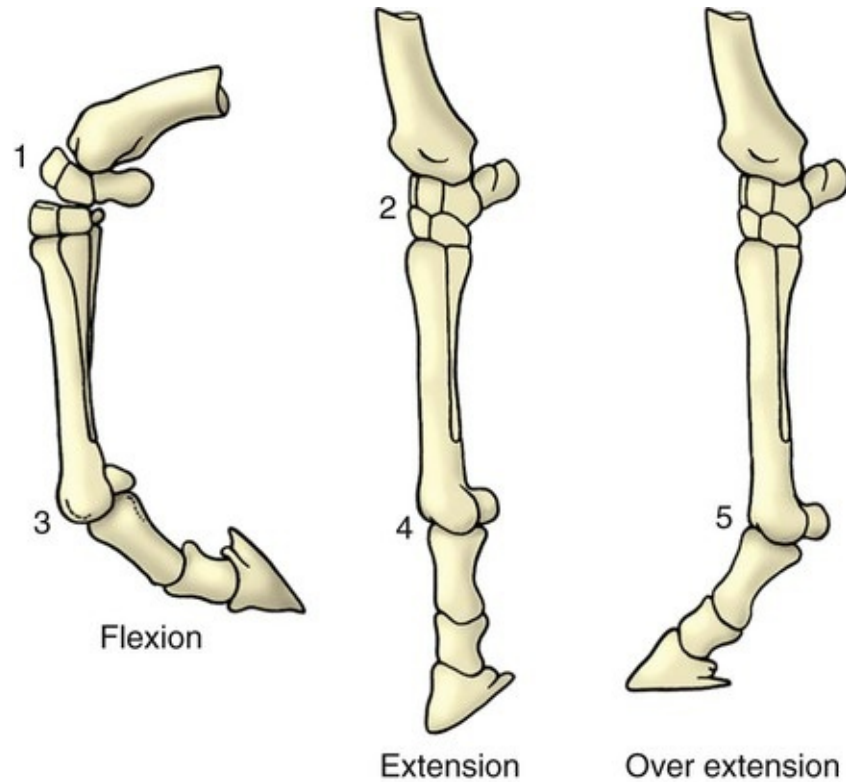
6-34 Equine: Synovial Joint



1. Joint cavity
2. Synovial membrane
3. Articular cartilage
4. Fibrous layer of joint capsule
5. Periosteum
6. Compact bone

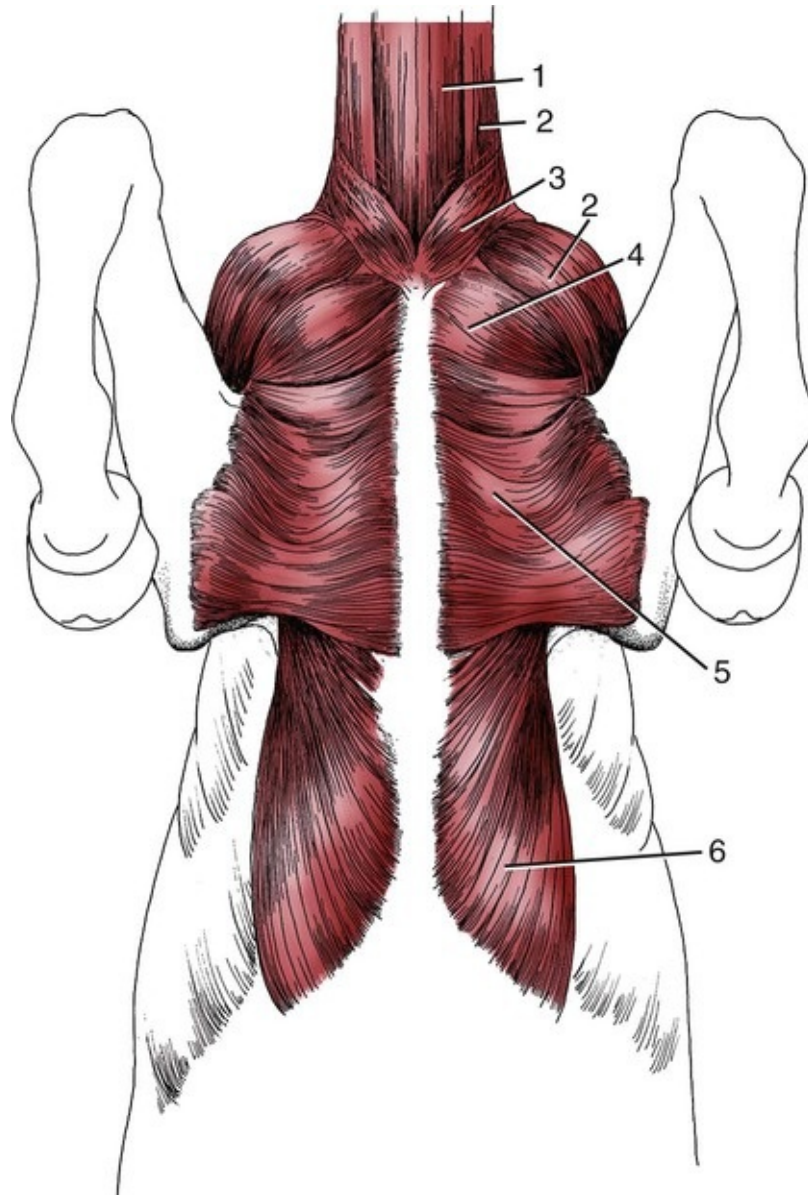
Note: A synovial joint (in section) is projecting from the synovial membrane of the fetlock joint (greatly enlarged).

➤ 6-35 Equine Joints: Flexion, Extension, and Overextension



1. Flexed carpal joint
2. Extended carpal joint
3. Flexed fetlock joint
4. Extended fetlock joint
5. Overextended fetlock joint

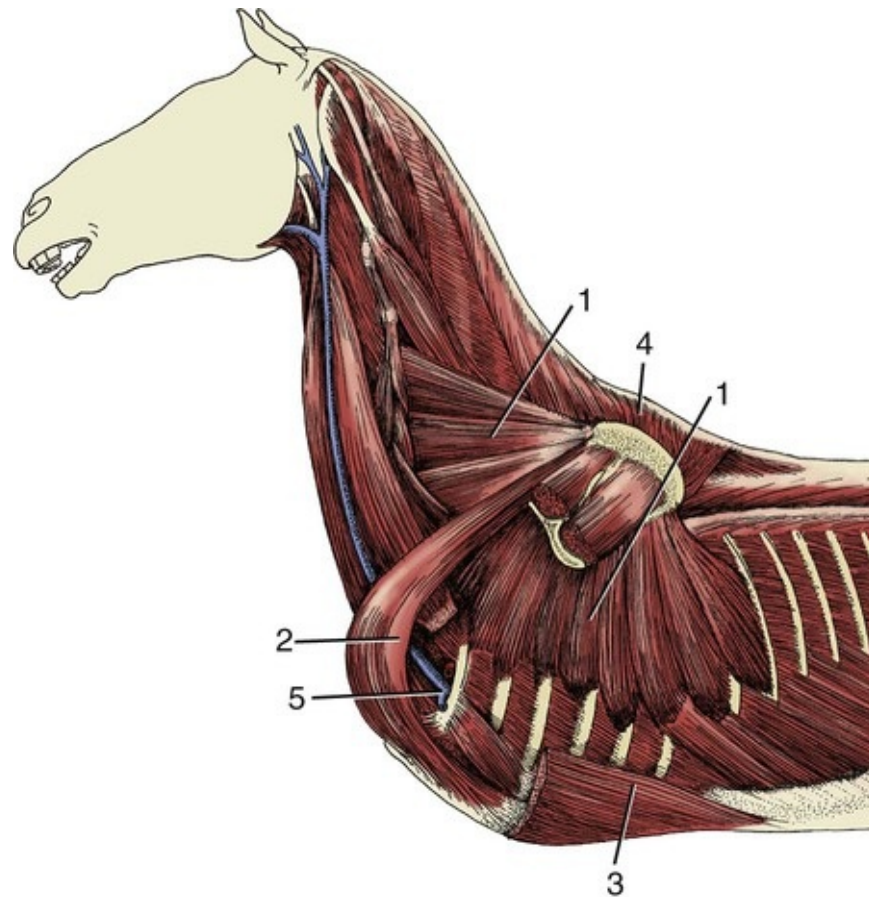
6-36 Equine Muscles: Ventral Surface of the Thorax



1. Sternocephalicus
2. Cleidocephalicus
3. Cutaneus colli
4. Pectoralis descendens
5. Pectoralis transversus
6. Pectoralis profundus (ascendens)

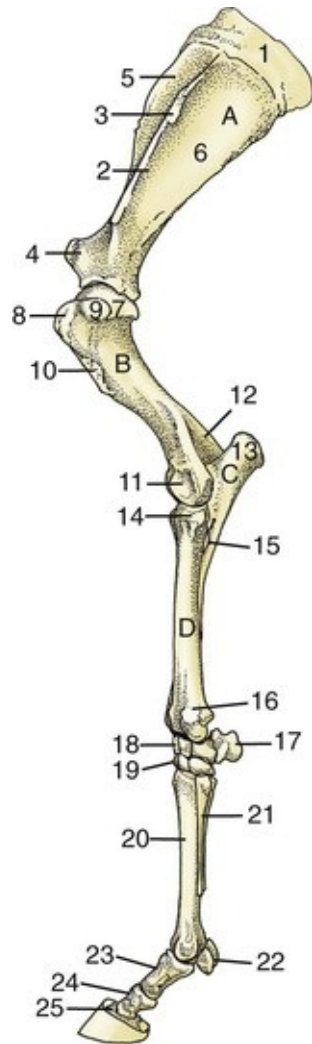
6-37 Equine: Deep Muscles Attaching

the Forelimb to the Trunk



1. Serratus ventralis
2. Subclavius
3. Pectoralis profundus
4. Rhomboideus
5. Axillary vessels turning around the first rib into the limb

6-38 Equine: Left Forelimb (Lateral View)

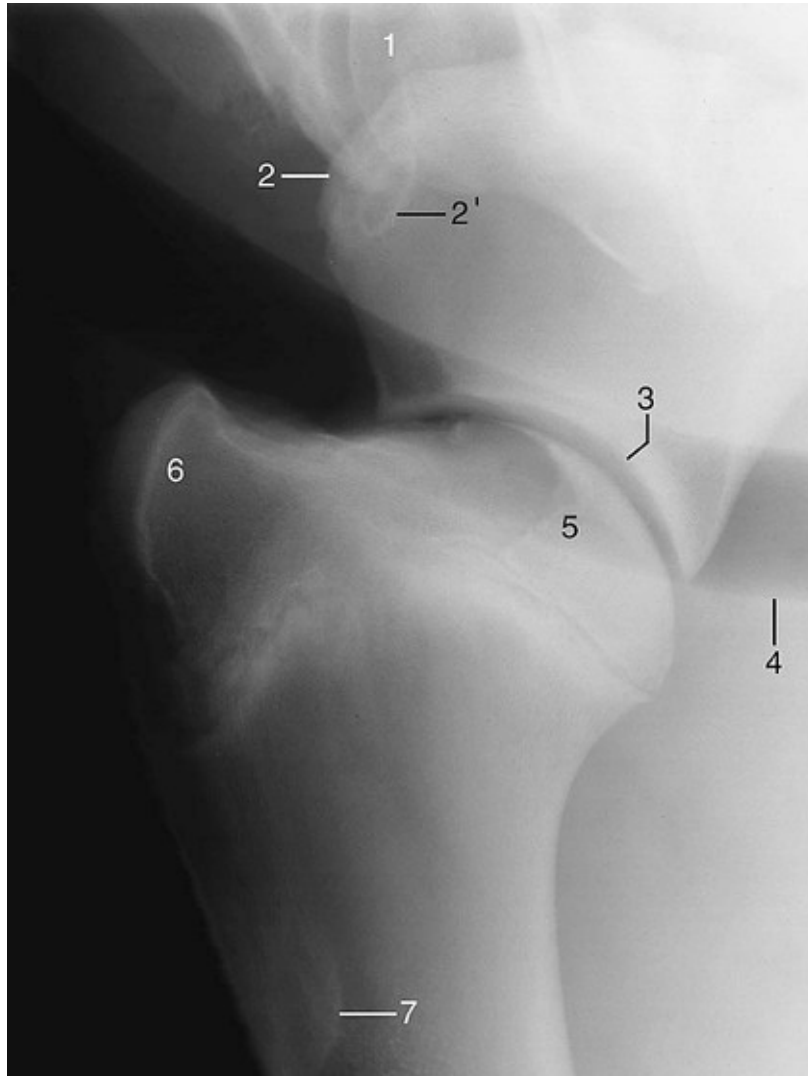


1. Scapular cartilage
2. Scapular spine
3. Tuberosity of scapular spine
4. Supraglenoid tubercle
5. Supraspinous fossae
6. Infraspinous fossae
7. Head of humerus
8. Cranial part of the greater tubercle
9. Caudal part of the greater tubercle
10. Deltoid tuberosity
11. Condyle
12. Olecranon fossa
13. Olecranon
14. Tubercle for lateral collateral ligament

15. Interosseous space
16. Lateral styloid process
17. Accessory carpal
18. Proximal row of carpal bones
19. Distal row of carpal bones
20. Large metacarpal (cannon/third metacarpal) bone
21. Small metacarpal (splint bone)
22. Proximal sesamoid bones
23. Proximal phalanx
24. Middle phalanx
25. Distal phalanx

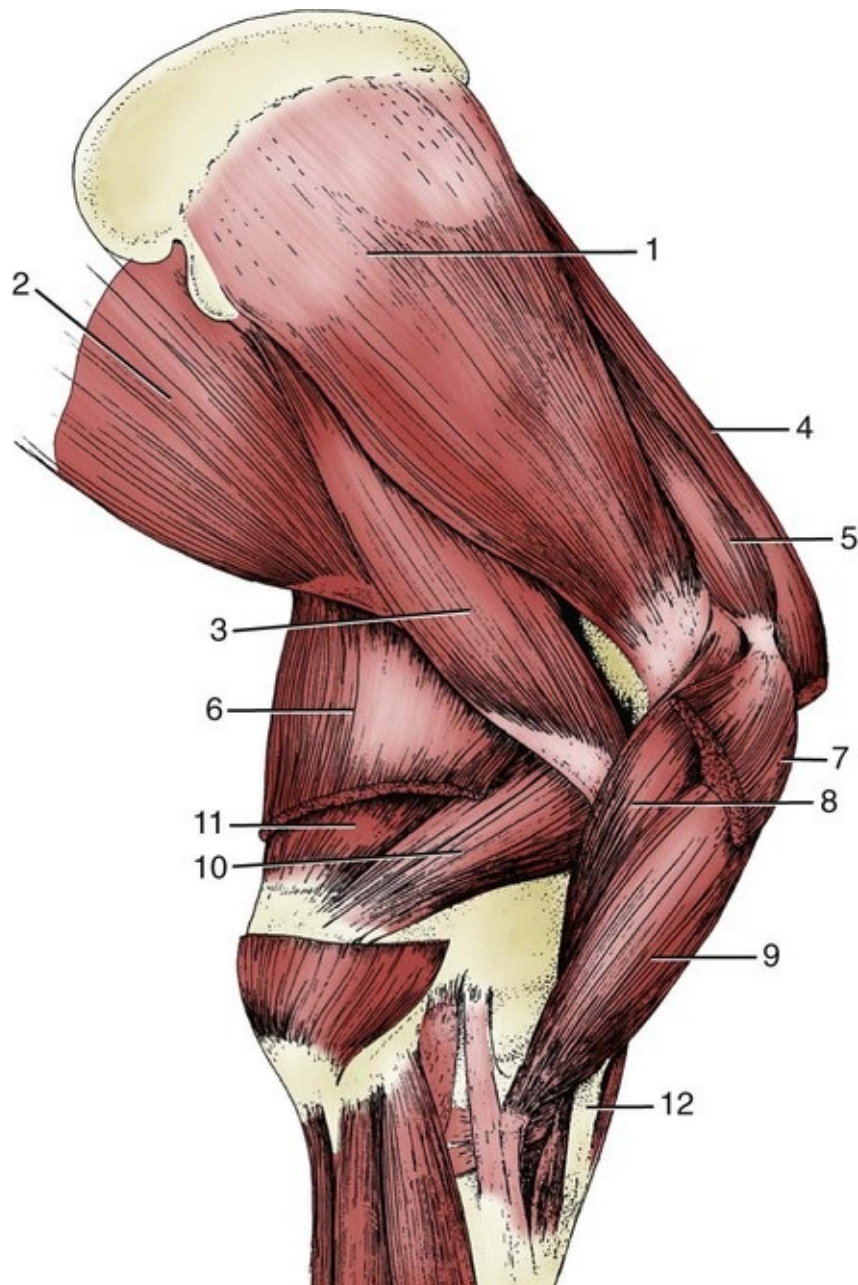
Note: *A*, Scapula; *B*, humerus; *C*, ulna; *D*, radius.

• 6-39 Equine: Shoulder Joint (Lateral View)



1. Sixth cervical vertebra
2. Supraglenoid tubercle of the scapula
- 2'. Coracoid process
3. Glenoid cavity
4. Trachea
5. Head of the humerus
6. Superimposed greater, lesser, and intertubercular tubercles
7. Deltoid tuberosity

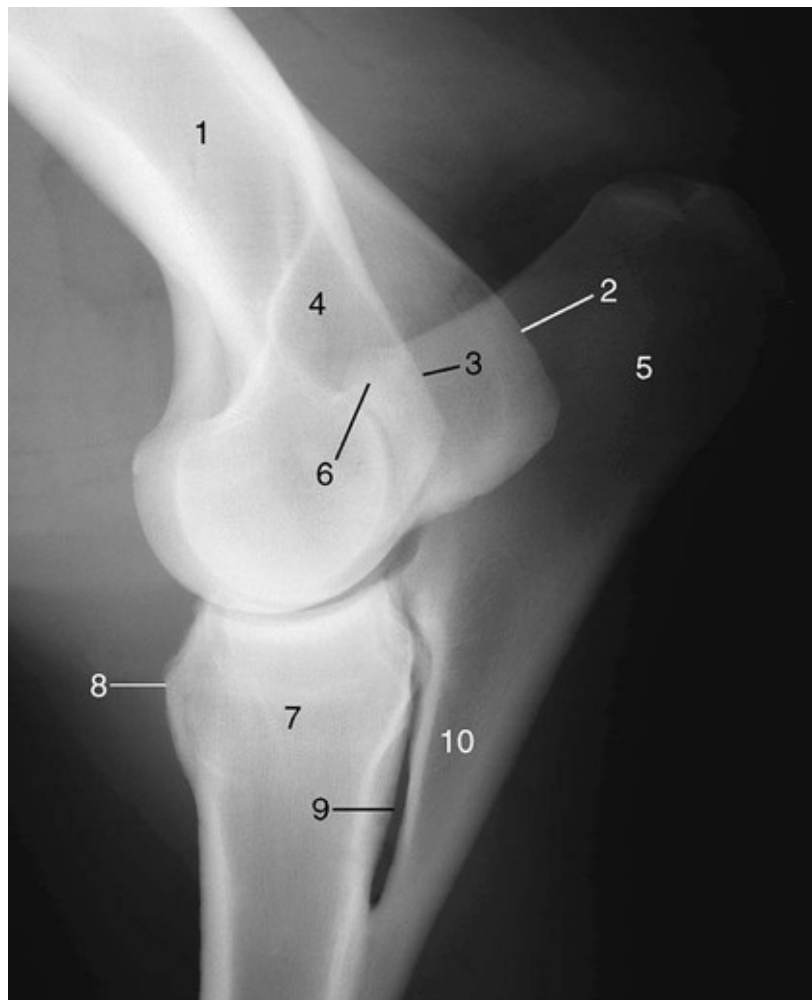
6-40 Equine Muscles: Medial Surface of the Left Shoulder and Arm



1. Subscapularis
2. Latissimus dorsi
3. Teres major

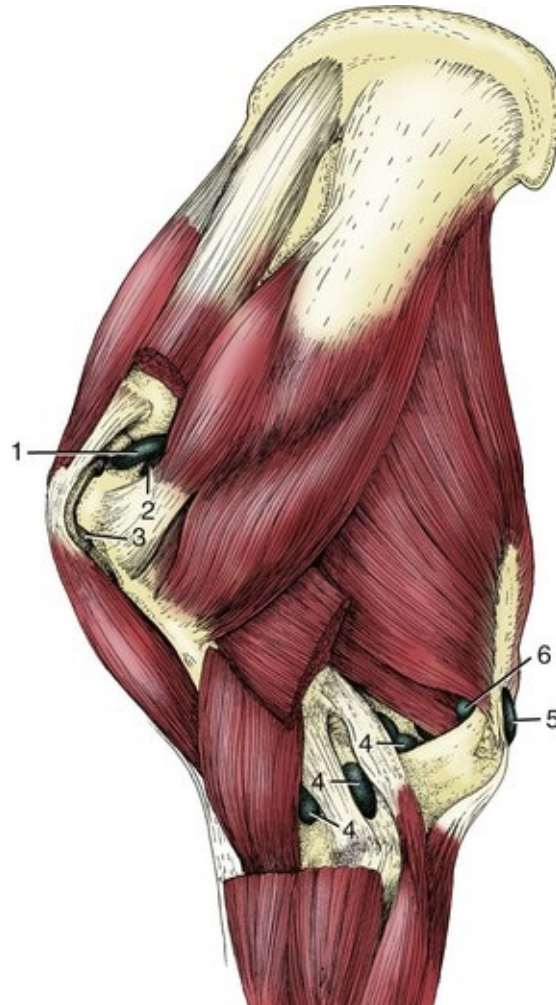
- 4. Subclavius
- 5. Supraspinatus
- 6. Tensor fasciae antebrachii
- 7. Deep pectoral
- 8. Coracobrachialis
- 9. Biceps
- 10. Medical head of the triceps
- 11. Long head of the triceps
- 12. Lacertus fibrosis

6-41 Equine: Elbow Joint (Lateral View)



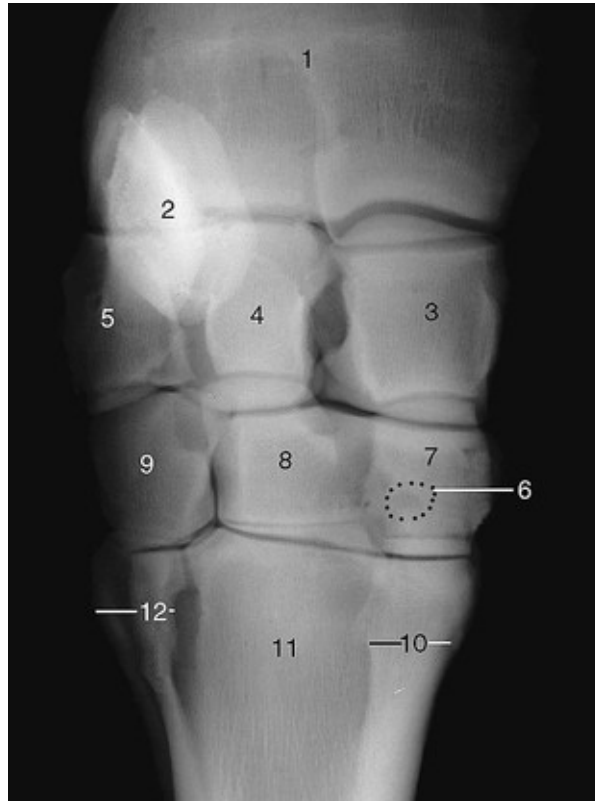
1. Humerus
2. Medial epicondyle
3. Lateral epicondyle
4. Olecranon fossa
5. Olecranon
6. Anconeal process of the olecranon
7. Radius
8. Radial tuberosity
9. Interosseous space
10. Ulna

• **6-42 Equine: Synovial Structures of the Left Shoulder and Elbow (Lateral View)**



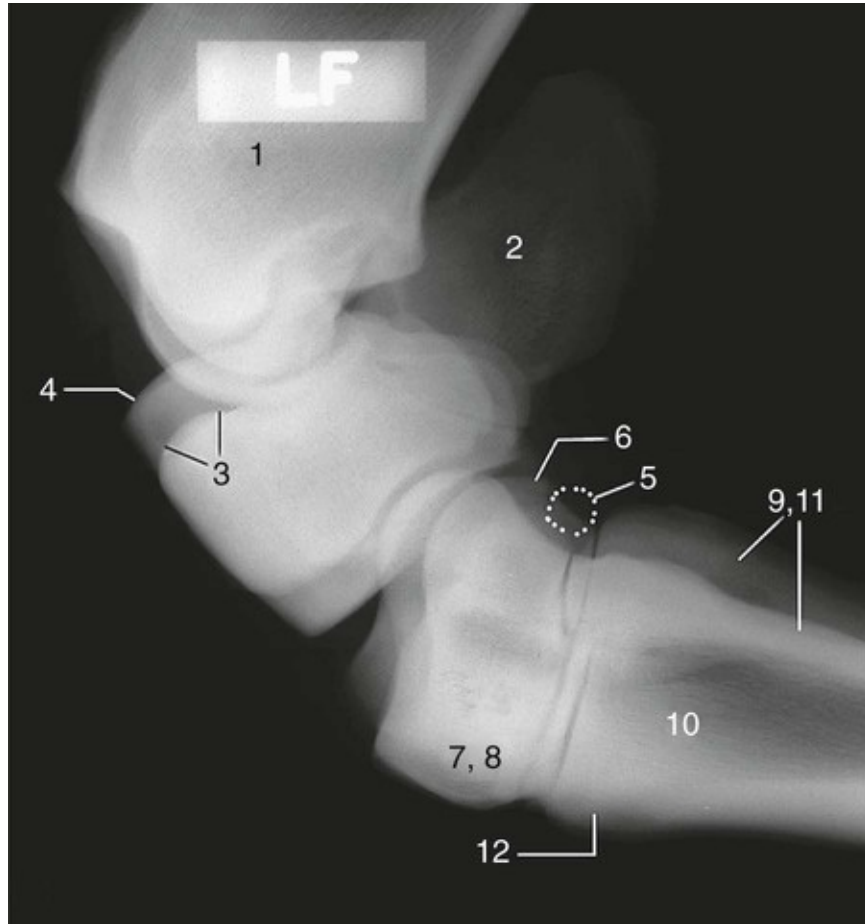
1. Shoulder joint capsule
2. Infraspinatus bursa
3. Intertubercular bursa (between the biceps tendon and humerus)
4. Elbow joint capsule
5. Subcutaneous olecranon bursa
6. Subtendinous olecranon bursa

6-43 Equine: Carpus (Dorsopalmar View)



1. Radius
2. Accessory carpal (faint)
3. Radial carpal
4. Intermediate carpal
5. Ulnar carpal
6. Position of first carpal (when present)
7. Second carpal
8. Third carpal
9. Fourth carpal
10. Second metacarpal
11. Third metacarpal
12. Fourth metacarpal

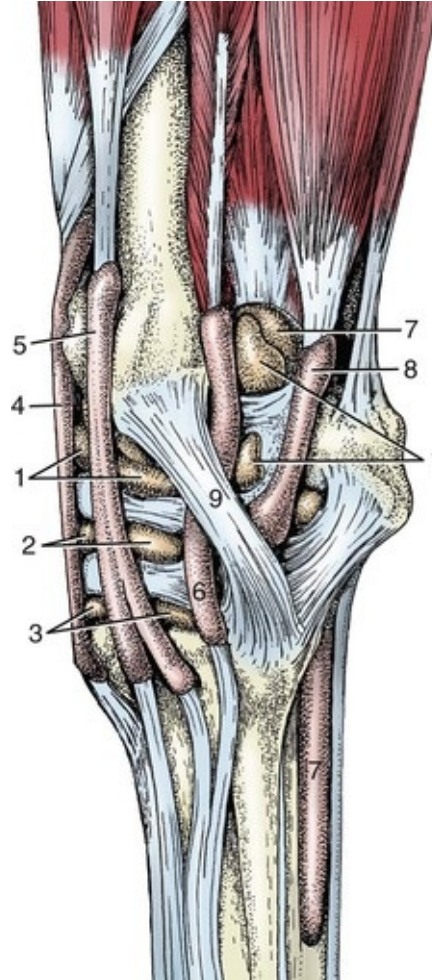
6-44 Equine: Carpus (Lateral View)



1. Radius
2. Accessory carpal (faint)
3. Radial carpal
4. Intermediate carpal
5. Position of the first carpal (when present)
6. Second carpals
7. Superimposed third and fourth carpal
8. Superimposed third and fourth carpal
9. Superimposed second metacarpal
10. Third metacarpal
11. Superimposed fourth metacarpal
12. Metacarpal tuberosity

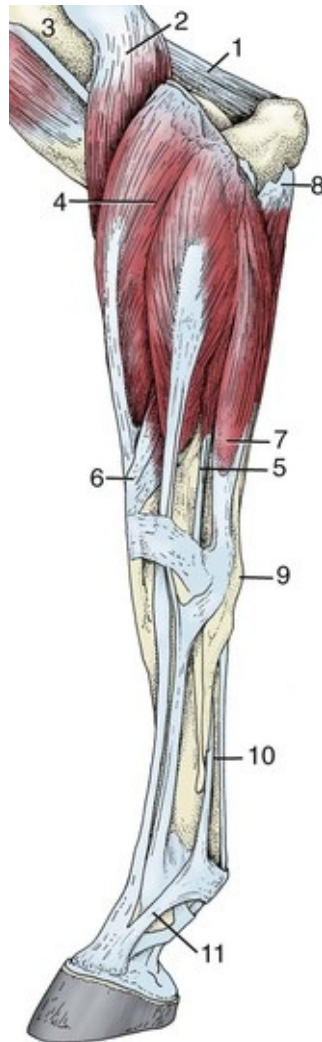
6-45 Equine: Synovial Structures of the

Left Carpus (Lateral View)



1. Antebrachioarpal
2. Midcarpal joint capsule
3. Carpometacarpal joint capsule
4. Tendon sheath of the extensor carpi radialis
5. Tendon sheath of the common digital extensor
6. Tendon sheath of the lateral digital extensor
7. Tendon sheath of the superficial and deep digital flexors (carpal sheath)
8. Tendon sheath of the ulnaris lateralis
9. Lateral collateral ligament

6-46 Equine: Distal Muscles of the Forelimb (Lateral View)



1. Anconeus
2. Brachialis
3. Deltoid tuberosity of the humerus
4. Extensor carpi radialis
5. Lateral digital extensor
6. Abductor digiti I longus
7. Ulnaris lateralis
8. Ulnar head of the deep digital flexor
9. Accessory carpal bone

11. Extensor branch of the interosseus

Q: Which nerves supply the digital flexors?

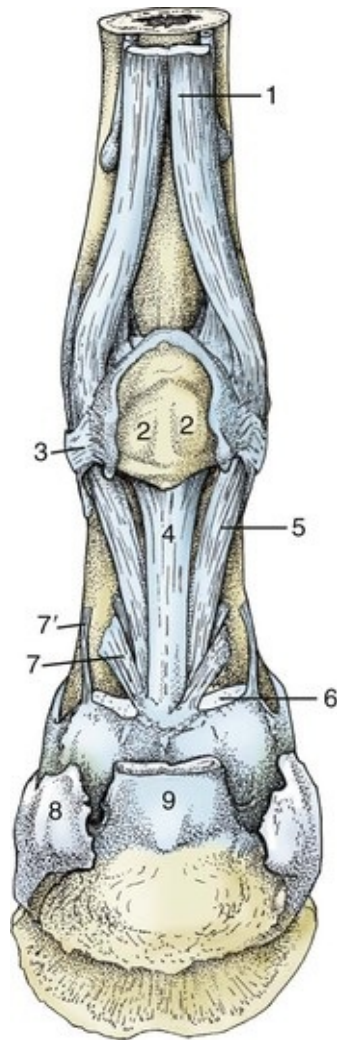


2. Cephalic vein
- 2'. Accessory cephalic veins
3. Radius
4. Accessory (check) ligament of the superficial digital flexor
5. Flexor carpi radialis, median artery, and medial and lateral palmar nerves
6. Flexor carpi ulnaris
7. Ulnar nerve and collateral ulnar vessels
8. Ulnaris lateralis
9. Superficial digital flexor
- 9'. Deep digital flexors
10. Lateral digital extensor
11. Common digital extensor
12. Abductor digiti I longus
13. Median artery, medial and lateral palmar nerves

Note: Transverse section of the right forearm is 6 cm proximal to the proximal border of the accessory carpal, demonstrating the topography of the accessory (check) ligament (4) of the superficial digital flexor; looking distally. The tendons or tendinous tissue (*hatched areas*) and muscle tissue (*gray areas*) are visualized.

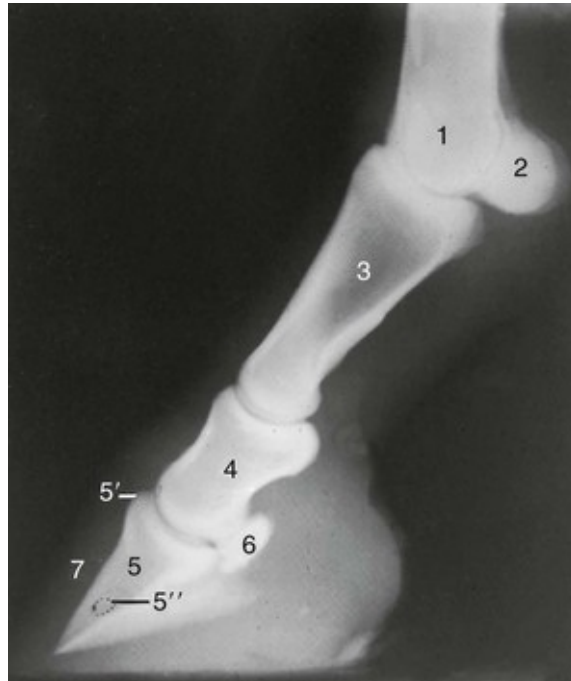
A: Median and ulnar nerves

6-48 Equine: Structures Supporting the Fetlock Joint



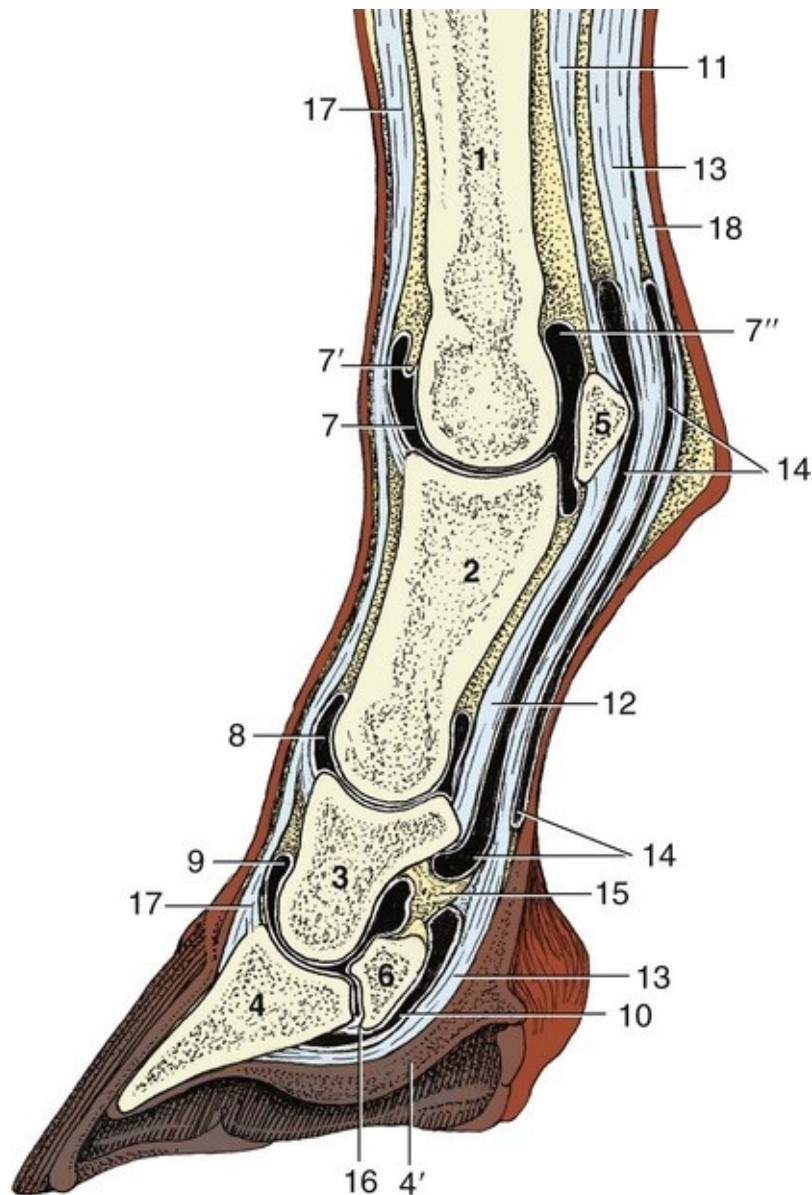
1. Interosseus
2. Proximal sesamoid bones connected by thick palmar ligament
3. Collateral sesamoidean ligament
4. Straight sesamoidean ligament
5. Oblique sesamoidean ligament
6. Stump of superficial flexor
7. Axial palmar ligament of pastern joint
- 7'. Abaxial palmar ligaments of pastern joint
8. Hoof cartilage
9. Stump of deep flexor

6-49 Equine: Fetlock Joint and Digit (Lateral View)



1. Third metacarpal bone
2. Proximal sesamoid bones
3. Proximal phalanx
4. Middle phalanx
5. Distal phalanx
- 5'. Extensor process
- 5''. Solar canal
6. Navicular bone
7. Wall of hoof

6-50 Equine: Axial Section of the Digit

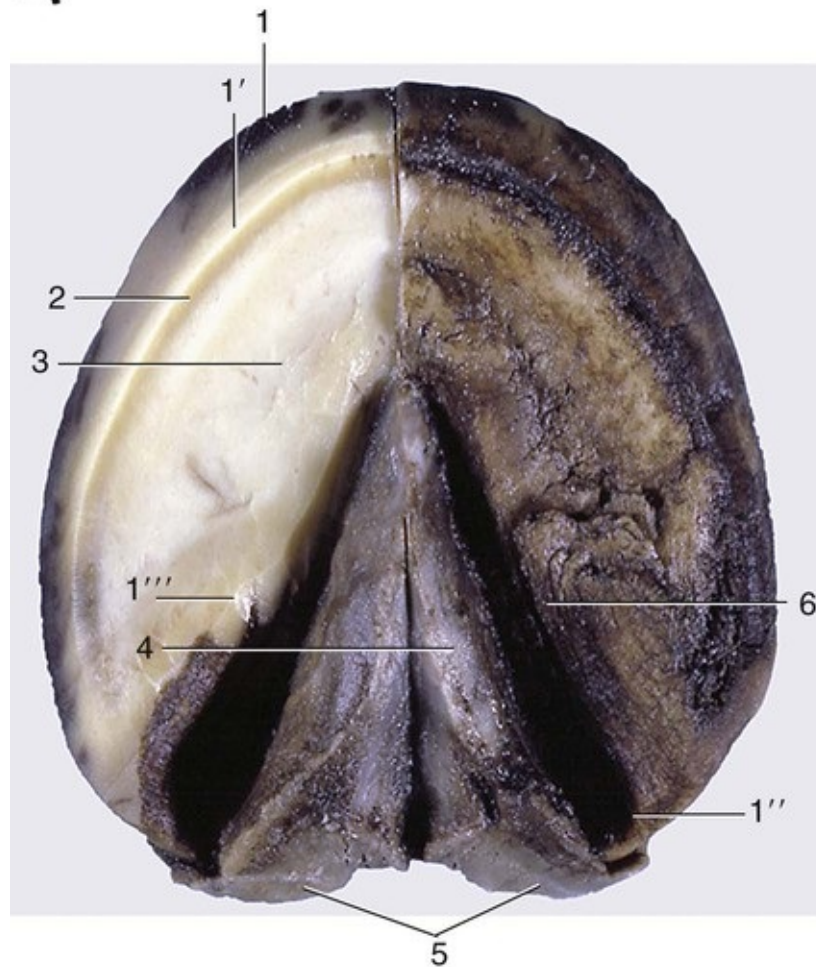


1. Third metacarpal bone
2. Proximal phalanx
3. Middle phalanx
4. Distal phalanx
- 4'. Digital cushion

5. Proximal sesamoid bone
6. Distal sesamoid (navicular) bone
7. Dorsal pouch of fetlock joint
- 7'. Capsular fold
- 7". Palmar pouch of fetlock joint
8. Dorsal pouch of pastern joint
9. Dorsal pouch of coffin joint
10. Navicular bursa
11. Interosseus
12. Straight sesamoidean ligament
13. Deep flexor tendon
14. Digital sheath
15. Collateral ligaments of the navicular bone
16. Distal navicular ligament
17. Common digital extensor tendon
18. Superficial flexor tendon

Note: Axial section of the digit with latex injected fetlock and pastern and coffin joints.

🐾 6-51 Equine: Ground Surface of the Hoof

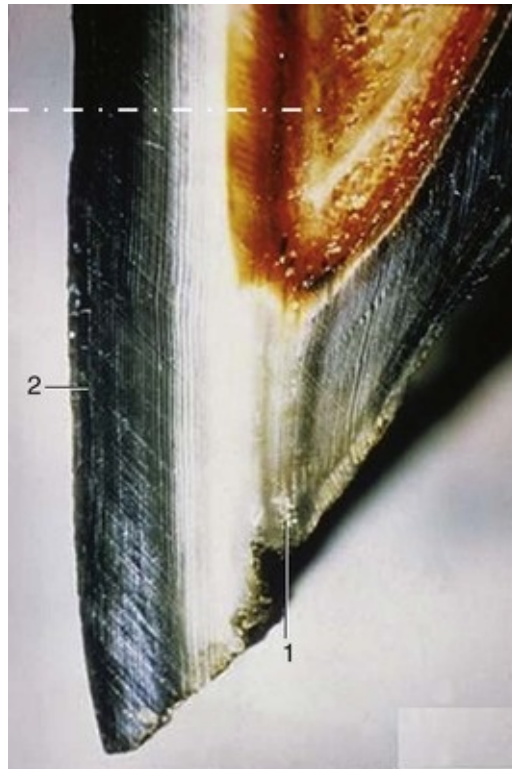


- 1. Wall
- 1'. Unpigmented part of the wall
- 1''. Heel
- 1'''. Bar
- 2. White line (union of the wall and sole)
- 3. Sole
- 4. Frog

- 5. Bulbs of the heels
- 6. Paracuneal groove

Note: Inset shows the direction of hoof nails that are placed at the white line indicated by 2 in the figure.

• 6-52 Equine: Sagittal Section of the Hoof



- 1. White line
- 2. Wall

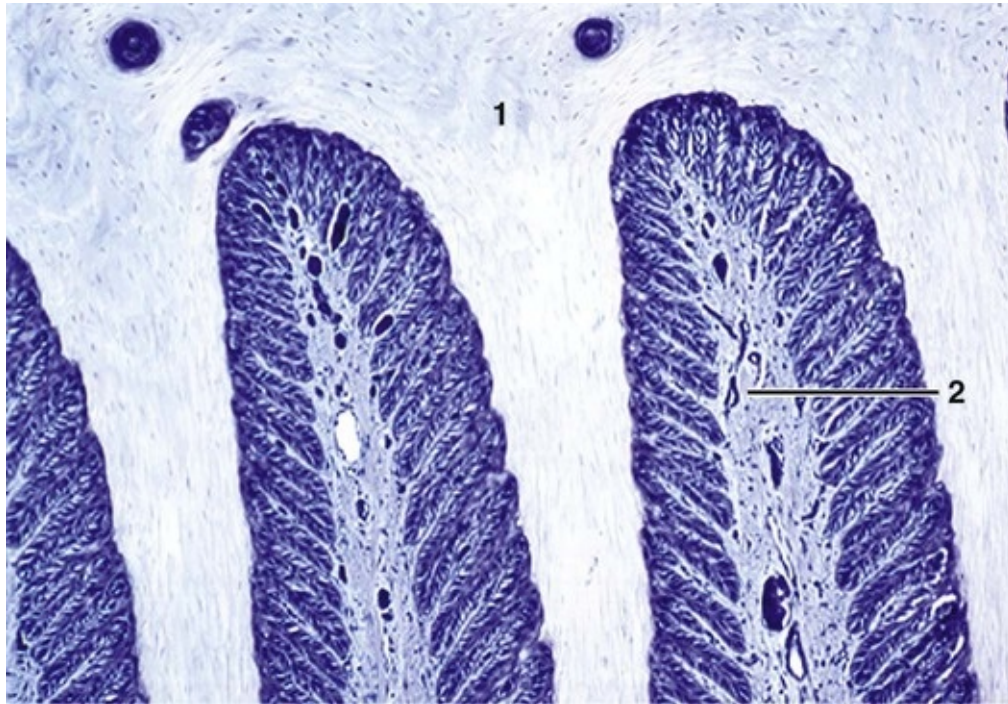
6-53 Equine: Transverse Section of the Hoof



1. Stratum externum
2. Stratum medium
3. Stratum internum

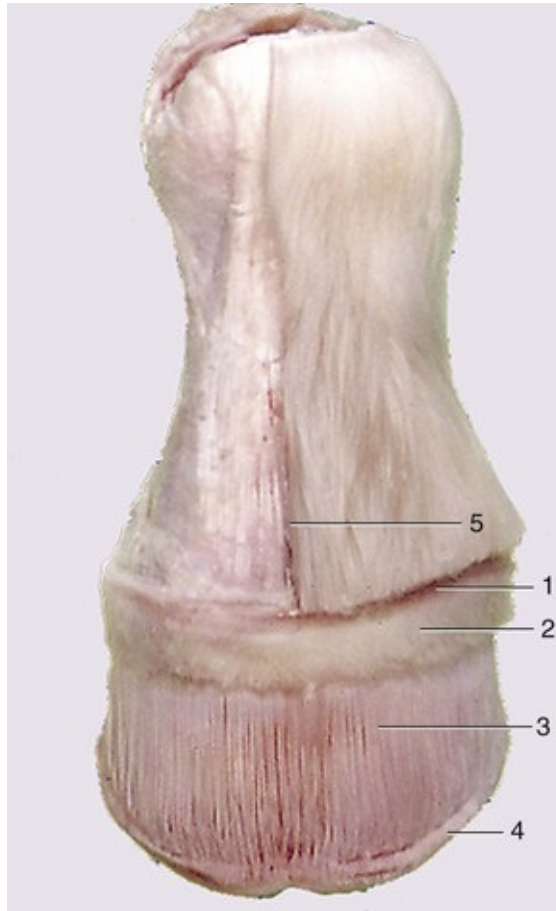
Note: Transverse section of the part of the hoof at the level indicated by the dotted line in Flash Card 6-52.

6-54 Equine: Dermal Lamellae



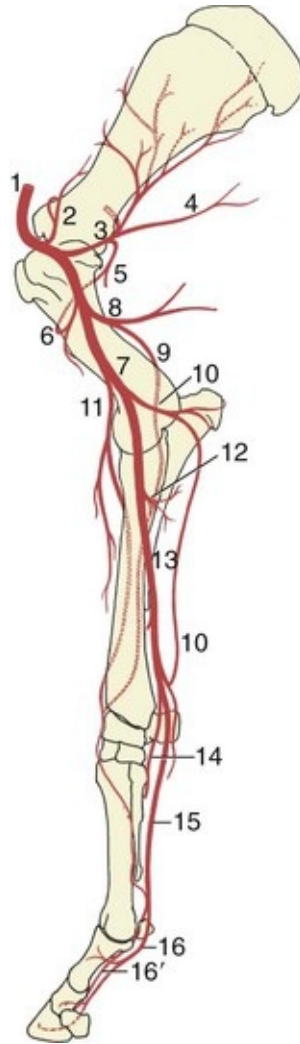
1. Primary horny laminae
2. Primary dermal laminae

6-55 Equine: Dermis Exposed by Removal of the Hoof



1. Perioplic dermis
2. Coronary dermis
3. Laminar dermis
4. Terminal papillae on the ends of the dermal laminae
5. Cut edge of skin

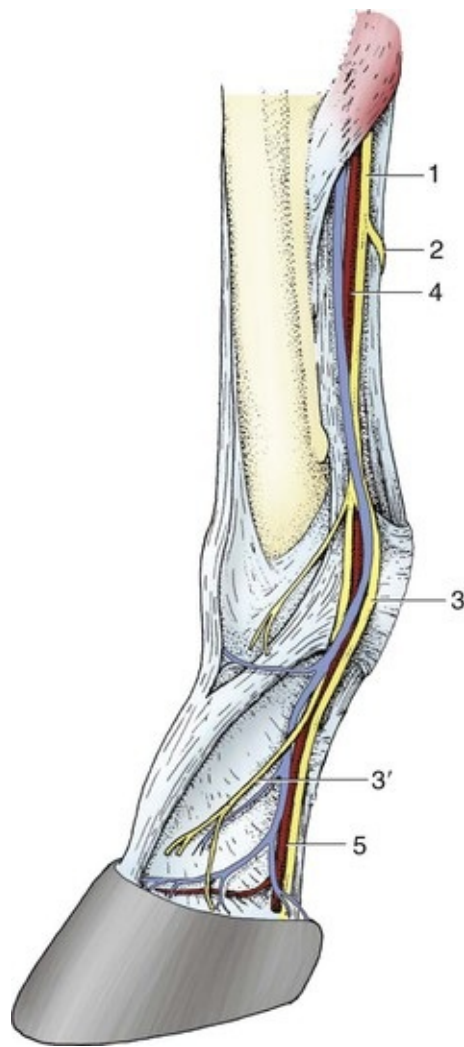
6-56 Equine: Major Arteries of the Right Forelimb (Medial View)



1. Axillary artery
2. Suprascapular artery
3. Subscapular artery
4. Thoracodorsal artery
5. Caudal circumflex humeral artery
6. Cranial circumflex humeral artery
7. Brachial artery
8. Deep brachial artery
9. Collateral radial artery
10. Collateral ulnar artery
11. Transverse cubital artery
12. Common interosseous artery

- 13. Median artery
- 14. Radial artery
- 15. Medial palmar artery
- 16. Medial digital artery
- 16'. Lateral digital artery

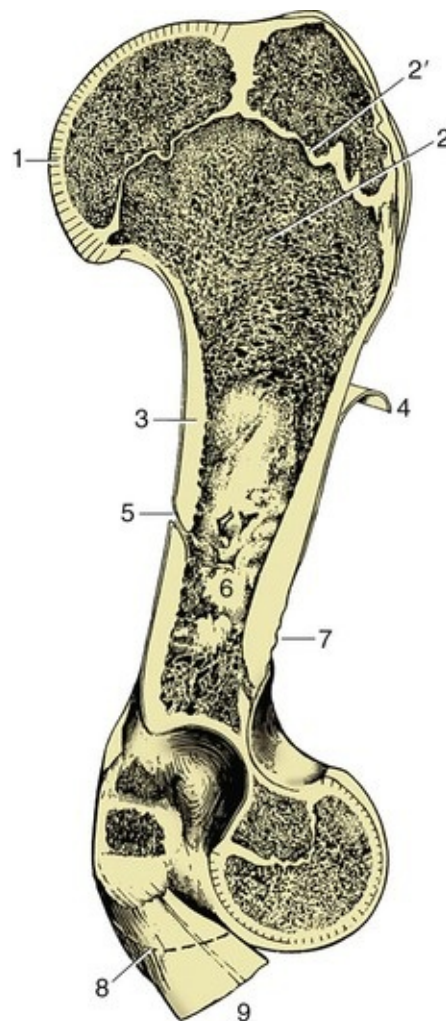
6-57 Equine: Medial Palmar Nerve



- 1. Medial palmar nerve
- 2. Communicating branch

- 3. Medial palmar digital nerve
- 3'. Dorsal branch
- 4. Medial palmar artery and vein
- 5. Medial digital artery and vein

6-58 Bovine: Humerus

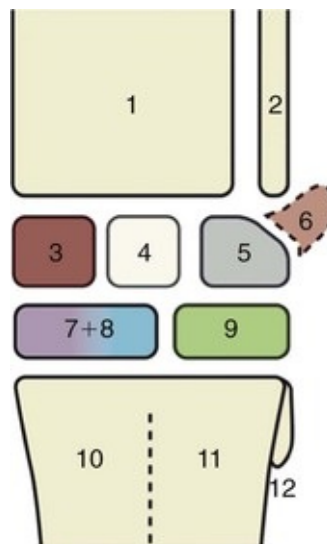


- 1. Articular cartilage
- 2. Spongy bone
- 2'. Epiphysial cartilage

3. Compact bone
4. Periosteum, partly reflected
5. Nutrient foramen
6. Marrow cavity
7. Roughened area for the attachment of muscle or ligament
8. Distal extent of the medial epicondyle
9. Tendon of origin of the carpal and digital flexors

Note: This long bone (humerus) is sectioned longitudinally.

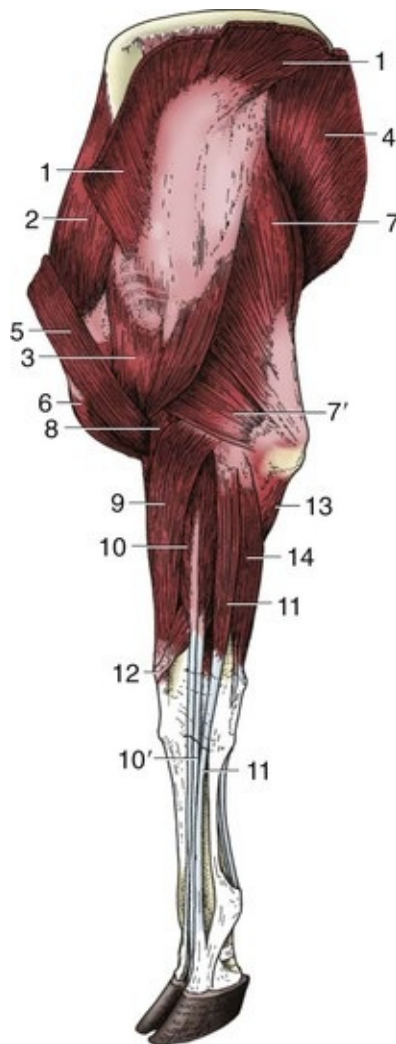
• 6-59 Bovine: Carpal Skeleton



1. Radius
2. Ulna
3. Radial carpal bone
4. Intermediate carpal bone
5. Ulnar carpal bone
6. Accessory carpal bone
7. Second carpal bone
8. Third carpal bone

- 9. Fourth carpal bone
- 10. Third metacarpal bone
- 11. Fourth metacarpal bone
- 12. Fifth metacarpal bone

6-60 Bovine: Muscles of the Left Forelimb (Lateral View)



- 1. Trapezius
- 2. Supraspinatus

3. Deltoideus
4. Latissimus dorsi
5. Brachiocephalicus, cleidobrachialis
6. Biceps
7. Long head of the triceps
- 7'. Lateral head of the triceps
8. Brachialis
9. Extensor carpi radialis
10. Common digital extensor
- 10'. Tendon of lateral belly of common digital extensor
11. Lateral digital extensor
12. Abductor digiti I longus
13. Ulnar head of the deep digital flexor
14. Ulnaris lateralis

• 6-61 Bovine: Foot (Dorsopalmar View)



- 1. Metacarpal bone
- 1'. Median septum
- 1''. Distal metacarpal canal
- 2. Proximal sesamoid bones
- 3. Dewclaw
- 3'. Rudimentary phalanx within dewclaw
- 4. Proximal phalanx
- 5. Middle phalanx

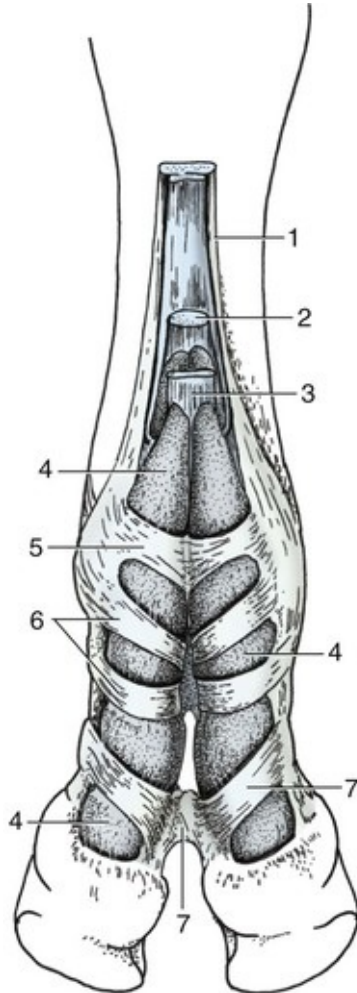
- 6. Navicular bone
- 7. Distal phalanx

• 6-62 Bovine: Foot (Lateromedial View)



- 1. Metacarpal bones
- 2. Proximal sesamoid bones
- 3. Proximal phalanx
- 4. Middle phalanx
- 5. Navicular bone
- 6. Distal phalanx

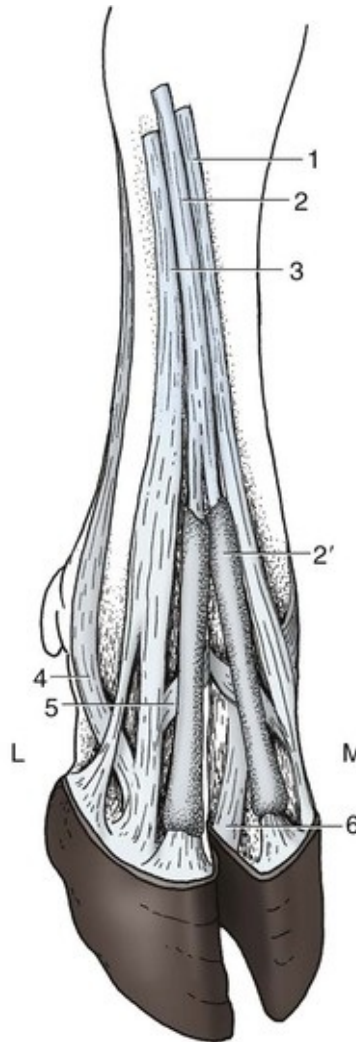
6-63 Bovine: Forefoot (Palmar View)



1. Interosseus
2. Deep digital flexor
3. Superficial digital flexor
4. Digital sheath
5. Annular ligament of fetlock joint
6. Digital annular ligaments
7. Distal interdigital ligament, deep part
- 7'. Superficial part

Note: Superficial dissection.

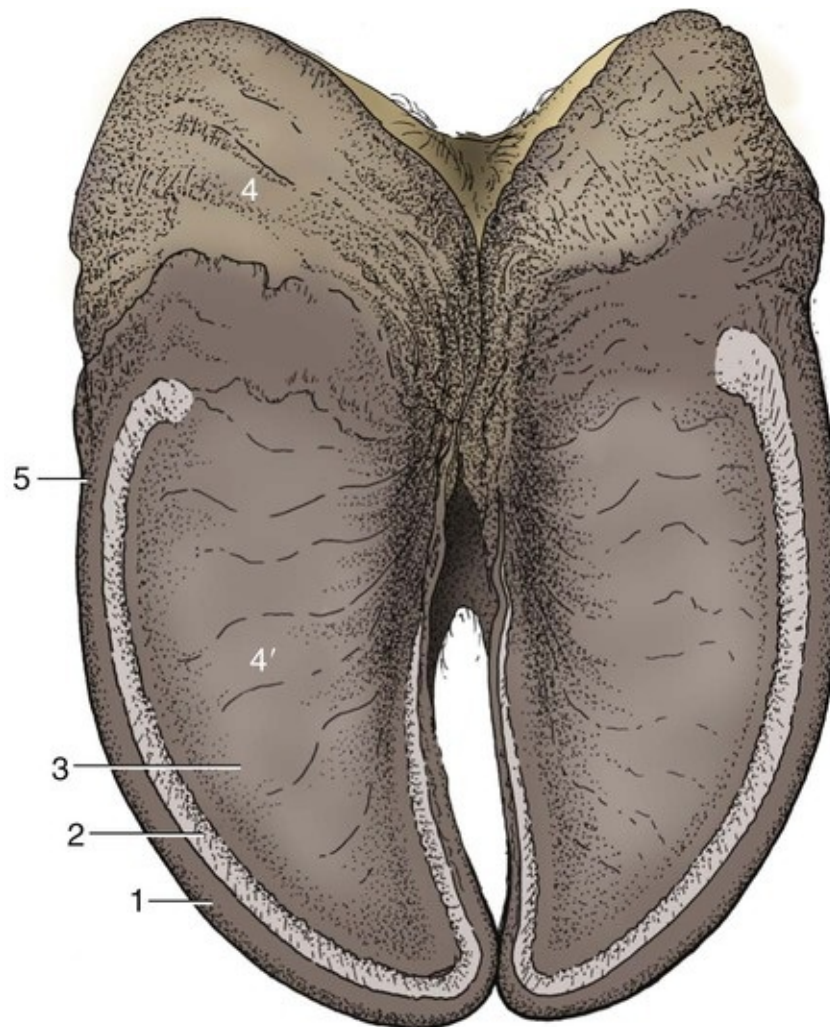
• 6-64 Bovine: Right Forefoot (Dorsal View)



1. Medial tendon of common digital extensor to the medial digit
2. Common digital extensor
- 2'. Its sheaths
3. Lateral digital extensor
4. Abaxial extensor branch of the interosseus to the lateral digital extensor

5. Axial extensor branch of the interosseus to the lateral digital extensor
6. Common axial collateral ligament

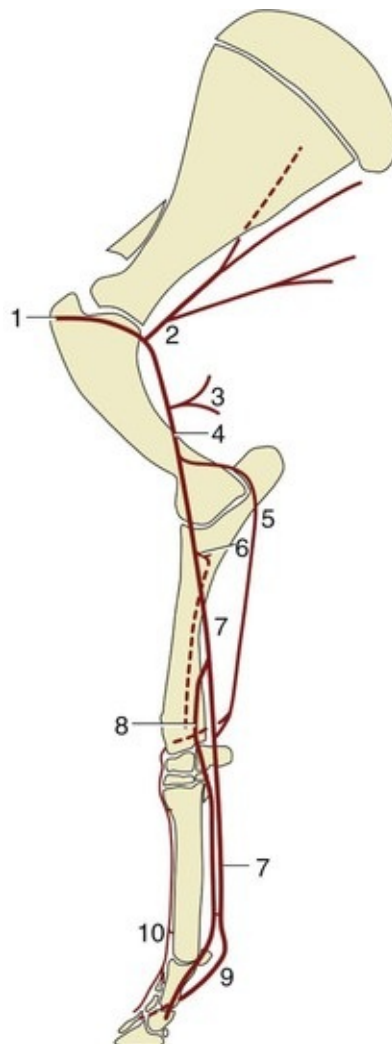
• 6-65 Bovine: Forefoot, Ground Surface of the Hoofs



1. Wall
2. White line
3. Sole

- 4. Horny digital pad of hoof (bulb)
- 4'. Apex of digital pad
- 5. Abaxial groove on the wall, dividing the wall from the bulb

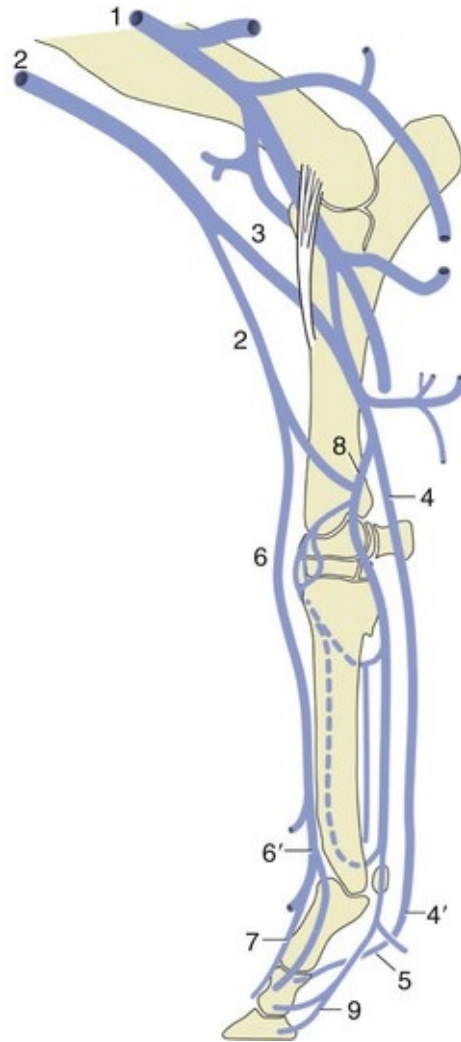
• 6-66 Bovine: Principal Arteries of the Right Forelimb (Medial View)



- 1. Axillary artery
- 2. Subscapular artery

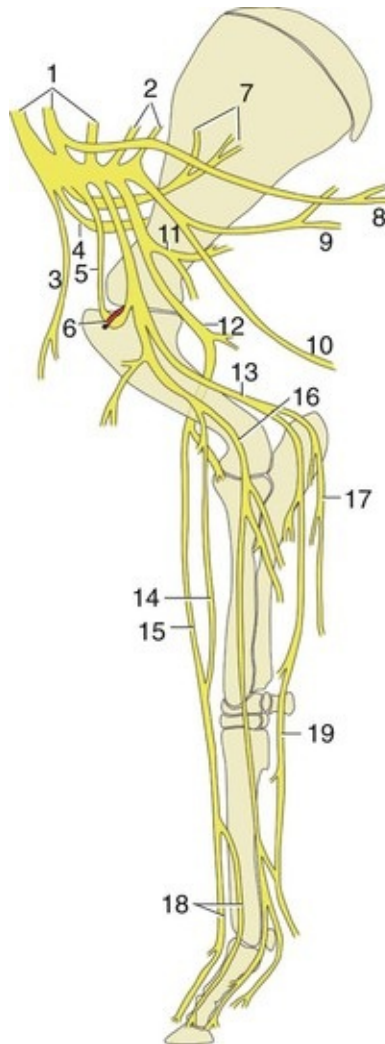
3. Deep brachial artery
4. Brachial artery
5. Collateral ulnar artery
6. Common interosseous artery
7. Median artery
8. Radial artery
9. Palmar common digital artery III
10. Dorsal common digital artery III

• **6-67 Bovine: Principal Veins of the Right Forelimb (Medial View)**



1. Brachial vein
2. Cephalic vein
3. Median cubital vein
4. Median vein
- 4'. Palmar common digital vein III
5. Axial palmar digital veins
6. Accessory cephalic vein
- 6'. Dorsal common digital vein III
7. Dorsal digital veins
8. Radial vein
9. Abaxial palmar digital veins

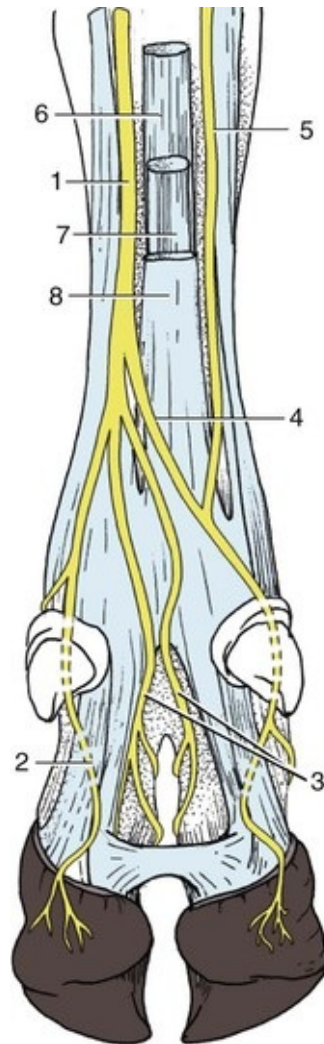
6-68 Bovine: Nerves of the Forelimb (Medial View)



- 1, 2. Roots of the brachial plexus
3. Cranial pectoral nerve
4. Suprascapular nerve
5. Musculocutaneous nerve
6. Axillary artery
7. Subscapular nerve
8. Long thoracic nerve

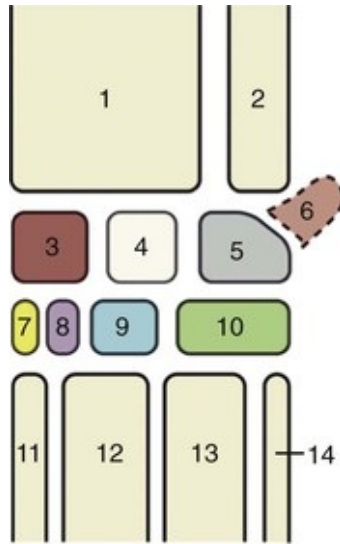
9. Thoracodorsal nerve
10. Lateral thoracic nerve
11. Axillary nerve
12. Radial nerve
13. Ulnar nerve
14. Medial cutaneous antebrachial nerve
15. Superficial branch of radial nerve
16. Median nerve
17. Caudal cutaneous antebrachial nerve
18. Dorsal common digital nerves III and II
19. Palmar branch of ulnar nerve

• **6-69 Bovine: Principal Nerves of the Right Forefoot (Palmar View)**



1. Median nerve
2. Palmar abaxial digital nerve
3. Palmar axial digital nerves
4. Communicating branch
5. Palmar branch of ulnar nerve
6. Interosseus
7. Deep flexor tendon
8. Superficial flexor tendon

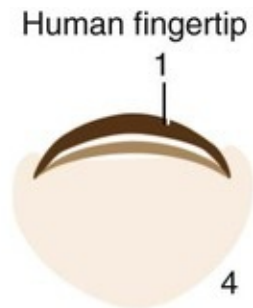
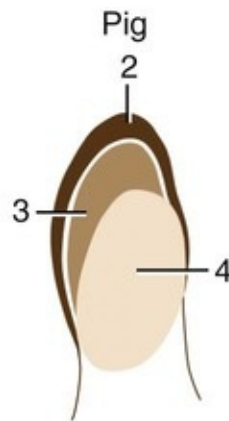
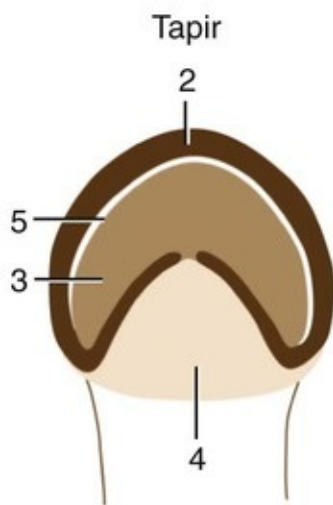
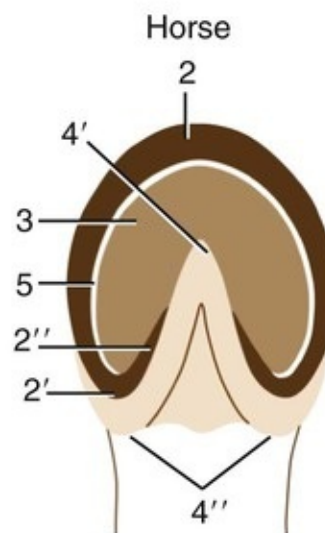
➤ 6-70 Porcine: Carpal Skeleton



1. Radius
2. Ulna
3. Radial carpal bone
4. Intermediate carpal bone
5. Ulnar carpal bone
6. Accessory carpal bone
7. First carpal bone
8. Second carpal bone
9. Third carpal bone
10. Fourth carpal bone
11. Second metacarpal bone
12. Third metacarpal bone
13. Fourth metacarpal bone
14. Fifth metacarpal bone

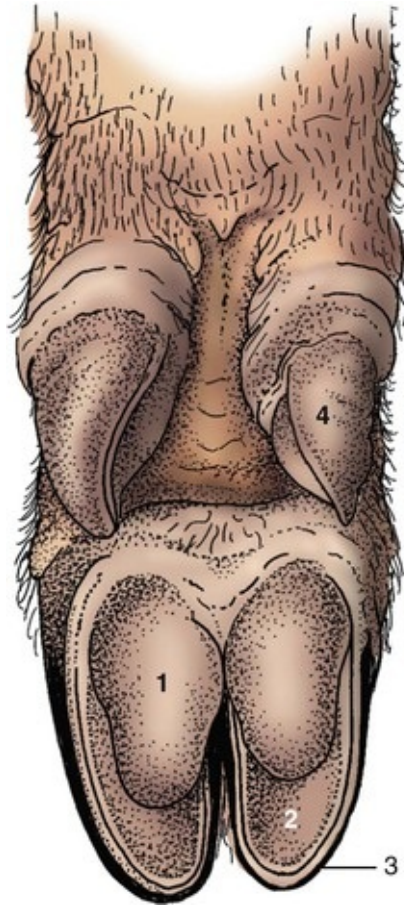
Note: Left carpus.

6-71 Porcine and Other Species Phylogenetic Development: Horn Structures Associated with the Distal Phalanx



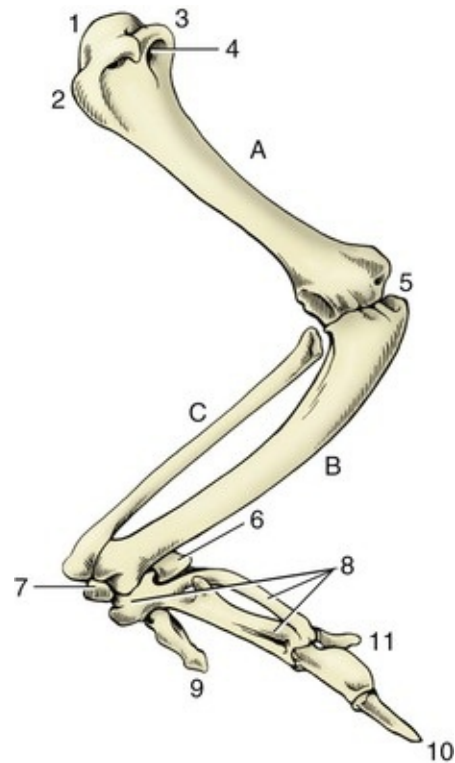
1. Nail
2. Wall of hoof
- 2'. Heel (horse)
- 2''. Bar (horse)
3. Sole
4. Footpad (bulb in the human finger and pig)
- 4'. Frog (horse)
- 4''. Bulbs of the heels (horse)
5. White line

6-72 Porcine: Palmar Surface of the Foot



1. Hoof digital pad
2. Sole of hoof
3. Wall of hoof
4. Hoof of accessory digit

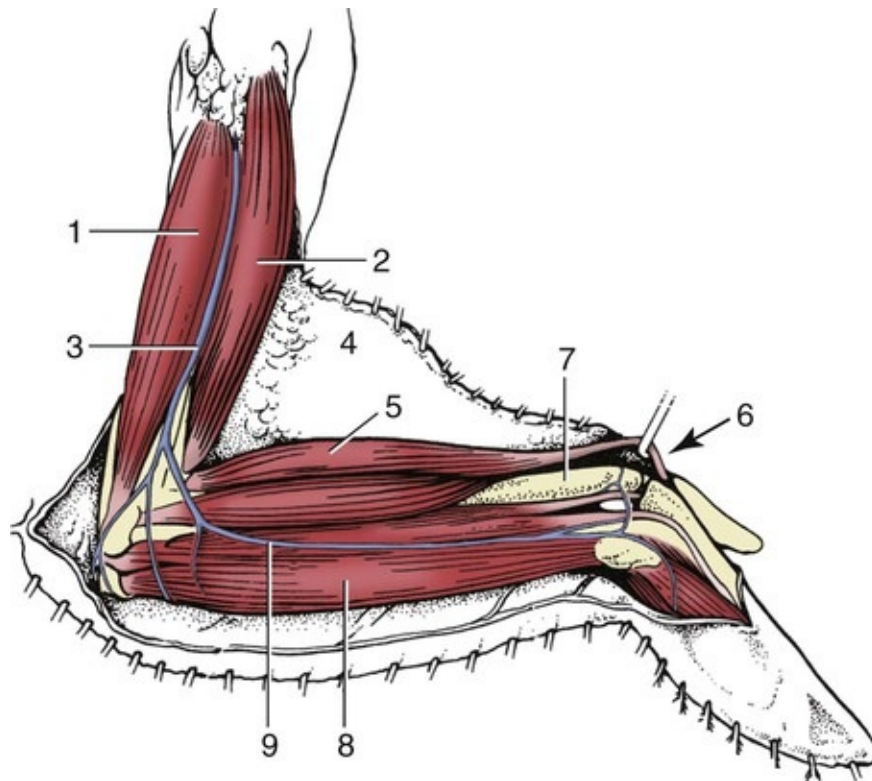
6-73 Avian: Skeleton of the Left Wing



1. Head of humerus
2. Dorsal tubercle
3. Ventral tubercle
4. Pneumatic foramen
5. Elbow joint
6. Ulnar carpal
7. Radial carpal
8. Carpometacarpals
- 9-11. II, III, and IV digits

Note: Partially extended laterally; dorsal surface. **A**, Humerus; **B**, ulna; **C**, radius.

6-74 Avian: Superficial Dissection of the Laterally Extended Left Wing



1. Triceps
2. Biceps
3. Brachial vein
4. Skin fold (propatagium)
5. Extensor metacarpi radialis
6. Carpometacarpal joint
7. Subcutaneous part of radius
8. Flexor carpi ulnaris
9. Cutaneous ulnar (wing) vein

Note: Ventral surface

The Hind Limb

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7-45 Bovine: Major Veins of the Hind Limb

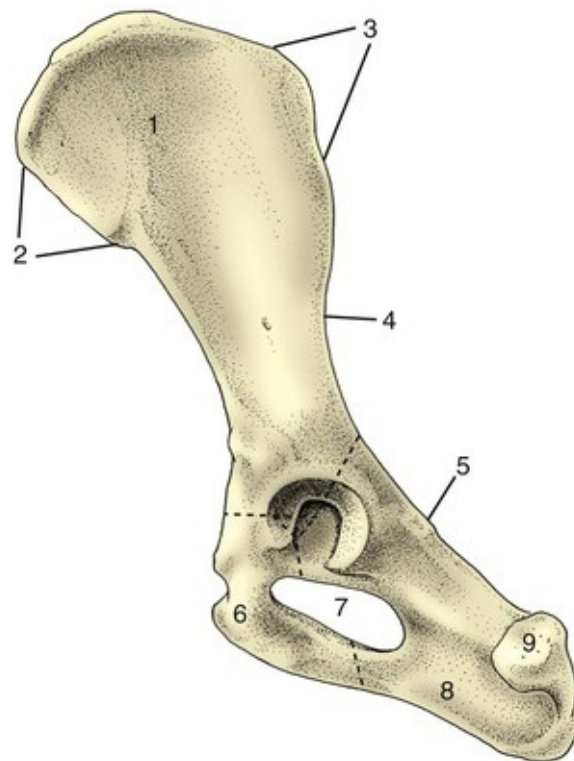
7-46 Bovine: Lymph Nodes of the Pelvis and Hind Limb

7-47 Bovine: Nerves of the Right Hind Limb

7-48 Porcine: Bones of the Tarsal Skeleton

7-49 Porcine: Lymph Flow of the Hind Limb

↻ **7-1 Canine: Hip Bone (Left Lateral View)**

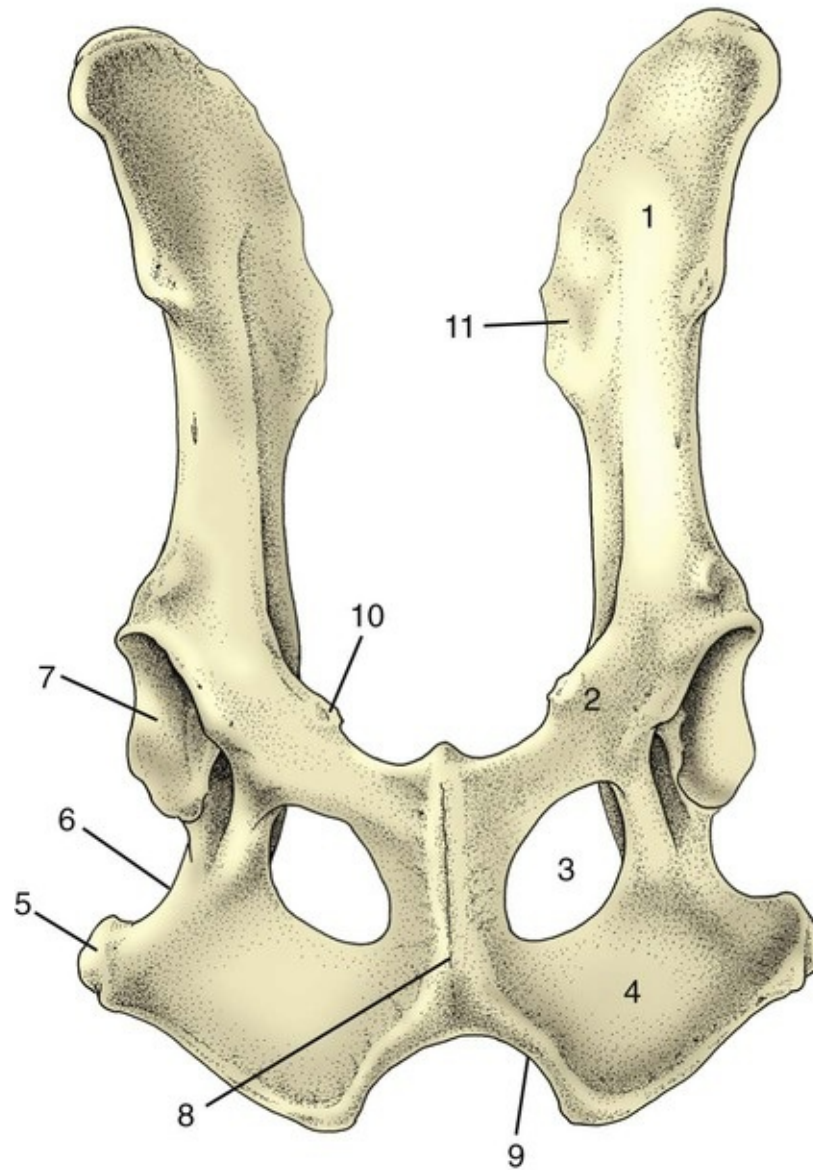


1. Wing of ilium
2. Coxal tuberosity
3. Sacral tuberosity
4. Greater sciatic notch
5. Ischial spine

6. Pubis
7. Obturator foramen
8. Ischium
9. Ischial tuber

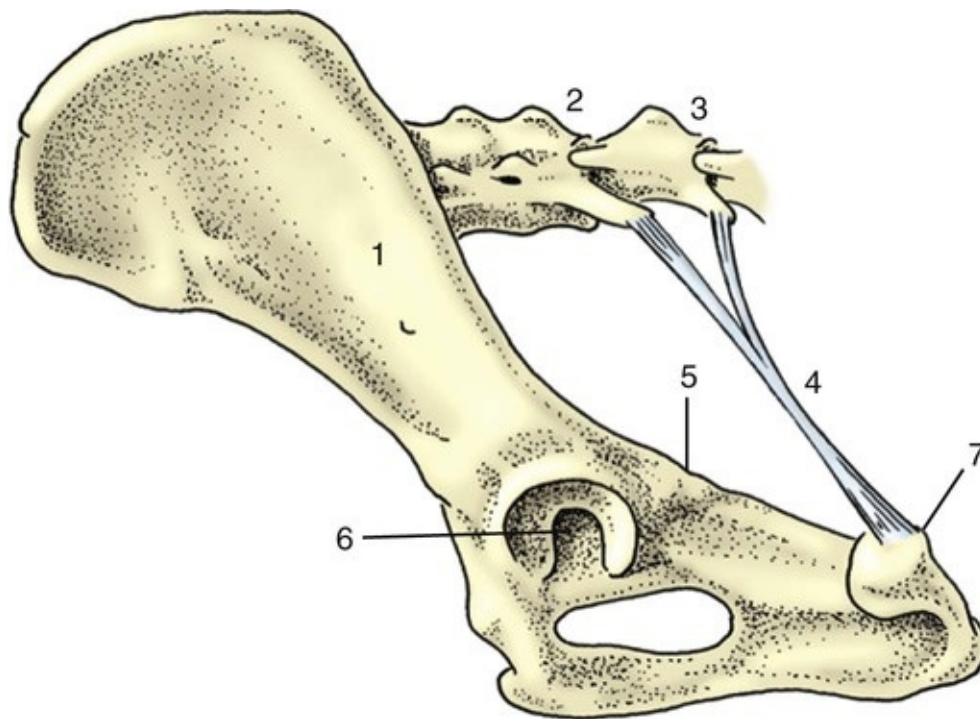
Note: The *broken lines* give the approximate extents of ilium, pubis, and ischium.

↻ 7-2 Canine: Hip Bone (Ventral View)



1. Wing of ilium
2. Pubis
3. Obturator foramen
4. Ischium
5. Ischial tuber
6. Lesser sciatic notch
7. Acetabulum
8. Pelvic symphysis
9. Ischial arch
10. Iliopubic eminence
11. Auricular articular surface

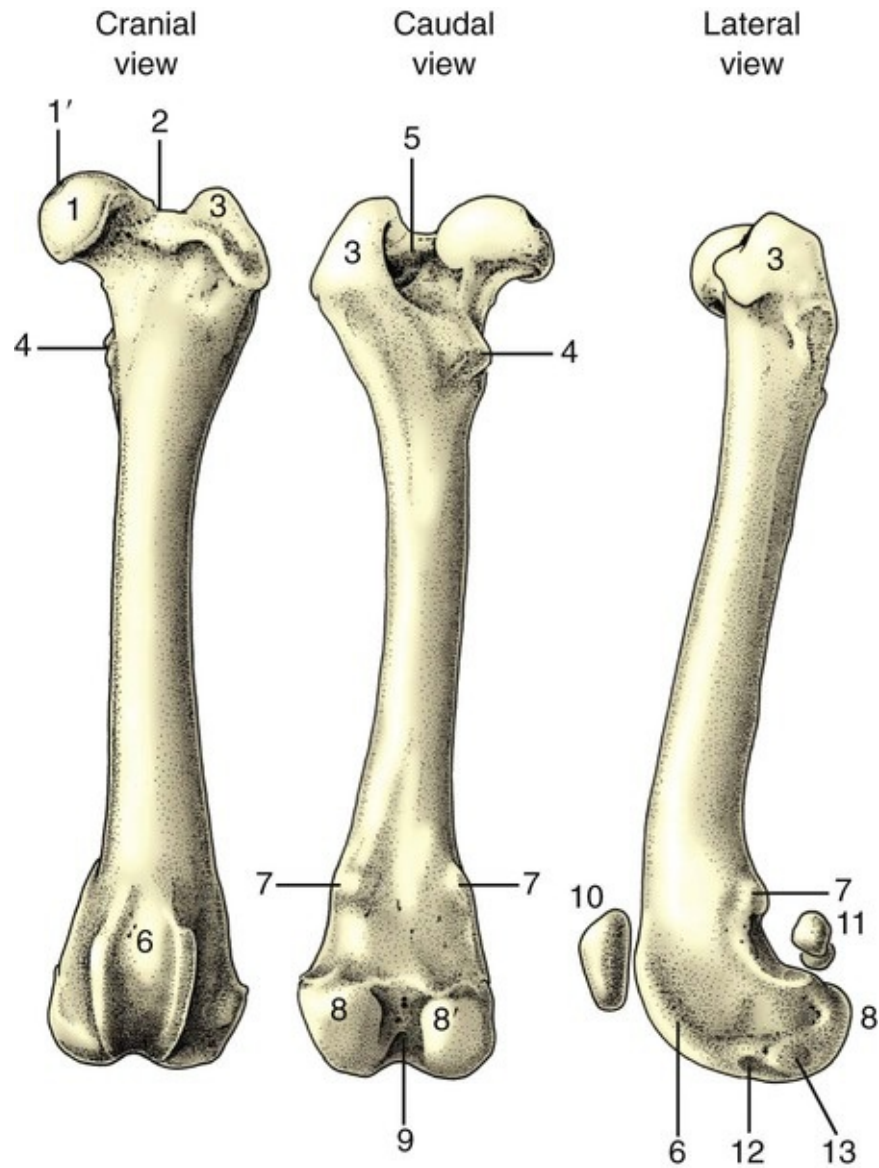
↻ 7-3 Canine: Sacrotuberous Ligament



1. Ilium
2. Sacrum
3. Caudal vertebra(e)
4. Sacrotuberous ligament
5. Ischial spine
6. Acetabulum
7. Ischial tuber

↻ 7-4 Canine: Left Femur

Q: Which structure attaches to 1'?

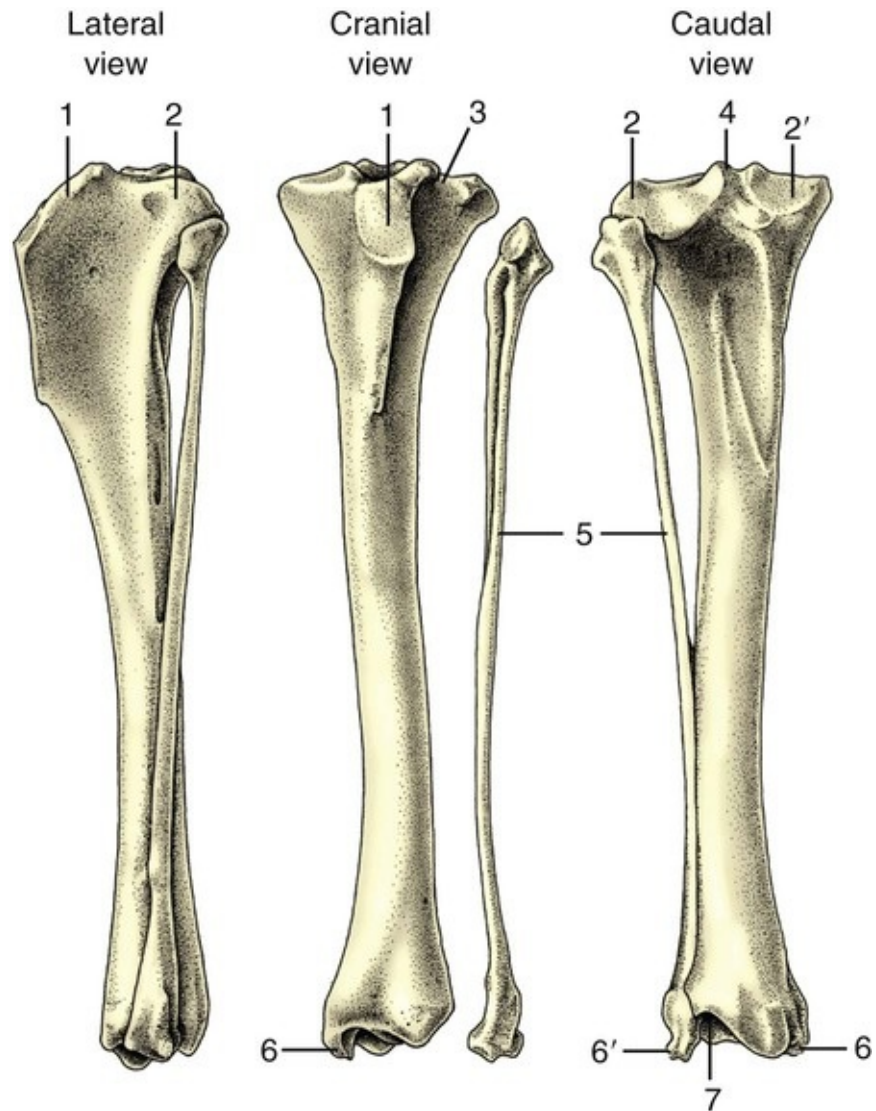


1. Head
- 1'. Fovea
2. Neck
3. Greater trochanter
4. Lesser trochanter
5. Trochanteric fossa
6. Trochlea
7. Supracondylar tuberosities
8. Lateral condyle
- 8'. Medial condyle

- 9. Intercondylar fossa
- 10. Patella
- 11. Sesamoid bones (in gastrocnemius)
- 12. Extensor fossa
- 13. Fossa for popliteus

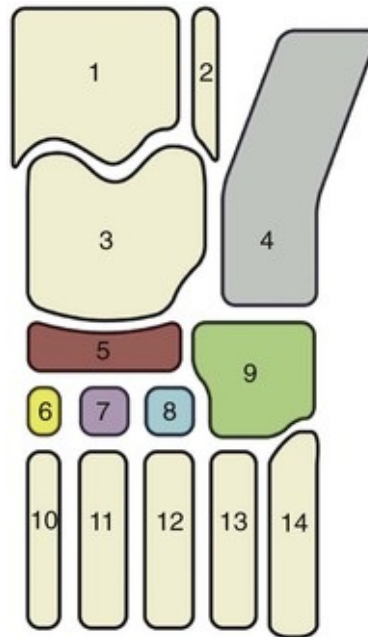
A: Ligament of the femoral head.

↻ **7-5 Canine: Left Tibia and Fibula**



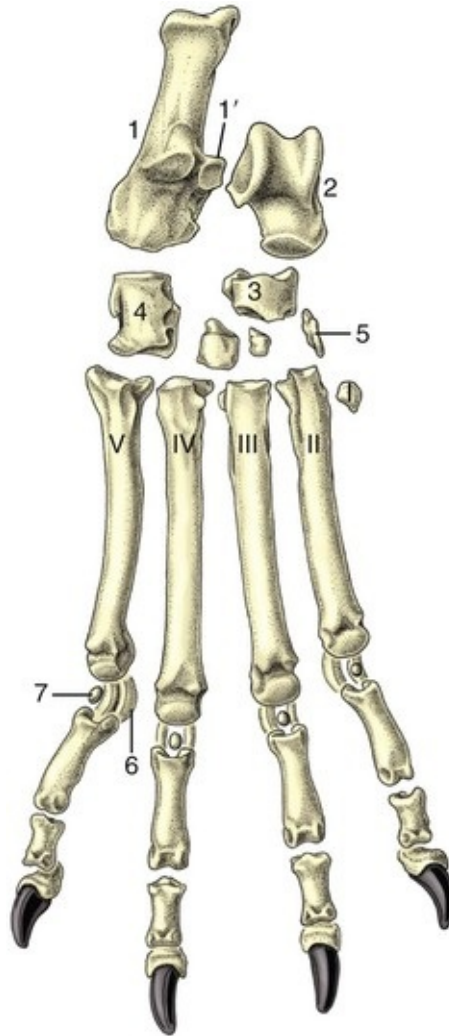
1. Tibial tuberosity
2. Lateral condyle
- 2'. Medial condyle
3. Extensor groove
4. Intercondylar eminence
5. Fibula
6. Medial malleolus
- 6'. Lateral malleolus
7. Cochlea

7-6 Canine: Bones of the Tarsal Skeleton



1. Tibia
2. Fibula
3. Talus
4. Calcaneus
5. Central tarsal bone
6. First tarsal bone
7. Second tarsal bone
8. Third tarsal bone
9. Fourth tarsal bone
10. First metatarsal bone
11. Second metatarsal bone
12. Third metatarsal bone
13. Fourth metatarsal bone
14. Fifth metatarsal bone

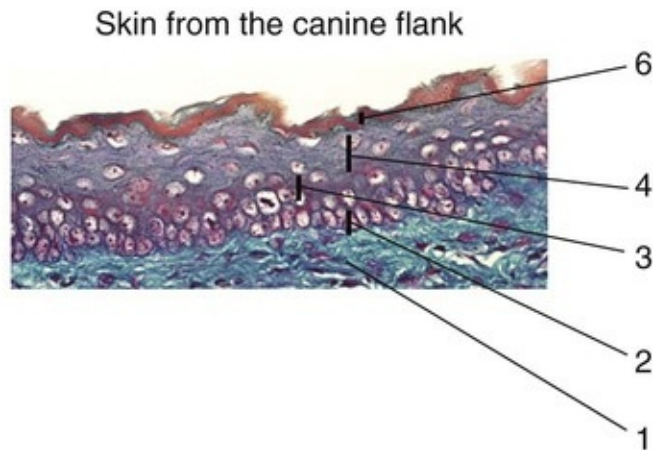
7-7 Canine: Right Pes (Dorsal View)



1. Calcaneus
- 1'. Sustentaculum tali
2. Talus
3. Central tarsal
4. Fourth tarsal
5. First, second, and third tarsal bones in the distal row
6. Proximal sesamoid bones
7. Dorsal sesamoid bones

Note: The metacarpal bones (*Roman numerals*) are identified.

↻ 7-8 Canine: Structure of the Adult Skin

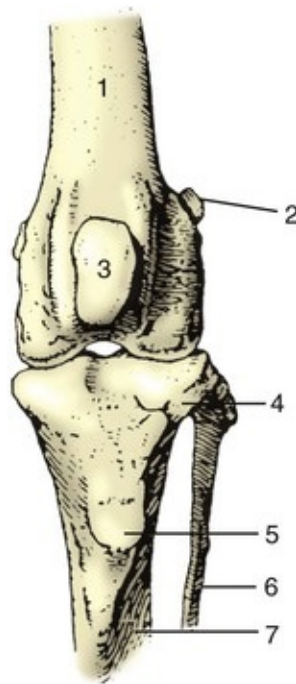


- 1. Dermis
- 1'. Dermal papilla
- 2. Stratum basale
- 3. Stratum spinosum
- 4. Stratum granulosum

- 5. Stratum lucidum
- 6. Stratum corneum

7-9 Canine: Left Stifle Joint (Cranial View)

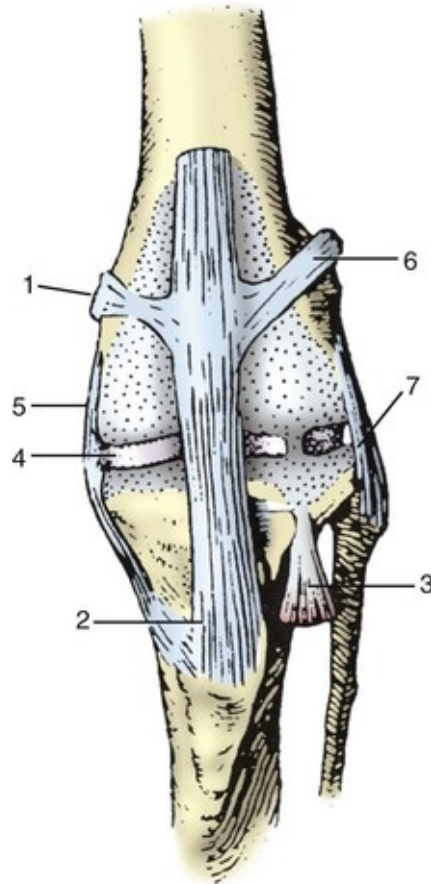
Q: Which structure attaches to 3?



- 1. Femur
- 2. Sesamoids in the gastrocnemius
- 3. Patella
- 4. Extensor groove
- 5. Tibial tuberosity
- 6. Fibula
- 7. Tibia

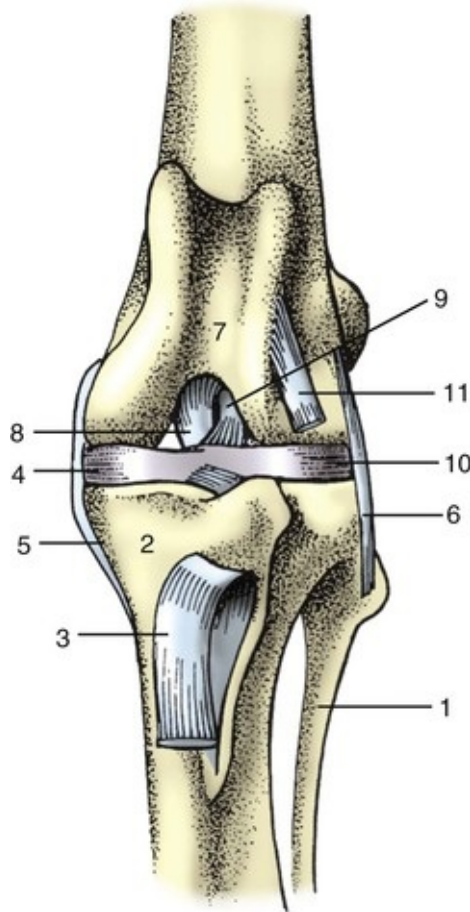
A: Tendon of quadriceps femoris on its way to tibial tuberosity.

7-10 Canine: Left Stifle Joint Showing the Extent of the Joint Capsule (Cranial View)



1. Medial femoropatellar ligament
2. Patellar ligament
3. Tendon of the long digital extensor passing through the extensor groove
4. Medial meniscus
5. Medial collateral ligament
6. Lateral femoropatellar ligament
7. Lateral collateral ligament

7-11 Canine: Left Stifle Joint with the Patella Removed (Cranial View)

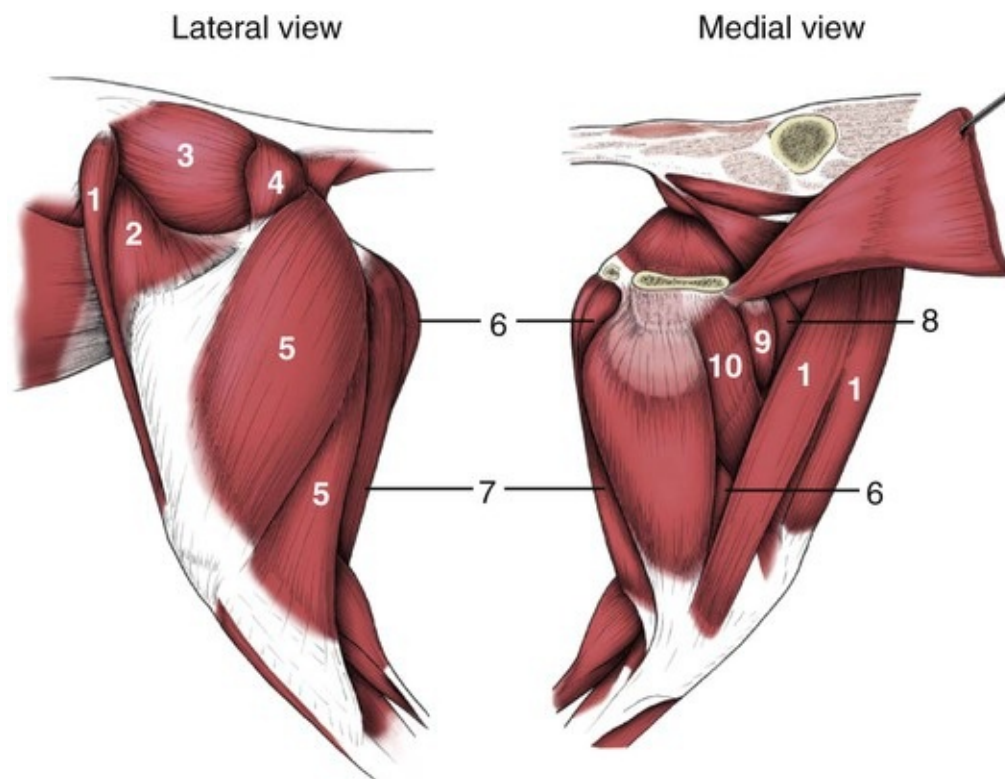


1. Fibula
2. Tibia
3. Patellar ligament
4. Medial meniscus
5. Medial collateral ligament
6. Lateral collateral ligament
7. Trochlea
8. Caudal cruciate ligament
9. Cranial cruciate ligament
10. Lateral meniscus
11. Stump of tendon of long digital extensor passing

through extensor groove

7-12 Canine: Muscles of the Hindquarter and Thigh

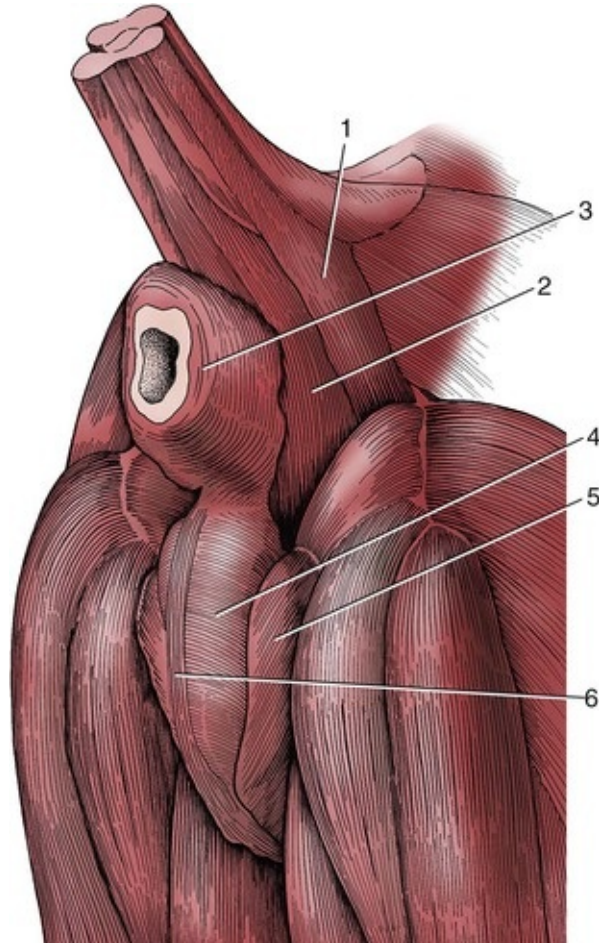
Q: Which nerve supplies 9 and 10?



1. Sartorius
2. Tensor fasciae latae
3. Gluteus medius
4. Gluteus superficialis
5. Biceps
6. Semimembranosus
7. Semitendinosus
8. Quadriceps
9. Pectineus
10. Adductor

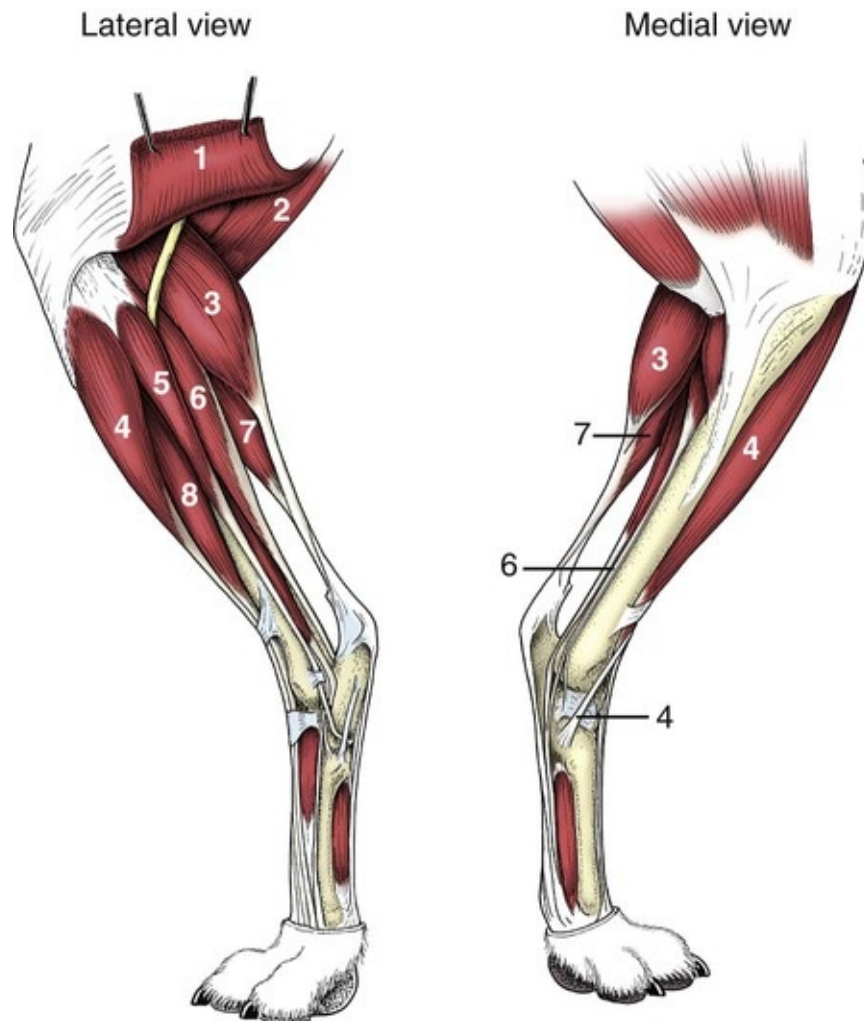
A: Obturator nerve.

7-13 Canine: Male Perineal Region



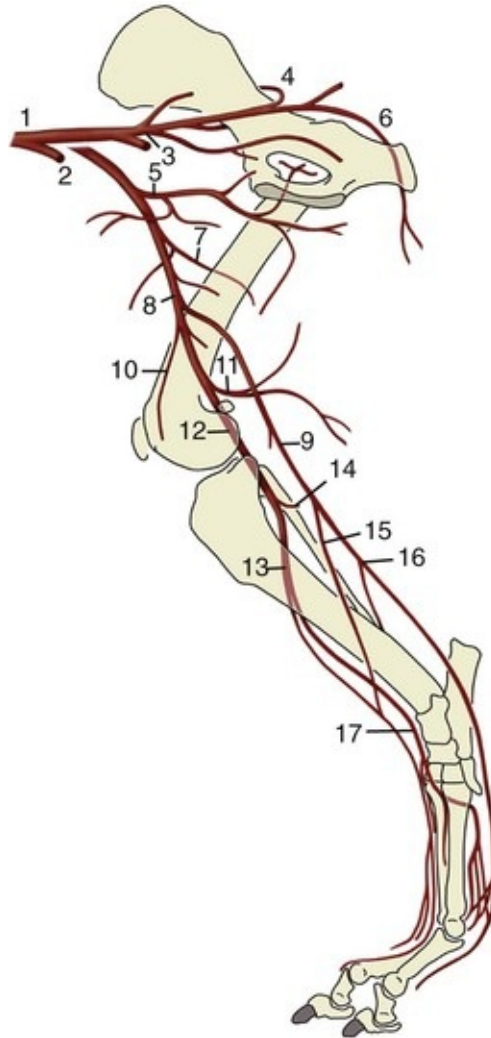
1. Coccygeus
2. Levator ani
3. External anal sphincter
4. Bulbospongiosus
5. Ischiocavernosus
6. Retractor penis

7-14 Canine: Muscles of the Left Leg



1. Biceps
2. Semitendinosus
3. Gastrocnemius
4. Tibialis cranialis
5. Fibularis longus
6. Lateral deep digital flexor
7. Superficial digital flexor
8. Long digital extensor

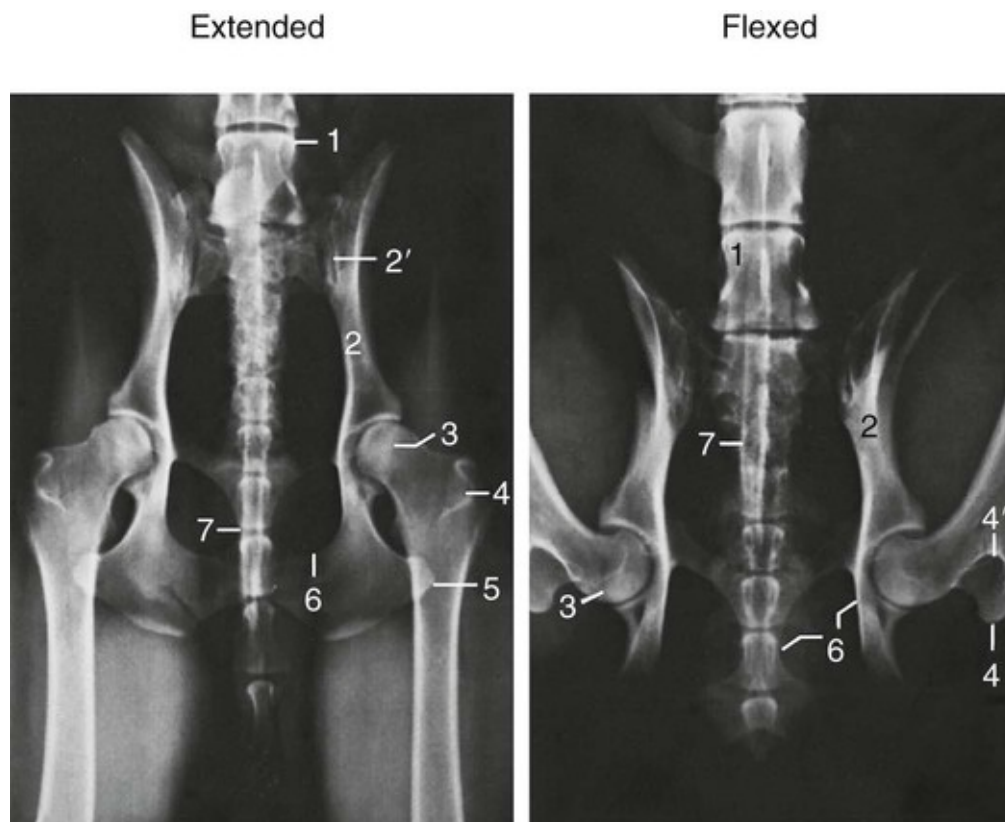
7-15 Canine: Arteries of the Hind Limb



1. Abdominal aorta
2. Left external iliac artery
3. Left and right internal iliac arteries
4. Cranial gluteal artery
5. Deep femoral artery
6. Caudal gluteal artery
7. Lateral circumflex femoral artery
8. Femoral artery
9. Saphenous artery
10. Descending genicular artery

- 11. Distal caudal femoral artery
- 12. Popliteal artery
- 13. Cranial tibial artery
- 14. Caudal tibial artery
- 15. Cranial branch of the saphenous artery
- 16. Caudal branch of the saphenous artery
- 17. Dorsal pedal artery

7-16 Canine: Pelvis with Extended and Flexed Hip Joints (Ventrodorsal View)



- 1. Last lumbar vertebra (L7)
- 2. Shaft of ilium
- 2'. Sacroiliac joint

- 3. Dorsal border of the acetabulum superimposed on the femoral head
- 4. Greater trochanter
- 4'. Trochanteric fossa
- 5. Ischial tuber
- 6. Obturator foramen
- 7. Os penis superimposed on the vertebrae

7-17 Canine: Stifle (Lateral View)



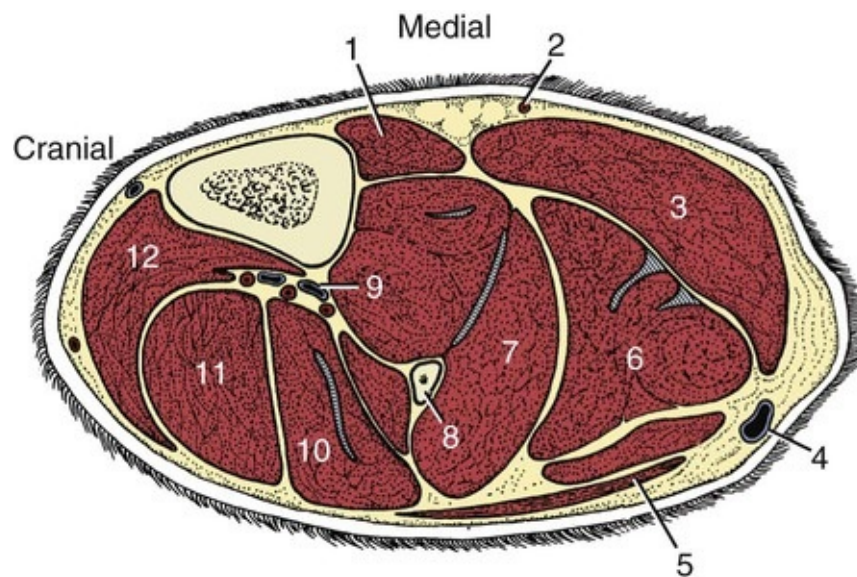
- 1. Femur
- 1'. Extensor fossa
- 2. Patella
- 3. Sesamoid bones in the gastrocnemius
- 3'. Popliteal sesamoid bone
- 4. Tibia

4'. Tibial tuberosity

5. Fibula

7-18 Canine: Left Leg

Q: Why is this the left leg?



1. Popliteus

2. Saphenous artery

3. Medial head of the gastrocnemius

4. Lateral saphenous vein

5. Biceps

6. Superficial digital flexor

7. Deep digital flexor

8. Fibula

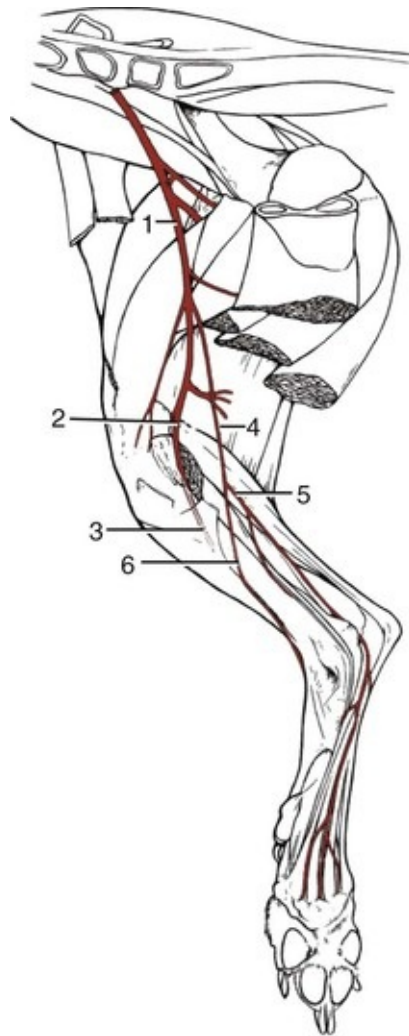
9. Cranial tibial vessels

10. Fibularis longus

11. Long digital extensor

12. Tibialis cranialis

7-19 Canine: Arteries of the Right Hind Limb (Medial View)



1. Femoral artery
2. Popliteal artery
3. Cranial tibial artery passing between the tibia and fibula
4. Saphenous artery
5. Caudal branch of the saphenous artery
6. Cranial branches of the saphenous artery

7-20 Canine: Hocks and Hind Paws (Dorsoplantar View)



1. Tibia
2. Fibula
3. Calcaneus
- 3'. Sustentaculum tali
4. Talus
5. Fourth tarsal bone
6. Central tarsal bone
7. Second metatarsal bone
- 7'. Fifth metatarsal bone

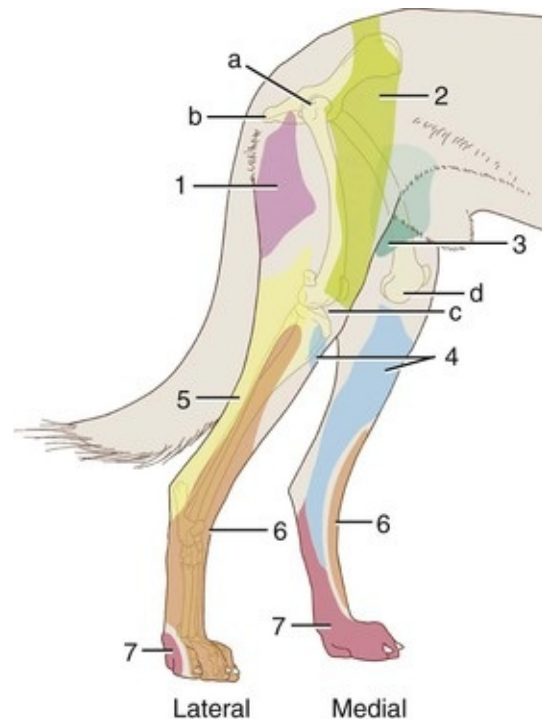
7-21 Canine: Hock (Lateral View)



- 1. Tibia and fibula
- 2. Calcaneus
- 2'. Sustentaculum tali
- 3. Talus

- 3'. Trochlea of talus
- 4. Superimposed fourth and central tarsal bones
- 4'. Palmar tubercle on the fourth tarsal bone
- 5. Distal row of the tarsal bones
- 6. Metatarsal bones

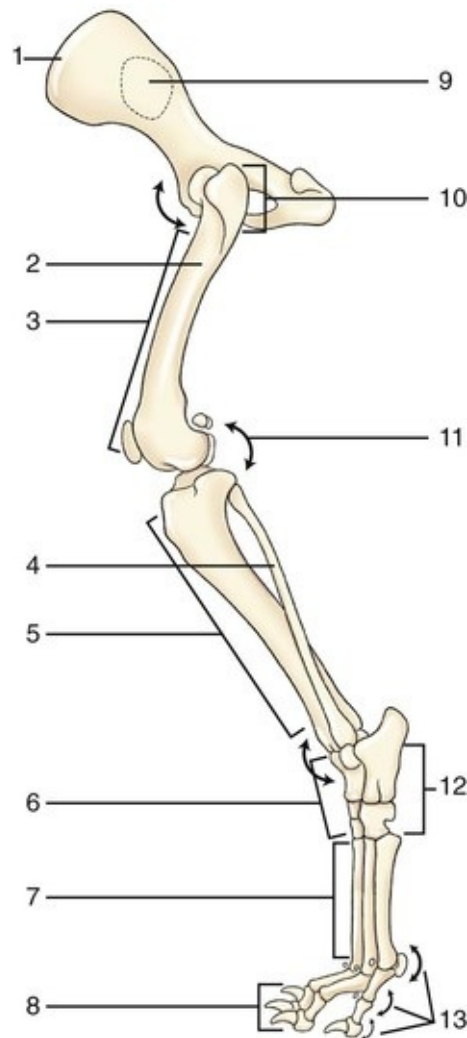
7-22 Canine: Cutaneous Innervation of the Hind Limb



- 1. Caudal cutaneous femoral nerve
- 2. Lateral cutaneous femoral nerve
- 3. Genitofemoral nerve
- 4. Saphenous nerve
- 5. Sciatic nerve
- 6. Peroneal nerve
- 7. Tibial nerve

Note: **A**, Position of the greater trochanter; **B**, ischial tuber; **C**, lateral tibial condyle; **D**, medial femoral condyle.

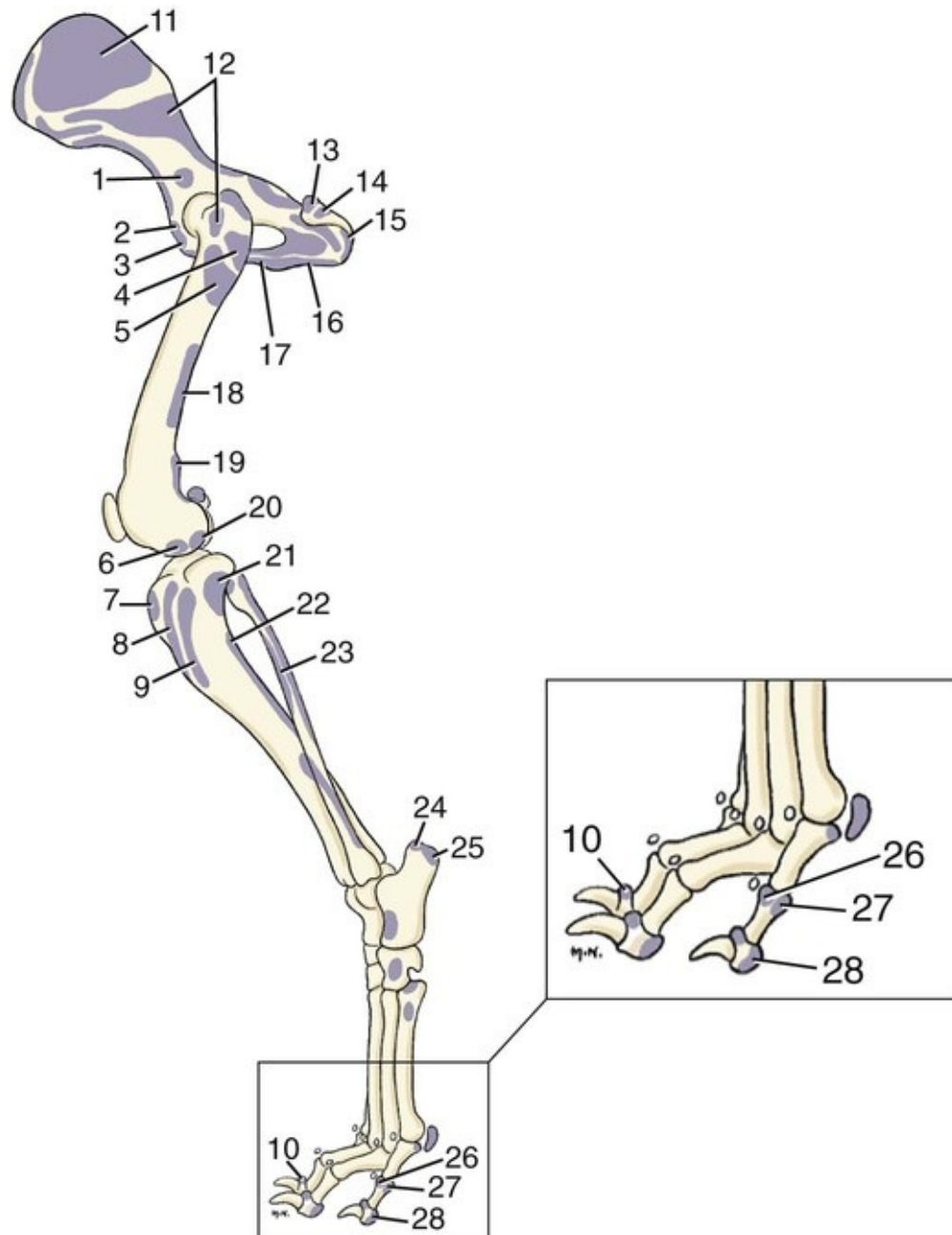
7-23 Canine: Bones of the Left Pelvic Limb



1. Ilium, ischium, pubis
2. Femur
3. Thigh
4. Tibia, fibula
5. Leg (crus)

6. Tarsus
7. Metatarsus
8. Digits
9. Sacroiliac joint
10. Hip joint
11. Flexor surface of the stifle joint
12. Tarsal joints
13. Flexor surface of the digital joints

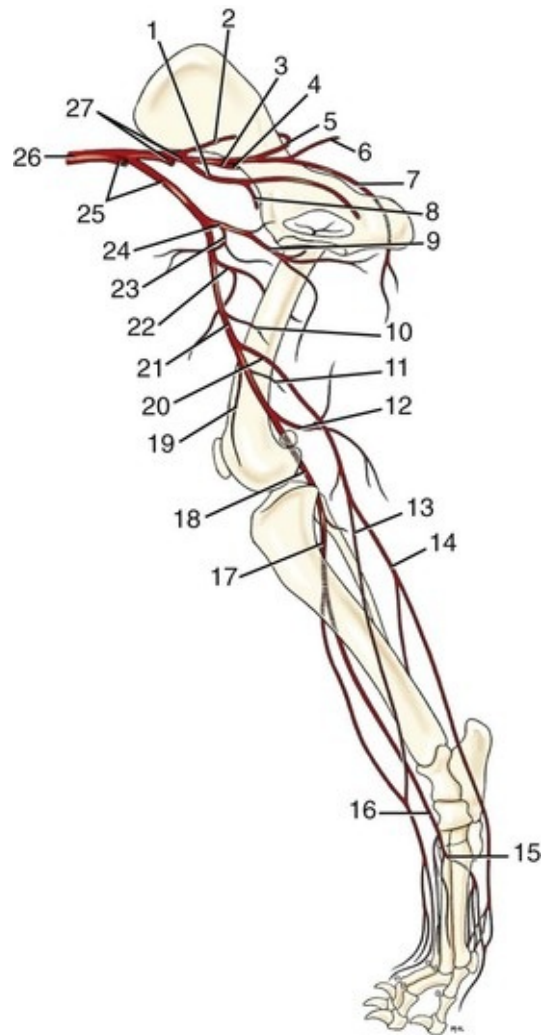
↻ **7-24 Canine: Muscle Attachments on the Pelvis and Left Pelvic Limb (Lateral View)**



1. Rectus femoris
2. Pectineus
3. Rectus abdominis
4. Superficial gluteal
5. Vastus lateralis
6. Long digital extensor
7. Quadriceps
8. Biceps femoris
9. Cranial tibial

10. Long digital extensor
11. Middle gluteal
12. Deep gluteal
13. Biceps femoris
14. Semitendinosus
15. Semimembranosus
16. Adductor
17. Gracilis
18. Adductor
19. Gastrocnemius
20. Popliteus
21. Fibularis longus
22. Lateral digital flexor
23. Lateral digital extensor
24. Gastrocnemius
25. Superficial digital flexor
26. Lateral digital extensor
27. Superficial digital flexor
28. Deep digital flexor

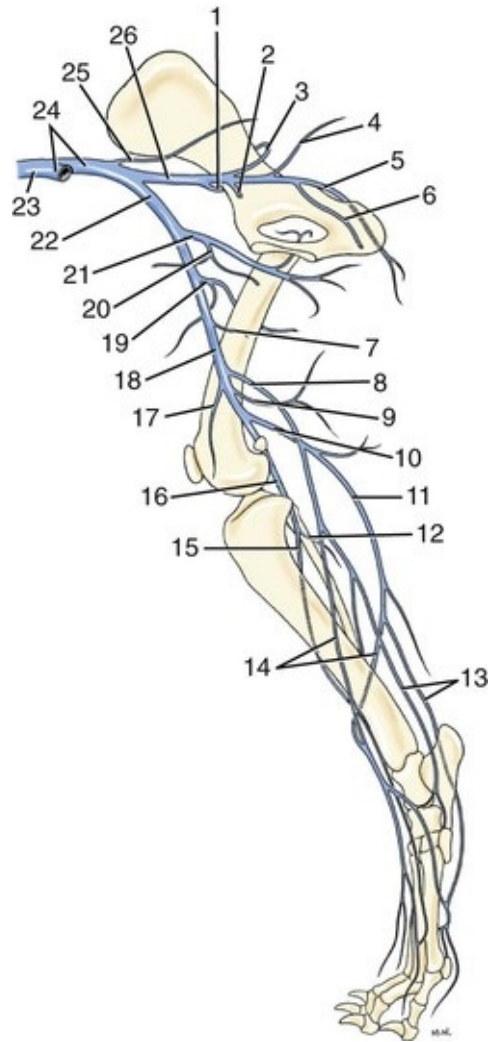
↻ **7-25 Canine: Arteries of the Right Pelvic Limb**



1. Internal pudendal artery
2. Median sacral artery
3. Caudal gluteal artery
4. Iliolumbar artery
5. Cranial gluteal artery
6. Lateral caudal artery
7. Caudal gluteal artery
8. Prostatic or vaginal artery
9. Medial circumflex femoral artery
10. Proximal caudal femoral artery
11. Middle caudal femoral artery
12. Distal caudal femoral artery
13. Cranial branch of the saphenous artery
14. Caudal branch of the saphenous artery

15. Perforating ramus artery
16. Dorsal pedal artery
17. Cranial tibial artery
18. Popliteal artery
19. Descending genicular artery
20. Saphenous artery
21. Femoral artery
22. Lateral circumflex femoral artery
23. Pudendoepigastric trunk artery
24. Deep femoral artery
25. Left and right external iliac arteries
26. Aorta artery
27. Left and right internal iliac arteries

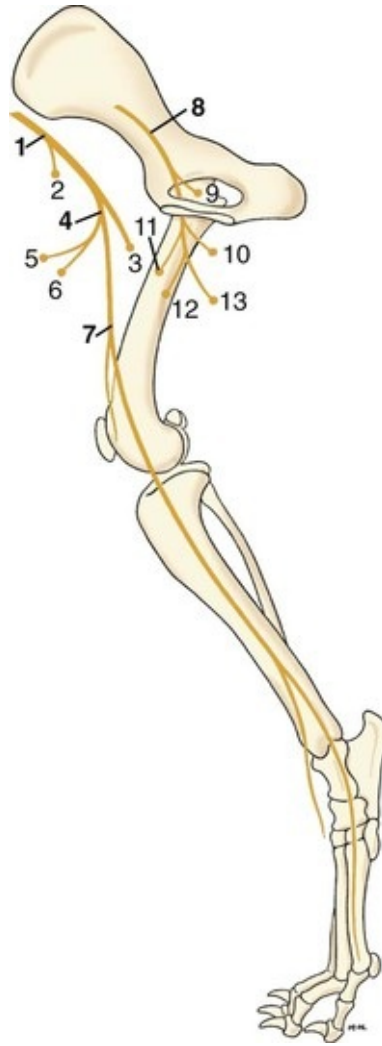
↻ **7-26 Canine: Veins of the Right Pelvic Limb**



1. Iliolumbar vein
2. Prostatic or vaginal vein
3. Cranial gluteal vein
4. Lateral caudal vein
5. Caudal gluteal vein
6. Internal pudendal vein
7. Proximal caudal femoral veins
8. Medial saphenous vein
9. Middle caudal femoral vein
10. Distal caudal femoral vein
11. Lateral saphenous vein
12. Caudal tibial vein
13. Caudal rami of the medial and lateral saphenous veins

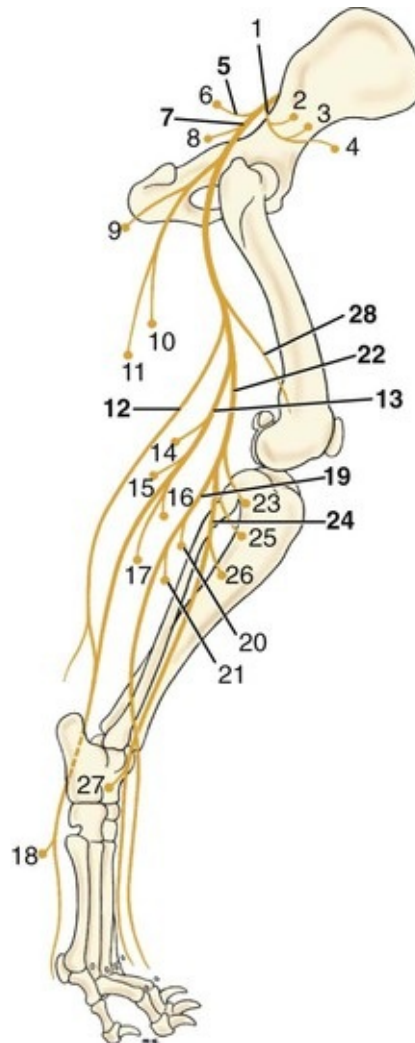
14. Cranial rami of the medial and lateral saphenous veins
15. Cranial tibial vein
16. Popliteal vein
17. Descending genicular vein
18. Femoral vein
19. Lateral circumflex femoral vein
20. Pudendoepigastric trunk vein
21. Deep femoral vein
22. External iliac vein
23. Caudal vena cava vein
24. Left and right common iliac vein
25. Median sacral vein
26. Internal iliac vein

↻ **7-27 Canine: Distribution of Saphenous, Femoral, and Obturator Nerves of the Right Pelvic Limb**



1. **Femoral nerve**
2. To iliopsoas muscle
3. To quadriceps femoris
4. **Saphenous nerve**
5. To sartorius (cranial part)
6. To sartorius (caudal part)
7. **Cutaneous nerve**
8. **Obturator nerve**
9. To external obturator
10. To adductor longus
11. To pectineus
12. To adductor magnus and brevis
13. To gracilis

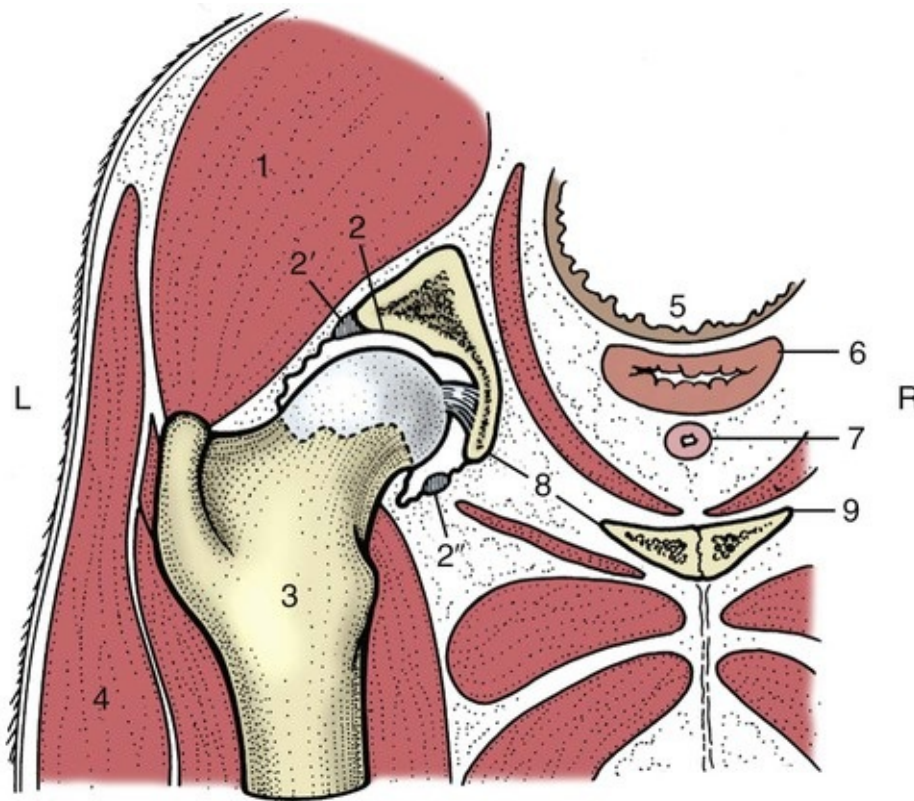
7-28 Canine: Cranial and Caudal Gluteal Nerves and the Sciatic Nerve of the Right Pelvic Limb



1. **Cranial gluteal nerve**
2. Middle gluteal
3. Deep gluteal
4. Tensor fasciae latae
5. **Caudal gluteal nerve**
6. Superficial gluteal
7. **Sciatic nerve**

8. Gemelli (internal obturator and quadratus femoris)
9. Biceps femoris
10. Semimembranosus
11. Semitendinosus
12. **Caudal cutaneous sural**
13. **Tibial nerve**
14. Gastrocnemius
15. Superficial digital flexor
16. Popliteus
17. Deep digital flexors
18. Plantar muscles
19. **Superficial fibular nerve**
20. Lateral digital extensor
21. Fibularis brevis
22. **Common fibular nerve**
23. Fibularis longus
24. **Deep fibular nerve**
25. Cranial tibial and long digital extensor
26. External digiti longus
27. External digitorum brevis
28. **Lateral cutaneous sural**

↻ 7-29 Canine: Schematic through the Left Hip Joint



1. Gluteus medius
2. Acetabulum, connected to the femoral head by the ligament of the head of the femur
- 2'. Fibrous rim (labrum) of acetabulum
- 2''. Transverse acetabular ligament
3. Femur
4. Biceps
5. Rectum
6. Vagina
7. Urethra
8. Obturator foramen
9. Pelvic floor

Note: Transverse section.

7-30 Feline: Pelvis (Ventrodorsal [Top])

and Lateral [Bottom] Views)



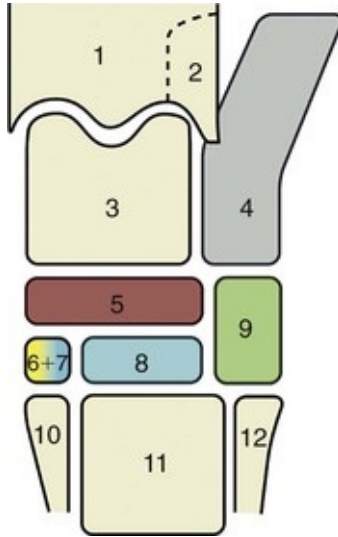
1. Last lumbar vertebra (L7)
2. Shaft of ilium
- 2'. Sacroiliac joint
3. Greater trochanter
- 3'. Trochanteric fossa
- 3''. Lesser trochanter
4. Ischial tuber
5. Obturator foramen

7-31 Feline: Stifle (Craniocaudal View)



- 1. Femur
- 1'. Lateral condyle
- 2. Patella
- 3. Sesamoid bones in gastrocnemius
- 4. Tibia
- 4'. Tibial crest
- 5. Fibula

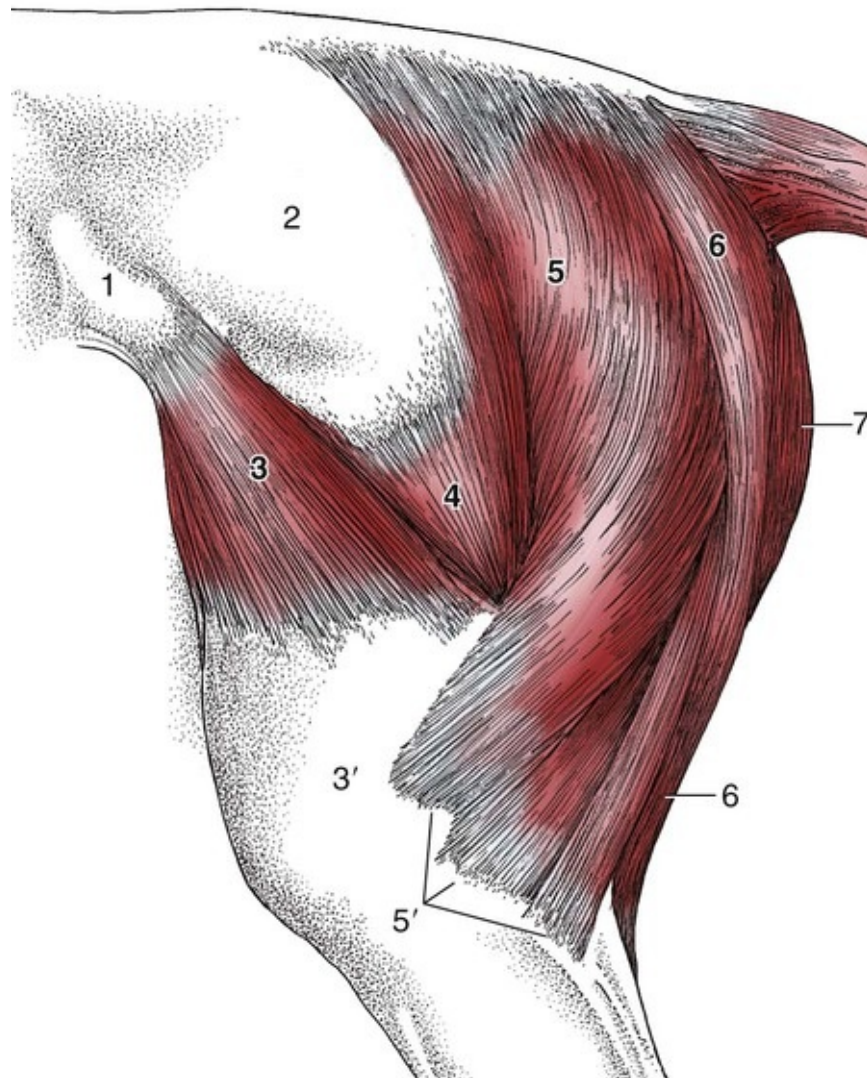
7-32 Equine: Bones of the Tarsal Skeleton



1. Tibia
2. Fibula
3. Talus
4. Calcaneus
5. Central tarsal bone
6. First tarsal bone
7. Second tarsal bone
8. Third tarsal bone
9. Fourth tarsal bone
10. Second metatarsal bone
11. Third metatarsal bone
12. Fourth metatarsal bone

7-33 Equine: Muscles of the Croup and Thigh (Lateral View)

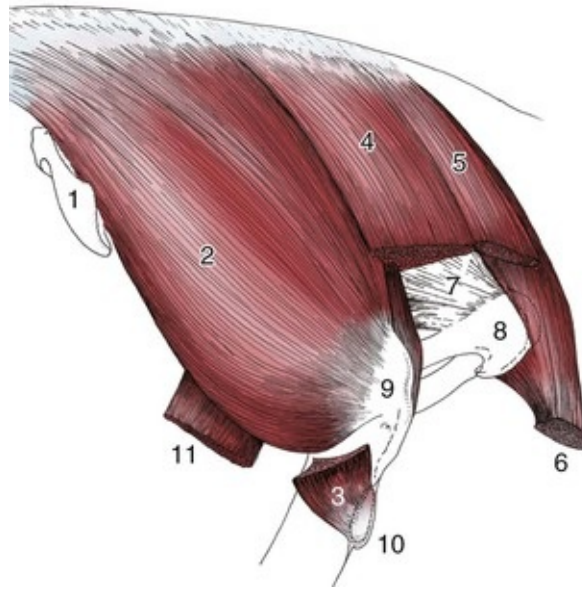
Q: Does the biceps femoris muscle contribute to the common calcanean tendon?



1. Coxal tuber
2. Deep gluteal fascia
3. Tensor fasciae latae
- 3'. Fascia lata
4. Gluteus superficialis
5. Vertebral head of the biceps
- 5'. Three distal divisions of the biceps
6. Semitendinosus
7. Semimembranosus

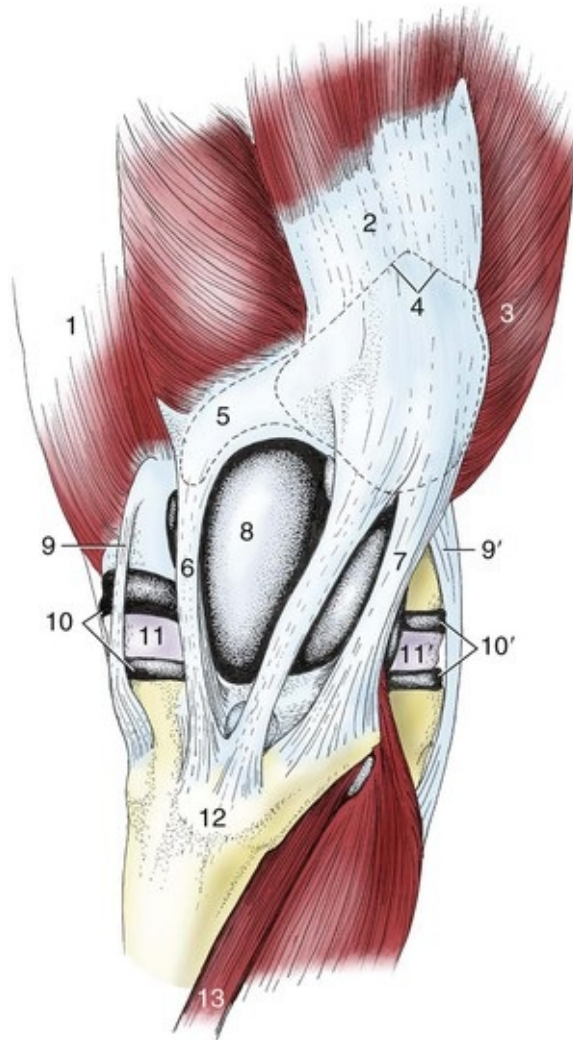
A: Yes.

7-34 Equine: Croup Muscles, Resected to Expose the Ischial Tuber (Lateral View)



1. Coxal tuber
2. Gluteus medius
3. Gluteus superficialis
4. Vertebral head of biceps
5. Semitendinosus
6. Semimembranosus
7. Sacrosciatic ligament
8. Ischial tuber
9. Caudal part of the greater trochanter
10. Third trochanter
11. Stump of the rectus femoris

7-35 Equine: Left Stifle Joint (Cranial View)



1. Adductor
2. Rectus femoris
3. Vastus lateralis
4. Outline of patella
5. Outline of the patellar fibrocartilage
6. Medial patellar ligament
7. Lateral patellar ligament
8. Joint capsule over the medial ridge of the femoral trochlea
9. Medial collateral ligament
- 9'. Lateral collateral ligament
10. Medial femorotibial joint capsule

10'. Lateral femorotibial joint capsule

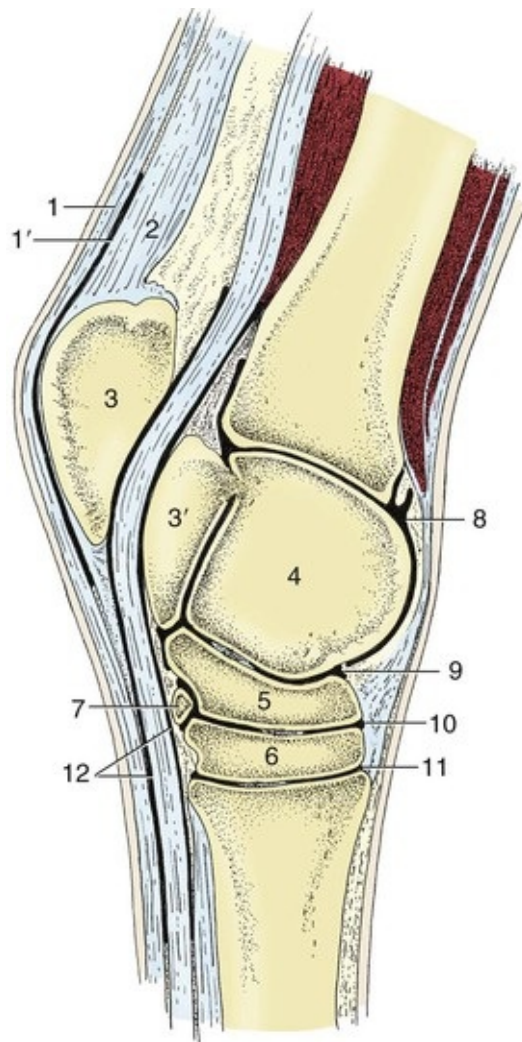
11. Medial meniscus

11'. Lateral meniscus

12. Tibial tuberosity

13. Tibialis cranialis

7-36 Equine: Sagittal Section of the Hock Joint

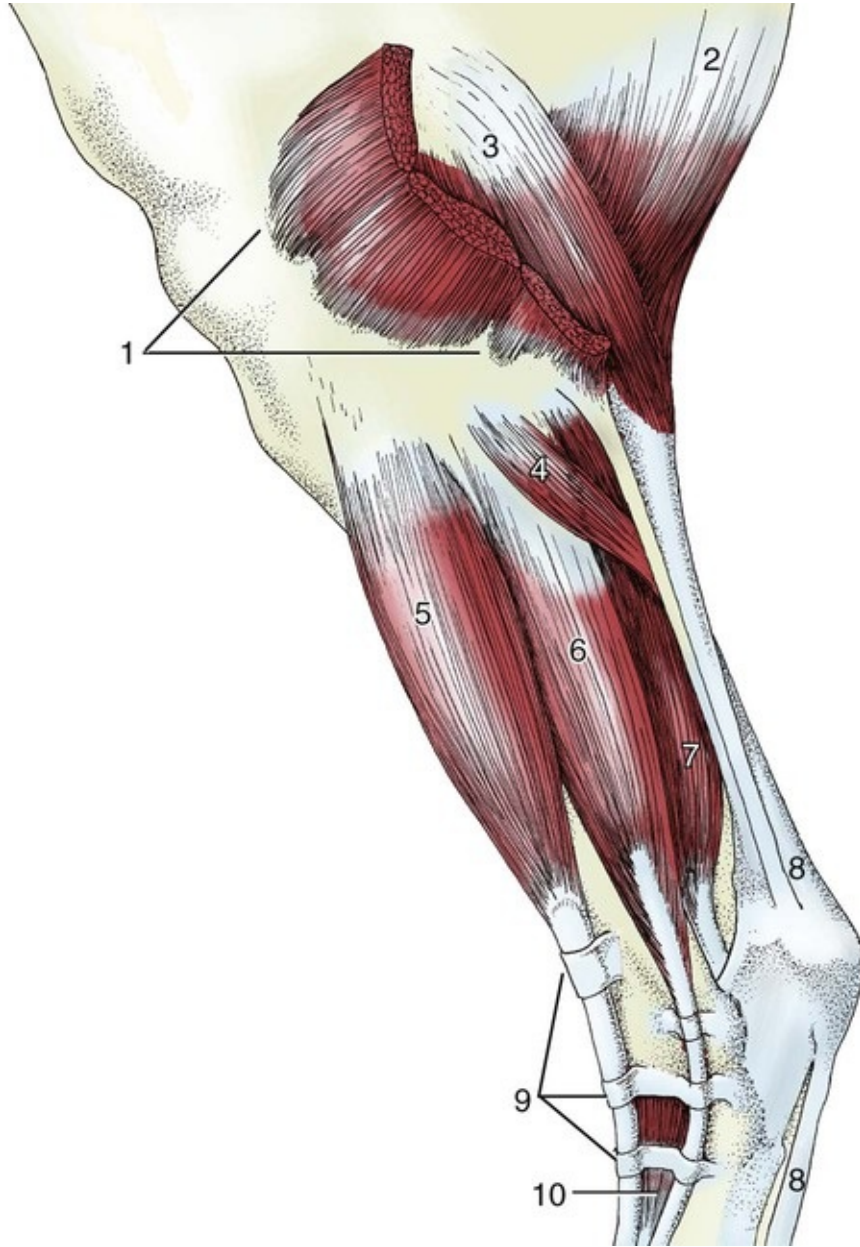


1. Superficial digital flexor
- 1'. Subtendinous calcanean bursa
2. Gastrocnemius
3. Calcaneus
- 3'. Sustentaculum tali
4. Talus

5. Central tarsal
6. Third tarsal
7. Fourth tarsal (mainly on lateral side)
8. Tarsocrural joint
9. Proximal intertarsal joint (communicates with the tarsocrural joint)
10. Distal intertarsal joint
11. Tarsometatarsal joint
12. Tarsal sheath

• 7-37 Equine: Left Stifle and Leg (Lateral View)

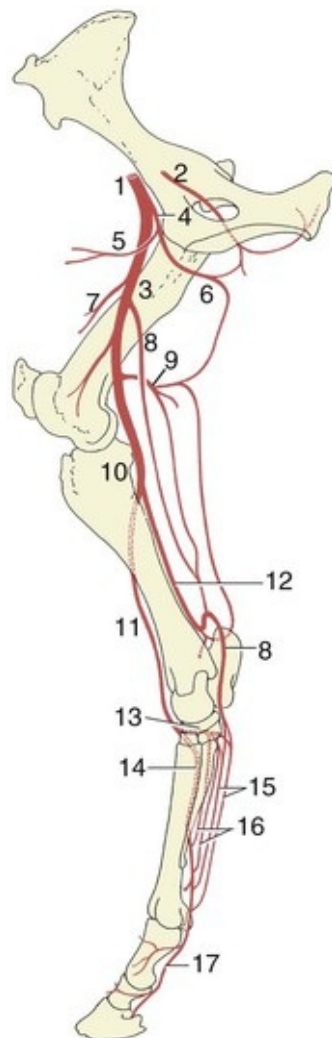
Q: Which nerve supplies 5 and 6?



1. Distal divisions of biceps
2. Semitendinosus
3. Gastrocnemius
4. Soleus
5. Long digital extensor
6. Lateral digital extensor
7. Deep digital flexors
8. Superficial digital flexor
9. Proximal, middle, and distal extensor retinacula
10. Extensor digitoris brevis

A: Common peroneal (fibular) nerve.

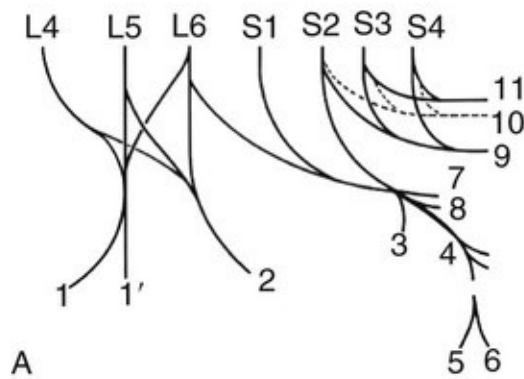
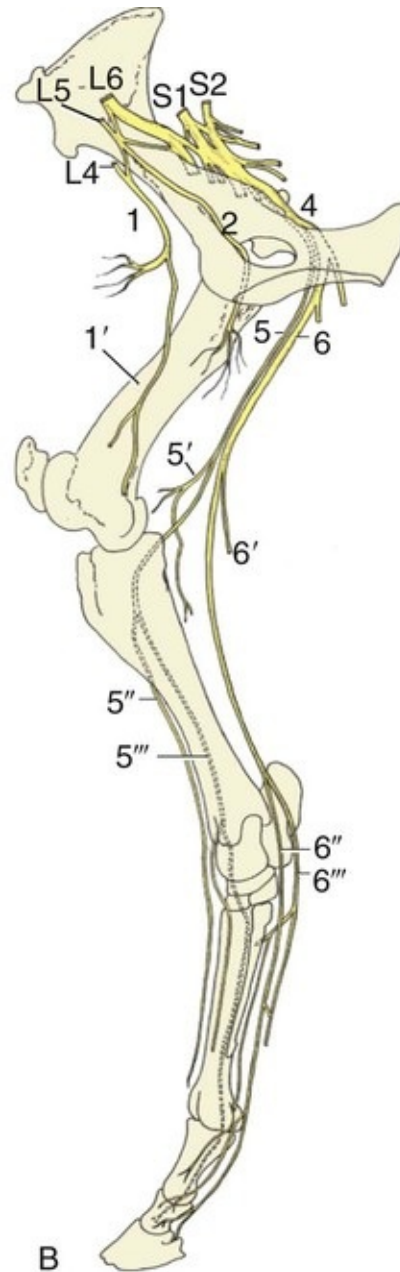
7-38 Equine: Principal Arteries of the Right Hind Limb (Medial View)



1. External iliac artery
2. Obturator artery
3. Femoral artery
4. Deep femoral artery
5. Pudendoepigastric trunk

6. Medial circumflex femoral artery
7. Lateral circumflex femoral artery
8. Saphenous artery
9. Caudal femoral artery
10. Popliteal artery
11. Cranial tibial artery
12. Caudal tibial artery
13. Perforating tarsal artery
14. Dorsal metatarsal artery
15. Medial and lateral plantar arteries
16. Medial and lateral plantar metatarsal arteries
17. Medial and lateral digital arteries

• **7-39 Equine: Lumbosacral Plexus and Nerve Supply to Hind Limb**

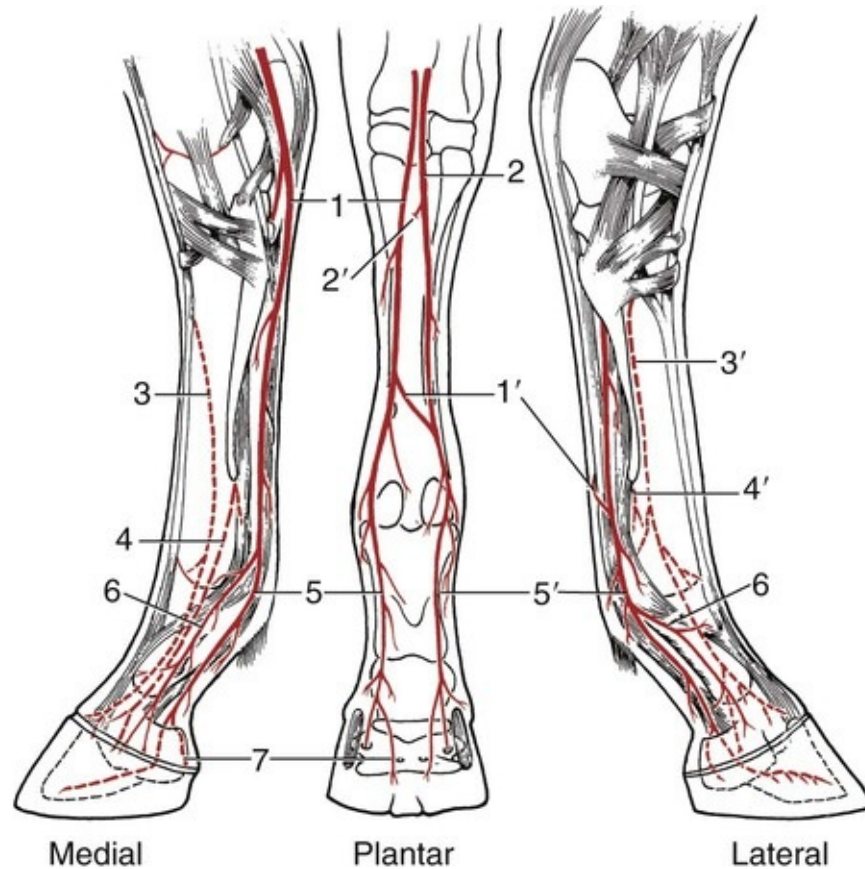


1. Femoral nerve
- 1'. Saphenous nerve
2. Obturator nerve
3. Cranial gluteal nerve
4. Sciatic nerve
5. Common peroneal nerve
- 5'. Lateral cutaneous sural nerve
- 5''. Superficial peroneal nerves

- 5". Deep peroneal nerves
- 6. Tibial nerve
- 6'. Caudal cutaneous sural nerve
- 6". Medial plantar nerve (gives rise to medial plantar digital nerve)
- 6"". Lateral plantar nerve (gives rise to plantar metatarsal nerves)
- 7. Caudal gluteal nerve
- 8. Caudal cutaneous femoral nerve
- 9. Pudendal nerve
- 10. Pelvic nerve
- 11. Caudal rectal nerve

Note: **A**, The lumbosacral plexus, schematic (diagram). **B**, The principal nerves (medial view).

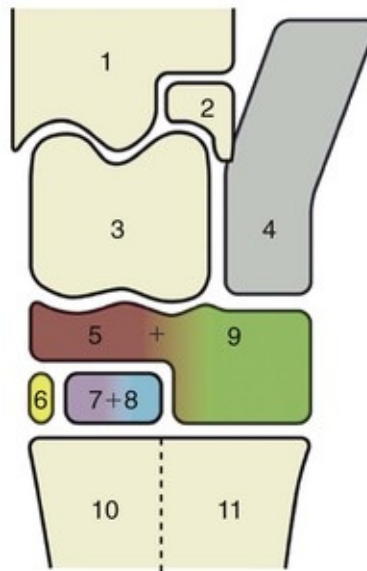
7-40 Equine: Nerves of the Right Hind Limb



1. Medial plantar nerves (from tibial)
- 1'. Communicating branch
2. Lateral plantar nerves (from the tibial)
- 2'. Deep branch (for the plantar metatarsal nerves), cut
3. Medial dorsal metatarsal nerve (from the deep peroneal nerve)
- 3'. Lateral dorsal metatarsal nerves (from the deep peroneal)
4. Medial plantar metatarsal nerves (from the lateral plantar, deep branch)
- 4'. Lateral plantar metatarsal nerves (from the lateral plantar, deep branch)
5. Medial plantar digital nerve
- 5'. Lateral plantar digital nerve
6. Dorsal branch of the digital nerve

7. Branch to the digital cushion

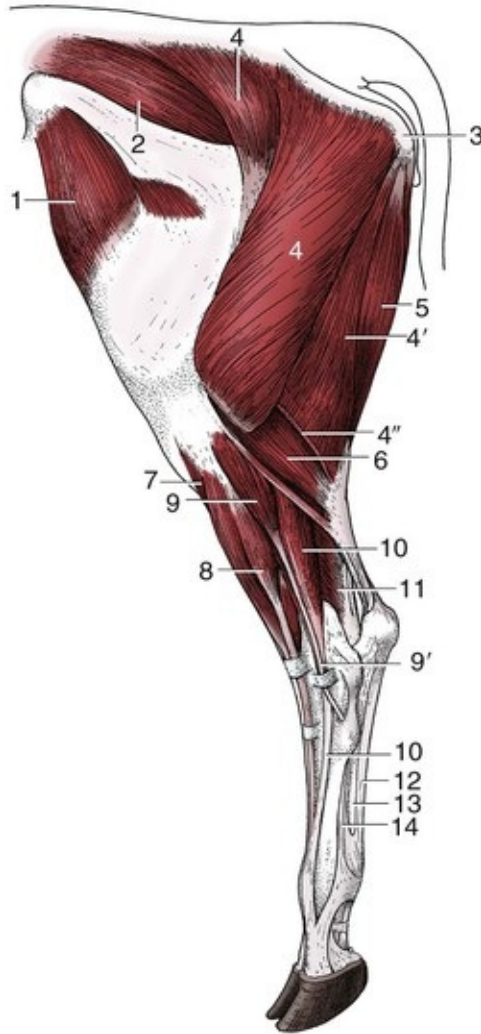
• 7-41 Bovine: Bones of the Tarsal Skeleton



1. Tibia
2. Fibula
3. Talus
4. Calcaneus
5. Central tarsal bone
6. First tarsal bone
7. Second tarsal bone
8. Third tarsal bone
9. Fourth tarsal bone
10. Third metatarsal bone
11. Fourth metatarsal bone

• 7-42 Bovine: Muscles of the Left Hind

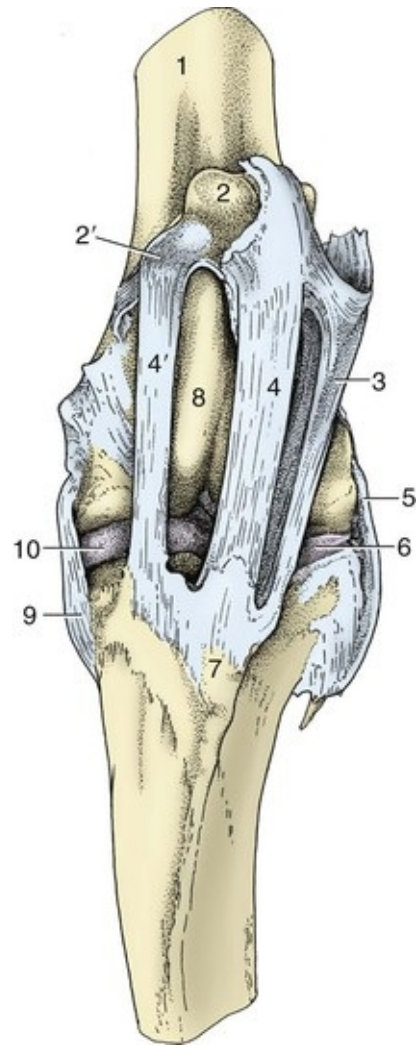
Limb (Lateral View)



1. Tensor fasciae latae
2. Gluteus medius
3. Ischial tuber
- 4, 4', 4". Biceps transected at 4"
5. Semitendinosus
6. Lateral head of the gastrocnemius
7. Tibialis cranialis
8. Long digital extensor

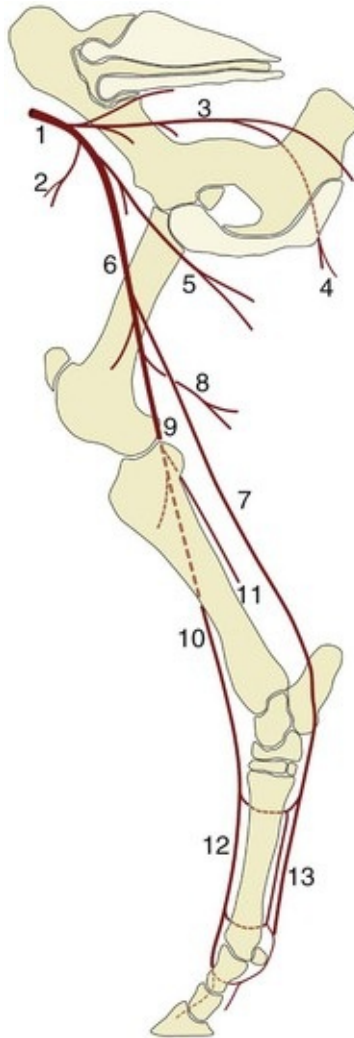
- 9, 9'. Fibularis longus
- 10. Lateral digital extensor
- 11. Lateral digital flexor
- 12. Tendon of the superficial digital flexor
- 13. Combined tendon of the deep digital flexors
- 14. Interosseus

• 7-43 Bovine: Left Stifle Joint (Cranial View)



1. Femur
2. Patella
- 2'. Fibrocartilage of the patella
3. Lateral patellar ligament
4. Intermediate patellar ligament
- 4'. Medial patellar ligament
5. Lateral collateral ligament
6. Lateral meniscus
7. Tibial tuberosity
8. Medial ridge of the femoral trochlea
9. Medial collateral ligament
10. Medial meniscus

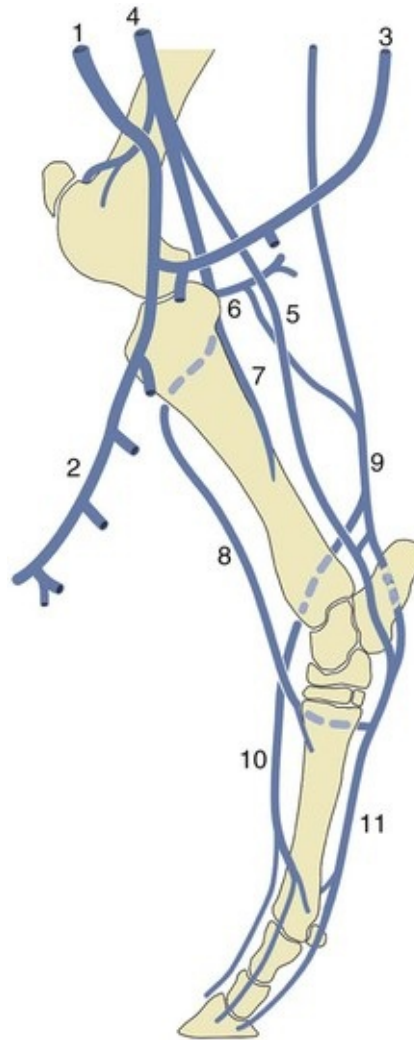
7-44 Bovine: Principal Arteries of the Right Hind Limb (Medial View)



1. External iliac artery
2. Deep circumflex iliac artery
3. Internal iliac artery
4. Caudal gluteal artery
5. Deep femoral artery
6. Femoral artery
7. Saphenous artery

8. Caudal femoral artery
9. Popliteal artery
10. Cranial tibial artery
11. Caudal tibial artery
12. Dorsal metatarsal artery
13. Medial and lateral plantar arteries; metatarsal (closer to the bone) artery

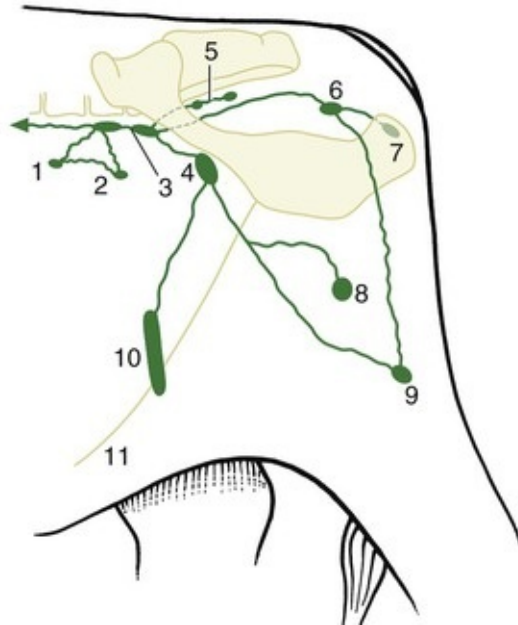
• 7-45 Bovine: Major Veins of the Right Hind Limb (Medial View)



1. External pudendal vein
2. Cranial mammary vein
3. Ventral labial vein
4. Femoral vein
5. Medial saphenous vein
6. Caudal femoral vein
7. Caudal tibial vein
8. Cranial tibial vein
9. Lateral saphenous vein
10. Cranial tributary of lateral saphenous vein
11. Medial and lateral plantar veins

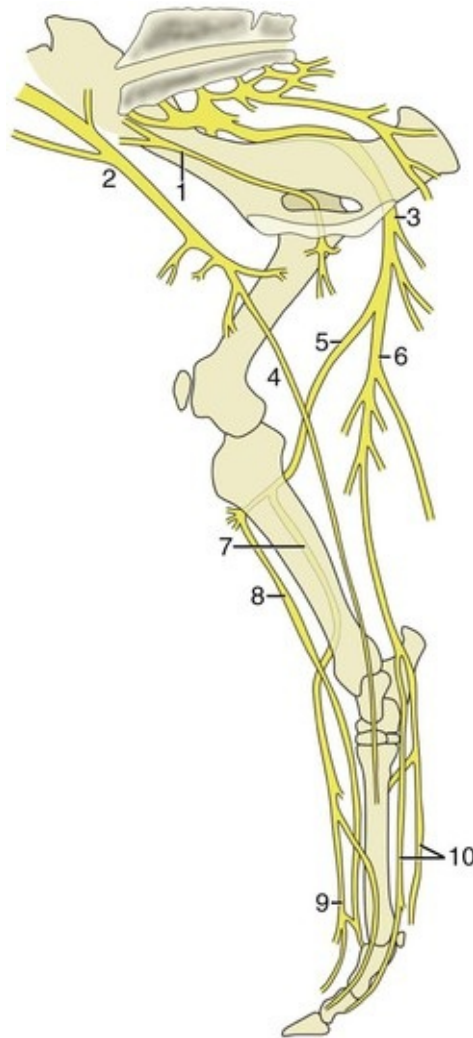
Note: Right limb; medial view

• 7-46 Bovine: Lymph Nodes of the Pelvis and Hind Limb



1. Lateral iliac lymph node
2. Coxal lymph node
3. Medial iliac and sacral lymph nodes
4. Deep inguinal lymph node
5. Gluteal lymph node
6. Ischial lymph node
7. Tuberal lymph node
8. Superficial inguinal (mammary) lymph node
9. Popliteal lymph node
10. Subiliac lymph node
11. Linea alba

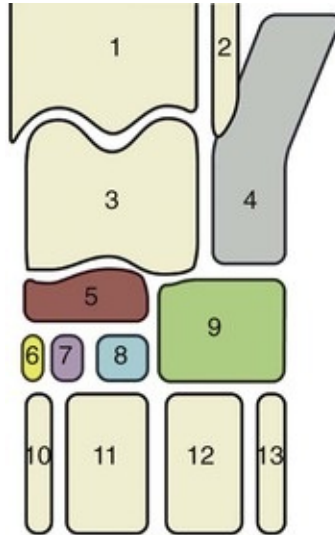
• 7-47 Bovine: Nerves of the Right Hind Limb (Medial View)



1. Obturator nerve
2. Femoral nerve
3. Sciatic nerve
4. Saphenous nerve
5. Common peroneal nerve
6. Tibial nerve
7. Superficial peroneal nerve
8. Deep peroneal nerve
9. Dorsal common digital nerve III
10. Medial and lateral plantar nerves

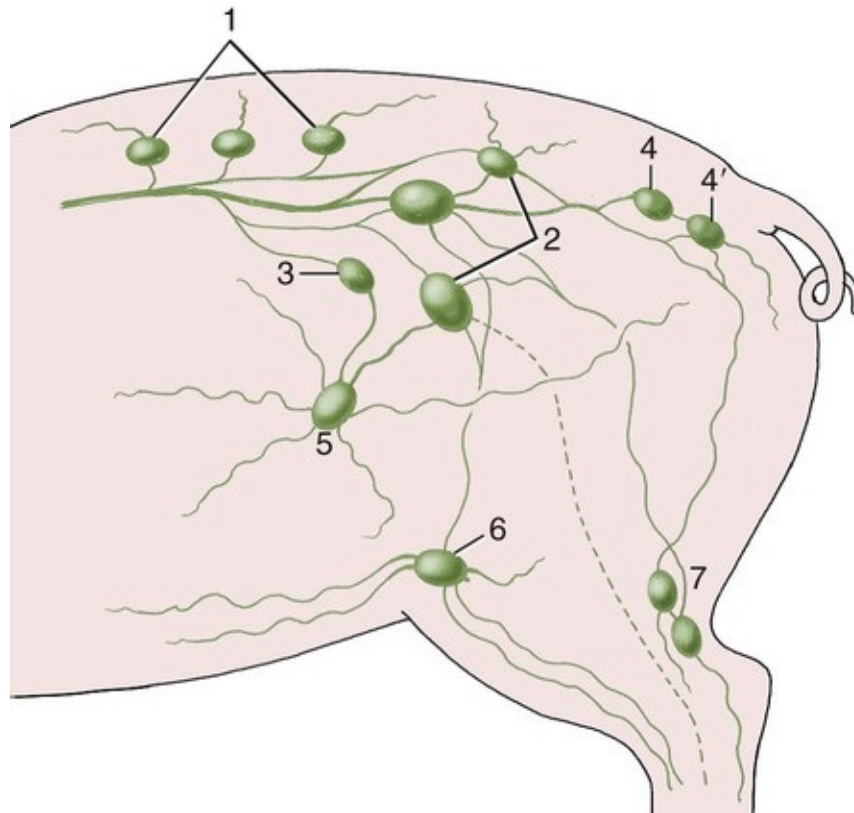
➤ **7-48 Porcine: Bones of the Tarsal**

Skeleton



1. Tibia
2. Fibula
3. Talus
4. Calcaneus
5. Central tarsal bone
6. First tarsal bone
7. Second tarsal bone
8. Third tarsal bone
9. Fourth tarsal bone
10. Second metatarsal bone
11. Third metatarsal bone
12. Fourth metatarsal bone
13. Fifth metatarsal bone

7-49 Porcine: Lymph Flow of the Hind Limb (Lateral View)



1. Lumbar aortic nodes
2. Medial iliac nodes
3. Lateral iliac node
4. Ischial node
- 4'. Gluteal nodes
5. Subiliac nodes
6. Superficial inguinal nodes
7. Popliteal nodes

Exotics

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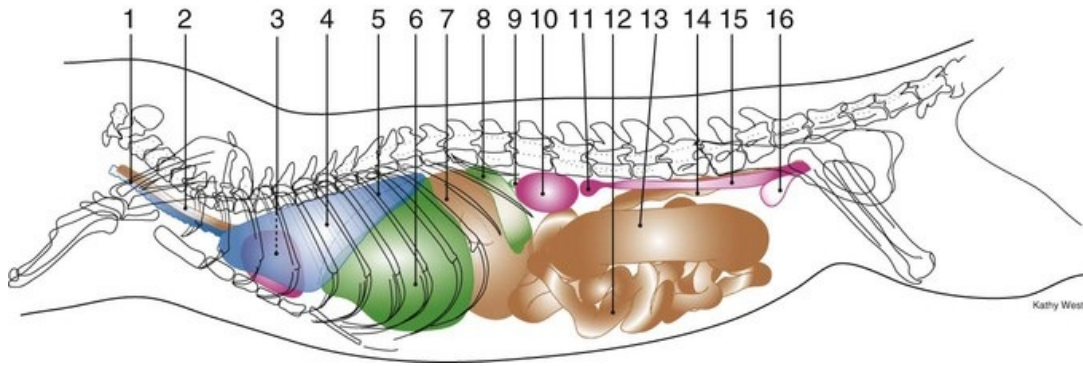
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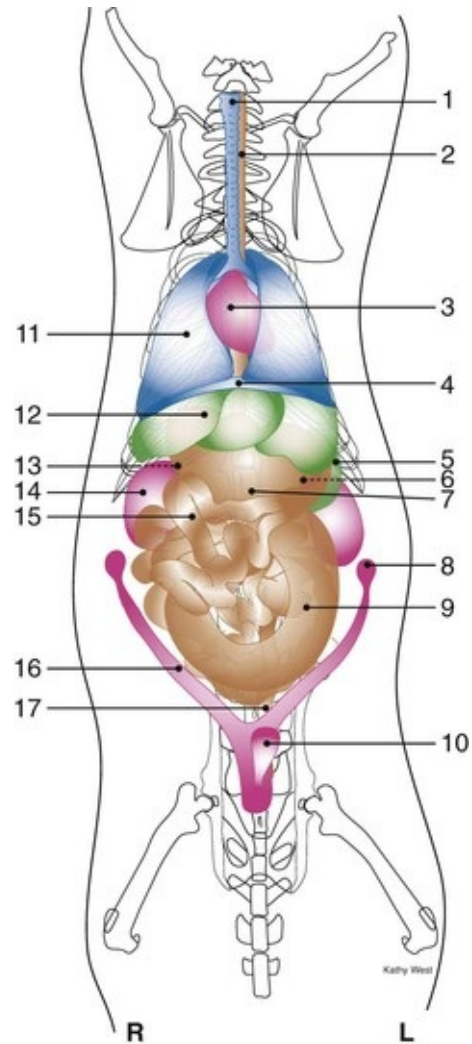
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• **8-1 Murine: Viscera of the Thorax and Abdomen of Adult Female Rat (Lateral View)**



1. Trachea
2. Esophagus
3. Heart
4. Lung
5. Diaphragm
6. Liver
7. Stomach
8. Spleen
9. Left adrenal gland
10. Left kidney
11. Left ovary
12. Small intestine
13. Cecum
14. Descending colon
15. Left horn of uterus
16. Urinary bladder

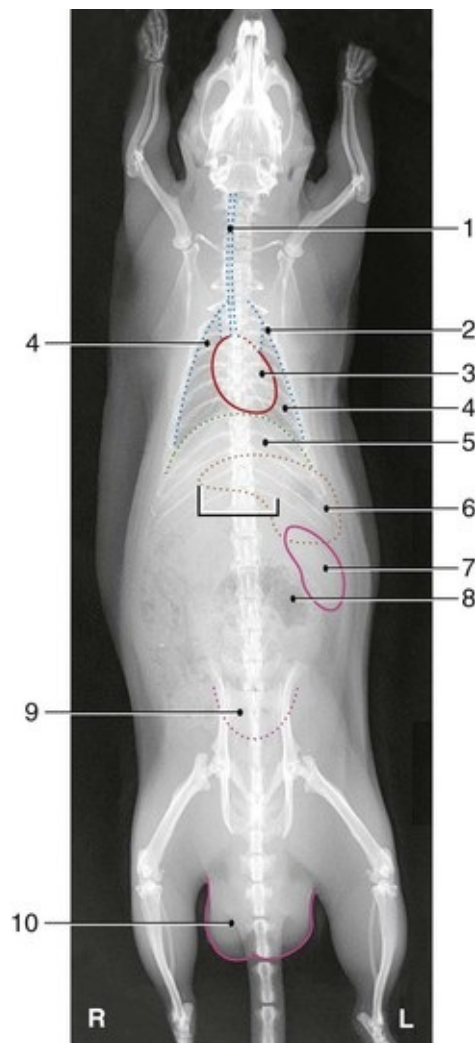
8-2 Murine: Viscera of the Thorax and Abdomen of Adult Female Rat (Ventral View)



1. Trachea
2. Esophagus
3. Heart
4. Diaphragm
5. Spleen
6. Left adrenal gland
7. Stomach
8. Left ovary
9. Cecum
10. Urinary bladder
11. Lung
12. Liver
13. Right adrenal gland
14. Right kidney

- 15. Small intestine
- 16. Right horn of uterus
- 17. Descending colon

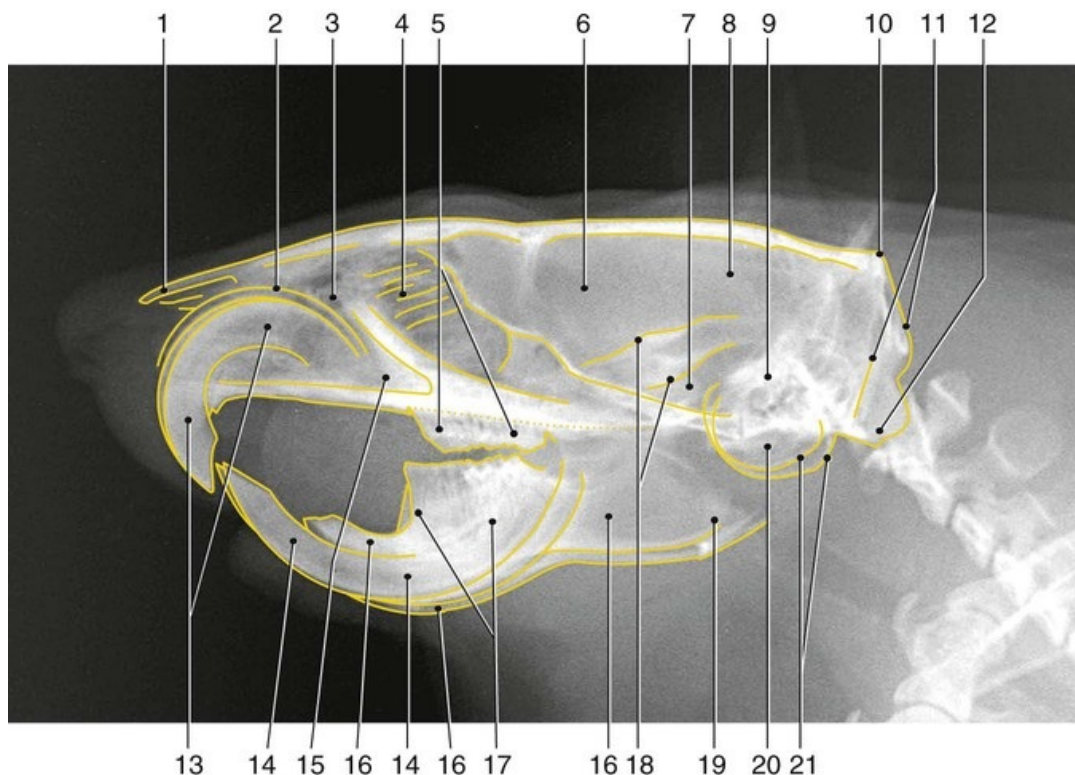
8-3 Murine: Viscera of the Thorax and Abdomen of Adult Female Rat (Ventral View)



- 1. Trachea
- 2. Cranial mediastinum

- 3. Heart
- 4. Lung
- 5. Liver
- 6. Stomach
- 7. Left kidney
- 8. Cecum
- 9. Urinary bladder
- 10. Scrotum

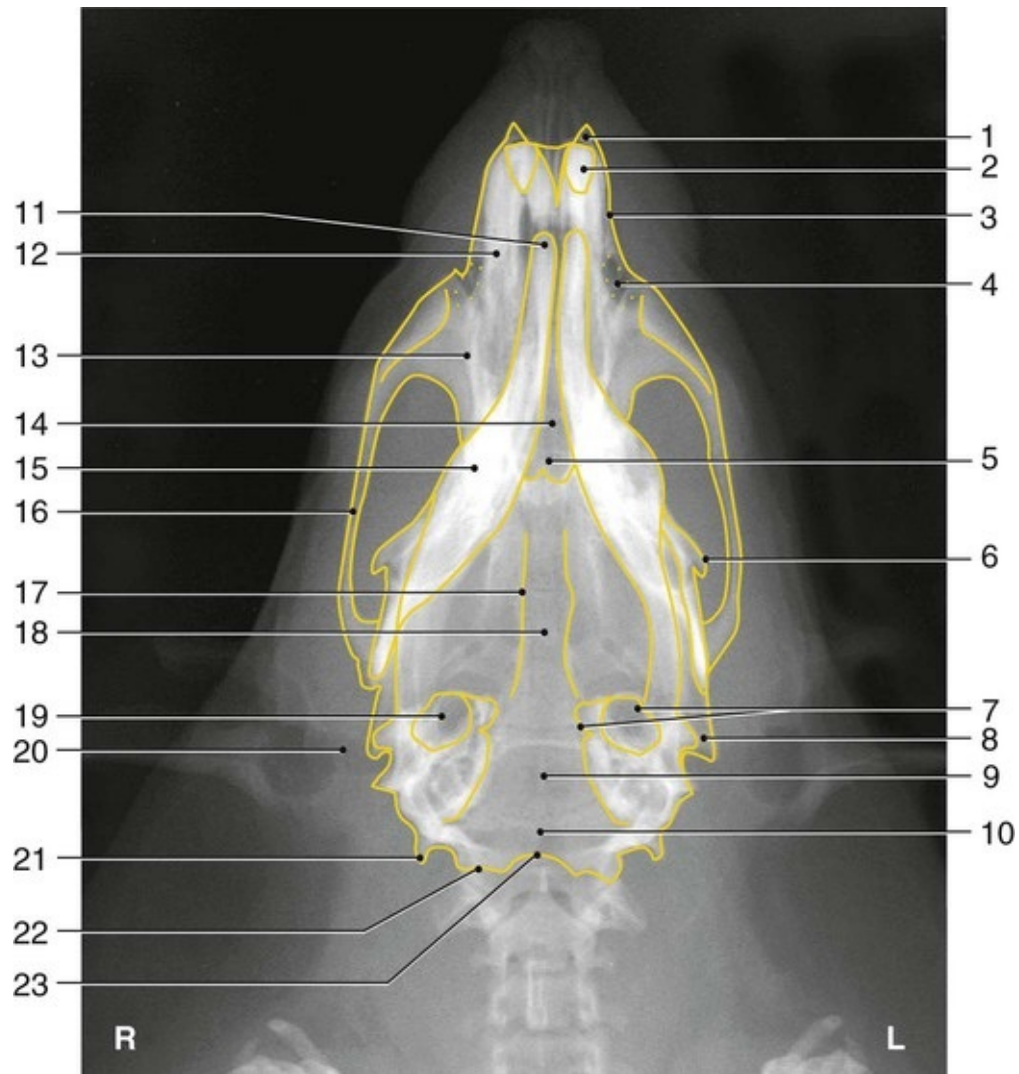
8-4 Murine: Skull of a 5-Month-Old Rat (Lateral View)



- 1. Nasal bone
- 2. Incisive bone
- 3. Nasal cavity
- 4. Ethmoturbinates

5. Maxillary molar teeth
6. Frontal bone
7. Temporal bone
8. Parietal bone
9. Petrous part of the temporal bone
10. External occipital protuberance
11. Occipital bone
12. Occipital condyle
13. Maxillary incisor tooth
14. Mandibular incisor tooth
15. Maxilla
16. Mandible
17. Mandibular molar teeth
18. Zygomatic process of temporal bone
19. Angular process of mandible
20. Tympanic cavity
21. Tympanic bullae

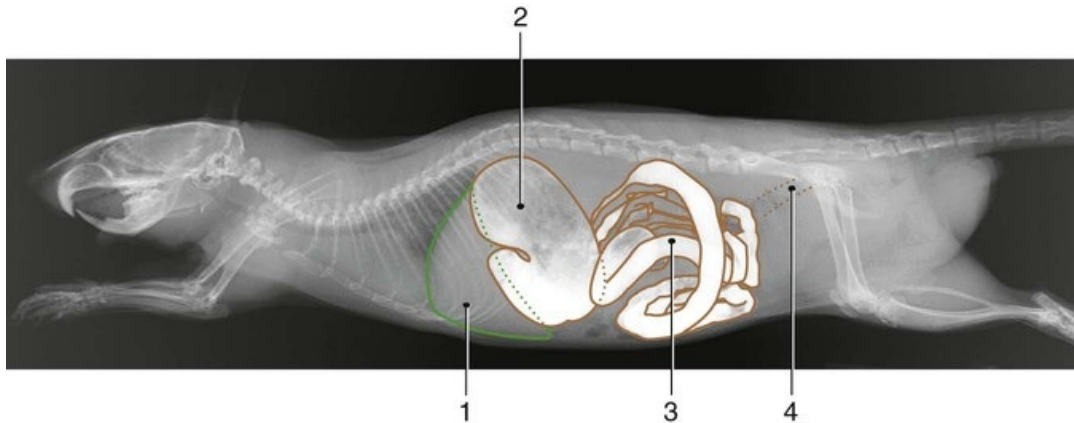
• **8-5 Murine: Skull of a 5-Month-Old Rat (Ventral View)**



1. Nasal bone
2. Maxillary incisor tooth
3. Incisive bone
4. Infraorbital hiatus
5. Palatine bone
6. Coronoid process of mandible
7. Tympanic bulla
8. Angular process of mandible
9. Parietal bone
10. Occipital bone
11. Mandibular incisor tooth
12. Maxilla
13. Zygomatic process of maxilla
14. Nasal cavity

- 15. Mandible
- 16. Zygomatic bone
- 17. Pterygoid bone
- 18. Basisphenoid bone
- 19. Tympanic cavity
- 20. Ear canal
- 21. Paracondylar process of occipital bone
- 22. Occipital condyle
- 23. Foramen magnum

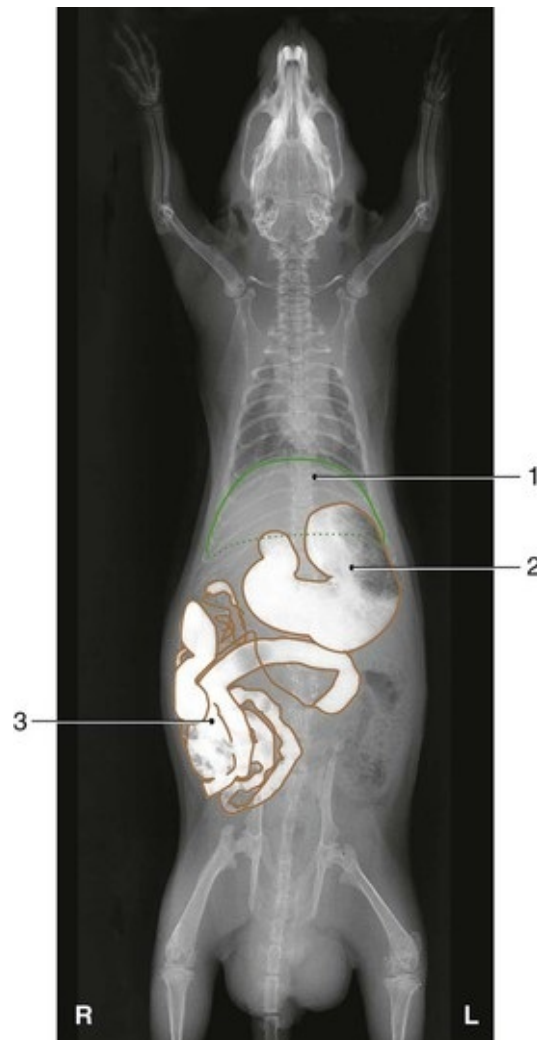
• 8-6 Murine: Gastrointestinal Positive Contrast Study in an Adult Male Rat (Lateral View)



- 1. Liver
- 2. Stomach
- 3. Small intestine
- 4. Colon

• 8-7 Murine: Gastrointestinal Positive

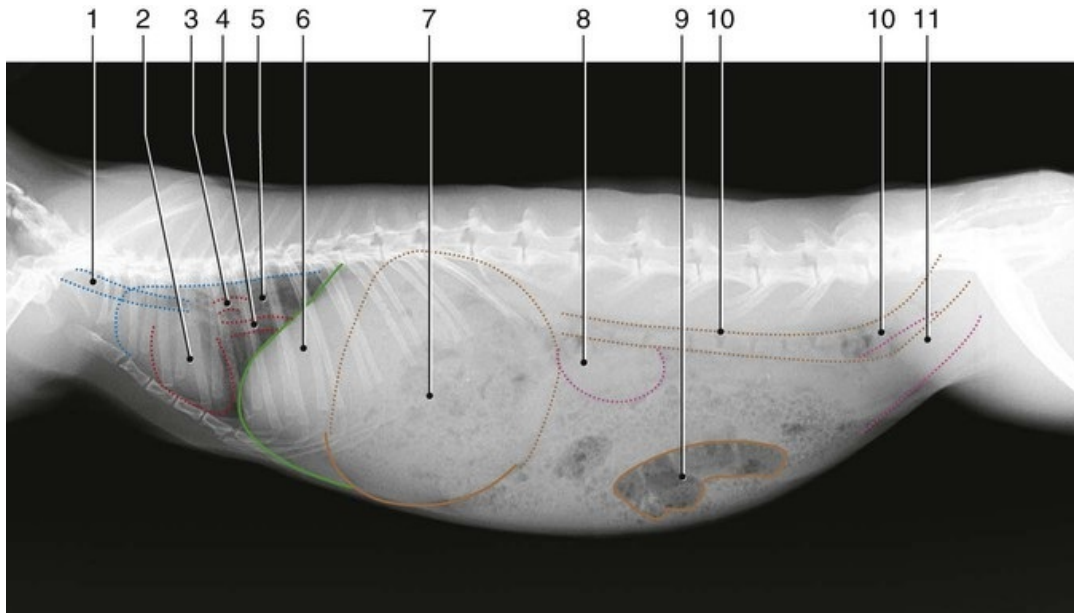
Contrast Study in an Adult Male Rat (Ventral View)



1. Liver
2. Stomach
3. Small intestine

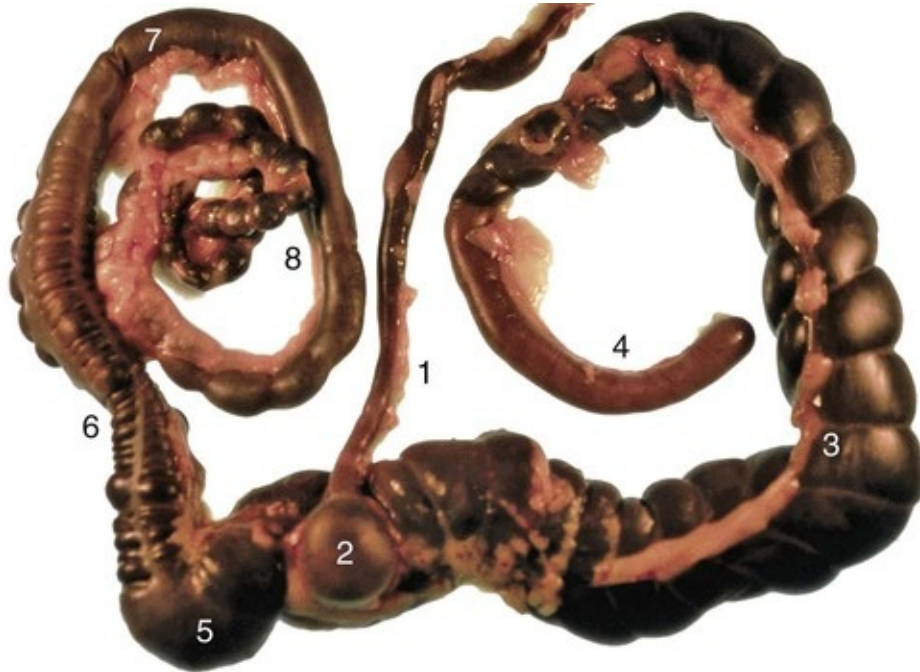
• **8-8 Leporine: Viscera of the Thorax and Abdomen of Adult Male Rabbit (Lateral**

View)



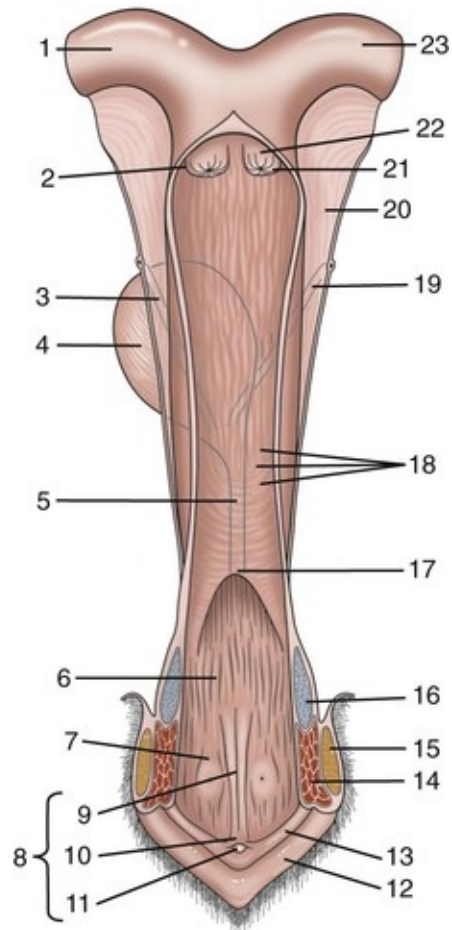
1. Trachea
2. Heart
3. Pulmonary vasculature
4. Caudal vena cava
5. Lung
6. Liver
7. Stomach
8. Kidney
9. Cecum
10. Colon
11. Urinary bladder

8-9 Leporine: Dissected Large Intestine of a Rabbit



1. Ileum
2. Sacculus rotundus
3. Body of cecum (note the long spiral fold along its length)
4. Vermiform appendix
5. Ampulla coli
6. Proximal colon
7. Fusus coli
8. Distal colon

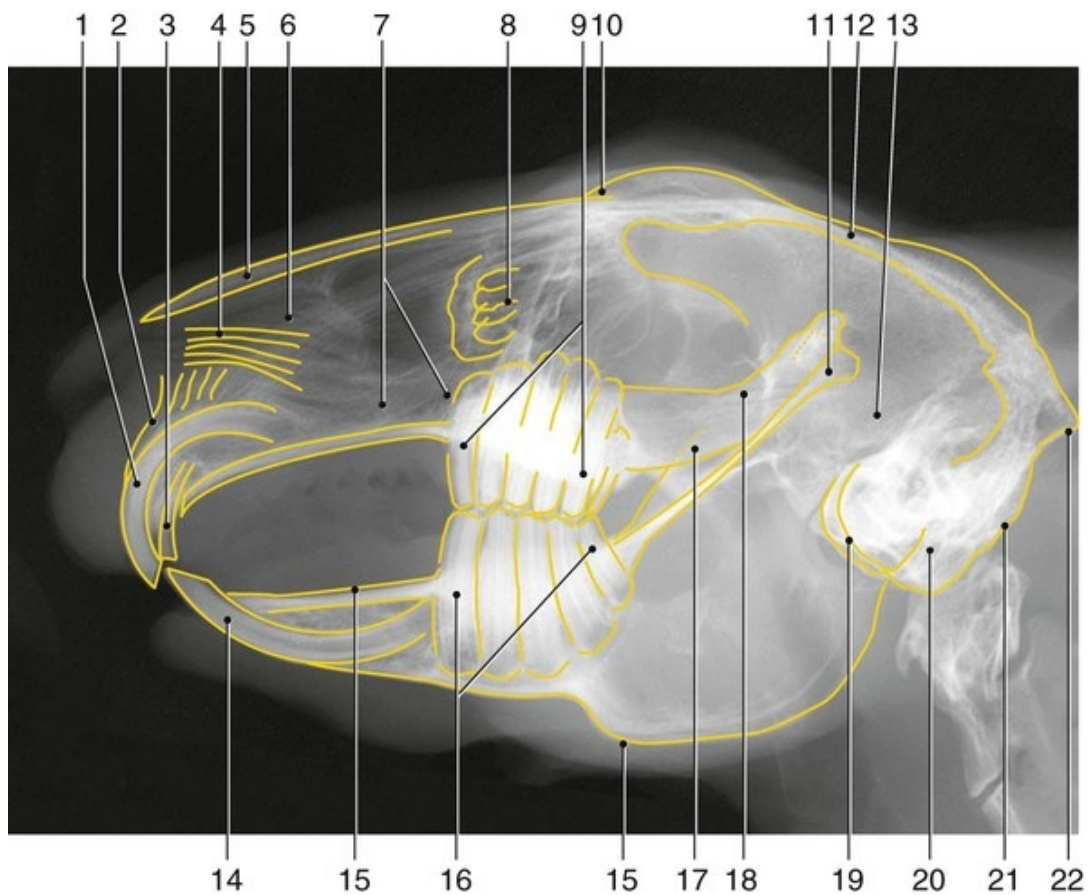
8-10 Leporine: Dissected Postparturient Rabbit Uterus (Dorsal Surface)



1. Left uterine horn
2. Vaginal fornix
3. Left ureter
4. Urinary bladder
5. Urethra
6. Vaginal vestibule
7. Greater vestibular gland
8. Clitoris
9. Corpus
10. Preputium
11. Glans
12. Greater lip of pudenda
13. Lesser lip of pudenda
14. Constrictor muscle of vestibule
15. Preputial gland
16. Vestibular bulb
17. External urethral opening

- 18. Vagina (ventral floor)
- 19. Right ureter
- 20. Uterine broad ligament
- 21. External uterine ostium
- 22. Right vaginal cervix
- 23. Right uterine horn

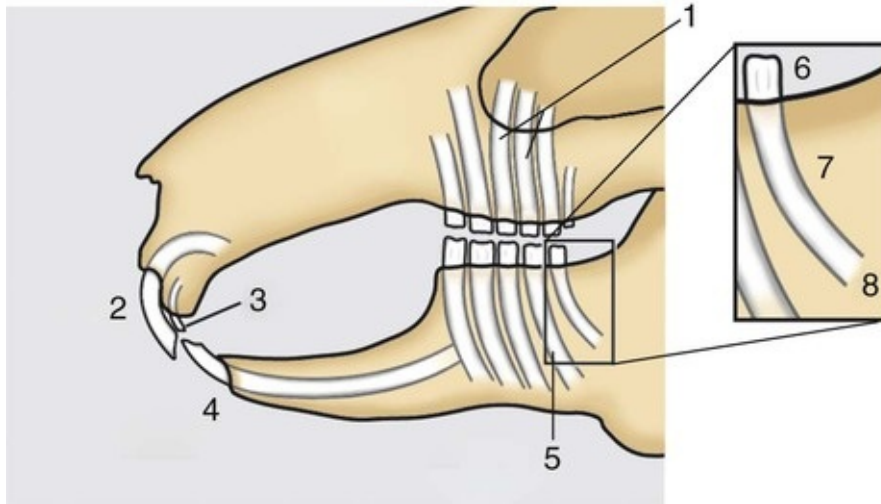
8-11 Leporine: Skull of Rabbit (Lateral View)



- 1. Maxillary incisor tooth
- 2. Incisive bone
- 3. Second maxillary incisor tooth
- 4. Nasoturbinate

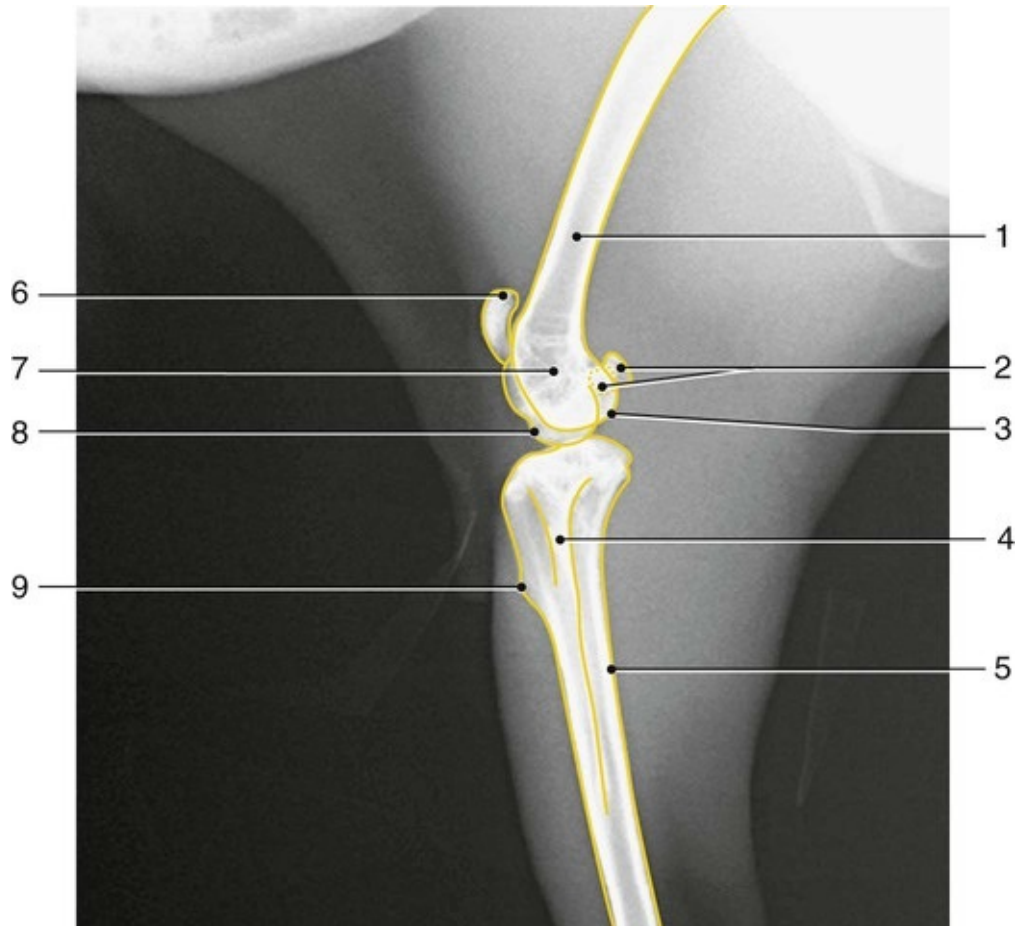
5. Nasal bone
6. Nasal cavity
7. Maxilla
8. Ethmoturbinates
9. Maxillary premolar and molar teeth
10. Frontal bone
11. Condylar process of mandible
12. Parietal bone
13. Temporal bone
14. Mandibular incisor tooth
15. Mandible
16. Mandibular premolar and molar teeth
17. Rostral margin of mandibular ramus
18. Zygomatic bone
19. Tympanic bulla
20. Tympanic cavity
21. Occipital bone
22. External occipital protuberance

• **8-12 Leporine: Rabbit Skull Showing Dentition of Mandible, Maxilla, and Individual Tooth (Lateral View)**



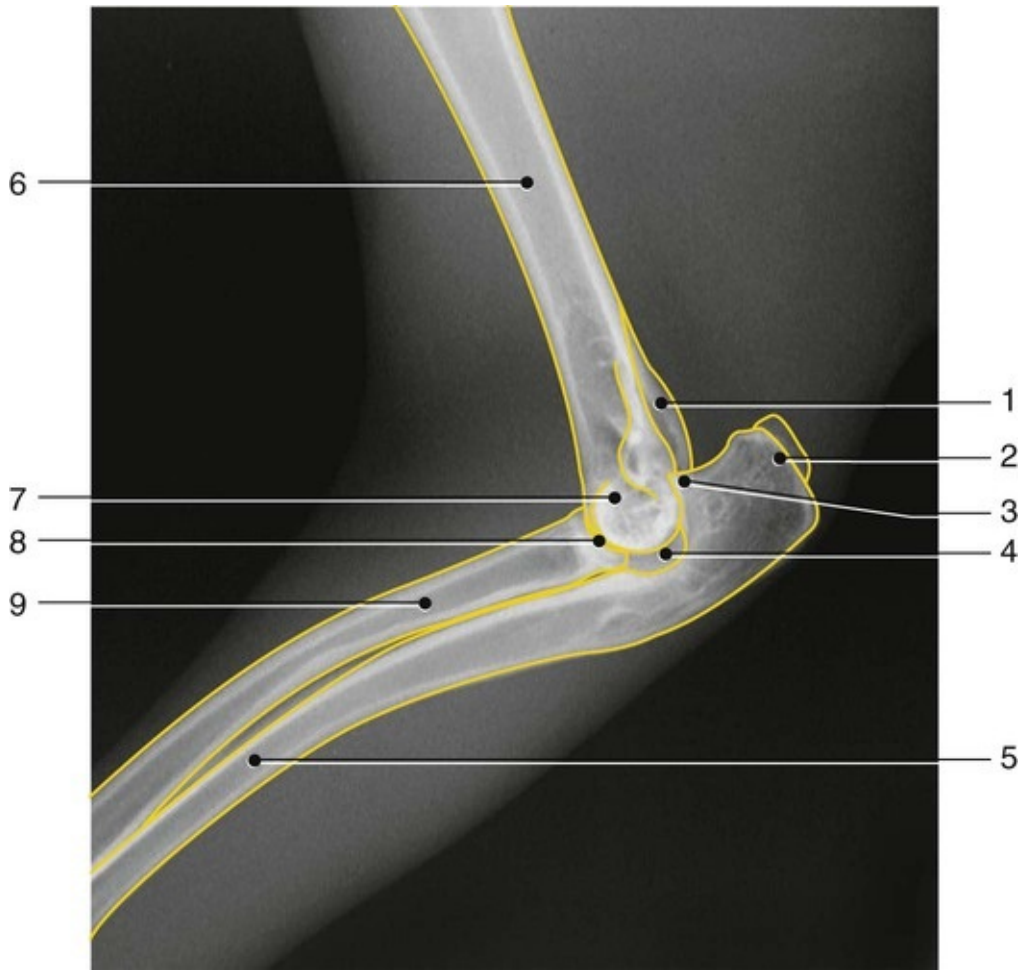
1. Upper cheek teeth
2. Upper incisor
3. Peg tooth
4. Lower incisor
5. Lower cheek teeth
6. Clinical crown
7. Reserve crown
8. Apex

8-13 Leporine: Stifle Joint of an Adult Male Rabbit (Lateral View)



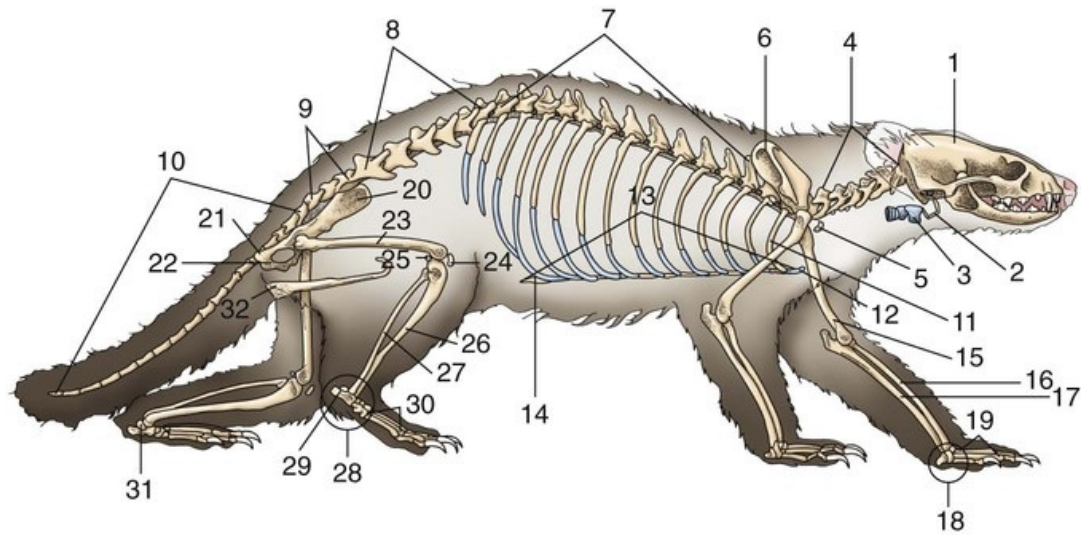
1. Femur
2. Fabellae
3. Medial femoral condyle
4. Fibula
5. Tibia
6. Patella
7. Femoral epicondyle
8. Lateral femoral condyle
9. Tibial crest

8-14 Leporine: Elbow Joint of an Adult Male Rabbit (Lateral View)



1. Medial humeral epicondyle
2. Olecranon of ulna
3. Anconeal process of ulna
4. Trochlear notch of ulna
5. Ulna
6. Humerus
7. Humeral condyle
8. Humeroradial joint space
9. Radius

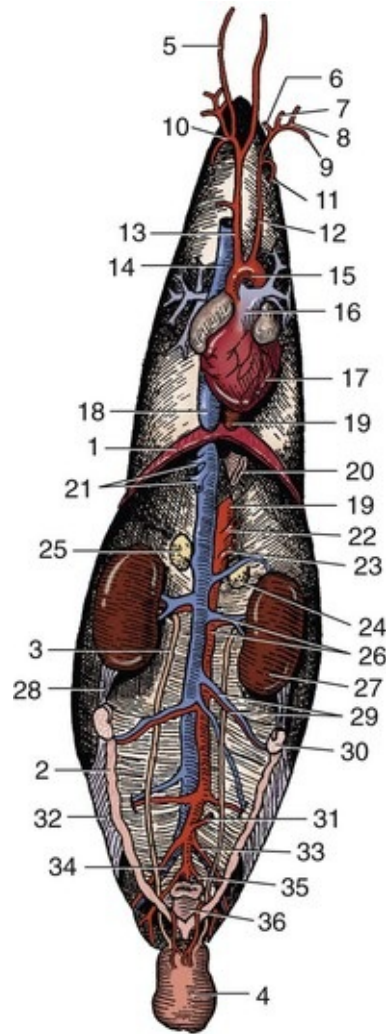
8-15 Musteline: Skeletal Anatomy of a Ferret



1. Calvaria
2. Hyoid apparatus
3. Larynx
4. Seven cervical vertebrae
5. Clavicle
6. Scapula
7. Fifteen thoracic vertebrae
8. Five lumbar vertebrae
9. Three sacral vertebrae
10. Eighteen caudal vertebrae
11. First rib
12. Manubrium
13. Sternum
14. Xiphoid process
15. Humerus
16. Radius
17. Ulna
18. Carpal bones
19. Metacarpal bones
20. Ilium
21. Ischium
22. Pubis
23. Femur
24. Patella
25. Fabella

- 26. Tibia
- 27. Fibula
- 28. Tarsal bones
- 29. Calcaneus
- 30. Metatarsal bones
- 31. Talus
- 32. Os penis

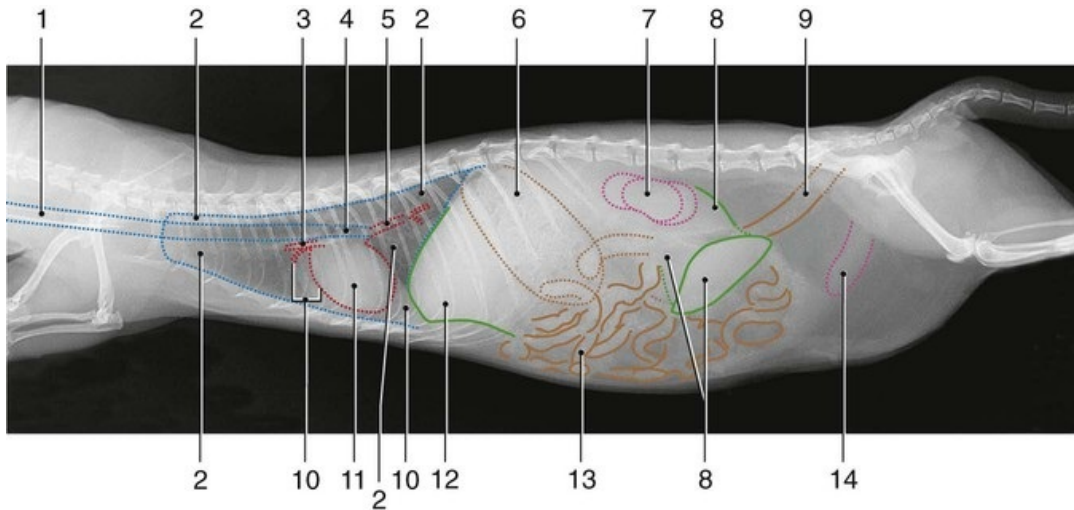
• **8-16 Musteline: Anatomy of the Viscera and Most Important Blood Vessels in a Ferret (After Removal of the Lungs, Liver, and Gastrointestinal Tract)**



1. Diaphragm
2. Uterus
3. Ureter
4. Urinary bladder
5. Right common carotid artery
6. Left common carotid artery
7. Vertebral artery
8. Costocervical artery
9. Superficial cervical artery
10. Axillary artery
11. Right subclavian artery
12. Right internal thoracic artery
13. Left internal thoracic artery
14. Branch to thymus

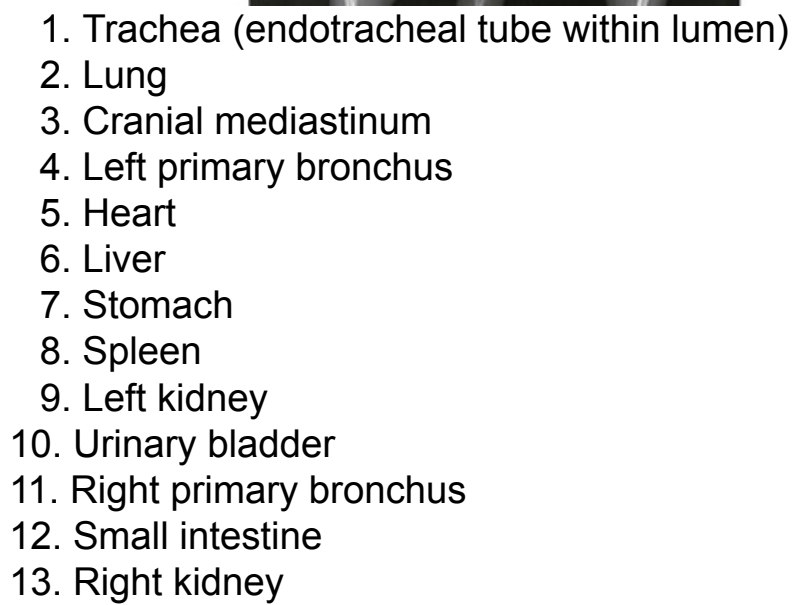
15. Left subclavian artery
16. Brachiocephalic (innominate) artery
17. Cranial vena cava
18. Aortic arch
19. Right atrium
20. Pulmonary trunk
21. Left atrium
22. Right ventricle
23. Left ventricle
24. Caudal vena cava
25. Aorta
26. Esophagus
27. Hepatic veins
28. Celiac artery
29. Cranial mesenteric artery
30. Left adrenolumbar vein
31. Left adrenal gland
32. Right adrenal gland
33. Left renal artery and vein
34. Left kidney
35. Suspensory ligament of ovary
36. Left ovarian artery and vein
37. Left ovary
38. Left deep circumflex iliac artery and vein
39. Caudal mesenteric artery
40. Broad ligament of uterus
41. Left external iliac artery
42. Right common iliac vein
43. Left internal iliac artery
44. Rectum

8-17 Musteline: Viscera of the Thorax and Abdomen of Adult Female Ferret (Lateral View)



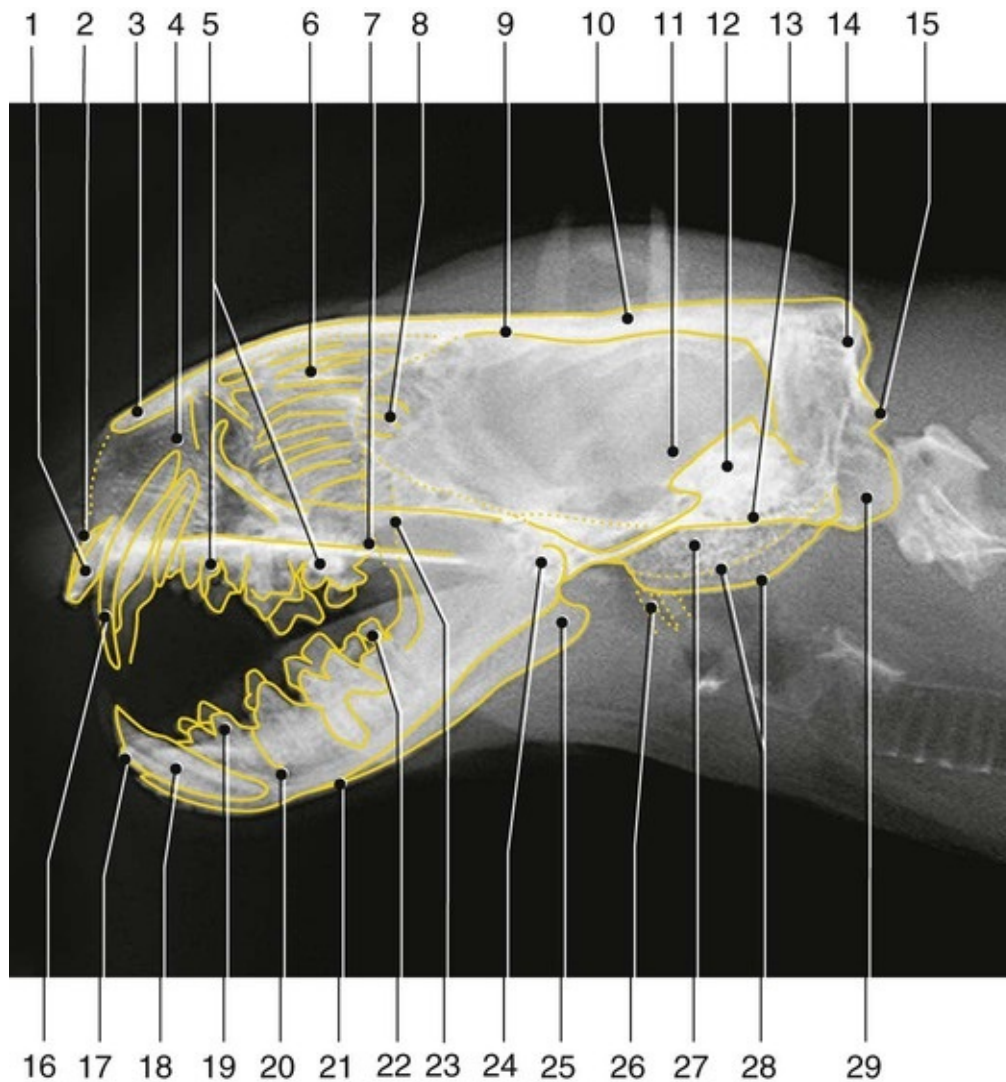
1. Trachea (endotracheal tube within lumen)
2. Lung
3. Pulmonary vasculature
4. Bronchus
5. Pulmonary vein
6. Stomach
7. Kidney
8. Spleen
9. Colon
10. Intrathoracic adipose tissue
11. Heart
12. Liver
13. Small intestine
14. Urinary bladder

8-18 Musteline: Viscera of the Thorax and Abdomen of Adult Female Ferret (Ventral View)



1. Trachea (endotracheal tube within lumen)
2. Lung
3. Cranial mediastinum
4. Left primary bronchus
5. Heart
6. Liver
7. Stomach
8. Spleen
9. Left kidney
10. Urinary bladder
11. Right primary bronchus
12. Small intestine
13. Right kidney

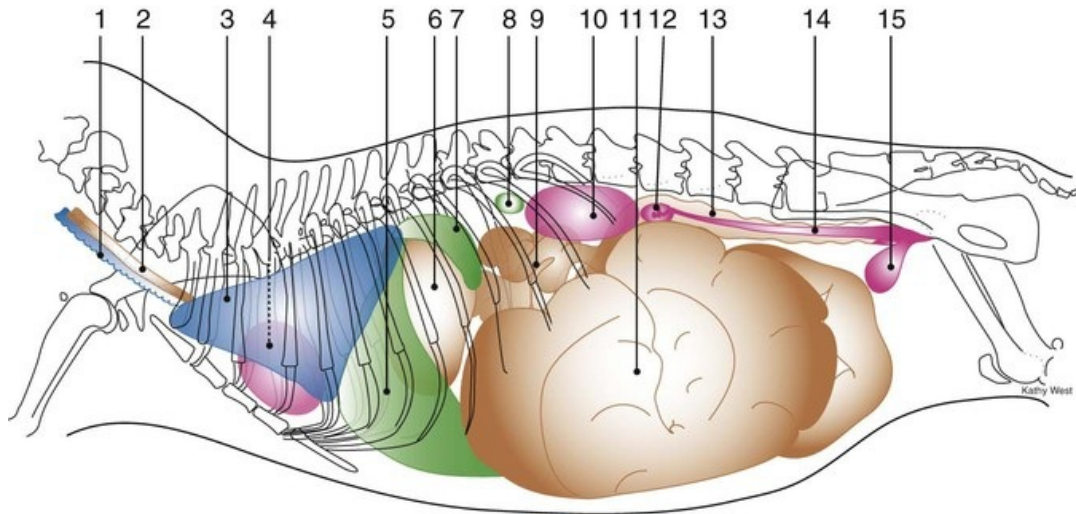
8-19 Musteline: Skull of a Ferret with Mouth Open (Lateral View)



1. Maxillary incisor tooth
2. Incisive bone
3. Nasal bone
4. Nasal cavity
5. Maxillary premolar and molar teeth
6. Nasoturbinates
7. Palatine bone
8. Ethmoturbinates

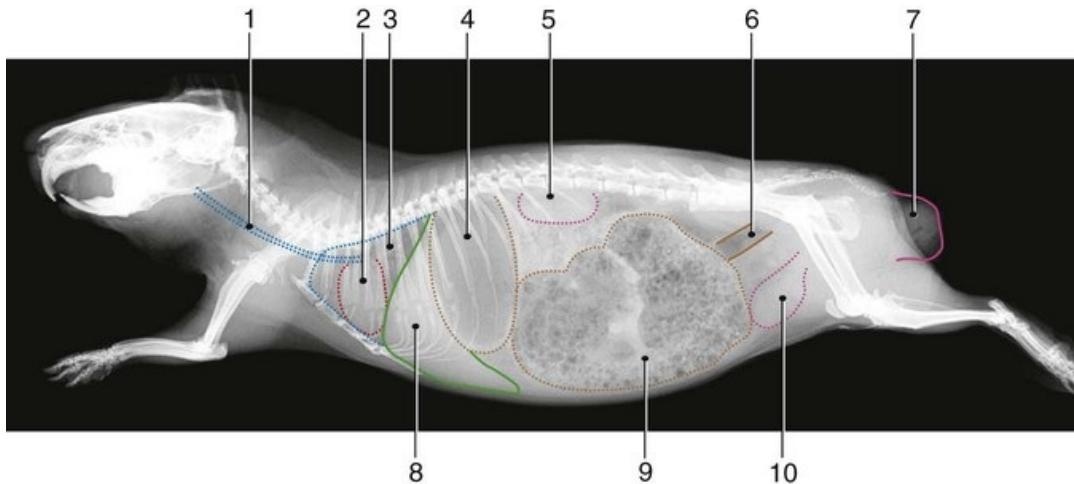
9. Frontal bone
10. Parietal bone
11. Temporal bone
12. Petrous part of temporal bone
13. Basal part of occipital bone
14. External occipital protuberance
15. Occipital bone
16. Maxillary canine tooth
17. Mandibular incisor tooth
18. Mandibular canine tooth
19. Mandibular premolar tooth
20. Mental foramen
21. Mandible
22. Mandibular molar tooth
23. Coronoid process of mandible
24. Condylar process of mandible
25. Angular process of mandible
26. Hyoid bones
27. Tympanic cavity
28. Tympanic bullae
29. Occipital condyle

• **8-20 Cavine: Viscera of the Thorax and Abdomen of Adult Female Guinea Pig (Lateral View)**



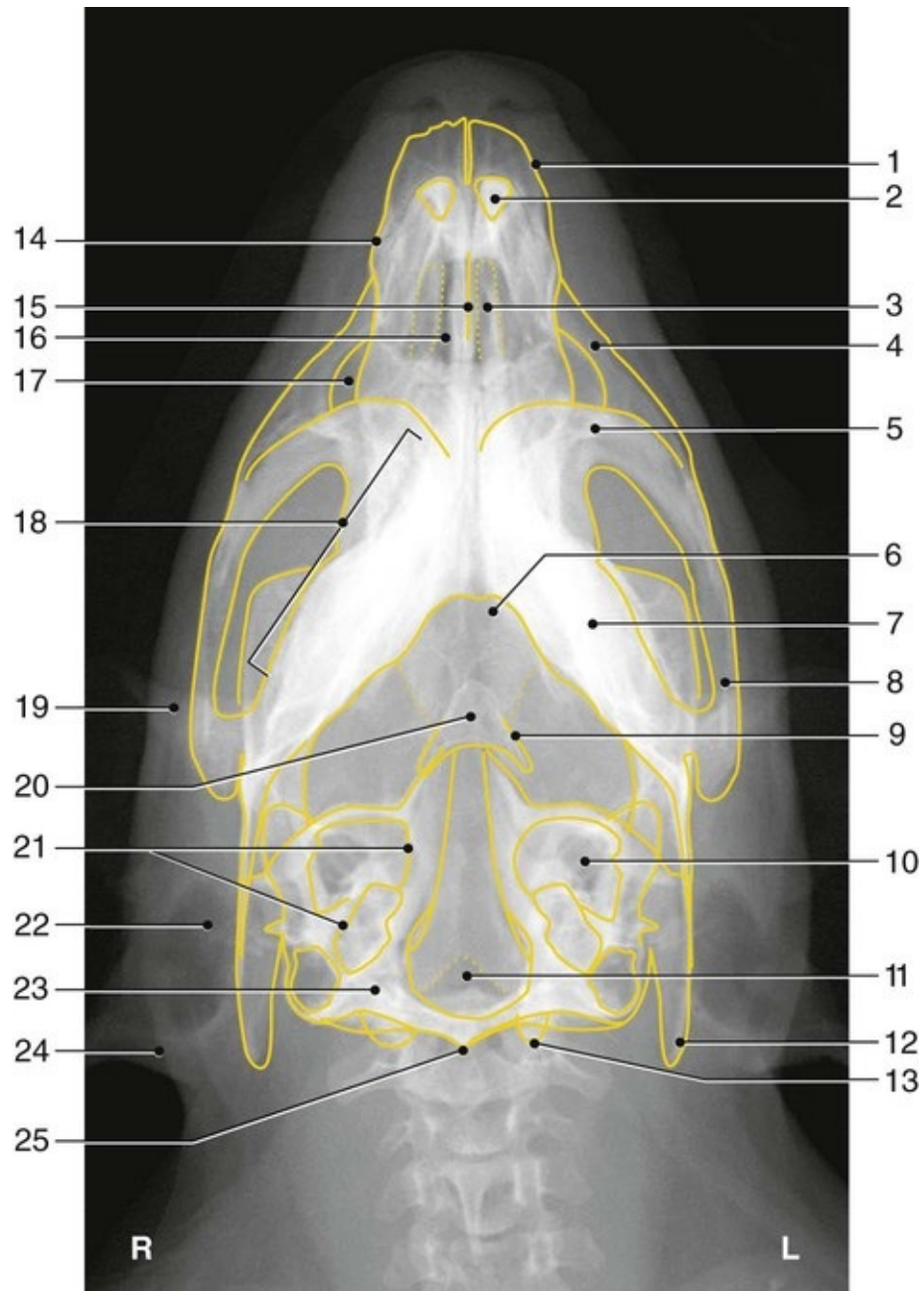
1. Trachea
2. Esophagus
3. Lung
4. Heart
5. Liver
6. Stomach
7. Spleen
8. Left adrenal gland
9. Small intestine
10. Left kidney
11. Cecum
12. Left ovary
13. Descending colon
14. Left horn of uterus
15. Urinary bladder

8-21 Cavine: Viscera of the Thorax and Abdomen of Adult Male Guinea Pig (Lateral View)



1. Trachea
2. Heart
3. Lung
4. Stomach
5. Kidney
6. Colon
7. Scrotum
8. Liver
9. Cecum
10. Urinary bladder

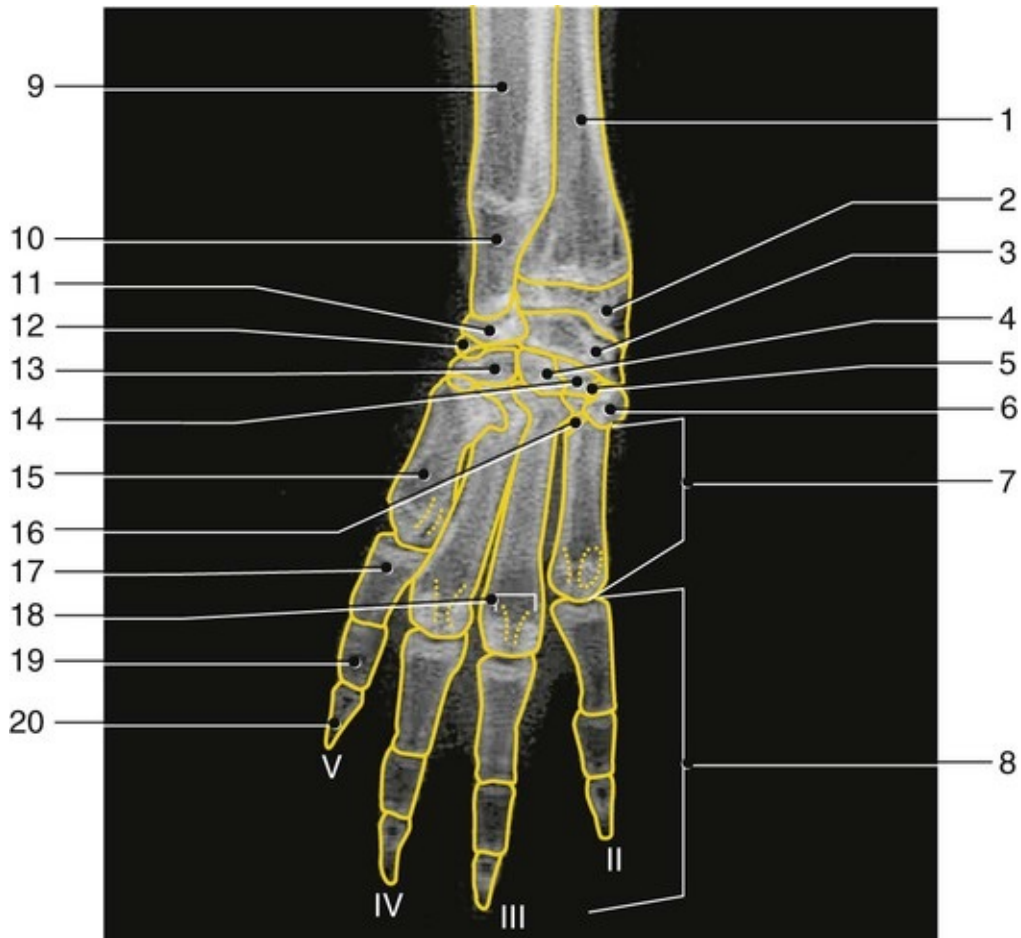
8-22 Cavine: Skull of a Guinea Pig (Ventral View)



1. Nasal bone
2. Maxillary incisor tooth
3. Mandibular incisor tooth
4. Maxilla
5. Zygomatic process of maxilla
6. Palatine bone
7. Mandible
8. Zygomatic bone
9. Pterygoid bone

10. Tympanic cavity
11. Foramen magnum
12. Angular process of mandible
13. Paracondylar process of occipital bone
14. Incisive bone
15. Vomer
16. Nasal cavity
17. Infraorbital hiatus
18. Premolar and molar teeth
19. Rostral margin of pinna
20. Basisphenoid bone
21. Tympanic bulla
22. Ear canal
23. Occipital bone
24. Caudal margin of pinna
25. External occipital protuberance

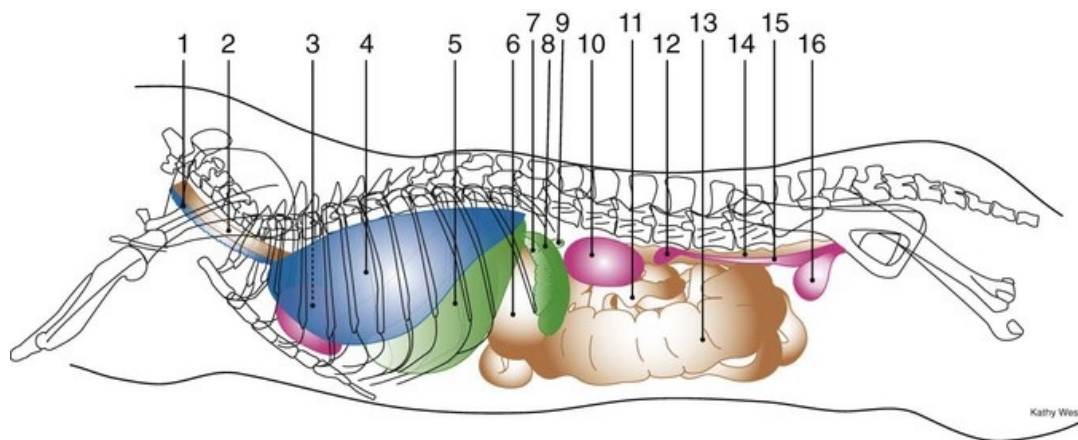
• **8-23 Cavine: Distal Thoracic Limb of an Adult Male Guinea Pig (Palmer View)**



1. Radius
2. Distal radial epiphysis
3. Intermediaradial carpal bone
4. Carpal bone III
5. Carpal bone I
6. Metacarpal bone I
7. Metacarpal bones
8. Phalanges
9. Ulna
10. Styloid process of ulna
11. Ulnar carpal bone
12. Accessory carpal bone
13. Carpal bone IV
14. Carpal bone II
15. Metacarpal bone V
16. Falciform carpal bone
17. Proximal phalanx of digit V

- 18. Proximal sesamoid bones
- 19. Middle phalanx of digit V
- 20. Distal phalanx of digit V

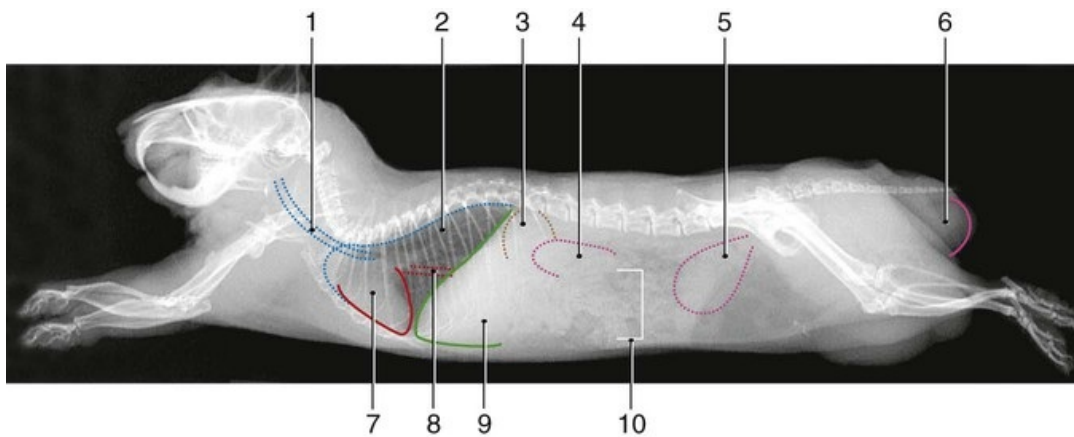
8-24 Cricetine: Viscera of the Thorax and Abdomen of Adult Female Hamster (Lateral View)



- 1. Trachea
- 2. Esophagus
- 3. Heart
- 4. Lung
- 5. Liver
- 6. Stomach
- 7. Pancreas
- 8. Spleen
- 9. Left adrenal gland
- 10. Left kidney
- 11. Small intestine
- 12. Left ovary
- 13. Cecum
- 14. Descending colon
- 15. Left horn of uterus

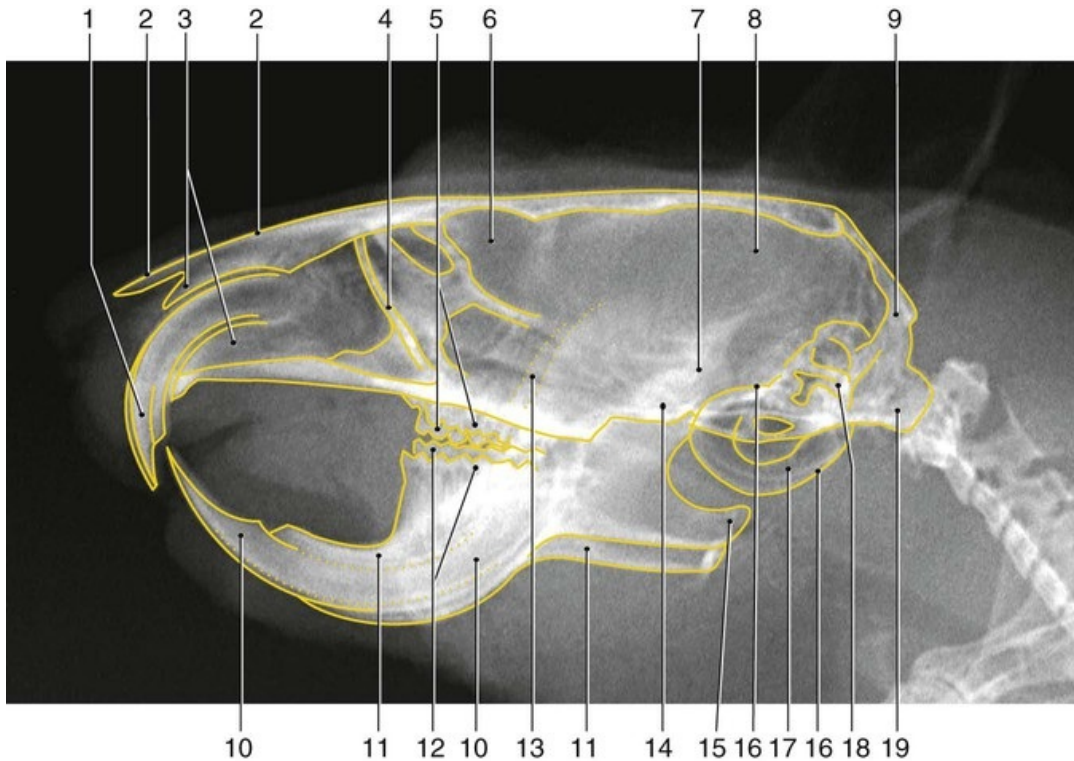
16. Urinary bladder

8-25 Cricetine: Viscera of the Thorax and Abdomen of Adult Male Hamster (Lateral View)



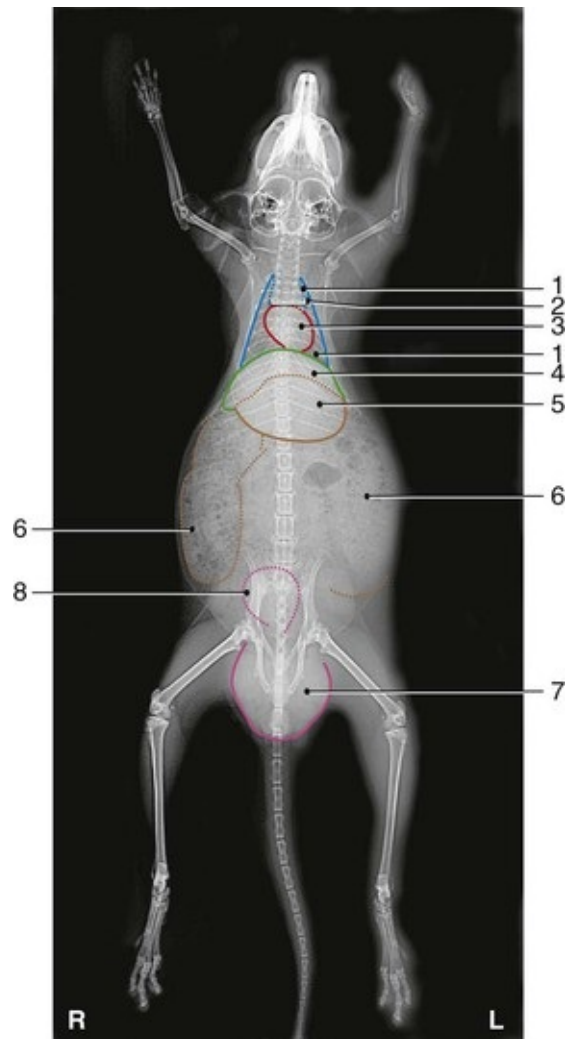
1. Trachea
2. Lung
3. Stomach
4. Kidney
5. Urinary bladder
6. Scrotum
7. Heart
8. Caudal vena cava
9. Liver
10. Cecum

8-26 Cricetine: Skull of a Hamster (Lateral View)



1. Maxillary incisor tooth
2. Nasal bone
3. Incisive bone
4. Zygomatic process of maxilla
5. Maxillary molar teeth
6. Frontal bone
7. Temporal bone
8. Parietal bone
9. Occipital bone
10. Mandibular incisor tooth
11. Mandible
12. Mandibular molar teeth
13. Coronoid process of mandible
14. Condylar process of mandible
15. Angular process of mandible
16. Tympanic bulla
17. Tympanic cavity
18. Petrous part of temporal bone
19. Occipital condyle

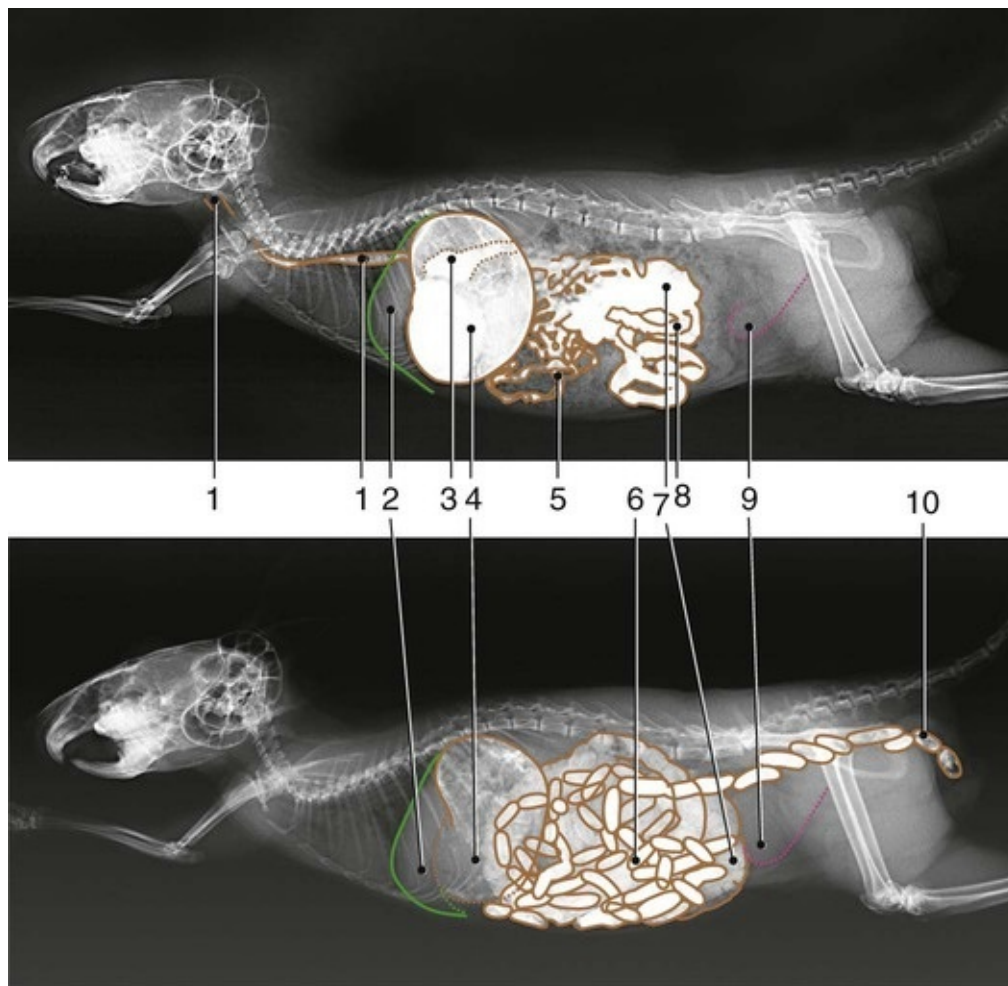
8-27 Chinchilline: Viscera of the Thorax and Abdomen of Adult Male Chinchilla (Ventral View)



1. Lung
2. Cranial mediastinum
3. Heart
4. Liver
5. Stomach
6. Cecum
7. Scrotum

8. Urinary bladder

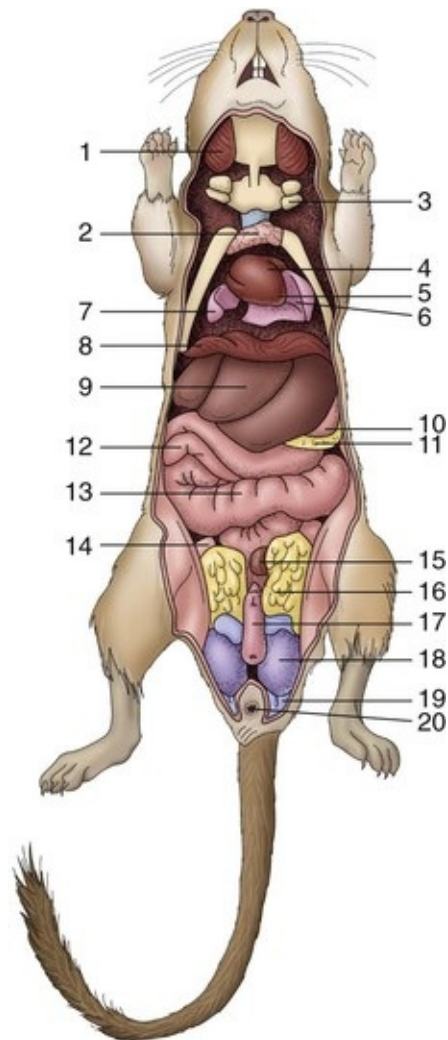
8-28 Chinchilline: Gastrointestinal Positive Contrast Study in an Adult Male Chinchilla (Lateral Views)



1. Esophagus
2. Liver
3. Duodenum
4. Stomach
5. Small intestine

- 6. Colon
- 7. Cecum
- 8. Ileum
- 9. Urinary bladder
- 10. Rectum

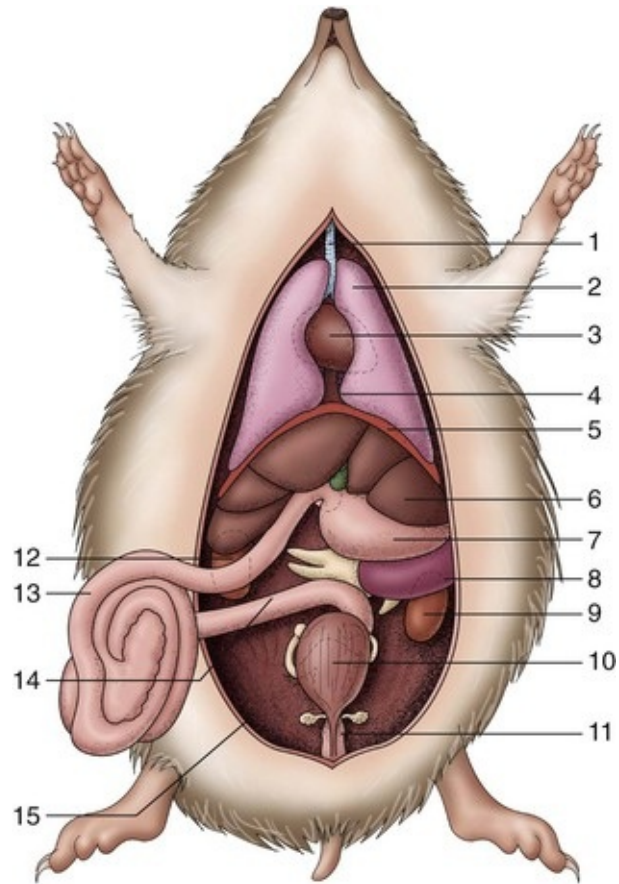
8-29 Cricetine: Internal Anatomy of a Male Gerbil (Ventral View)



- 1. Masseter muscle

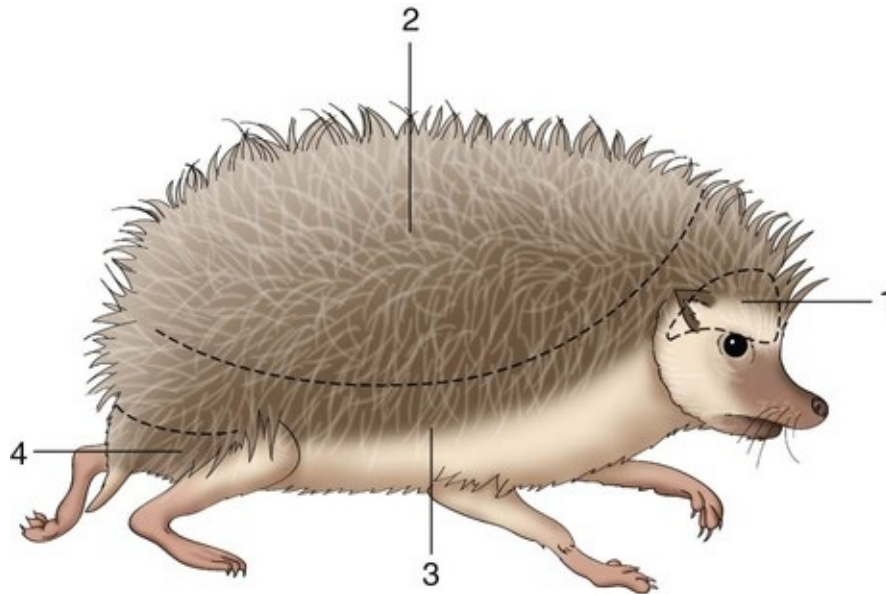
2. Thymus
3. Clavicle
4. Left atrium/auricle
5. Left ventricle
6. Left lung
7. Right lung
8. Diaphragm
9. Liver
10. Stomach
11. Greater omentum
12. Jejunum
13. Cecum
14. Vesicular gland
15. Bladder
16. Fat pad and head of epididymis
17. Penis
18. Testes
19. Tail of epididymis
20. Anus

• **8-30 Erinaceinae: Internal Anatomy of a Female Hedgehog (Ventral View)**



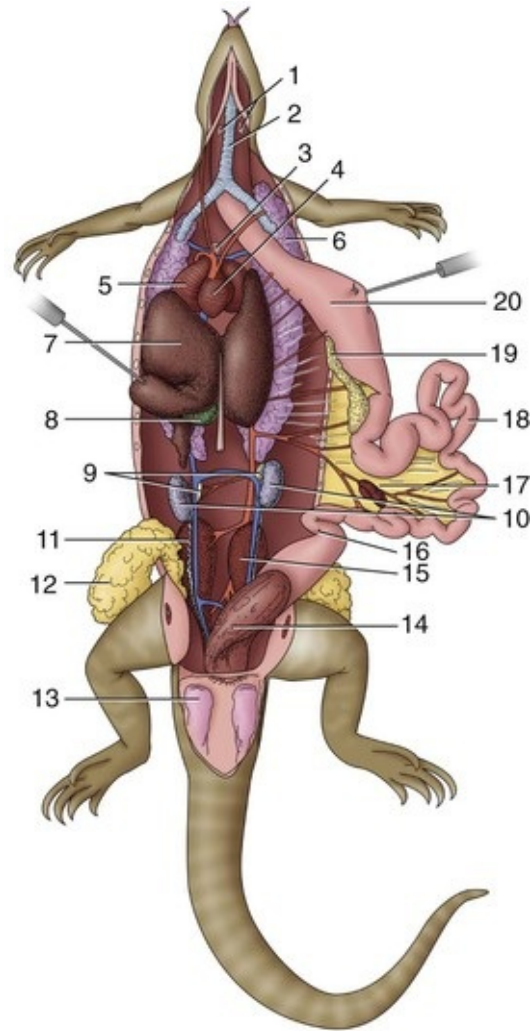
1. Trachea
2. Lung
3. Heart
4. Esophagus
5. Diaphragm
6. Liver
7. Stomach
8. Spleen
9. Left kidney
10. Urinary bladder
11. Rectum
12. Right kidney
13. Small intestine
14. Large intestine
15. Ovary

• 8-31 Erinaceinae: Hedgehog Muscles Used for Curling Body and Spinal Control



1. Frontodorsalis muscle
2. Panniculus carnosus muscle
3. Orbicularis muscle
4. Caudodorsalis muscle

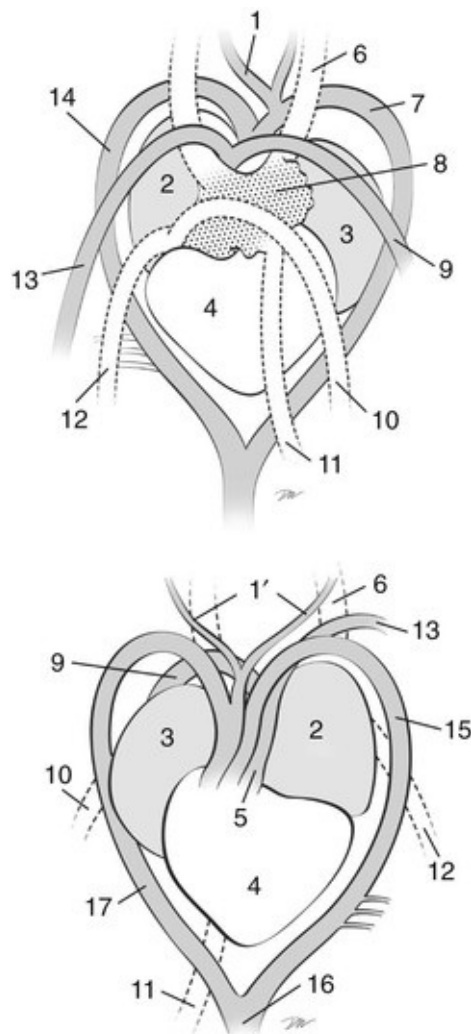
• 8-32 Lacertilian: Internal Anatomy of a Savannah Monitor Lizard (Ventral View)



1. Parathyroids
2. Trachea
3. Thyroid
4. Ventricle
5. Right atrium
6. Lung
7. Liver
8. Gallbladder
9. Adrenal glands
10. Testes
11. Vas deferens
12. Fat pad
13. Hemipenis sac
14. Bladder

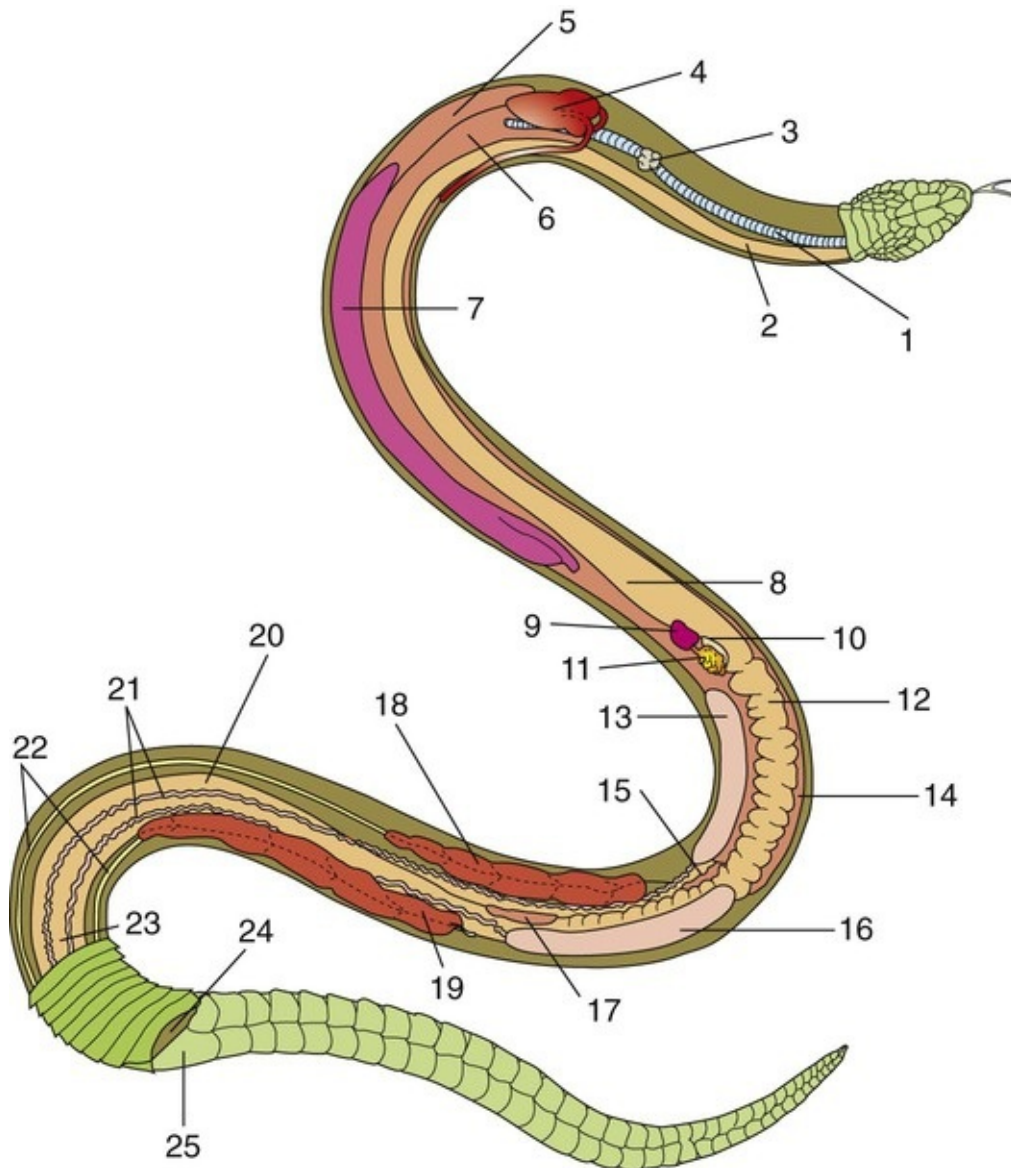
- 15. Kidney
- 16. Colon
- 17. Spleen
- 18. Small intestine
- 19. Pancreas
- 20. Stomach

● 8-33 Lacertilian: Lizard Heart (Dorsal [Top] and Ventral [Bottom] Views)



1. Carotid artery
- 1'. Internal carotid arteries
2. Left atrium
3. Right atrium
4. Ventricle
5. Pulmonary trunk
6. Precava
7. Right aorta
8. Sinus venosus
9. Right pulmonary artery
10. Right pulmonary vein
11. Postcava
12. Left pulmonary vein
13. Left pulmonary artery
14. Left aorta
15. Left systemic aorta
16. Dorsal aorta
17. Right systemic aorta

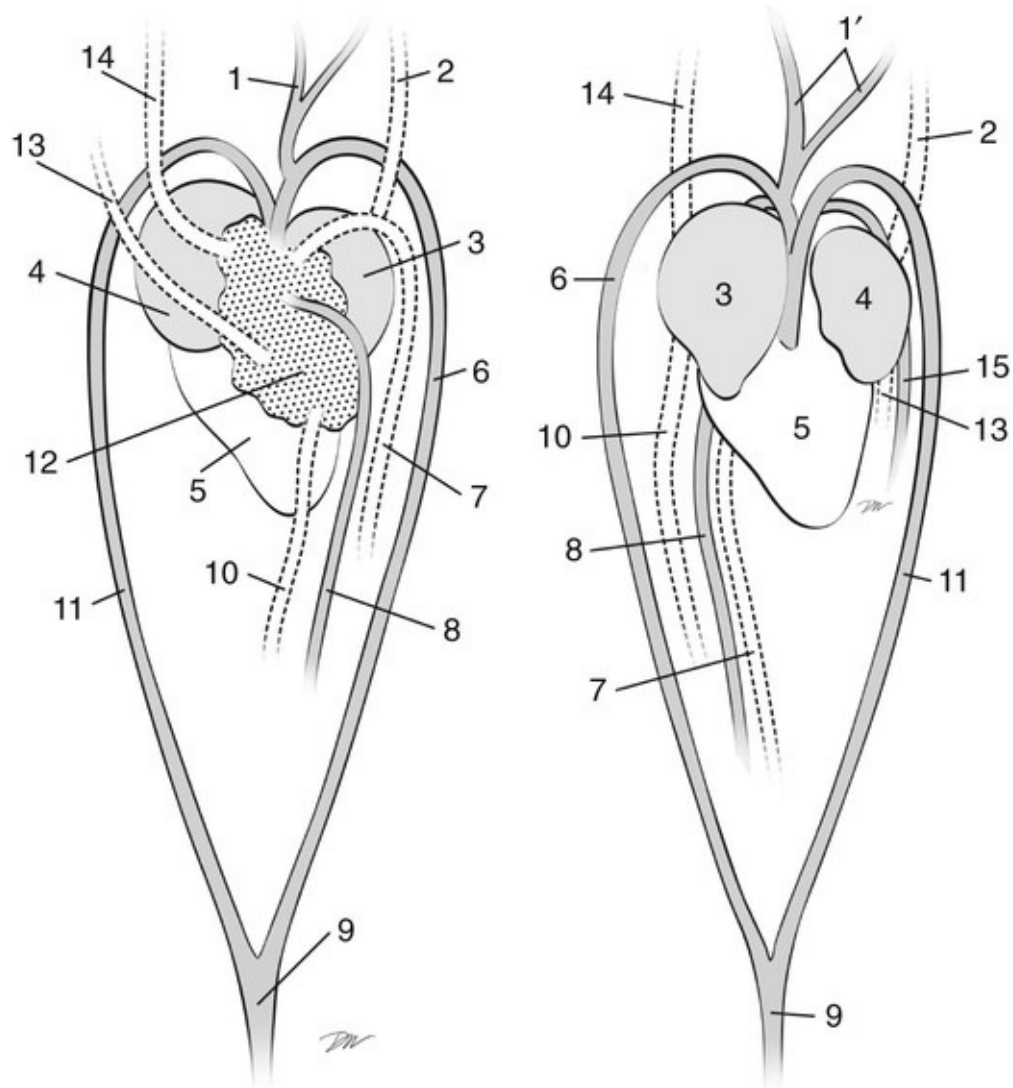
● 8-34 Serpentine: Internal Anatomy of a Male Snake (Ventral View)



1. Trachea
2. Esophagus
3. Thyroid gland
4. Heart
5. Left lung
6. Right lung
7. Liver
8. Stomach
9. Gallbladder
10. Spleen
11. Pancreas
12. Small intestine

13. Right testis
14. Right air sac
15. Right adrenal gland
16. Left testis
17. Left adrenal gland
18. Right kidney
19. Left kidney
20. Large intestine
21. Vas deferens
22. Ureters
23. Rectum
24. Cloaca
25. Anal scale (divided)

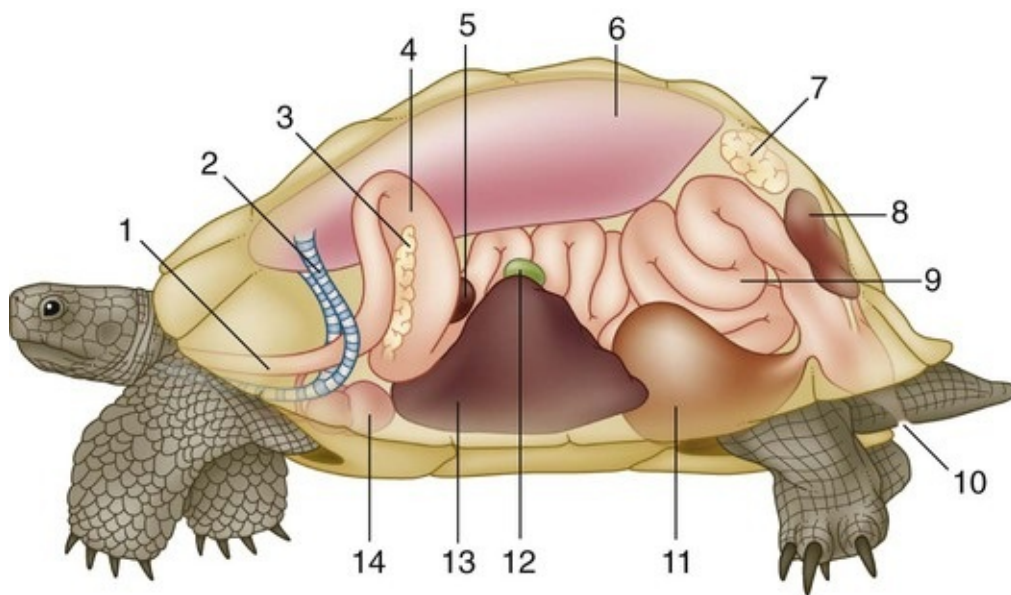
● **8-35 Serpentine: Snake Heart (Dorsal [Left] and Ventral [Right] Views)**



1. Carotid artery
- 1'. Common carotid arteries
2. Left precava
3. Right atrium
4. Left atrium
5. Ventricle
6. Right aorta
7. Right pulmonary vein
8. Right pulmonary artery
9. Dorsal aorta
10. Postcava

- 11. Left aorta
- 12. Sinus venosus
- 13. Left pulmonary vein
- 14. Right precava
- 15. Left pulmonary artery

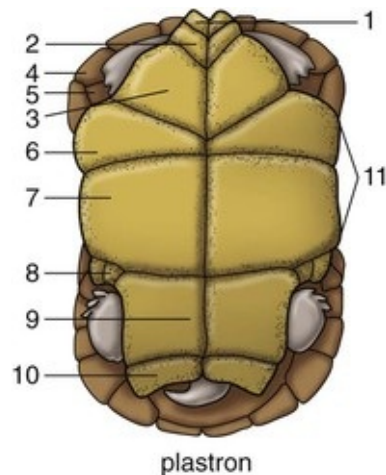
8-36 Chelonian: Internal Anatomy of a Tortoise (Lateral View)



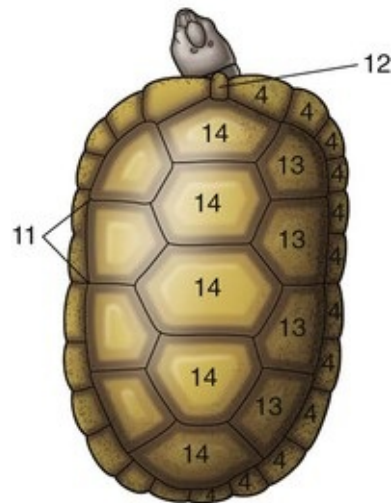
- 1. Oesophagus
- 2. Trachea
- 3. Pancreas
- 4. Stomach
- 5. Spleen
- 6. Lung
- 7. Gonad
- 8. Kidney
- 9. Intestines
- 10. Cloaca

- 11. Bladder
- 12. Gallbladder
- 13. Liver
- 14. Heart

8-37 Chelonian: Plastron and Carapace Scutes of a Tortoise



plastron

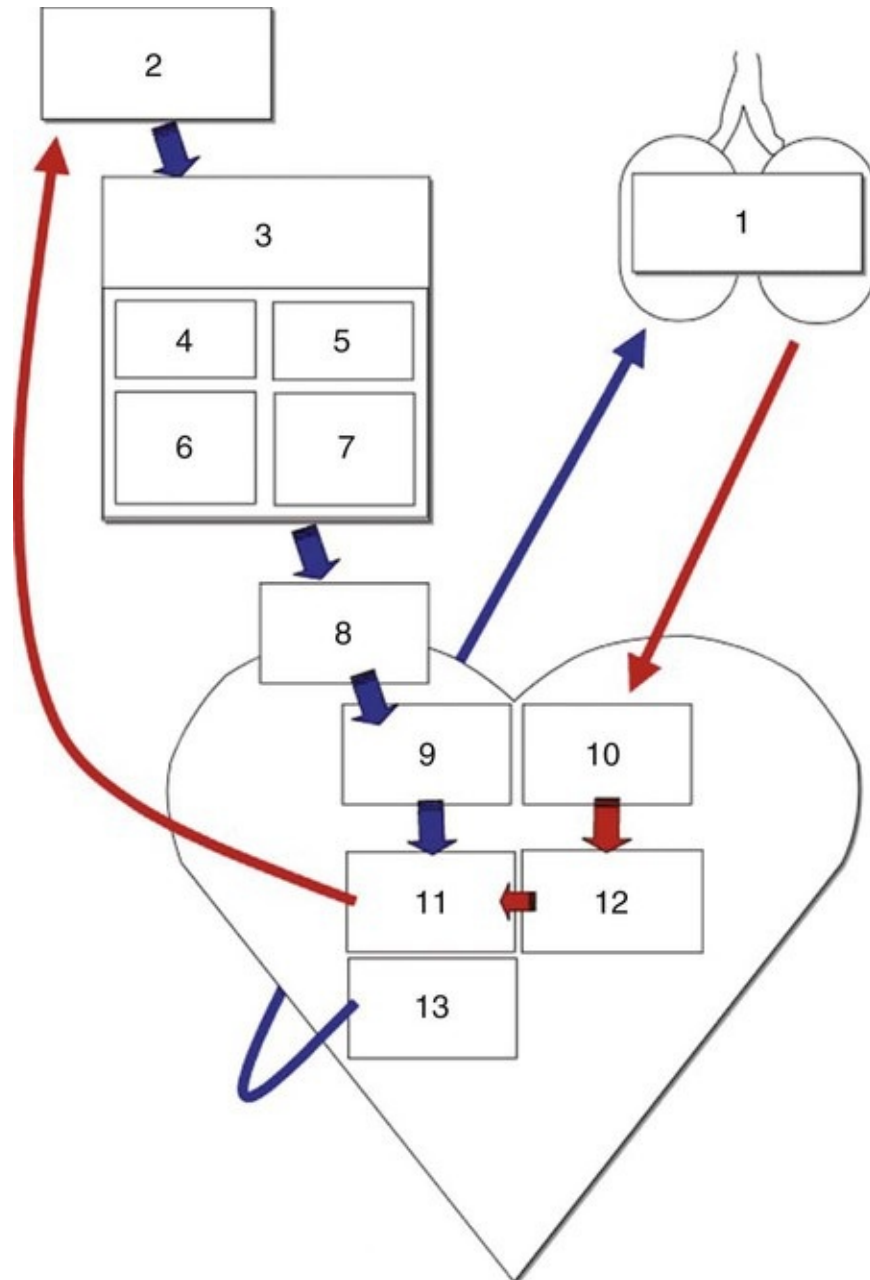


carapace

- 1. Intergular
- 2. Gular

3. Humeral
4. Marginales (12)
5. Axillary
6. Pectoral
7. Abdominal
8. Inguinal
9. Femoral
10. Anal
11. Bridge
12. Nuchal
13. Pleurales (4)
14. Vertebrales (5)

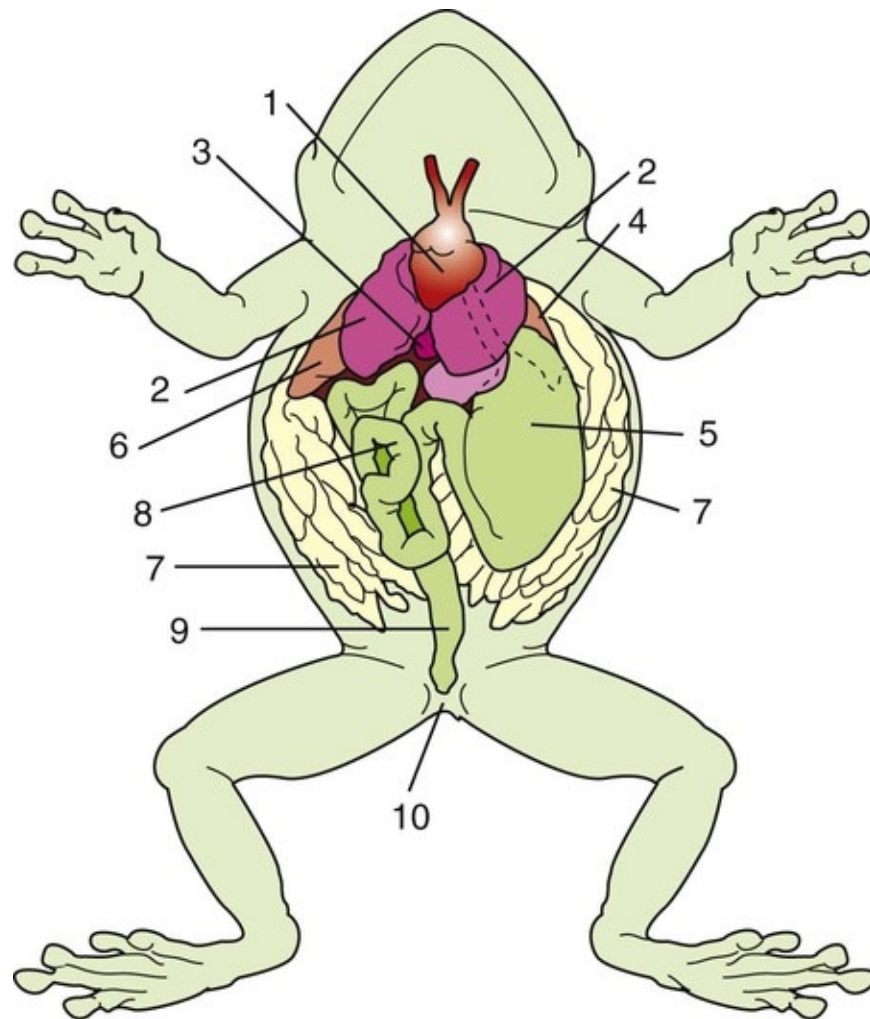
• 8-38 Reptilian: General Circulation in a Non-Crocodylian Reptile



1. Pulmonary circulation
2. General circulation
3. Major vessels returning to the heart
4. Left precava
5. Right precava
6. Left hepatic vein
7. Postcava
8. Sinus venosus
9. Right atrium

- 10. Left atrium
- 11. Cavum venosum
- 12. Cavum arteriosum
- 13. Cavum pulmonale

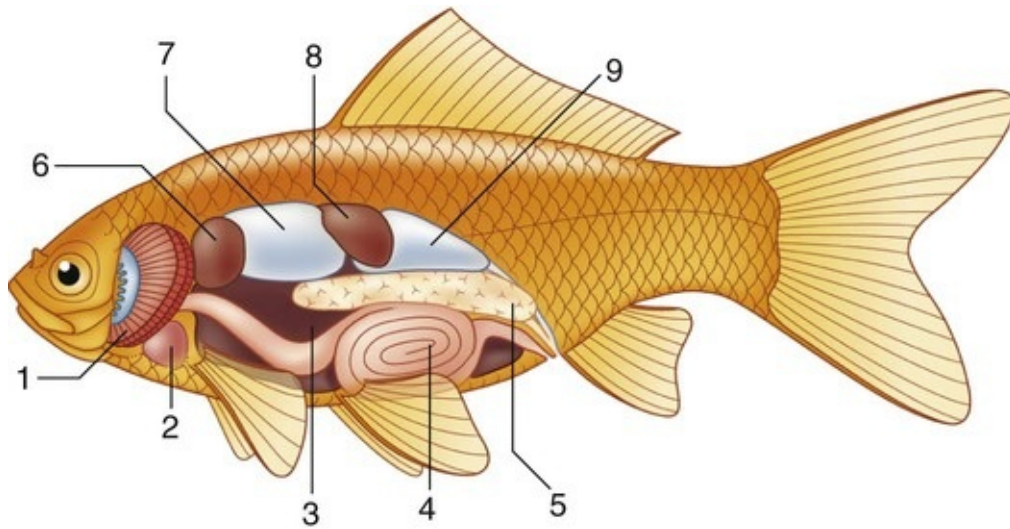
8-39 Bufo tenine: Internal Anatomy of a Frog (Ventral View)



- 1. Heart
- 2. Liver
- 3. Gallbladder

4. Lung
5. Stomach
6. Lung
7. Body fat
8. Intestine
9. Colon
10. Cloaca

● 8-40 Piscine: Internal Anatomy of a Goldfish (Lateral View)



1. Gills
2. Heart
3. Hepatopancreas
4. Intestines
5. Gonad
6. Anterior pole of kidney
7. Anterior chamber of swim bladder
8. Posterior pole of kidney
9. Posterior chamber of swim bladder