

# **LYMPHGEFÄßSYSTEM DES KOPFES UND HALSES**

**Andrea Heinzlmann**

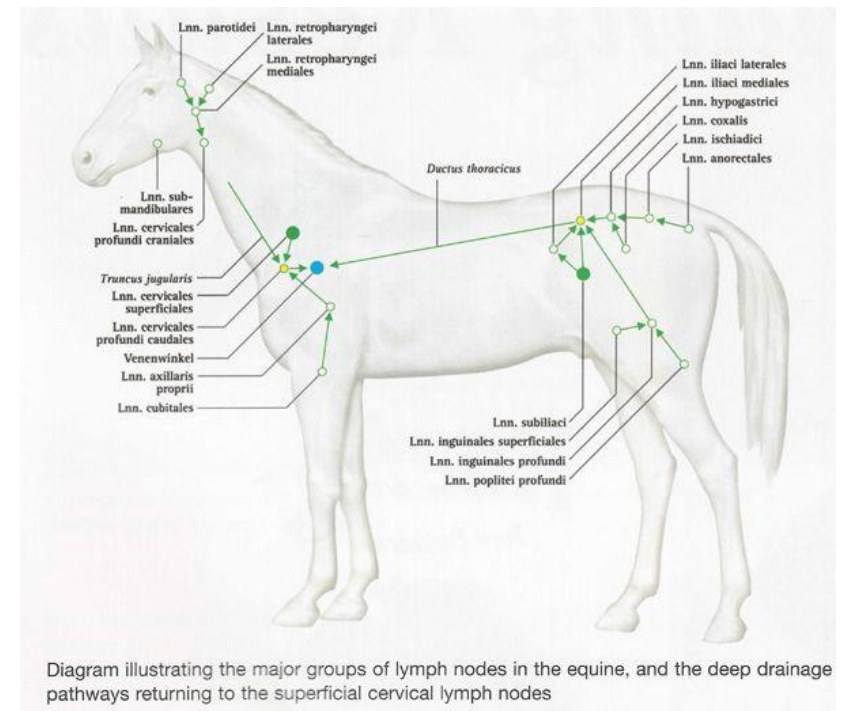
**Veterinärmedizinische Universität, Budapest**

**Lehrstuhl für Anatomie und Histologie**

**15. September 2020**

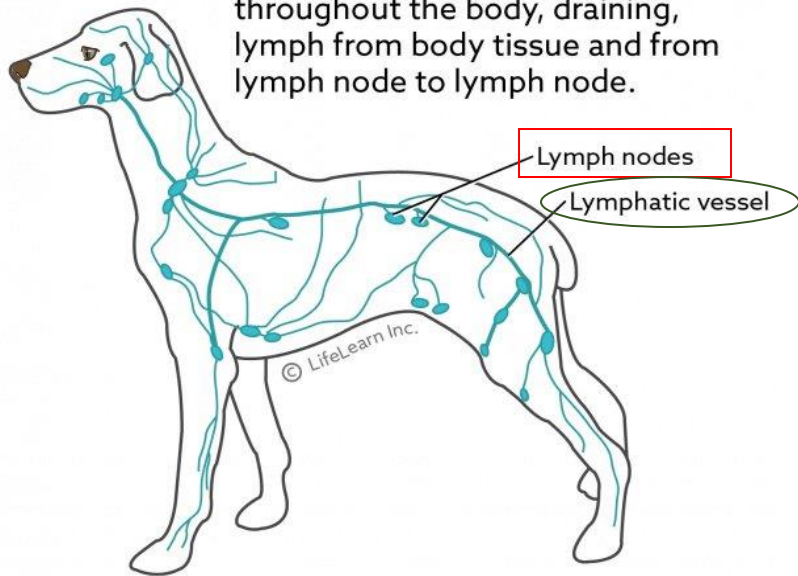
# LYMPHGEFÄßE UND LYMPHKNOTEN

- das Lymphsystem wird von:
  1. den lymphatischen Organen
  2. dem Lymphgefäßsystem gebildet



[www.pinterest.co.uk/pin/813110907708487871/](https://www.pinterest.co.uk/pin/813110907708487871/)

Lymphatic vessels are found throughout the body, draining lymph from body tissue and from lymph node to lymph node.



<https://www.goldenacresdogs.com/location-of-lymph-nodes-in-dogs.html>

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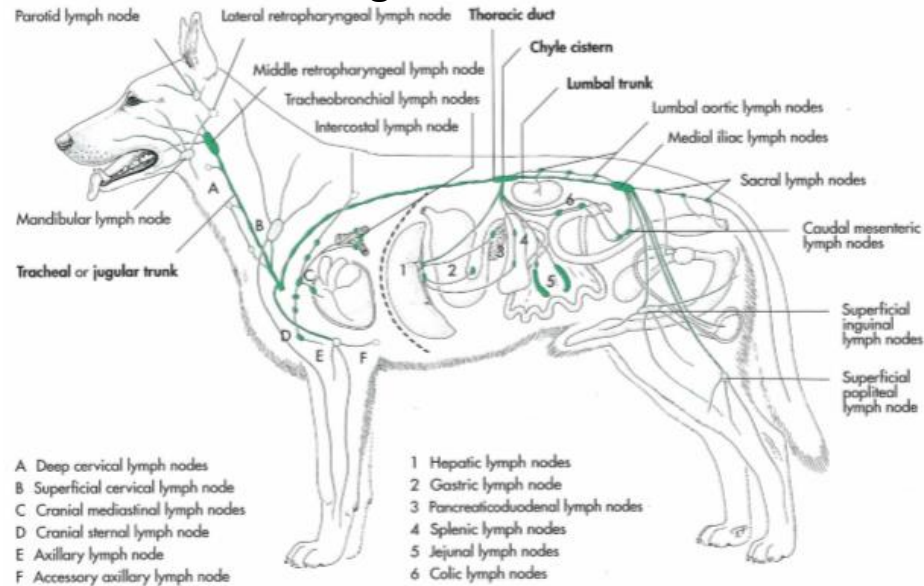


Fig. 13-12. Lymphatic system of the dog, schematic (Budras, Fricke and Richter, 1996).

# LYMPHGEFÄßE UND LYMPHKNOTEN

## Abschnitten des Lymphgefäßsystems

1. Lymphkapillaren (Vasa lymphatica capillaria - Blindsäcke mit meist geschlossenem Endothel)

2. Lymphgefäße mit Klappen (Vasa lymphatica)

- lymphatischen Organe

3. Lymphstämme (Trunci lymphatici)

4. Lymphgänge (Ductus lymphatici)

- Venen

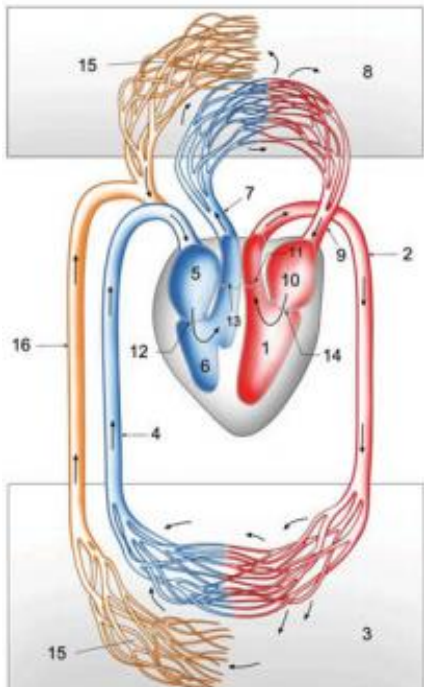
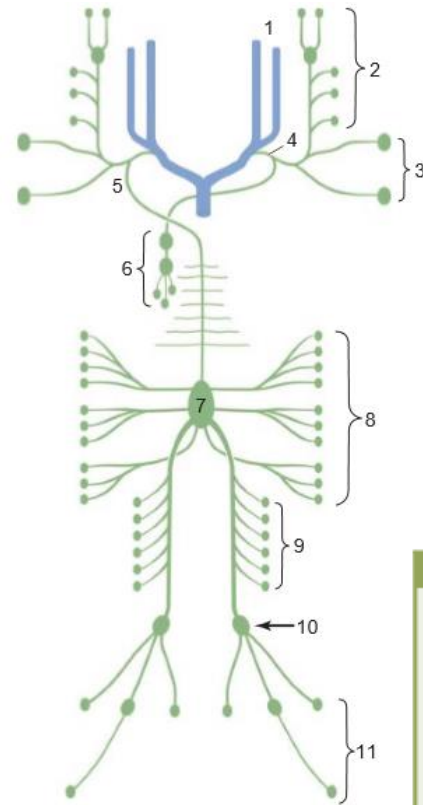


Abb. 6.45 Blut- und Lymphkreislauf, schematisch

- |                                       |                                      |
|---------------------------------------|--------------------------------------|
| 1 Ventriculus sinister                | 10 Atrium sinistrum                  |
| 2 Aorta                               | 11 Valva aortae                      |
| 3 Kapillargebiet des Körperkreislaufs | 12 Valva atrioventricularis dextra   |
| 4 V. cava cranialis/caudalis          | 13 Valva trunci pulmonali            |
| 5 Atrium dextrum                      | 14 Valva atrioventricularis sinistra |
| 6 Ventriculus dexter                  | 15 Lymphkapillaren                   |
| 7 Truncus pulmonalis                  | 16 Lymphsammelstämme                 |
| 8 Kapillargebiet der Lunge            |                                      |
| 9 Vv. pulmonales                      |                                      |



### 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.

### LYMPHSAMMELSTÄMME

- **Cisterna chyli:** Lymphsack in kranialer Bauchhöhle, dorsal der Aorta
- **Zuflüsse:**
  - *Truncus lumbalis* (Becken und Hintergliedmaße)
  - *Tr. celiacus* und *intestinalis* (Baucheingeweide; außer beim Pfd. Vereinigung zum *Tr. visceralis*)
- **Abfluss:** *Ductus thoracicus*
- **Ductus thoracicus**
  - Aufnahme efferenter Gefäße der Lymphzentren der Brusthöhle
  - Mündung in den Venenwinkel oder die V. cava cranialis
- **Tr. trachealis s. jugularis** (paarig)
  - Lymphe aus Kopf-Hals-Region
  - mündet direkt oder indirekt in den Venenwinkel

Lymphkapillaren  
(Vasa lymphatica capillaria)



Lymphgefäße mit Klappen  
(Vasa lymphatica)



Lymphatischen Organe



Lymphstämme  
(Trunci lymphatici)



Lymphgänge  
(Ductus lymphatici)



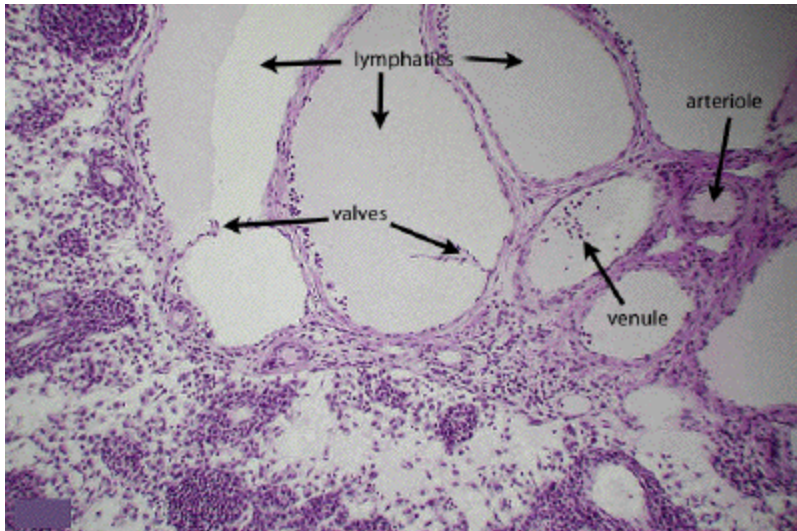
Venen

## BEGRIFFE:

# LYMPHGEFÄßE UND LYMPHKNOTEN

## Lympe:

- eine wässrige, leicht milchig getrübbte Körperflüssigkeit
- in den Lymphgefäßen des Körpers findet
- enthält Elektrolyte, Proteine, Chylomikronen und Lymphozyten
- ihr Proteingehalt ist jedoch deutlich geringer als der des Blutplasmas
- die fettreiche, trübere Lympe aus dem Magen-Darm-Trakt bezeichnet man als Chylus



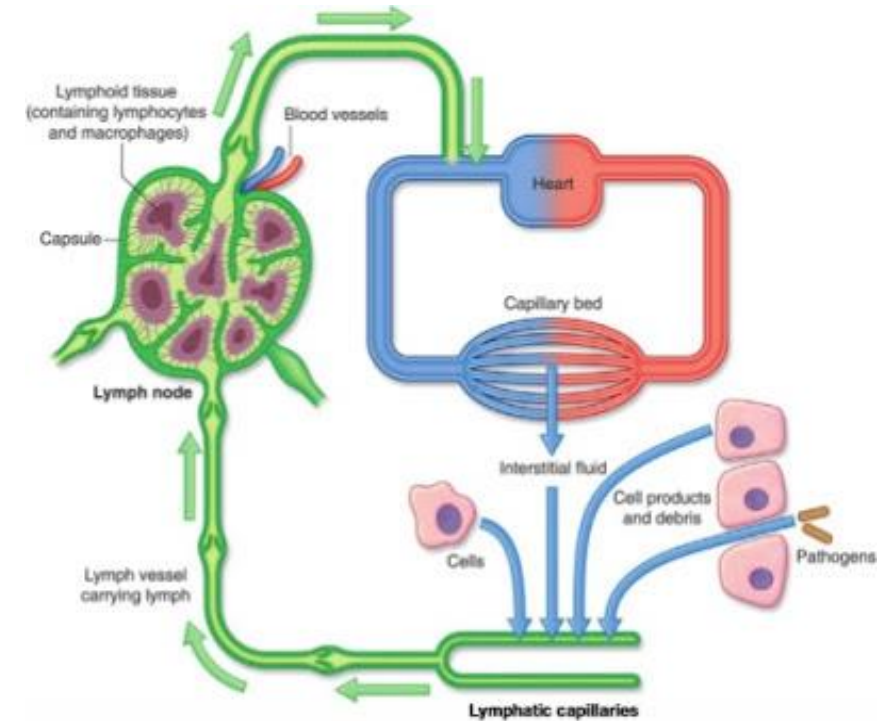
This is a higher power view of the hilum of the lymph node, the site where blood vessels enter and exit the node and also where the medullary sinuses coalesce into large efferent lymphatic vessels that then exit the node. One may distinguish an arteriole and blood-filled venule from the large, lymph-filled efferent lymphatic vessels. Valves are abundant in the lymphatic channels and may help to distinguish these vessels.

[https://www.dartmouth.edu/~anatomy/Histo/lab\\_6/lymphoid/DMS120/popup.html](https://www.dartmouth.edu/~anatomy/Histo/lab_6/lymphoid/DMS120/popup.html)



Human lymph fluid, obtained after a thoracic duct injury

<https://iqmdublin.wixsite.com/lymph>



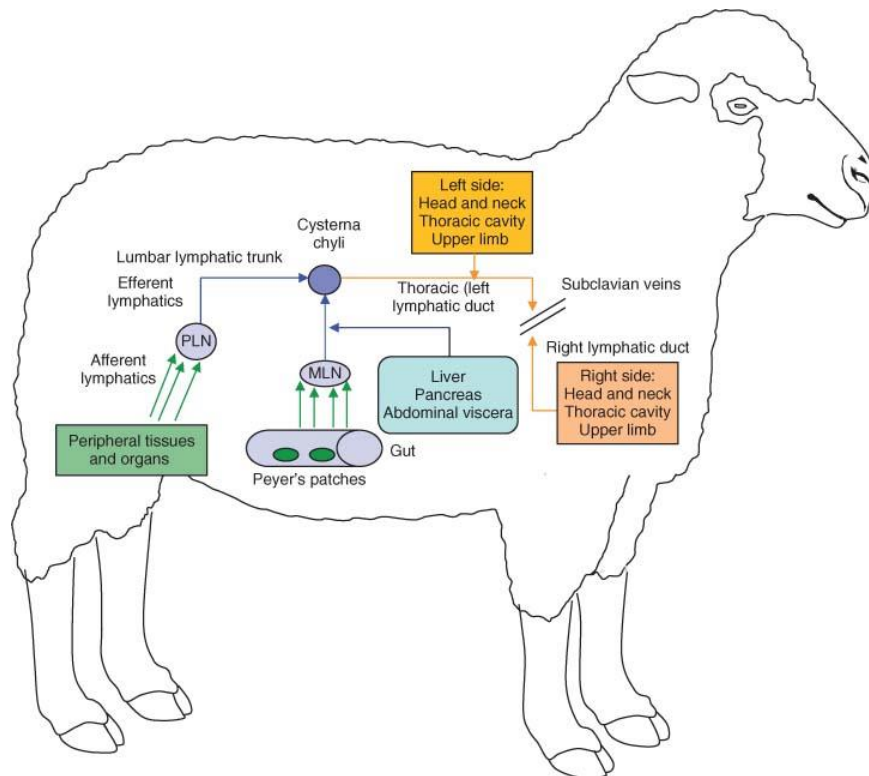
<https://science-naturalphenomena.blogspot.com/2018/03/diagram-of-lymphatic-circulation.html>

# LYMPHGEFÄßE UND LYMPHKNOTEN

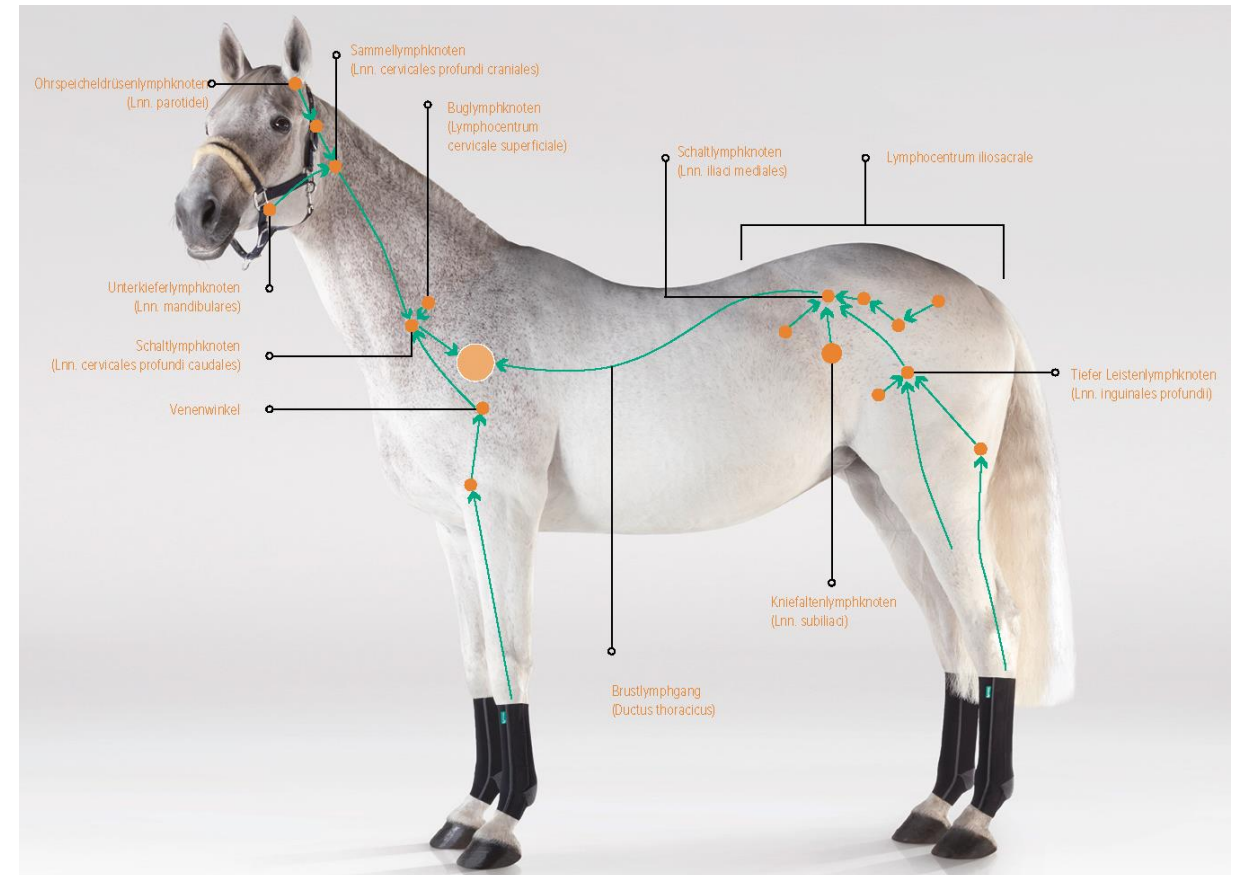
## BEGRIFFE:

### Lymphbahn:

- dient dem Transport von Stoffen, die nicht sofort dem Blut beigemischt werden sollen, bzw. erst gefiltert werden müssen - die im Darm resorbierten Fette, Teilchen, die Kapillarwand nicht durchdringen können, z.B. Bakterien



<https://onlinelibrary.wiley.com/doi/abs/10.1002/9780470015902.a0000523.pub3>



<https://www.equicrown.de/lymphsystem-des-pferdes/>

# LYMPHGEFÄßE UND LYMPHKNOTEN

## BEGRIFFE:

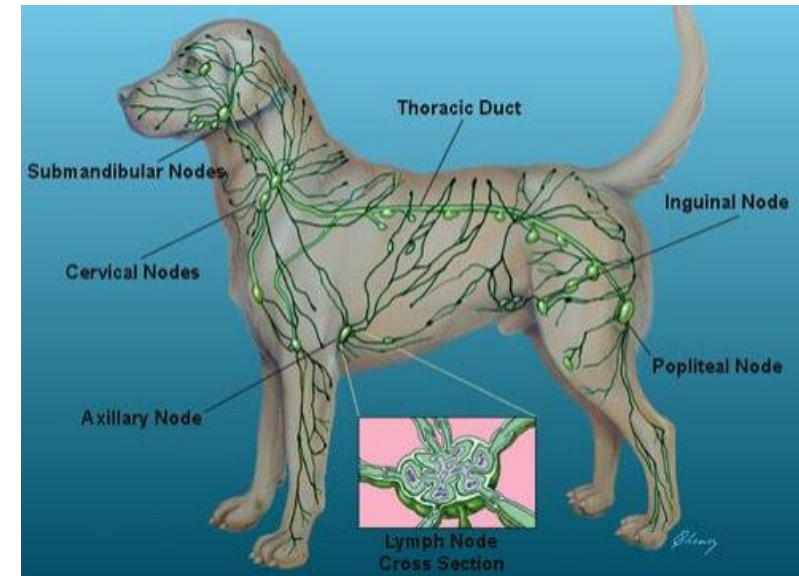
### Lymphknoten (Nodus lymphaticus):

- sekundäre lymphatische Organe
- gehören zum lymphatischen System des Körpers
- spielen als Filterstationen für Antigene eine wichtige Rolle im Immunsystem
- als weiteres Synonym wird die Bezeichnung "Lymphonodus" (Plural "Lymphonodi" bzw. "Lnn.") verwendet

unterscheidet man:

### 1. primäre Lymphknoten

### 2. sekundäre Lymphknoten



<https://www.response5.com/files/BowenAnatomyandPhysiologyPart3.pdf>

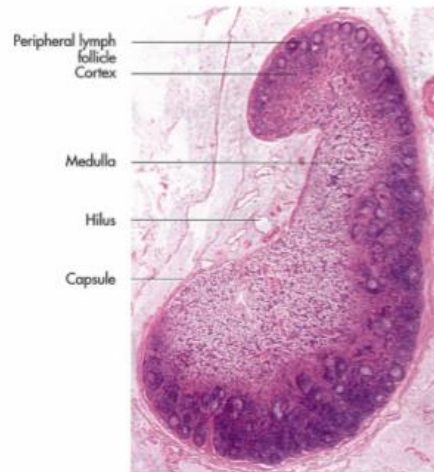


Fig. 13-2. Histological section of a lymph node of a sheep.

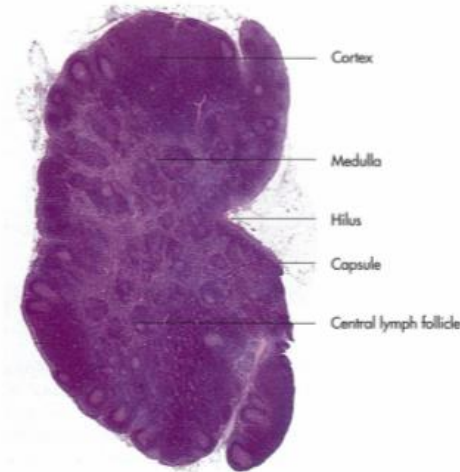


Fig. 13-3. Histological section of a lymph node of a pig.

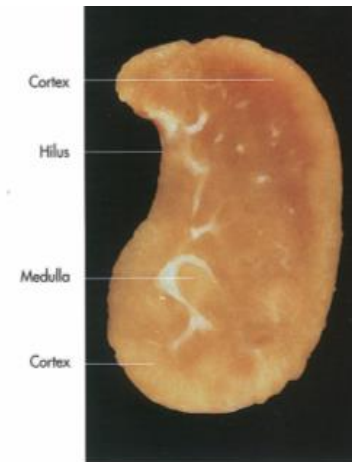


Fig. 13-5. Lymph node of a pig, transverse section (courtesy of PD Dr. S. Reese, Munich).



Fig. 13-6. Lymph node of a pig (courtesy of PD Dr. S. Reese, Munich).

# LYMPFGEFÄÙE UND LYMPHKNOTEN

## PRIMÄRE LYMPHKNOTEN:

- mehrere LymphgefäÙe (Vasa afferentes) münden in den primären Lymphknoten ein
- die Lymphe wird hier im Sinus filtriert, und hier können Teilchen festgehalten werden
- in der Wand des Sinus sind Makrophage vorhanden, die Bakterien fressen und neutralisieren können
- die „gereinigte“ Lymphe fließt dann in dem abführenden LymphgefäÙ (Vas efferens) weiter - die Lymphe wird zu sekundären Lymphknoten geleitet

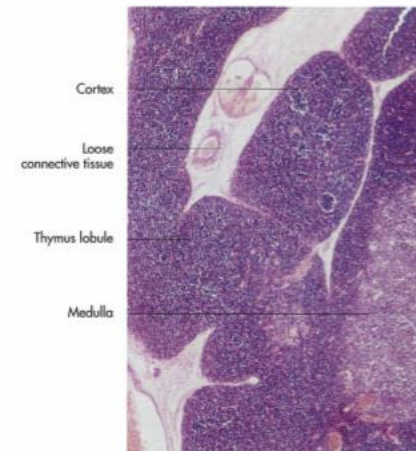
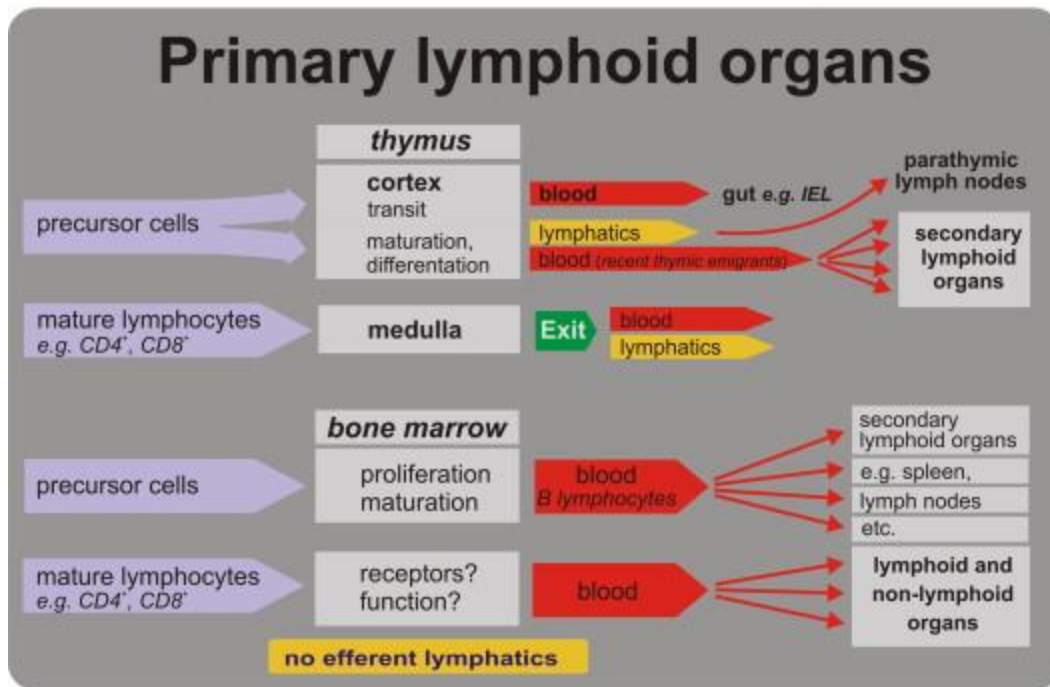


Fig. 13-15. Histological section of the thymus of a cat.

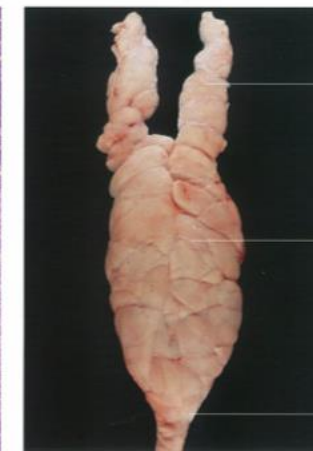


Fig. 13-16. Thymus of a calf, dorsal aspect (courtesy of PD Dr. S. Reese, Munich).

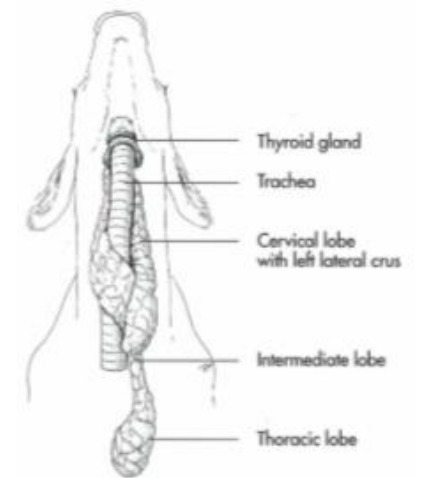
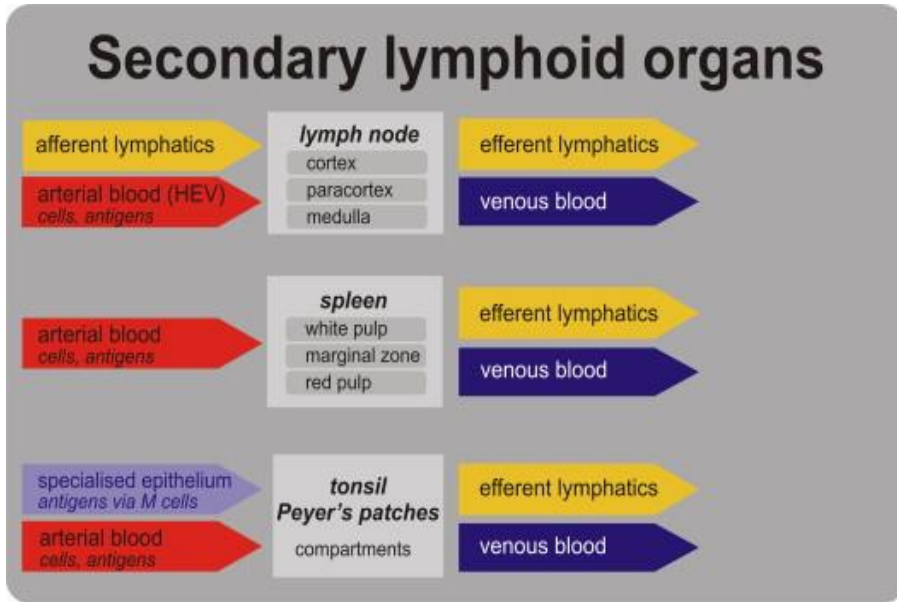


Fig. 13-17. Topography of the thymus of the calf, schematic.

# LYMPFGEFÄßE UND LYMPHKNOTEN

## SEKUNDÄRE LYMPHKNOTEN:

- die Lymphe wird hier noch einmal gefiltert



<https://www.sciencedirect.com/science/article/pii/S0165247807001459#fig1>

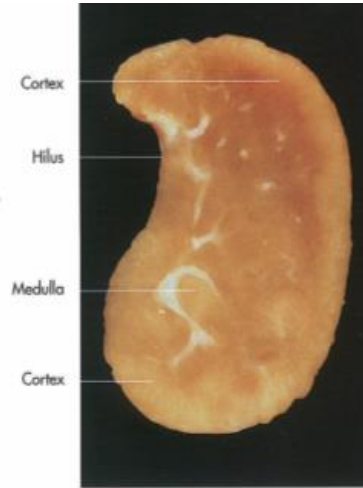
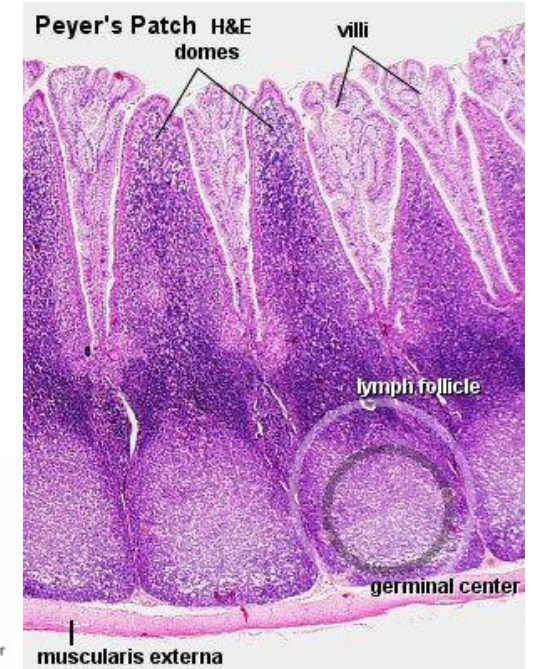


Fig. 13-5. Lymph node of a pig, transverse section (courtesy of PD Dr. S. Reese, Munich).



Fig. 13-6. Lymph node of a pig (courtesy of PD Dr. S. Reese, Munich).



<https://hu.pinterest.com/pin/253609022739133509/>

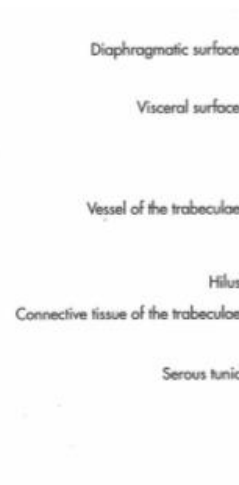


Fig. 13-18. Spleen of a pig, cross section (courtesy of PD Dr. J. Maierl, Munich).

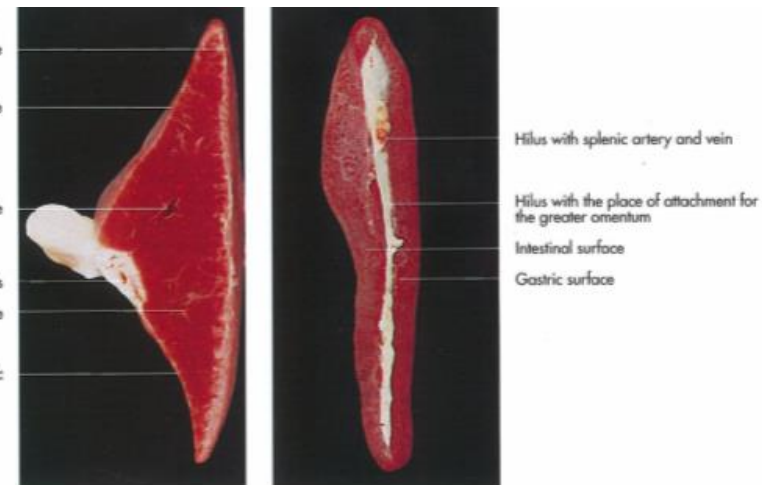


Fig. 13-19. Spleen of a pig, visceral surface (courtesy of PD Dr. J. Maierl, Munich).

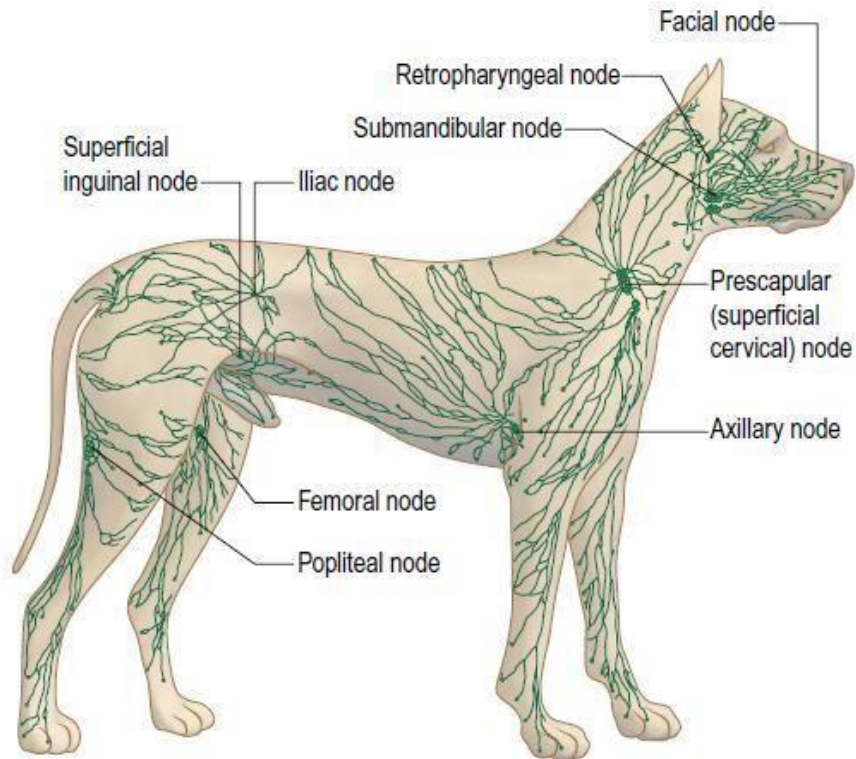


# LYMPHGEFÄßE UND LYMPHKNOTEN

## BEGRIFFE:

### tributäres Gebiet:

- jeder Lymphknoten ist für die Aufnahme und Filtration der Lymphe einer Körperregion zuständig
- dieses gefilterte Areal wird *tributäres Gebiet* genannt



<https://hu.pinterest.com/pin/314126142754578891/>

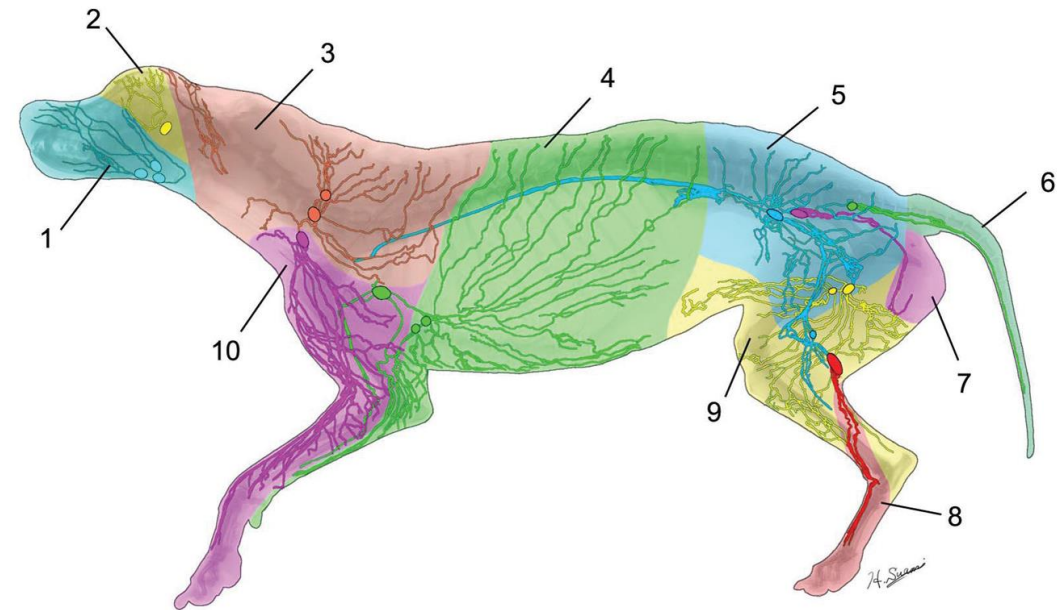


Figure 6. Color-coded diagram of the lymphatic territories (lymphosomes) with lymphatic vessels shown distally from their corresponding lymph nodes: 1, submandibular; 2, parotid; 3, dorsal superficial cervical; 4, axillary; 5, medial iliac; 6, lateral sacral; 7, hypogastric; 8, popliteal; 9, superficial inguinal; 10, ventral superficial cervical.

<https://doi.org/10.1371/journal.pone.0069222.g006>

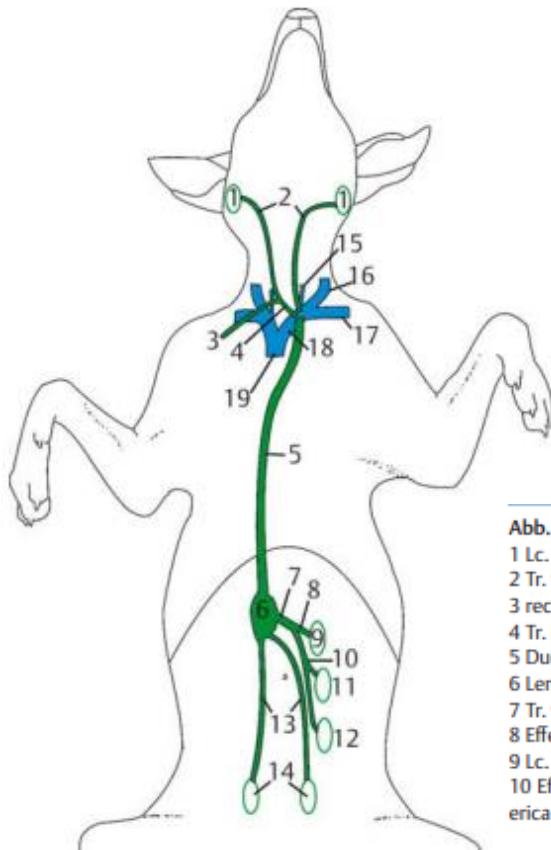
<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0069222>

# LYMPHGEFÄßE UND LYMPHKNOTEN

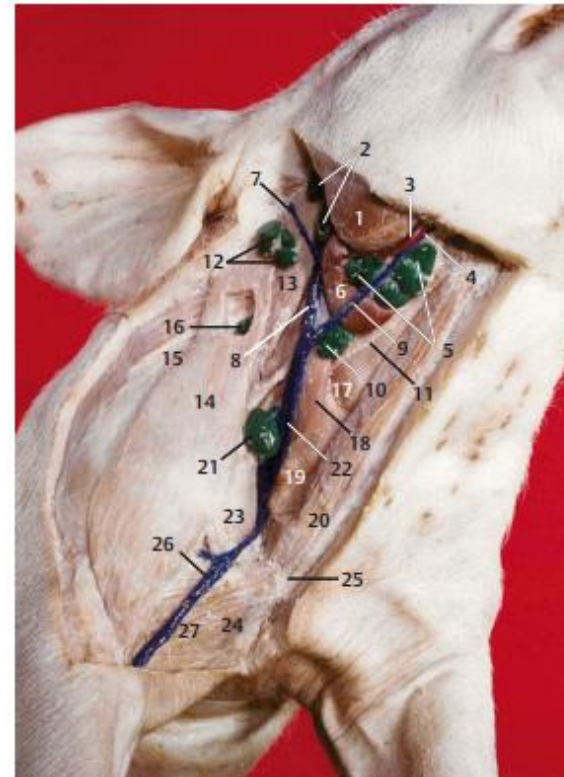
## BEGRIFFE:

### Lymphozentrum:

- um einen Lymphknoten oder eine Gruppe von Lymphknoten handelt, die in der gleichen Region des Körpers liegen und die afferente Lymphe von in etwa der selben Körperregion bekommen



**Abb. 6.47 Schema der Lympfsammelstämme beim Hund**  
 1 Lc. retropharyngeum  
 2 Tr. trachealis  
 3 rechte Achsellymphgefäße  
 4 Tr. lymphaticus dexter  
 5 Ductus thoracicus  
 6 Lendenzisterne (Cisterna chyli)  
 7 Tr. visceralis  
 8 Efferenzen des Lc. celiacum  
 9 Lc. celiacum  
 10 Efferenzen der Lcc. mesenterica  
 11 Lc. mesentericum craniale  
 12 Lc. mediastinale caudale  
 13 Tr. lumbalis  
 14 Lnn. iliaci mediales des Lc. iliosacrale  
 15 V. jugularis interna  
 16 V. jugularis externa  
 17 V. subclavia  
 18 V. brachiocephalica,  
 19 V. cava cranialis



**Abb. 6.49 Hals eines Schweines, Ventrolateralansicht, Gl. parotis entfernt**  
 1 M. masseter  
 2 Lnn. parotidei des Lc. parotideum  
 3 Ductus parotideus  
 4 A. et V. facialis  
 5 Lnn. mandibulares des Lc. mandibulare  
 6 Gl. mandibularis  
 7 V. auricularis caudalis  
 8 V. maxillaris  
 9 V. linguofacialis  
 10 Lnn. mandibulares accessorii des Lc. mandibulare  
 11 M. omohyoideus  
 12 Lnn. retropharyngei laterales des Lc. retropharyngeum  
 13 M. cleidocephalicus, Pars mastoidea  
 14 M. cleidocephalicus, Pars occipitalis  
 15 Lnn. cervicales superficiales dorsales des Lc. cervicale superficiales  
 16 M. omotraversarius  
 17 M. thyrohyoideus  
 18 M. sternocephalicus (teilweise entfernt); unter der am Proc. mastoideus inserierenden Endsehne liegen die Lnn. retropharyngei mediales des Lc. retropharyngeum  
 19 Thymus  
 20 M. sternohyoideus  
 21 Lnn. cervicales superficiales ventrales des Lc. cervicale superficiales  
 22 V. jugularis externa; Punktionsstelle 2 Finger breit vor und 2 Finger breit seitlich des Manubrium sterni  
 23 M. subclavius  
 24 M. pectoralis descendens der Mm. pectorales superficiales  
 25 Manubrium sterni  
 26 V. cephalica  
 27 M. pectoralis transversus der Mm. pectorales superficiales

# LYMPHGEFÄßE UND LYMPHKNOTEN

## ABKÜRZUNGEN:

1. Nodus lymphaticus (Lymphknote) – Nl. bzw. Nodi lymphatici – Nll.
2. Lymphonodus – Ln. bzw. Lymphonodi – Lnn.
3. Lymphocentrum – Lc.

# LYMPHGEFÄßSYSTEM DES KOPFES

unterscheidet man am Kopf drei Lymphozentren:

## 1. Lc. parotideum:

- das die Lymphe aus den oberflächlichen Gebieten des Oberschädels (Ausnahme der vorderen Nasenpartie) aufnimmt

## 2. Lc. mandibulare:

- das für oberflächliche und tiefe Gebiete des Unterkiefers und der Mundhöhle, der vorderen Nasenpartie zuständig

## 3. Lc. retropharyngeum:

- die tiefgelegenen Teile des Kopfes – Nasengrund, Nasenhöhlen, Schlundkopf, Kehlkopf- ihre Lymphe zusenden



Abb. 6.49 Hals eines Schweines, Ventrolateralansicht, Gl.

parotis entfernt

1 M. masseter

2 Lnn. parotidei des Lc. parotideum

3 Ductus parotideus

4 A. et V. facialis

5 Lnn. mandibulares des Lc. mandibulare

6 Gl. mandibularis

7 V. auricularis caudalis

8 V. maxillaris

9 V. linguofacialis

10 Lnn. mandibulares accessorii des Lc. mandibulare

11 M. omohyoideus

12 Lnn. retropharyngei laterales des Lc. retropharyngeum

13 M. cleidocephalicus, Pars mastoidea

14 M. cleidocephalicus, Pars occipitalis

15 Lnn. cervicales superficiales dorsales des Lc. cervicale superficiales

16 M. omotransversarius

17 M. thyrohyoideus

18 M. sternocephalicus

(teilweise entfernt); unter der am Proc. mastoideus inserierenden Endsehne

liegen die Lnn. retropharyngei mediales des Lc. retropharyngeum

19 Thymus

20 M. sternohyoideus

21 Lnn. cervicales superficiales ventrales des Lc. cervicale superficiales

22 V. jugularis externa; Punktionsstelle 2 Finger breit vor und 2 Finger breit seitlich des Manubrium sterni

23 M. subclavius

24 M. pectoralis descendens der Mm. pectorales superficiales

25 Manubrium sterni

26 V. cephalica

27 M. pectoralis transversus der Mm. pectorales superficiales

## KOPFLYMPHKNOTEN

### – Lc. parotideum

- Lnn. parotidei
  - ventral des Kiefergelenks, teilweise oder vollständig unter der Parotis
  - bei Hd. und Rd. **tastbar**
  - tributär: oberflächlicher, kaudodorsaler Kopfbereich

### – Lc. mandibulare

- Lnn. mandibulares
  - lateral im Kehlgang, nahe der Incisura vasorum facialis
  - bei Flfr., Pfd. und Rd. **tastbar**
  - tributär: vorderer Kopfbereich, Kehlgang, Mundhöhle, vordere Nasenhöhle
  - Lnn. mandibulares accessorii (bei Ktz. und Schw., nachgeschaltet)

### – Lc. retropharyngeum

- Lnn. retropharyngei mediales (dorsal auf dem Schlundkopf)
- Lnn. retropharyngei laterales (ventral des Atlasflügel bei Hd. [nicht immer vorhanden] und Rd. **tastbar**)
  - tributär: tiefe Kopfstrukturen und kranialer Halsbereich

### – Abfluss:

- Lc. mandibulare und parotideum zumeist über Lc. retropharyngeum
- von dort, außer beim Pfd., über *Tr. trachealis*
- Schw.: zwei weitere Abflussbahnen zu den oberflächlichen Halslymphknoten
- Pfd.: zu den Lnn. cervicales profundi craniales

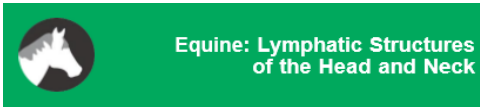
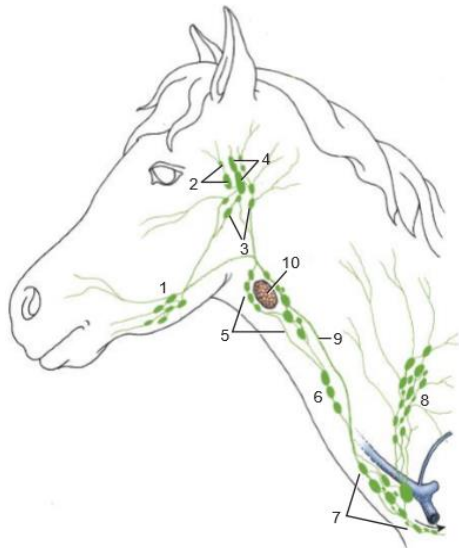
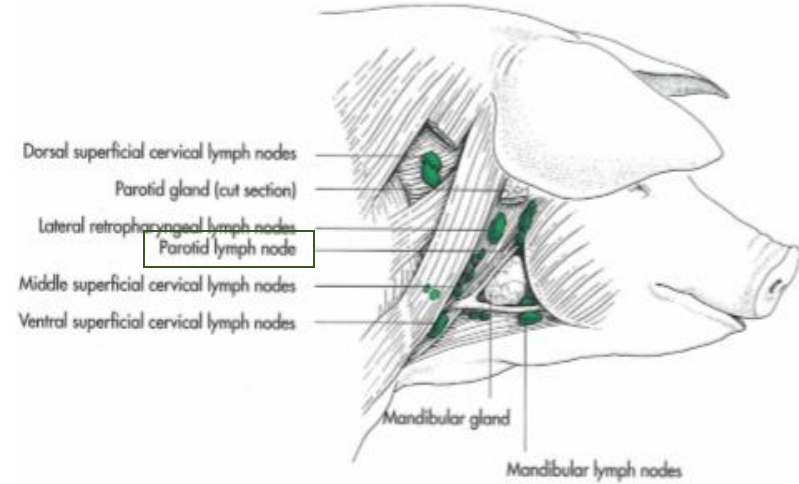
# LYMPHKNOTEN DES KOPFES

## LYMPHOCENTRUM PAROTIDEUM (Lc. parotideum):

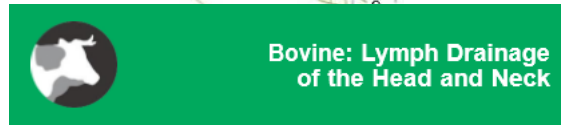
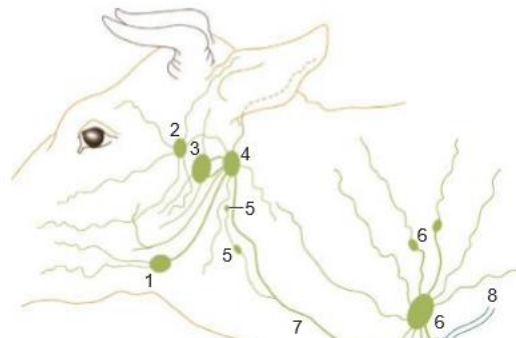
### a. Nodi lymphatici parotidei (Nll. parotidei):

- Ohrspeicheldrüsenlymphknoten
- sind Primärstation
- liegen ventral des Kiefergelenks unter dem Ohrende der Gl. parotis

1. beim Hd. und Rd. – tastbar
2. beim Schw., Rd., Pfd. - regelmäßig
3. beim kl. Wdk. - in besonderen Verdachtsfällen der Fleischschau untersucht



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. 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

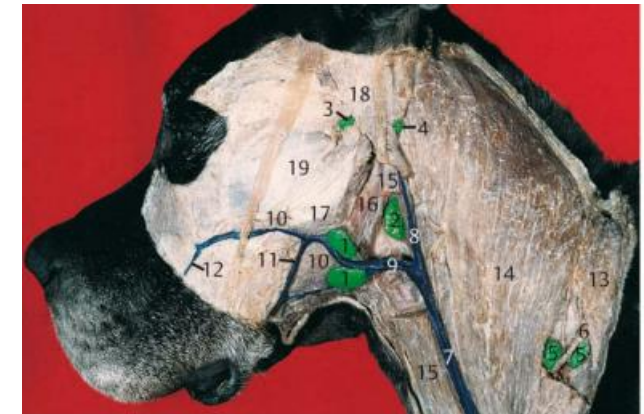


Abb. 6.48 Kopf und Hals eines Hundes (Gl. mandibularis ganz, M. sternocephalicus und M. omotransversarius teilweise entfernt)

- |  |                         |                      |
|--|-------------------------|----------------------|
| 1 Lnn. mandibulares (tastbar)                                    | 7 V. jugularis externa  | 16 M. digastricus    |
| 2 Ln. retropharyngeus medialis                                   | 8 V. maxillaris         | 17 M. masseter       |
| 3 Ln. parotideus (tastbar)                                       | 9 V. linguofacialis     | 18 Gl. parotis       |
| 4 Ln. retropharyngeus lateralis (tastbar, aber selten vorhanden) | 10 V. facialis          | 19 Ductus parotideus |
| 5 Buglymphknoten, Lnn. cervicales superficiales (tastbar)        | 11 V. labialis inferior |                      |
| 6 R. prescapularis der A. cervicalis superficialis               | 12 V. labialis superior |                      |
|  | 13 M. trapezius         |                      |
|  | 14 M. cleidocephalicus  |                      |
|  | 15 M. sternocephalicus  |                      |

# LYMPHKNOTEN DES KOPFES

**LYMPHOCENTRUM PAROTIDEUM (Lc. parotideum):**

**a. Nodi lymphatici parotidei (Nll. parotidei):**

**TRIBUTÄRES GEBIET:**

ihre Primärlymphe beziehen sie von:

1. der Haut der Stirn-, Scheitel-,Augen-,Ohr-,Masseter-,Parotisgend
2. den äußeren Kau – und Augenmuskeln
3. vom Stirn-,Joch-,Schläfen-, Scheitelbein
4. vom Unterkiefer
5. vom Kiefergend
6. den Augenlieder
7. dem Tränenapparat
8. vom äußeren Ohr
9. der Ohrspeicheldrüse

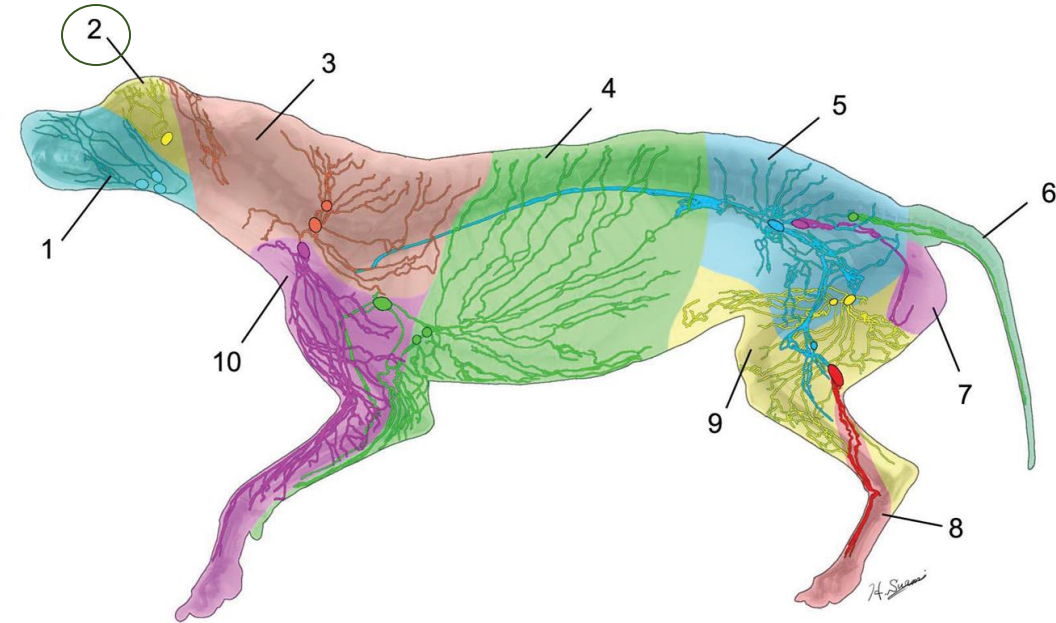
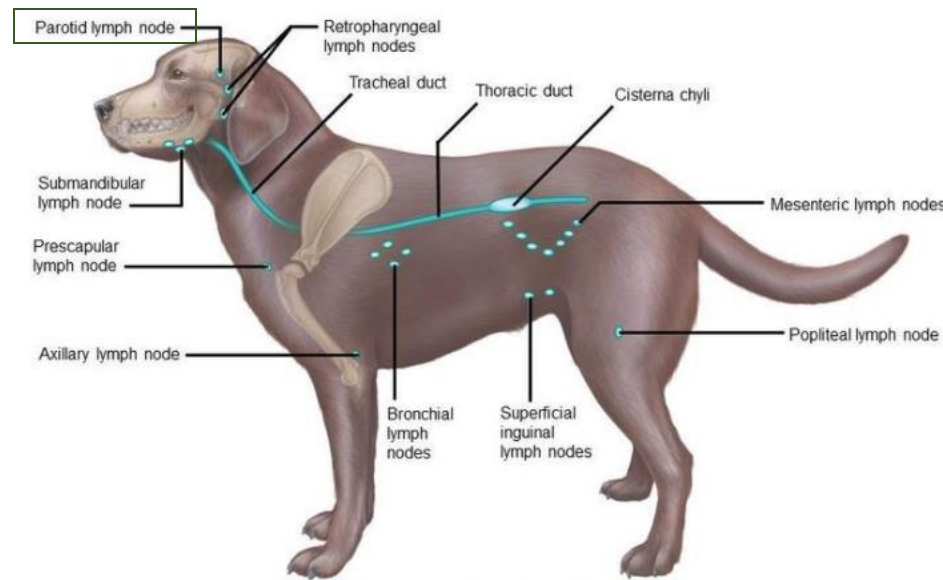


Figure 6. Color-coded diagram of the lymphatic territories (lymphosomes) with lymphatic vessels shown distally from their corresponding lymph nodes: 1, submandibular; 2, parotid; 3, dorsal superficial cervical; 4, axillary; 5, medial iliac; 6, lateral sacral; 7, hypogastric; 8, popliteal; 9, superficial inguinal; 10, ventral superficial cervical.

<https://doi.org/10.1371/journal.pone.0069222.g006>

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0069222>

# Lymphknoten des Kopfes

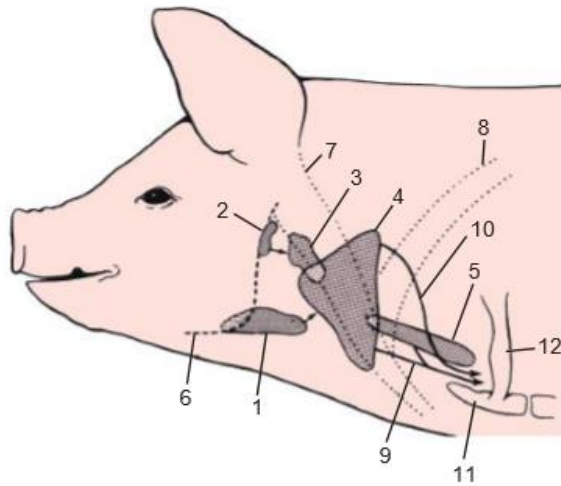
**LYMPHOCENTRUM PAROTIDEUM (Lc. parotideum):**

**a. Nodi lymphatici parotidei (Nll. parotidei):**

**ABFLUSS:**

ihre Durchflusslymphe geben sie:

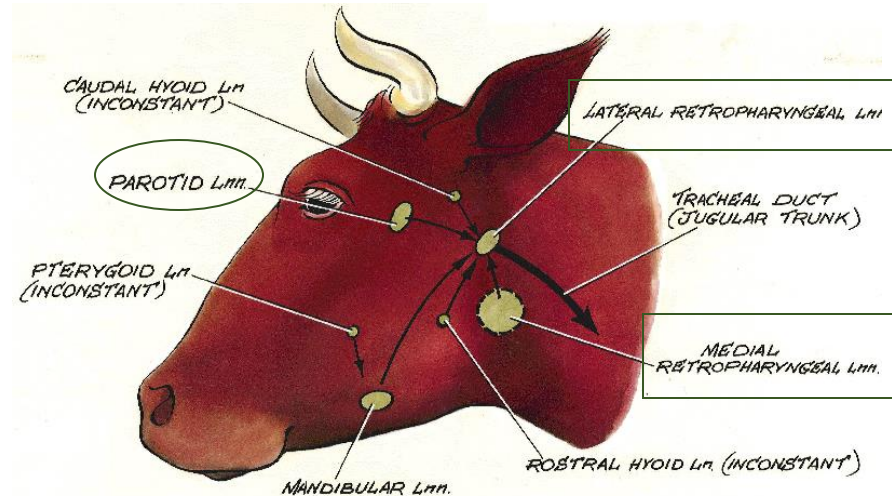
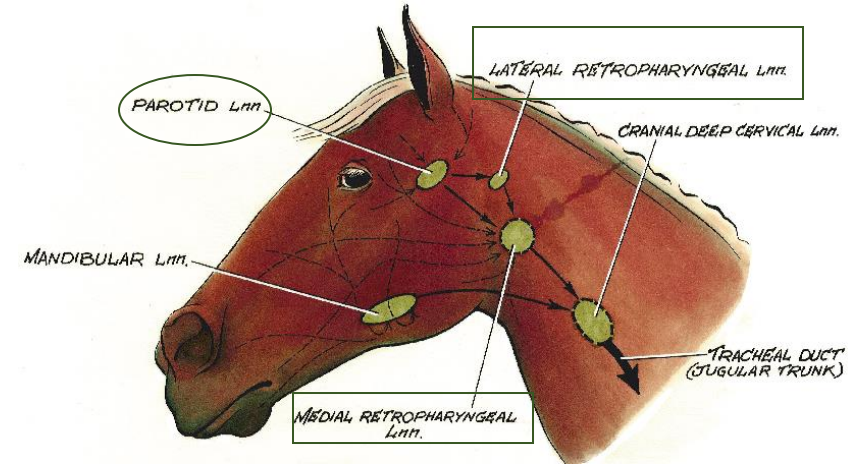
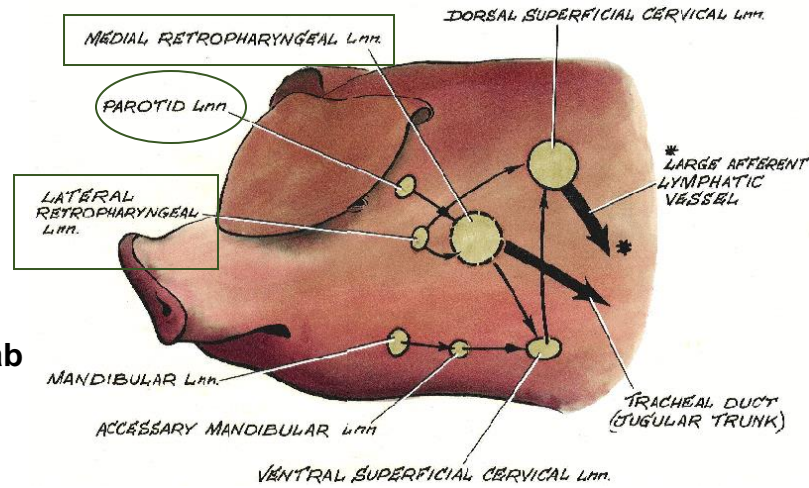
**a. an die Nll. retropharyngei mediales oder laterales ab**



**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.



# LYMPHKNOTEN DES KOPFES

## LYMPHOCENTRUM MANDIBULARE (Lc. mandibulare):

- Primärstation für große Gebiet des Kopfes
- Sekundärstation für die Lmphe des Gaumens – beim Rd.

**a. bei Hd, Wdk., Pfd. besteht aus den Nll. mandibulares (Kehlganglymphknoten)**

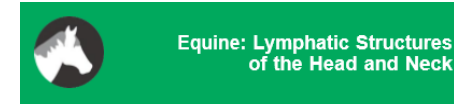
**b. bei Ktz, Schw. besteht aus den Nll. mandibulares und Nll. mandibulares accessorii (Sekundärstation)**

- liegen im hinteren Abschnitt des Kehlganges in der Nähe des Kieferwinkels – im Winkel der V. linguofacialis

1. beim Hd., Rd. gut zu tasten

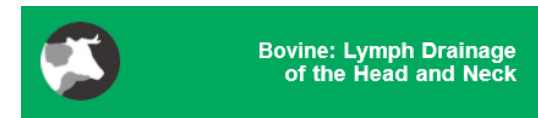
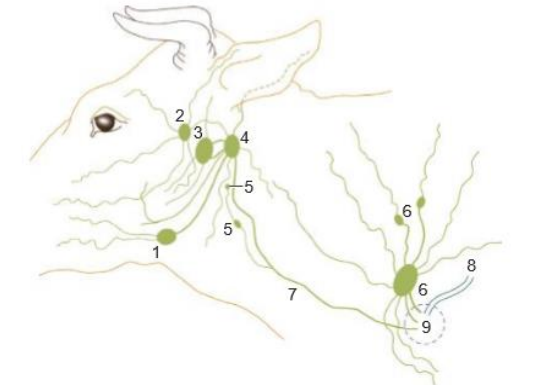
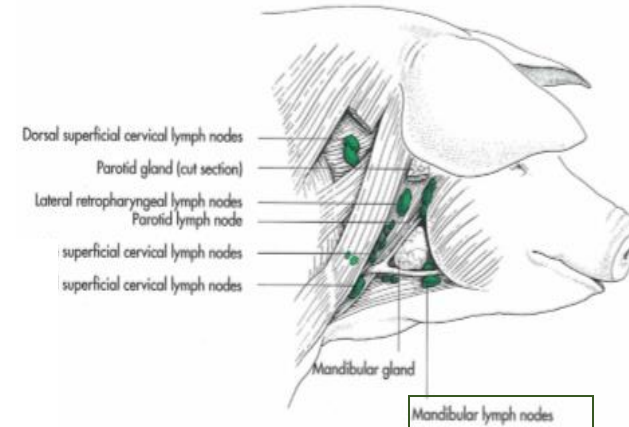
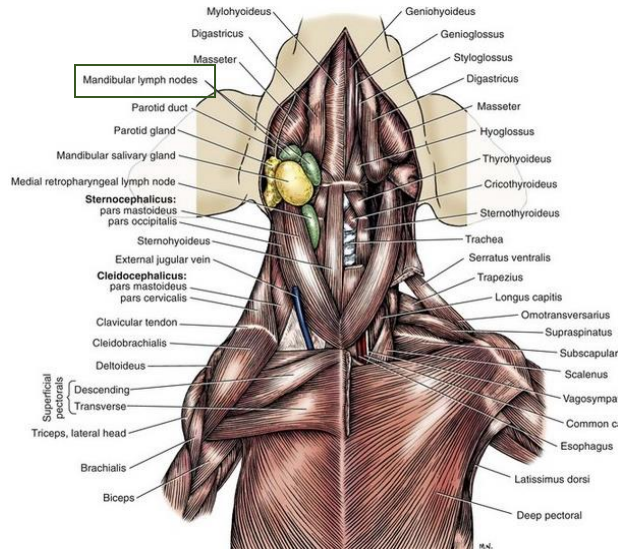
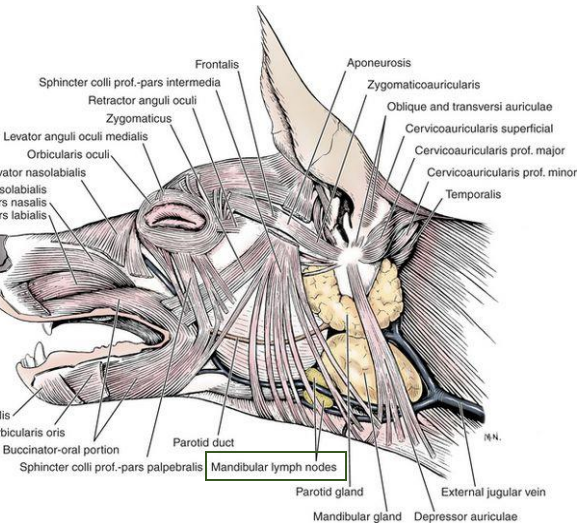
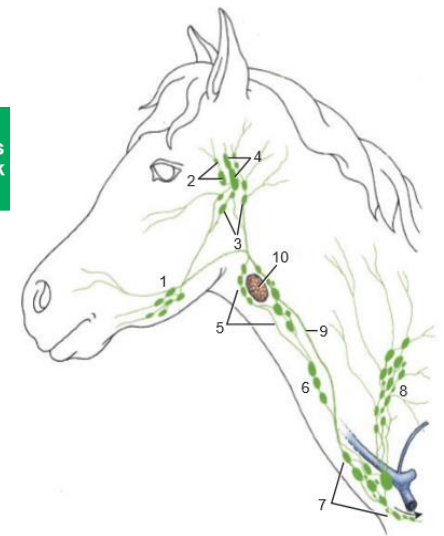
2. beim Schw., Rd., Pfd. regelmäßig

3. beim kl. Wdk. in Verdachtsfällen der Fleischschau untersucht



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



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



# LYMPHKNOTEN DES KOPFES

## LYPHOCENTRUM MANDIBULARE (Lc. mandibulare)

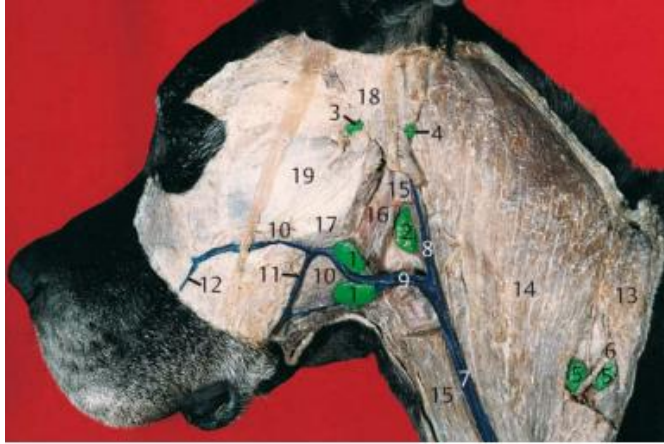


Abb. 6.48 Kopf und Hals eines Hundes (Gl. mandibularis ganz, M. sternocephalicus und M. omotransversarius teilweise entfernt)

- |  |                         |                      |
|--|-------------------------|----------------------|
| 1 Lnn. mandibulares (tastbar)                                    | 7 V. jugularis externa  | 16 M. digastricus    |
| 2 Ln. retropharyngeus medialis                                   | 8 V. maxillaris         | 17 M. masseter       |
| 3 Ln. parotideus (tastbar)                                       | 9 V. linguofacialis     | 18 Gl. parotis       |
| 4 Ln. retropharyngeus lateralis (tastbar, aber selten vorhanden) | 10 V. facialis          | 19 Ductus parotideus |
| 5 Buglymphknoten, Lnn. cervicales superficiales (tastbar)        | 11 V. labialis inferior |                      |
| 6 R. prescapularis der A. cervicalis superficialis               | 12 V. labialis superior |                      |
|  | 13 M. trapezius         |                      |
|  | 14 M. cleidocephalicus  |                      |
|  | 15 M. sternocephalicus  |                      |



Abb. 6.49 Hals eines Schweines, Ventrolateralansicht, Gl. parotis entfernt

- |  |   |
|--|---|
| 1 M. masseter  | 18 M. sternocephalicus (teilweise entfernt); unter der am Proc. mastoideus inserierenden Endsehne liegen die Lnn. retropharyngei mediales des Lc. retropharyngeum |
| 2 Lnn. parotidei des Lc. parotideum                                      | 19 Thymus   |
| 3 Ductus parotideus  | 20 M. sternohyoideus  |
| 4 A. et V. facialis  | 21 Lnn. cervicales superficiales ventrales des Lc. cervicale superficiale   |
| 5 Lnn. mandibulares des Lc. mandibulare                                  | 22 V. jugularis externa; Punktionsstelle 2 Finger breit vor und 2 Finger breit seitlich des Manubrium sterni  |
| 6 Gl. mandibularis   | 23 M. subclavius  |
| 7 V. auricularis caudalis  | 24 M. pectoralis descendens der Mm. pectorales superficiales  |
| 8 V. maxillaris  | 25 Manubrium sterni   |
| 9 V. linguofacialis  | 26 V. cephalica   |
| 10 Lnn. mandibulares accessorii des Lc. mandibulare                      | 27 M. pectoralis transversus der Mm. pectorales superficiales   |
| 11 M. omohyoideus  |   |
| 12 Lnn. retropharyngei laterales des Lc. retropharyngeum                 |   |
| 13 M. cleidocephalicus, Pars mastoidea                                   |   |
| 14 M. cleidocephalicus, Pars occipitalis                                 |   |
| 15 Lnn. cervicales superficiales dorsales des Lc. cervicale superficiale |   |
| 16 M. omotransversarius  |   |
| 17 M. thyrohyoideus  |   |

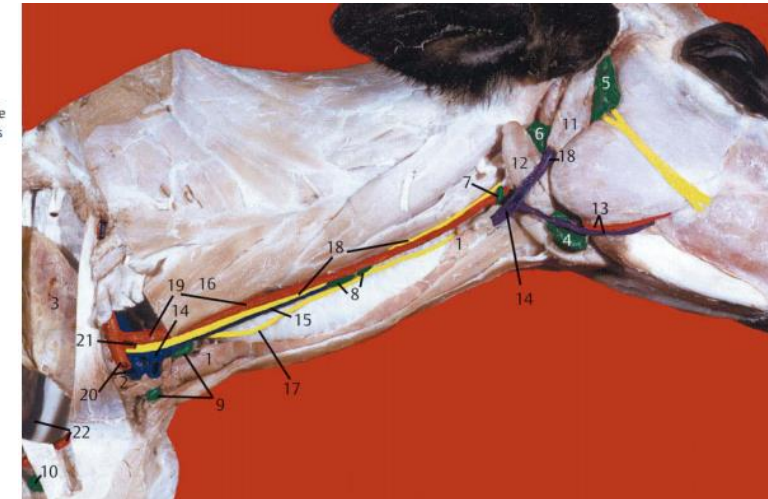


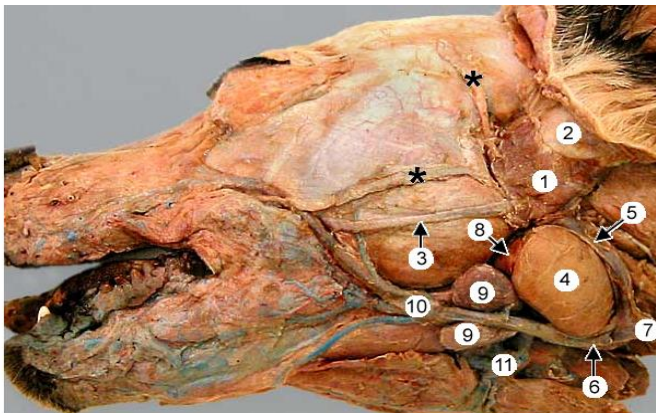
Abb. 6.50 Kehlgang eines Pferdes von ventral

- |   |  |
|---|--|
| 1 Lnn. mandibularis (tastbar)   | 7 Lig. cricothyroideum (die Incisura thyroidea caudalis verschließend) |
| 2 V. facialis   | 8 M. thyrohyoideus   |
| 3 N. mylohyoideus aus N. mandibularis des N. trigeminus (V)             | 9 M. cricothyroideus   |
| 4 M. geniohyoideus (der darüberliegende M. mylohyoideus ist abgetragen) | 10 Gl. thyroidea   |
| 5 M. sternohyoideus   | 11 M. sternothyroideus   |
| 6 Schildknorpel des Kehlkopfes  | 12 M. omohyoideus  |
|   | 13 Trachea   |



Abb. 6.44 Halssitus eines Kalbes

- |                                      |   |                                     |
|--------------------------------------|---|-------------------------------------|
| 1 Lobus cervicalis thymi             | 9 Lnn. cervicales profundi caudales               | 16 Mm. scaleni (teilweise entfernt) |
| 2 Lobus intermedius thymi            | 10 Lnn. sternales                                 | 17 N. laryngeus recurrens           |
| 3 Lobus thoracicus thymi             | 11 Gl. parotis                                    | 18 Tr. vagosympathicus              |
| 4 Lnn. mandibulares                  | 12 Gl. mandibularis                               | 19 A. carotis communis              |
| 5 Lnn. parotidei                     | 13 A. und V. facialis                             | 20 Stumpf der A. und V. subclavia   |
| 6 Lnn. retropharyngei laterales      | 14 V. jugularis externa (im Halsbereich entfernt) | 21 A. und V. thoracica interna      |
| 7 Lnn. cervicales profundi craniales | 15 V. jugularis interna                           | 22 A. thoracica interna             |
| 8 Lnn. cervicales profundi medii     |   |                                     |



Lateral view of superficial salivary glands. The **parotid salivary gland** (1) surrounds the external ear canal (2) and sends a **parotid duct** (3) toward the vestibule. It empties beside the upper fourth premolar. The **mandibular salivary gland** (4) is located where the maxillary v. (5) and linguofacial v. (6) join to form the external jugular v. (7). The monostomatic **sublingual salivary gland** (8) is located just rostral to the mandibular salivary gland. Notice the **mandibular lymph nodes** (9) flanking the facial v. (10), which joins the lingual v. (11) to form the linguofacial v. Branches of the facial n. are evident (asterisks).

<http://vanat.cvm.umn.edu/carnLabs/Lab22/lmg22-8.html>

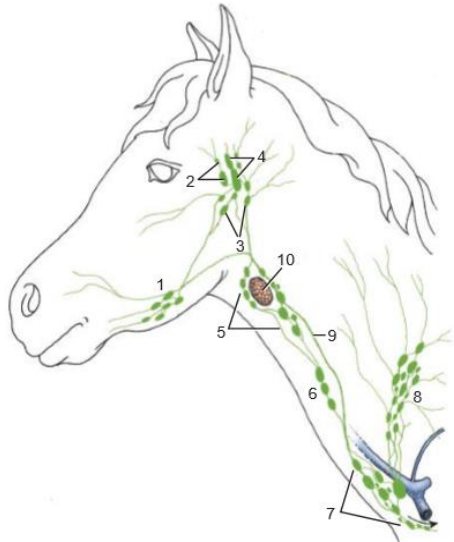
[https://www.narayana-verlag.com/homeopathy/pdf/Anatomie-fuer-die-Tiermedizin-Franz-Viktor-Salomon-Hans-Geyer-Uwe-Gille.17774\\_3aus\\_dem\\_Inhalt.pdf](https://www.narayana-verlag.com/homeopathy/pdf/Anatomie-fuer-die-Tiermedizin-Franz-Viktor-Salomon-Hans-Geyer-Uwe-Gille.17774_3aus_dem_Inhalt.pdf)

# LYMPHKNOTEN DES KOPFES

## LYMPHOCENTRUM MANDIBULARE (Lc. mandibulare):

beim Pfd. :

- finden sie in Höhe des Gefäßausschnittes
- fingerdick
- die Gruppen beider Seiten bilden ein V-förmig zusammenfließendes, tastbares Paket



### 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

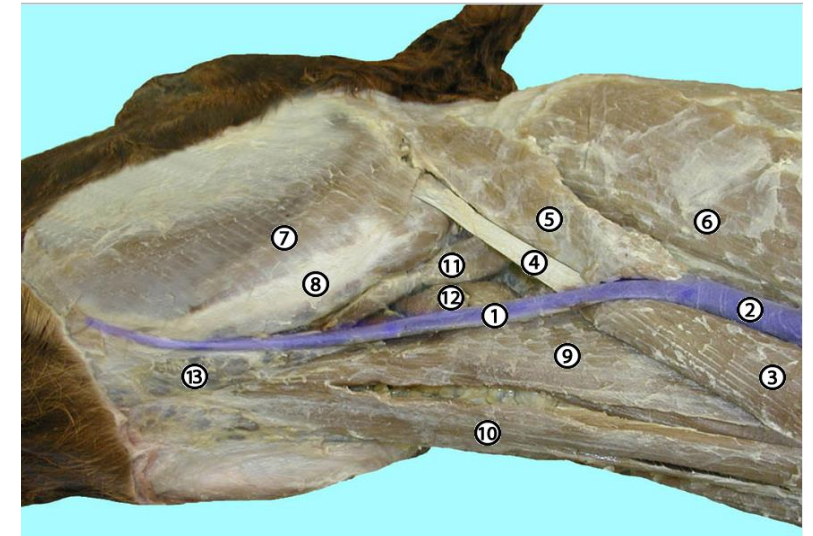


Abb. 6.50 Kehlgang eines Pferdes von ventral

1 Lnn. mandibularis (tastbar)

- 2 V. facialis
- 3 N. mylohyoideus aus N. mandibularis des N. trigeminus (V)
- 4 M. geniohyoideus (der darüberliegende M. mylohyoideus ist abgetragen)
- 5 M. sternohyoideus
- 6 Schildknorpel des Kehlkopfs

- 7 Lig. cricothyroideum (die Incisura thyroidea caudalis verschließend)
- 8 M. thyrohyoideus
- 9 M. cricothyroideus
- 10 Gl. thyroidea
- 11 M. sternothyroideus
- 12 M. omohyoideus
- 13 Trachea



Dissection of Viborg's triangle. 1. linguofacial vein; 2. external jugular vein; 3. sternocephalicus (sternomandibularis) m.; 4. sternocephalicus tendon; 5. parotid salivary gland reflected off the sternocephalicus tendon but covering the maxillary vein; 6. mastoid part of the brachiocephalicus m.; 7. masseter m.; 8. ventral edge of the mandible; 9. omohyoideus m.; 10. sternohyoideus m.; 11. mandibular salivary gland; 12. cranial deep cervical lymph nodes; 13. mandibular lymph nodes.

<http://va.nat.cvm.umn.edu/ungDissect/Lab08/Img8-13.html>

# LYMPHKNOTEN DES KOPFES

**LYMPHOCENTRUM MANDIBULARE (Lc. mandibulare):**

**TRIBUTÄRES GEBIET:**

**Primärlymphe liefern:**

1. die Haut der Nase, des Naseneingangs, der Lippen, Backen, der Masseter – und Augengegend, des Kehlganges
2. Fazialismuskeln
3. Kau – und Kehlgangsmuskeln
4. Oberkiefer – Zwischenkiefer-, Tränen-, Nasen-, Stirn-, Joch-, Unterkieferbein
5. Zähne, Zahnfleisch, Zunge, Muskeln
6. harter Gaumen
7. Backenschleimhaut
8. vorderer Teil der Nasenhöhle
9. Kopfdrüsen

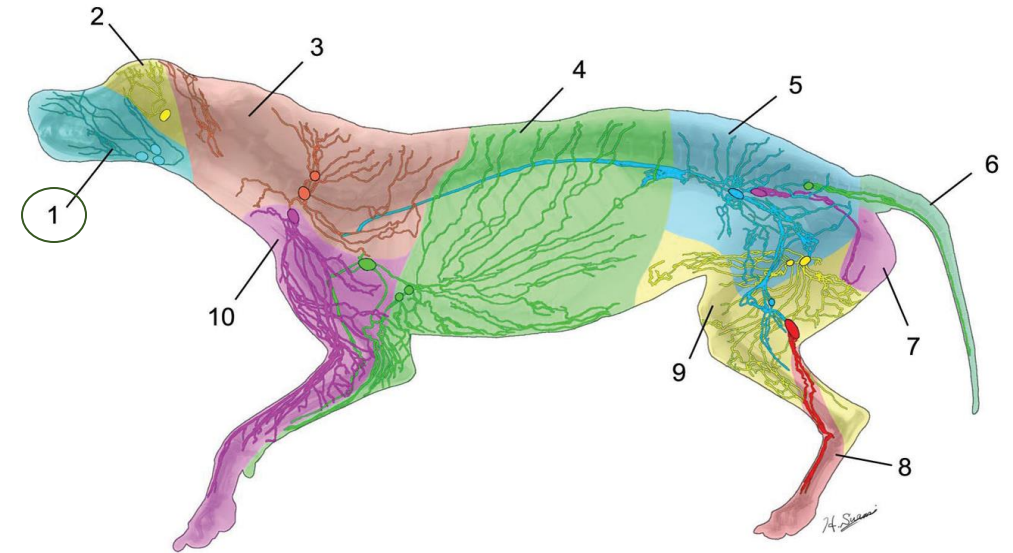


Figure 6. Color-coded diagram of the lymphatic territories (lymphosomes) with lymphatic vessels shown distally from their corresponding lymph nodes: 1, submandibular; 2, parotid; 3, dorsal superficial cervical; 4, axillary; 5, medial iliac; 6, lateral sacral; 7, hypogastric; 8, popliteal; 9, superficial inguinal; 10, ventral superficial cervical.

<https://doi.org/10.1371/journal.pone.0069222.g006>

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0069222>

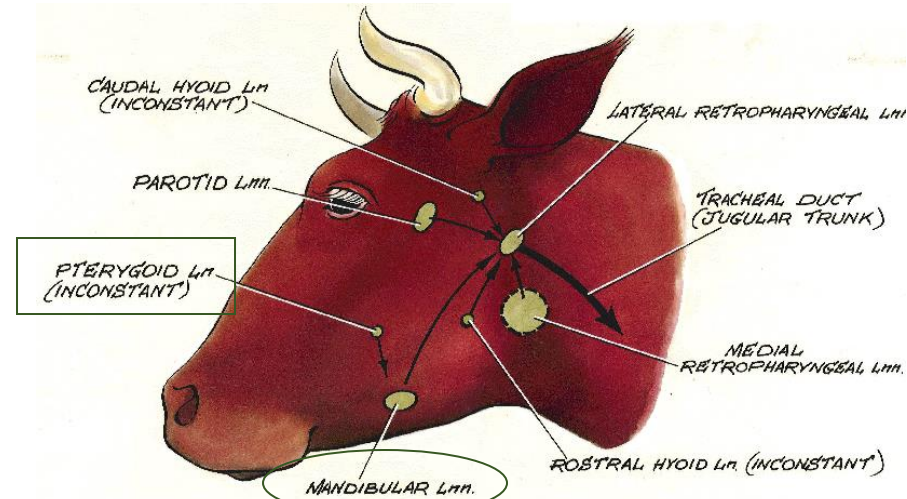
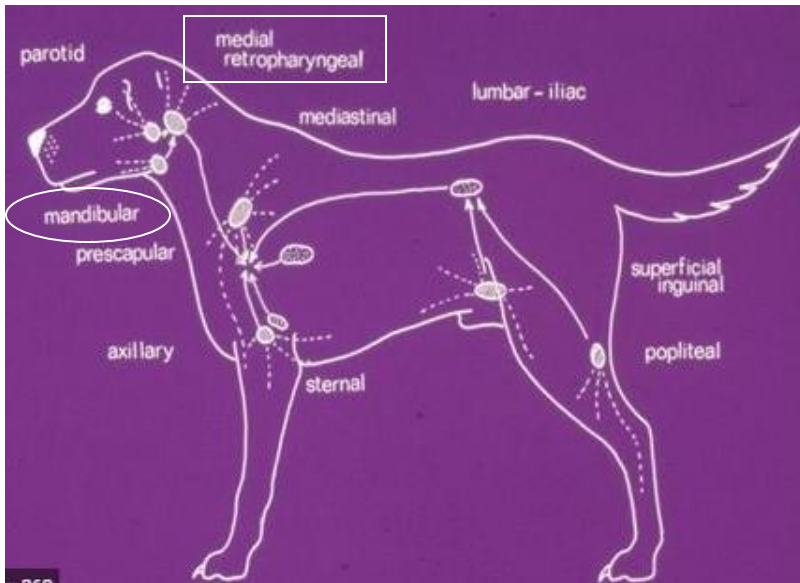
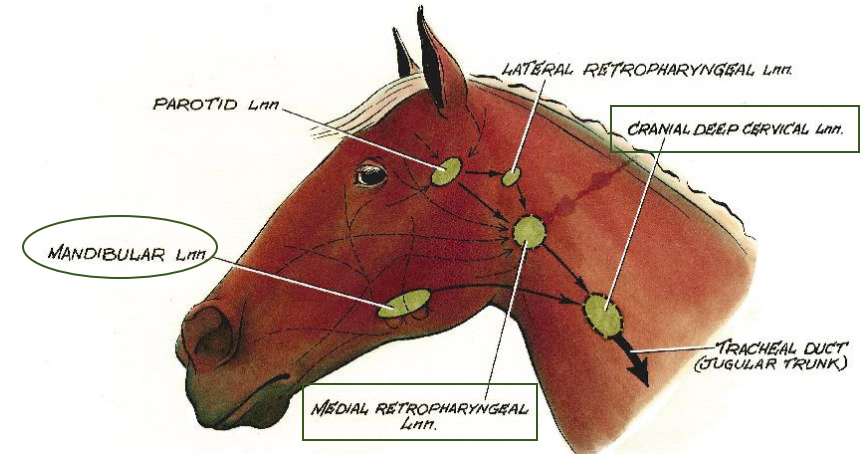
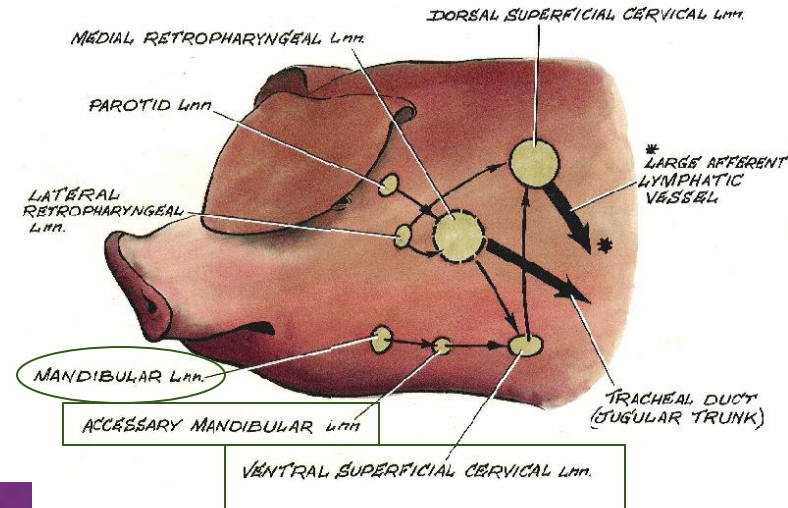
# LYMPHKNOTEN DES KOPFES

LYMPHOCENTRUM MANDIBULARE (Lc. mandibulare):

ABFLUSS:

die Vasa efferentia ziehen zu den:

- Nll. mandibulares accessorii – bei Ktz., Schw.
- Nll. retropharyngei mediales
- Nll. cervicales profundi craniales
- Nl. pterygoideus – beim Rd.



# LYMPHKNOTEN DES KOPFES

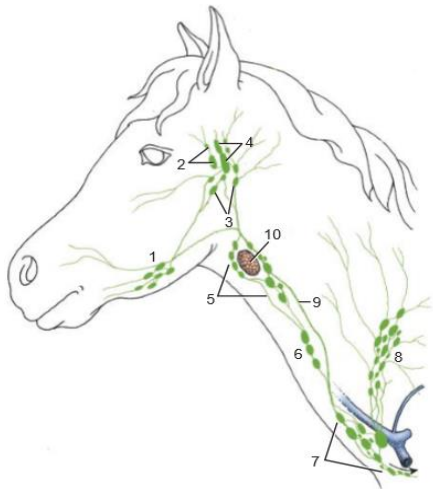
LYMPHOCENTRUM RETROPHARYNGEUM (Lc. retropharyngeum):

zu diesem Lymphozentrum gehören:

a. NII. retropharyngei laterales

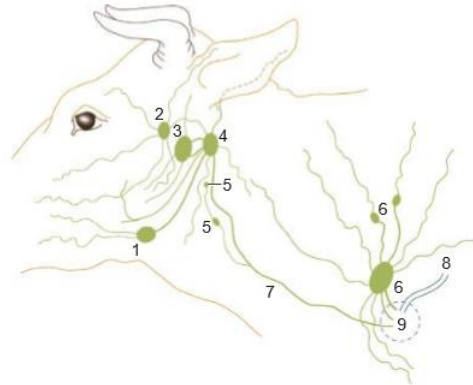
b. NII. retropharyngei mediales

- beim Schw., Wdk. Pfd. regelmäßig, beim kl. Wdk. in Verdachtsfällen in der Fleischbesuch untersucht



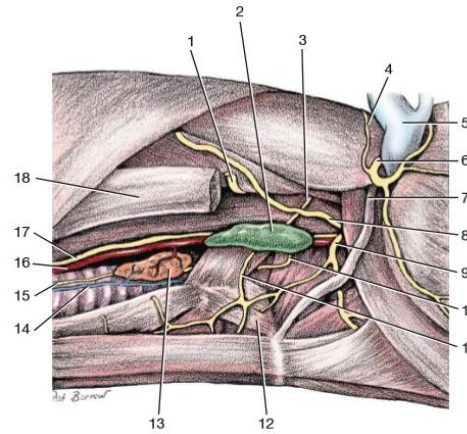
Equine: Lymphatic Structures of the Head and Neck

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



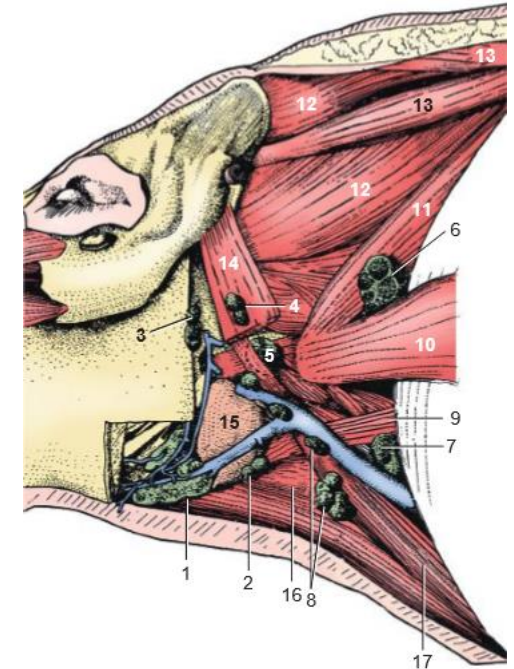
Bovine: Lymph Drainage of the Head and Neck

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



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



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. Sternocephalicus

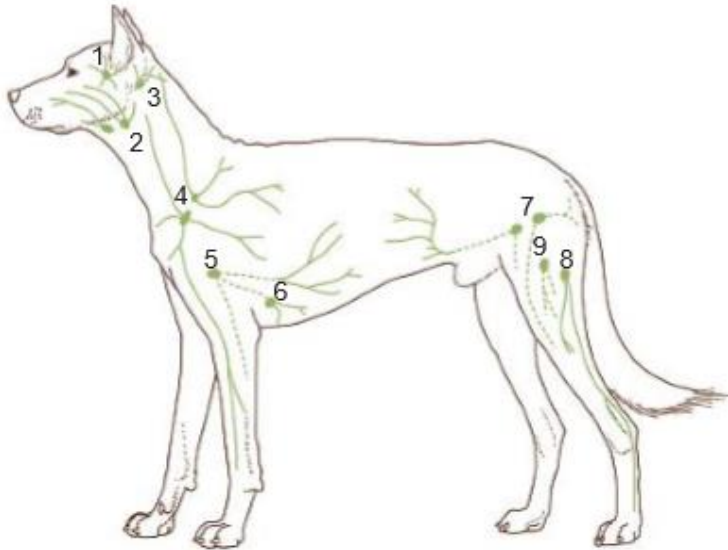
Note: Left, lateral view.

# LYMPHKNOTEN DES KOPFES

## LYMPHOCENTRUM RETROPHARYNGEUM (Lc. retropharyngeum):

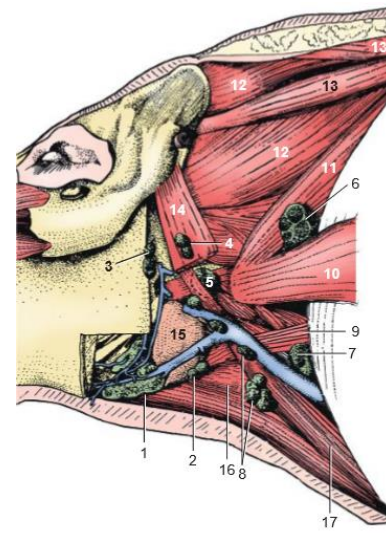
### a. NII. retropharyngei laterales:

- seitliche Schlundkopflymphknoten
- liegen in der Fossa retromandibularis nahe der Atlasflügelgrube
- beim Rd., - wenn vorhanden beim Hd.- tastbar
- beim Pfd. berühren sie die laterale Wandung des Luftsackes (Luftsacklymphknoten)



### Canine: Palpable Lymph Nodes

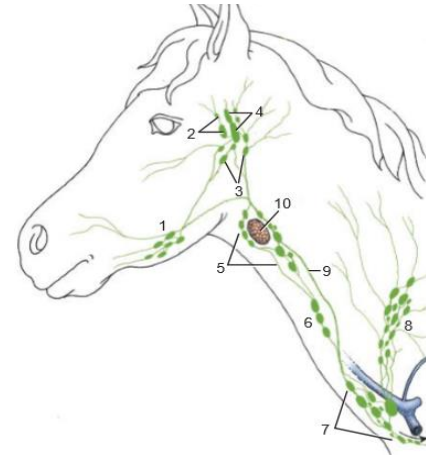
1. Parotid
2. Mandibular
3. Lateral retropharyngeal (inconstant)
4. Superficial cervical
5. Axillary
6. Accessory axillary (inconstant)
7. Superficial inguinal
8. Popliteal
9. Femoral (inconstant)



### 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.



### 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



### 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

# LYMPHKNOTEN DES KOPFES

## LYMPHOCENTRUM RETROPHARYNGEUM (Lc. retropharyngeum):

### a. NII. retropharyngei laterales:

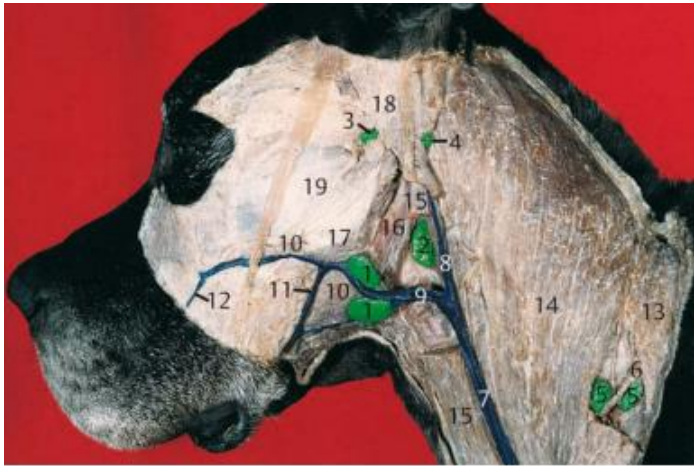


Abb. 6.48 Kopf und Hals eines Hundes (Gl. mandibularis ganz, M. sternocephalicus und M. omotransversarius teilweise entfernt)

- |  |                         |                      |
|--|-------------------------|----------------------|
| 1 Lnn. mandibulares (tastbar)                                    | 7 V. jugularis externa  | 16 M. digastricus    |
| 2 Ln. retropharyngeus medialis                                   | 8 V. maxillaris         | 17 M. masseter       |
| 3 Ln. parotideus (tastbar)                                       | 9 V. linguofacialis     | 18 Gl. parotis       |
| 4 Ln. retropharyngeus lateralis (tastbar, aber selten vorhanden) | 10 V. facialis          | 19 Ductus parotideus |
| 5 Buglymphknoten, Lnn. cervicales superficiales (tastbar)        | 11 V. labialis inferior |                      |
| 6 R. prescapularis der A. cervicalis superficiales               | 12 V. labialis superior |                      |
|  | 13 M. trapezius         |                      |
|  | 14 M. cleidocephalicus  |                      |
|  | 15 M. sternocephalicus  |                      |

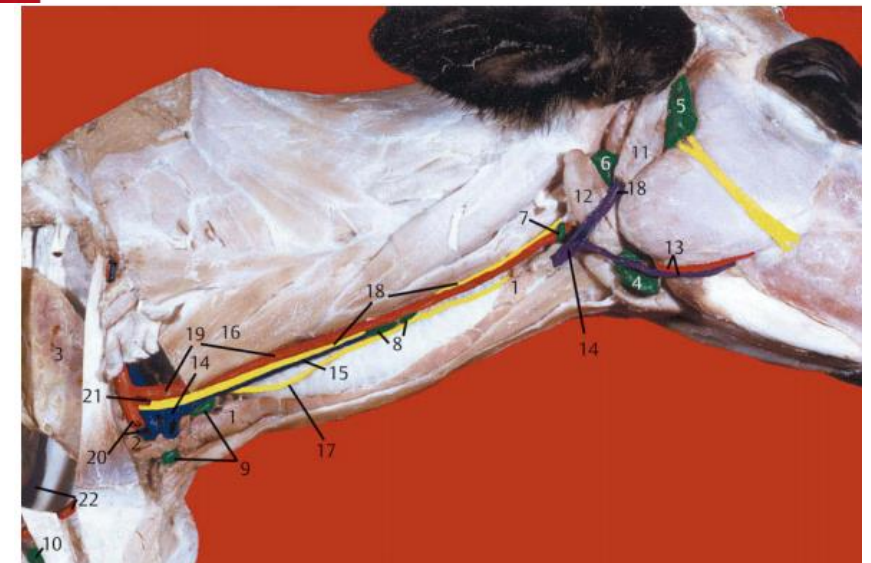
Abb. 6.44 Halsitus eines Kalbes

- |                                      |   |
|--------------------------------------|---|
| 1 Lobus cervicalis thymi             | 9 Lnn. cervicales profundi caudales               |
| 2 Lobus intermedius thymi            | 10 Lnn. sternales                                 |
| 3 Lobus thoracicus thymi             | 11 Gl. parotis                                    |
| 4 Lnn. mandibulares                  | 12 Gl. mandibularis                               |
| 5 Lnn. parotidei                     | 13 A. und V. facialis                             |
| 6 Lnn. retropharyngei laterales      | 14 V. jugularis externa (im Halsbereich entfernt) |
| 7 Lnn. cervicales profundi craniales | 15 V. jugularis interna                           |
| 8 Lnn. cervicales profundi medii     |   |



Abb. 6.49 Hals eines Schweines, Ventrolateralansicht, Gl. parotis entfernt

- |   |   |
|---|---|
| 1 M. masseter   | 18 M. sternocephalicus (teilweise entfernt); unter der am Proc. mastoideus inserierenden Endsehne liegen die Lnn. retropharyngei mediales des Lc. retropharyngeum |
| 2 Lnn. parotidei des Lc. parotideum                                       | 19 Thymus   |
| 3 Ductus parotideus   | 20 M. sternochoideus  |
| 4 A. et V. facialis   | 21 Lnn. cervicales superficiales ventrales des Lc. cervicale superficiales  |
| 5 Lnn. mandibulares des Lc. mandibulare                                   | 22 V. jugularis externa; Punktionsstelle 2 Finger breit vor und 2 Finger breit seitlich des Manubrium sterni  |
| 6 Gl. mandibularis  | 23 M. subclavius  |
| 7 V. auricularis caudalis   | 24 M. pectoralis descendens der Mm. pectorales superficiales  |
| 8 V. maxillaris   | 25 Manubrium sterni   |
| 9 V. linguofacialis   | 26 V. cephalica   |
| 10 Lnn. mandibulares accessorii des Lc. mandibulare                       | 27 M. pectoralis transversus der Mm. pectorales superficiales   |
| 11 M. omotransversarius   |   |
| 12 Lnn. retropharyngei laterales des Lc. retropharyngeum                  |   |
| 13 M. cleidocephalicus, Pars mastoidea                                    |   |
| 14 M. cleidocephalicus, Pars occipitalis                                  |   |
| 15 Lnn. cervicales superficiales dorsales des Lc. cervicale superficiales |   |
| 16 M. omotransversarius   |   |
| 17 M. thyrohyoideus   |   |

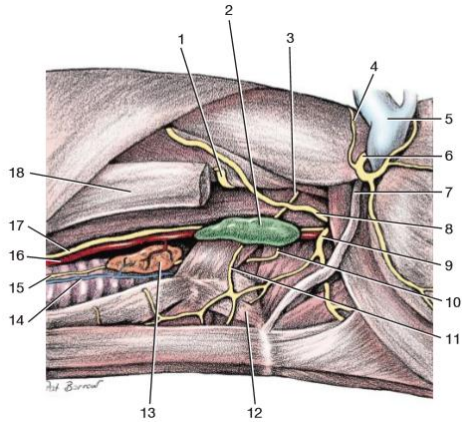


# LYMPHKNOTEN DES KOPFES

## LYMPHOCENTRUM RETROPHARYNGEUM (Lc. retrophary)

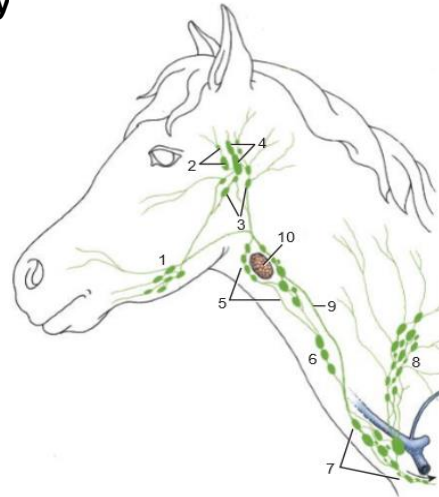
### b. NII. retropharyngei mediales:

- mittlere Schlundkopflymphknoten
- lagern sich dem Schlundkopf auf



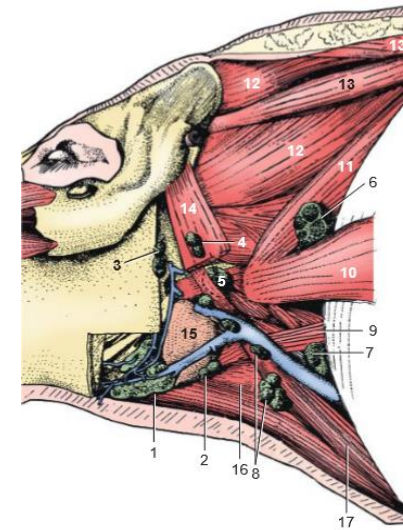
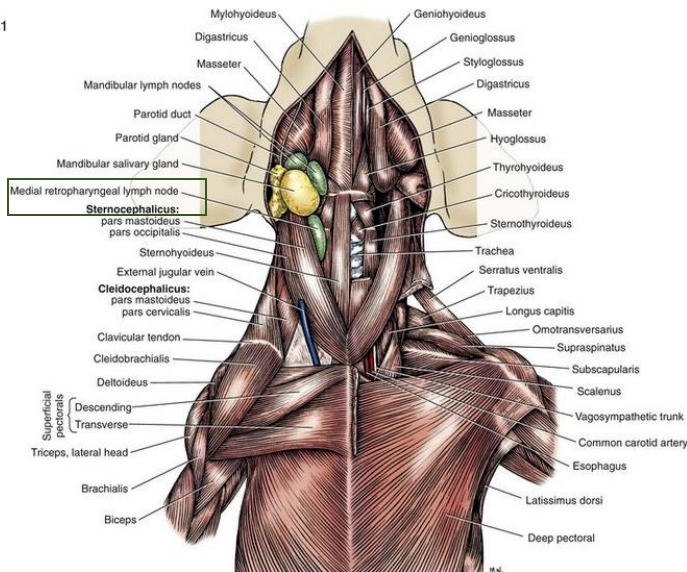
### Canine: Retropharyngeal Lymph Node and Thyroid Gland

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



### 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



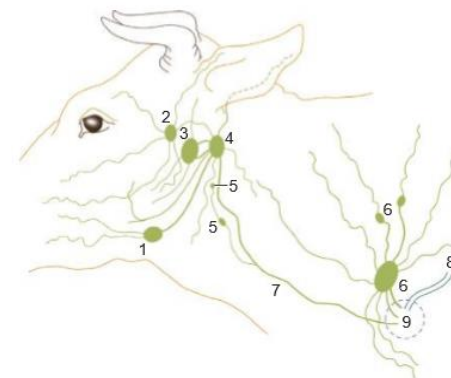
### Porcine: Dissection of the Neck to Show Lymph Nodes

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.



### 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



# LYMPHKNOTEN DES KOPFES

## LYMPHOCENTRUM RETROPHARYNGEUM (Lc. retropharyngeum):

### a. NII. retropharyngei medialis:

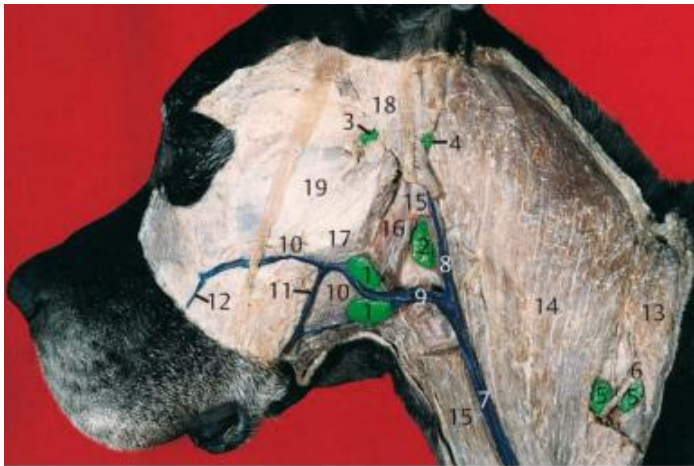


Abb. 6.48 Kopf und Hals eines Hundes (Gl. mandibularis ganz, M. sternocephalicus und M. omotransversarius teilweise entfernt)

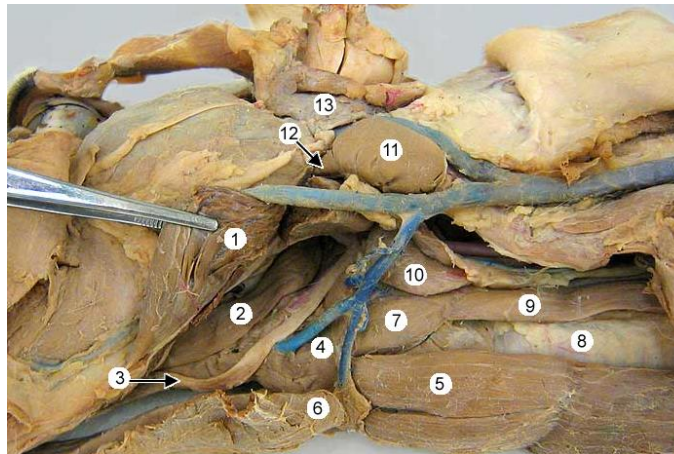
- |  |                         |                      |
|--|-------------------------|----------------------|
| 1 Lnn. mandibulares (tastbar)                                    | 7 V. jugularis externa  | 16 M. digastricus    |
| 2 Ln. retropharyngeus medialis                                   | 8 V. maxillaris         | 17 M. masseter       |
| 3 Ln. parotideus (tastbar)                                       | 9 V. linguofacialis     | 18 Gl. parotis       |
| 4 Ln. retropharyngeus lateralis (tastbar, aber selten vorhanden) | 10 V. facialis          | 19 Ductus parotideus |
| 5 Buglymphknoten, Lnn. cervicales superficiales (tastbar)        | 11 V. labialis inferior |                      |
| 6 R. prescapularis der A. cervicalis superficialis               | 12 V. labialis superior |                      |
|  | 13 M. trapezius         |                      |
|  | 14 M. cleidocephalicus  |                      |
|  | 15 M. sternocephalicus  |                      |

[https://www.narayana-verlag.com/homeopathy/pdf/Anatomie-fuer-die-Tiermedizin-Franz-Viktor-Salomon-Hans-Geyer-Uwe-Gille.17774\\_3aus\\_dem\\_Inhalt.pdf](https://www.narayana-verlag.com/homeopathy/pdf/Anatomie-fuer-die-Tiermedizin-Franz-Viktor-Salomon-Hans-Geyer-Uwe-Gille.17774_3aus_dem_Inhalt.pdf)



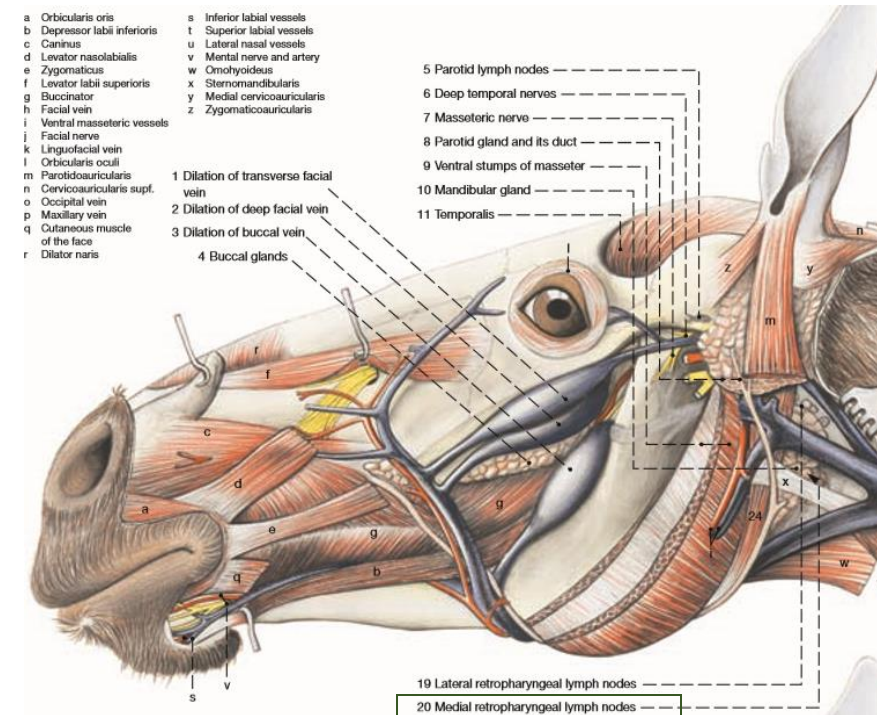
Abb. 6.49 Hals eines Schweines, Ventrolateralansicht, Gl. parotis entfernt

- |   |   |
|---|---|
| 1 M. masseter   | 18 M. sternocephalicus (teilweise entfernt); unter der am Proc. mastoideus inserierenden Endsehne liegen die Lnn. retropharyngei mediales des Lc. retropharyngeum |
| 2 Lnn. parotidei des Lc. parotideum                                       | 19 Thymus   |
| 3 Ductus parotideus   | 20 M. sternochoideus  |
| 4 A. et V. facialis   | 21 Lnn. cervicales superficiales ventrales des Lc. cervicale superficiales  |
| 5 Lnn. mandibulares des Lc. mandibulare                                   | 22 V. jugularis externa; Punktionsstelle 2 Finger breit vor und 2 Finger breit seitlich des Manubrium sterni  |
| 6 Gl. mandibularis  | 23 M. subclavius  |
| 7 V. auricularis caudalis   | 24 M. pectoralis descendens der Mm. pectorales superficiales  |
| 8 V. maxillaris   | 25 Manubrium sterni   |
| 9 V. linguofacialis   | 26 V. cephalica   |
| 10 Lnn. mandibulares accessorii des Lc. mandibulare                       | 27 M. pectoralis transversus der Mm. pectorales superficiales   |
| 11 M. omohyoideus   |   |
| 12 Lnn. retropharyngei laterales des Lc. retropharyngeum                  |   |
| 13 M. cleidocephalicus, Pars mastoidea                                    |   |
| 14 M. cleidocephalicus, Pars occipitalis                                  |   |
| 15 Lnn. cervicales superficiales dorsales des Lc. cervicale superficiales |   |
| 16 M. omotransversarius   |   |
| 17 M. thyrohyoideus   |   |



Ventral view of the left half of the head and neck. The digastricus m. (1) is reflected to expose the styloglossus m. (2), hypoglossal n. (3) and the hyoglossus m. (4). The latter attaches to hyoid bones, as does: sternochoideus m. (5), geniohyoideus m. (6) and thyrohyoideus m. (7). Identify the trachea (8), sternochoideus m. (9), medial retropharyngeal lymph node (10), mandibular salivary gland (11), monostomatic sublingual salivary gland (12), and the parotid salivary gland (13).

<http://vanat.cvm.umn.edu/carnLabs/Lab23/lmg23-13.html>



- |                                |                             |
|--------------------------------|-----------------------------|
| a Orbicularis oris             | s Inferior labial vessels   |
| b Depressor labii inferioris   | t Superior labial vessels   |
| c Caninus                      | u Lateral nasal vessels     |
| d Levator nasolabialis         | v Mental nerve and artery   |
| e Zygomaticus                  | w Omohyoideus               |
| f Levator labii superioris     | x Sternomandibularis        |
| g Buccinator                   | y Medial cervicoauricularis |
| h Facial vein                  | z Zygomaticoauricularis     |
| i Ventral masseteric vessels   |                             |
| j Facial nerve                 |                             |
| k Linguofacial vein            |                             |
| l Orbicularis oculi            |                             |
| m Parotidoauricularis          |                             |
| n Cervicoauricularis sup.      |                             |
| o Occipital vein               |                             |
| p Maxillary vein               |                             |
| q Cutaneous muscle of the face |                             |
| r Dilator naris                |                             |

- |  |
|--|
| 1 Dilatation of transverse facial vein |
| 2 Dilatation of deep facial vein       |
| 3 Dilatation of buccal vein            |
| 4 Buccal glands                        |

- |                              |
|------------------------------|
| 5 Parotid lymph nodes        |
| 6 Deep temporal nerves       |
| 7 Masseteric nerve           |
| 8 Parotid gland and its duct |
| 9 Ventral stumps of masseter |
| 10 Mandibular gland          |
| 11 Temporals                 |

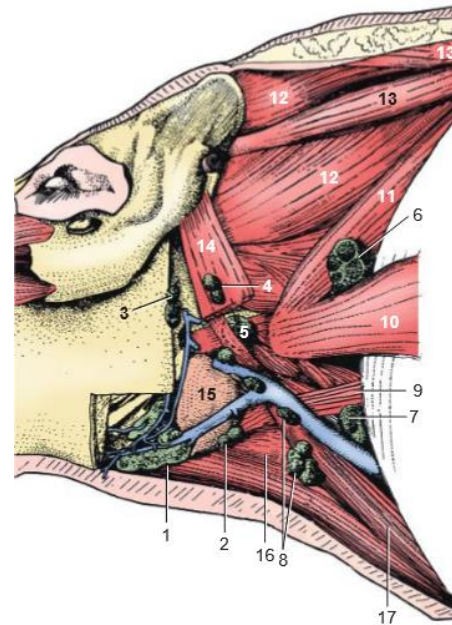
- |  |
|--|
| 19 Lateral retropharyngeal lymph nodes |
| 20 Medial retropharyngeal lymph nodes  |

# LYMPHKNOTEN DES KOPFES

LYMPHOCENTRUM RETROPHARYNGEUM (Lc. retropharyngeum):

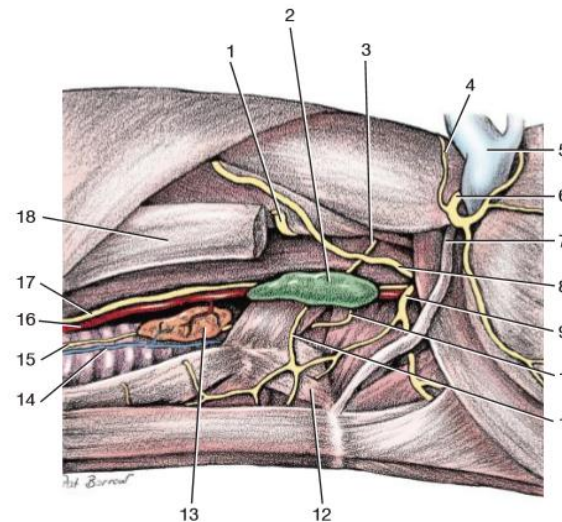
TRIBUTÄRES GEBIET:

1. die Haut der Parotisgegend
2. die Kehlgangs-, inneren Kaumuskeln
3. die Zungenbeinmuskeln
4. kopfnaher Hals-, Nackenmuskeln
5. Hinterhaupt-, Keil-, Schläfen-, Gaumen-, Stirn-, Oberkieferbein
6. Unterkiefer
7. Kopfdrüsen
8. Zunge, Zungenmuskeln
9. harter –, weicher Gaumen
10. lymphatischer Rachenring



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. Sternocephalicus

Note: Left, lateral view.



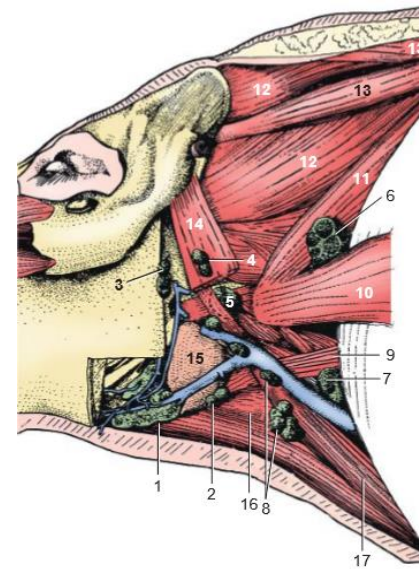
1. Second cervical spinal nerve
2. Medial retropharyngeal lymph node
3. First cervical spinal nerve
4. Caudal auricular nerve
5. Auricular cartilage
6. Facial nerve
7. Stylohyoideus
8. Accessory nerve
9. Hypoglossal nerve
10. Cranial laryngeal nerve
11. Ansa cervicalis
12. Thyrohyoideus
13. Thyroid gland
14. Internal jugular vein
15. Recurrent laryngeal nerve
16. Common carotid artery
17. Vagosympathetic nerve trunk
18. Mastoid part of cleidocephalicus

# LYMPHKNOTEN DES KOPFES

LYMPHOCENTRUM RETROPHARYNGEUM (Lc. retropharyngeum):

TRIBUTÄRES GEBIET:

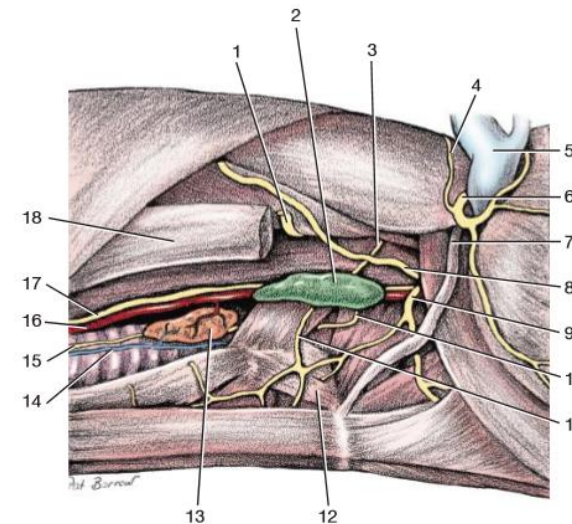
1. Zahnfleisch des maxillaren Zahnbogens
2. Nasengrund
3. Nasennebenhöhlen
4. Luftsack
5. Schlundkopf
6. Kehlkopf
7. Schilddrüse
8. äußeres Ohr



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. Sternocephalicus

Note: Left, lateral view.



Canine: Retropharyngeal Lymph Node and Thyroid Gland

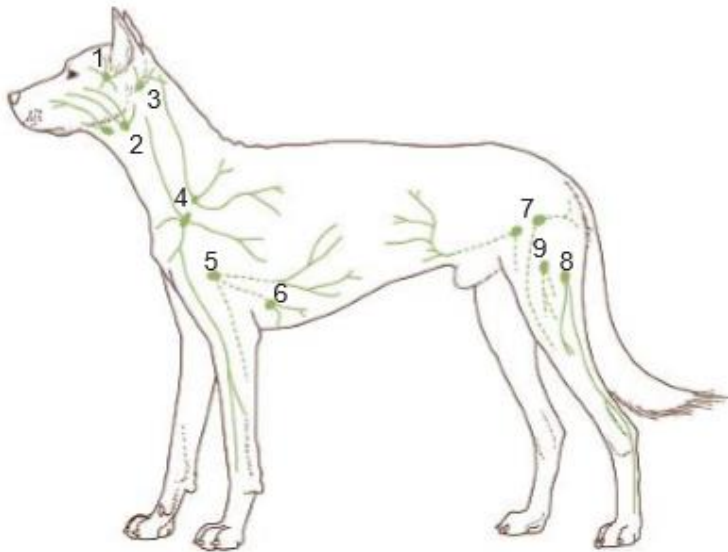
1. Second cervical spinal nerve
2. Medial retropharyngeal lymph node
3. First cervical spinal nerve
4. Caudal auricular nerve
5. Auricular cartilage
6. Facial nerve
7. Stylohyoideus
8. Accessory nerve
9. Hypoglossal nerve
10. Cranial laryngeal nerve
11. Ansa cervicalis
12. Thyrohyoideus
13. Thyroid gland
14. Internal jugular vein
15. Recurrent laryngeal nerve
16. Common carotid artery
17. Vagosympathetic nerve trunk
18. Mastoid part of cleidocephalicus

# LYMPHKNOTEN DES KOPFES

LYMPHOCENTRUM RETROPHARYNGEUM (Lc. retropharyngeum):

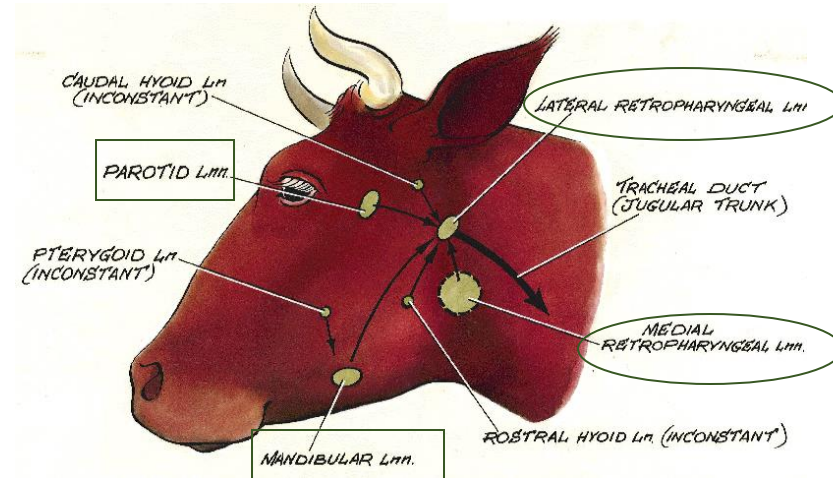
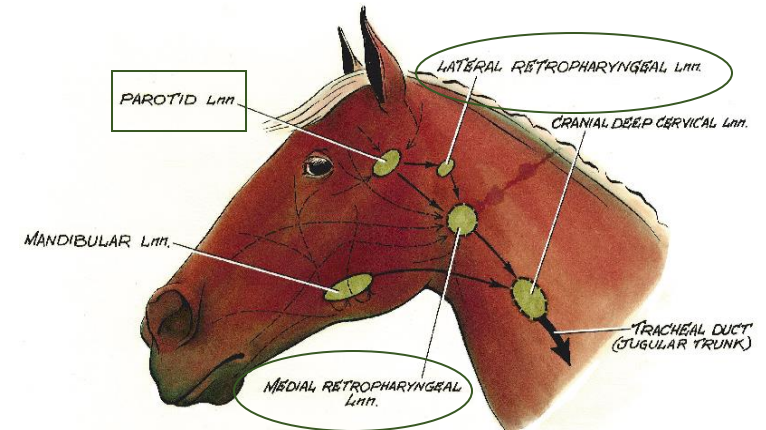
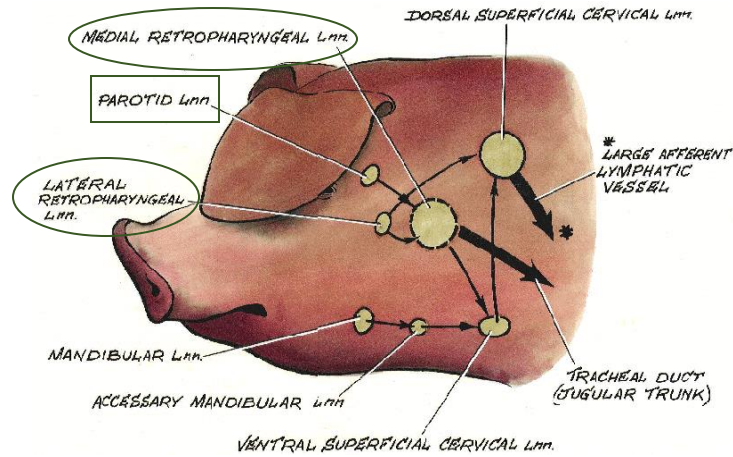
TRIBUTÄRES GEBIET:

- Durchganglymphe des Lc. parotideum – bei allen Hsgt.
- Durchganglymphe des Lc. mandibulare – bei Flfr., Rd.



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)



<https://www.ucd.ie/vetnat/images/25.gif>

# LYMPHKNOTEN DES KOPFES

LYMPHOCENTRUM RETROPHARYNGEUM (Lc. retropharyngeum):

TRIBUTÄRES GEBIET:

beim Rd. noch:

1. Nil. hyoideus rostralis

2. Nil. hyoideus caudalis

- inkonstant

- die Lymphe aus der Zunge und den Kopfdrüsen filtrieren – dann an die Nil. retropharyngei laterales weiterleiten

- 7. Lymphonodus pterygoideus
- 9. Lymphonodus retropharyngei med.
- 10. Lymphonodus retropharyngei lat.
- 11. Lymphonodus hyoideus rost.
- 12. Lymphonodus hyoideus caud.
- 20. Lymphonodi cervicales profundi craniales

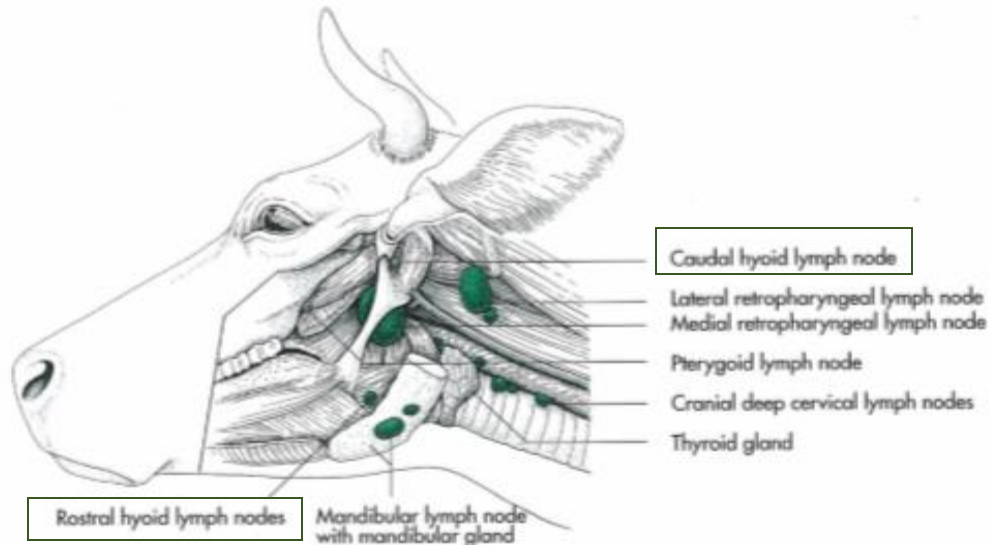
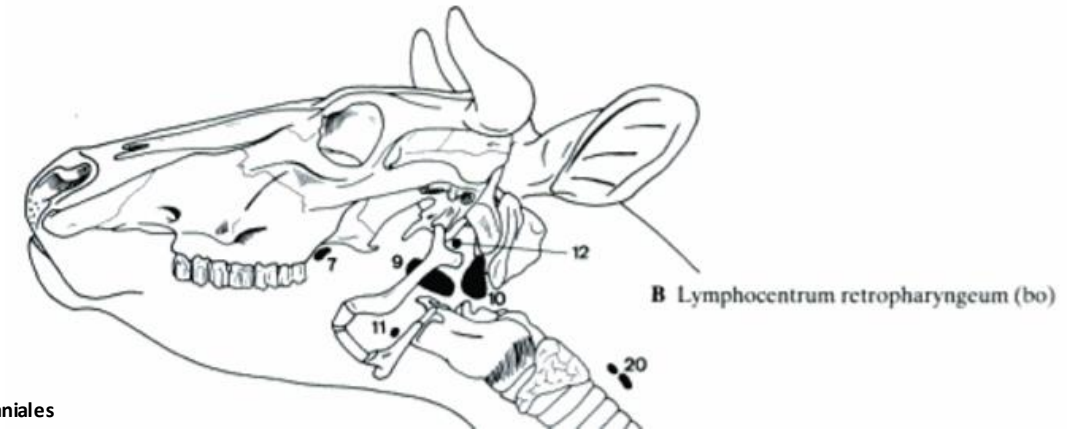
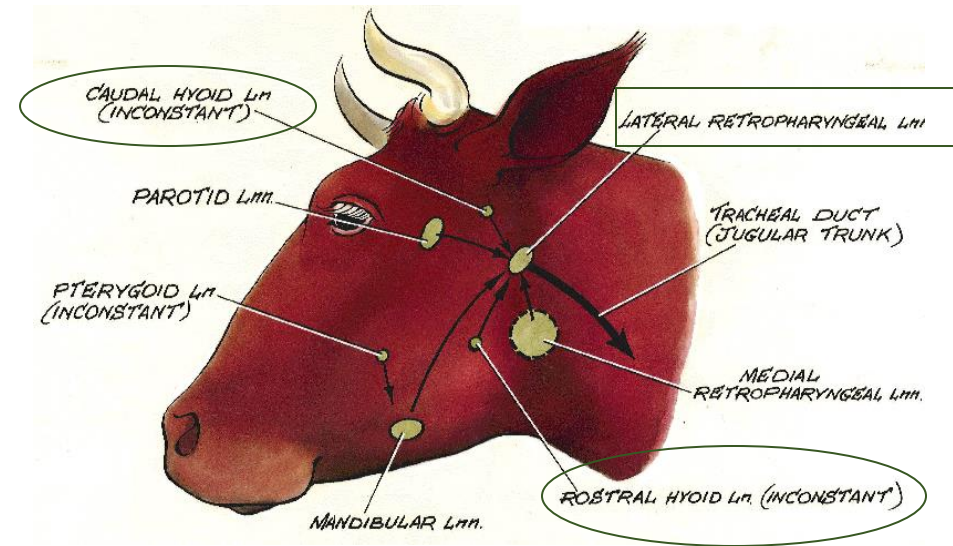


Fig. 13-9. Deep lymph nodes of the head and the cranial part of the neck of the ox, schematic (Najbrt, 1982).



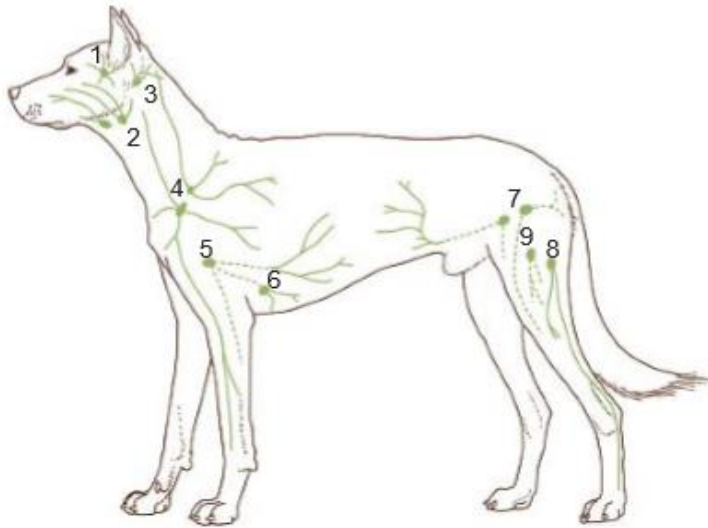
# LYMPHABFLUSS VOM KOPF

- tierartlich variable

BEIM HUND:

- leiten Nl. parotideus, Nll. mandibulares, Nl. retropharyngeus lat. ihre Lymphe zum Nl. retropharyngeus med. – hier beginnt der Truncus jugularis seu

Truncus trachealis



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)

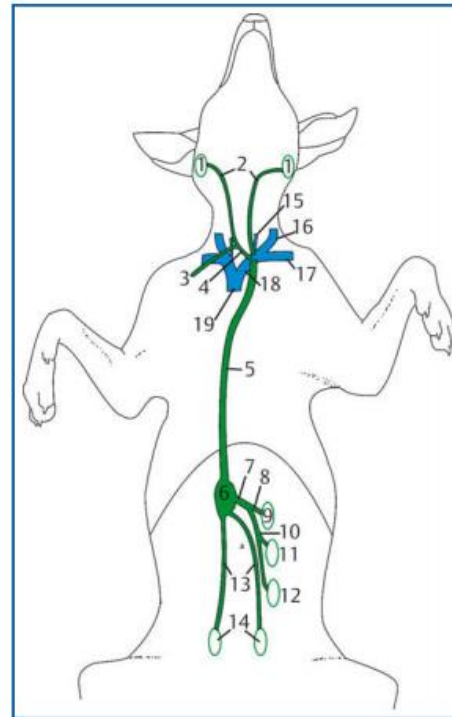
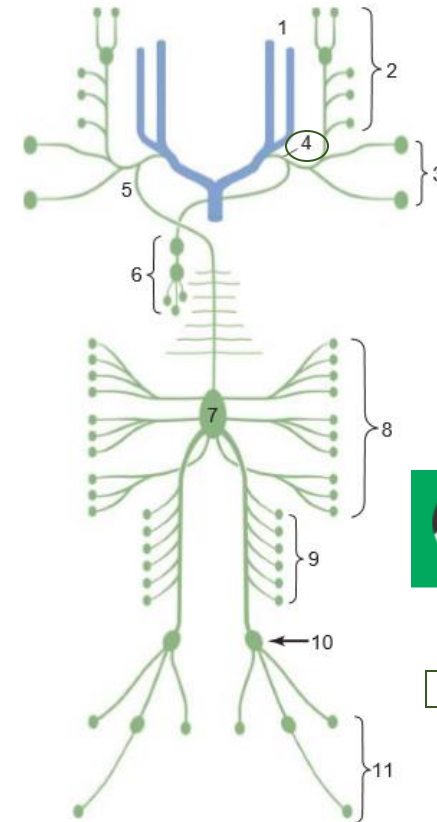


Abb. 6.47 Schema der Lymphsammelstämme beim Hund

1 Lc. retropharyngeum	11 Lc. mesentericum craniale
2 Tr. trachealis	12 Lc. mediastinale caudale
3 rechte Achsellymphgefäße	13 Tr. lumbalis
4 Tr. lymphaticus dexter	14 Lnn. iliaci mediales des Lc. iliosacrale
5 Ductus thoracicus	15 V. jugularis interna
6 Lendenzisterne (Cisterna chyli)	16 V. jugularis externa
7 Tr. visceralis	17 V. subclavia
8 Efferenzen des Lc. celiacum	18 V. brachiocephalica,
9 Lc. celiacum	19 V. cava cranialis
10 Efferenzen der Lcc. mesenterica	



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.

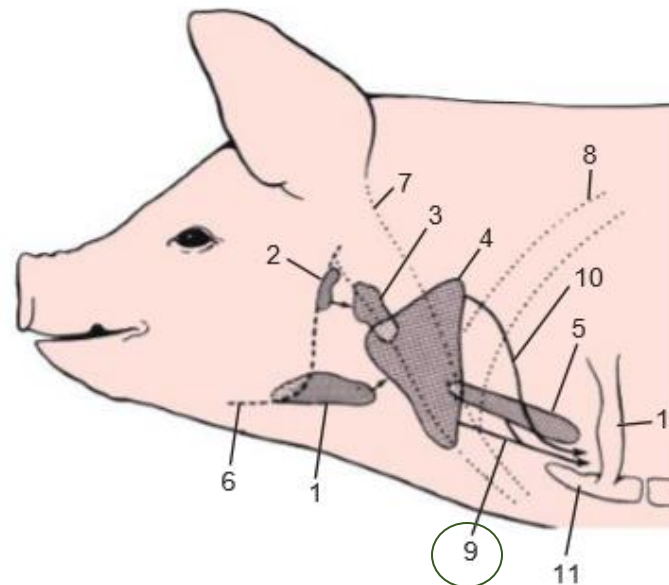
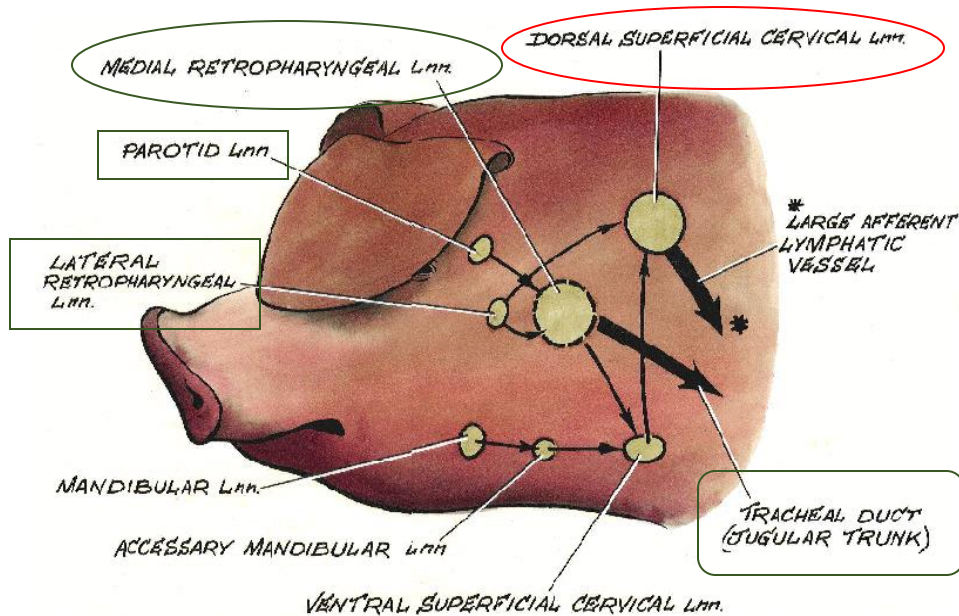
[https://www.narayana-verlag.com/homeopathy/pdf/Anatomie-fuer-die-Tiermedizin-Franz-Viktor-Salomon-Hans-Geyer-Uwe-Gille.17774\\_3aus\\_dem\\_Inhalt.pdf](https://www.narayana-verlag.com/homeopathy/pdf/Anatomie-fuer-die-Tiermedizin-Franz-Viktor-Salomon-Hans-Geyer-Uwe-Gille.17774_3aus_dem_Inhalt.pdf)

# LYMPHABFLUSS VOM KOPF

## BEIM SCHWEIN:

- zwei Hauptabflüsse

- a. Nll. parotidei, Nll. retropharyngei lat. senden ihre Lymphe zu den Nll. retropharyngei med., wo der Truncus jugularis beginnt
- b. Nll. mandibulares geben ihre Lymphe an die Nll. mandibulares accessorii – und diese an die Nll. cervicales superfic. ventrales weiter – diese erhalten Zuschuss von den Nll. retropharyngei med. und leiten dann direkt die Lymphe an die Nll. cervicales superficilales dorsales – damit die Hauptmenge der Kopflymphe erhalten



## Porcine: Lymph Center of the Head and Neck

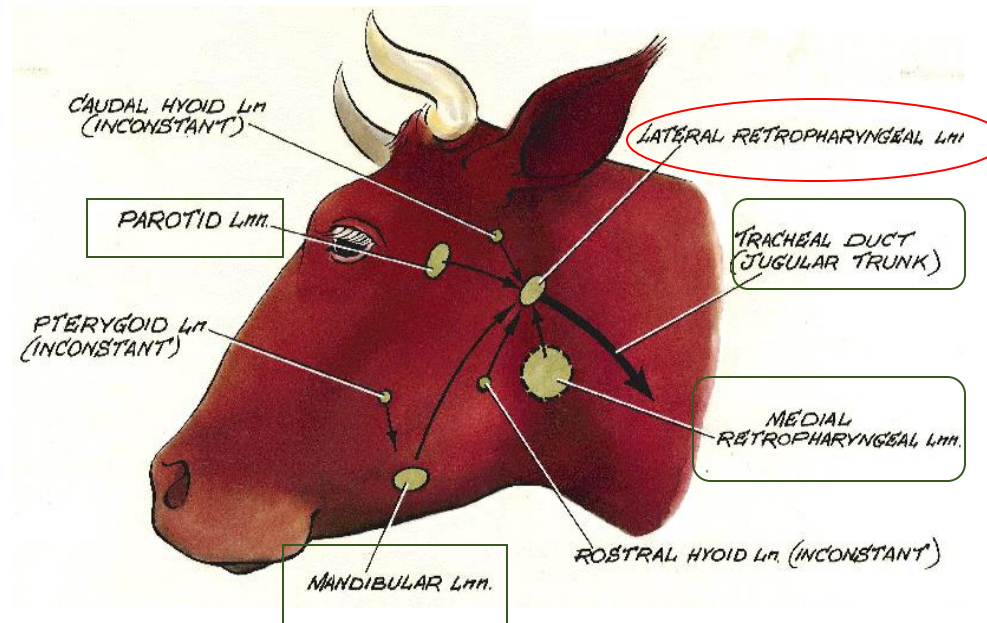
1. Mandibular lymph center
2. Parotid lymph center
3. Retropharyngeal lymph center
4. Superficial cervical lymph center
5. Deep cervical lymph center
6. Mandible
7. Cleidocephalicus
8. Subclavius
9. Tracheal lymph trunk
10. Lymph from dorsal superficial cervical nodes
11. Manubrium sterni
12. First rib

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

# LYMPHABFLUSS VOM KOPF

## BEIM RIND:

- fließt die Lymphe aus dem NI. parotideus, dem NI. mandibularis, dem NI. retropharyngeus med. zu den NII. retropharyngei lat. – dort beginnt der Truncus jugularis



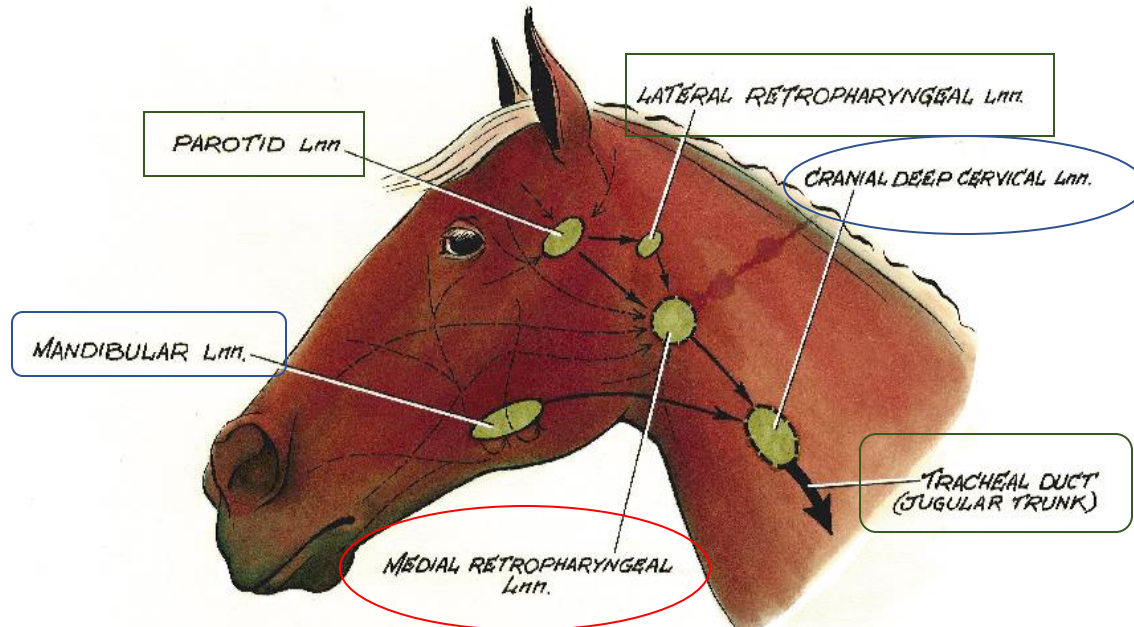
<https://www.ucd.ie/vetnat/images/25.gif>



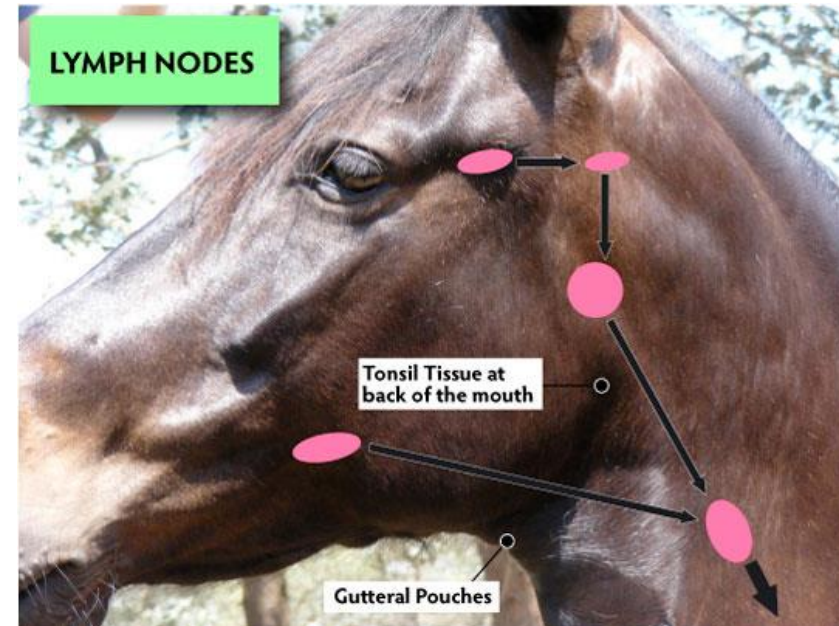
# LYMPHABFLUSS VOM KOPF

BEIM PFERD:

- geben die Nll. parotidei, Nll. retropharyngei lat. ihre Lymphe an die Nll. retropharyngei mediales weiter – von hier und von den Nll. mandibulares werden die Nll. cervicales profundi craniales gespeist – aus ihren efferenten Bahnen entsteht der Truncus jugularis



<https://www.ucd.ie/vet/nat/images/25.gif>



<https://www.itsmypony.com/strangles>

# LYMPHABFLUSS VOM KOPF

- bei Hd., Wdk., Pfd. die Kopflymphe allein über den Truncus jugularis abgeleitet
- beim Schw. die Hauptmenge der Kopflymphe geht über die Nll. cervicales superficiales dorsales

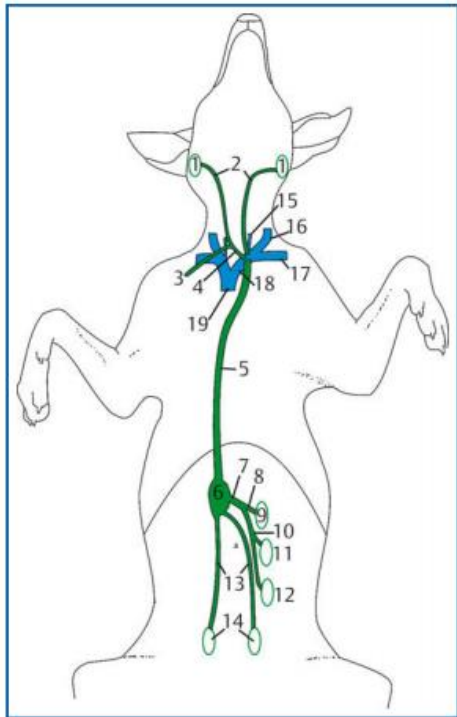
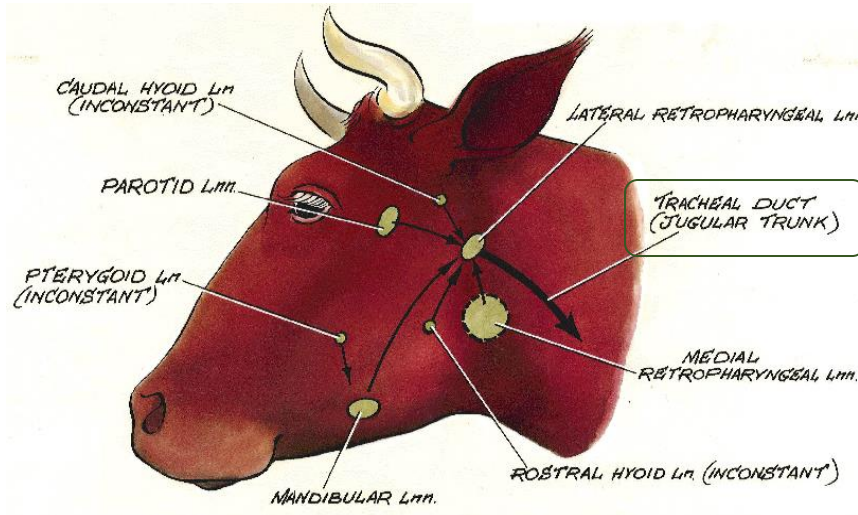
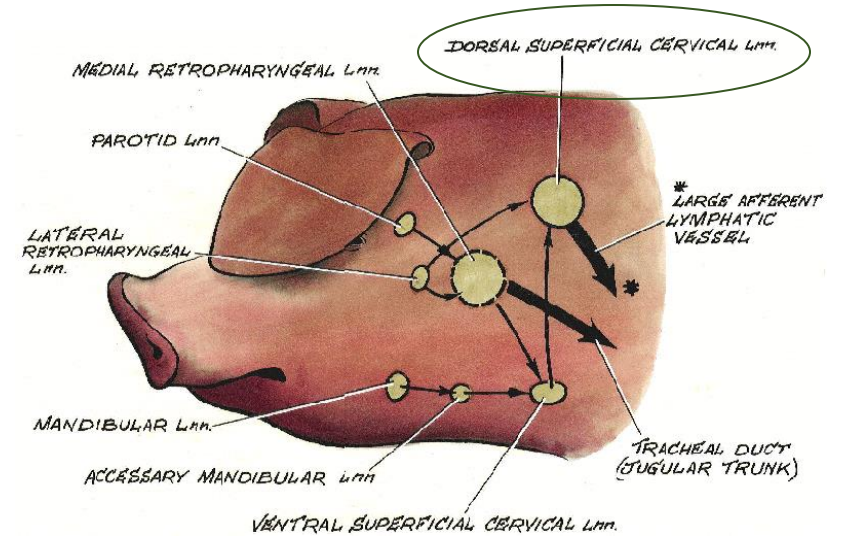


Abb. 6.47 Schema der Lymphsammelstämme beim Hund

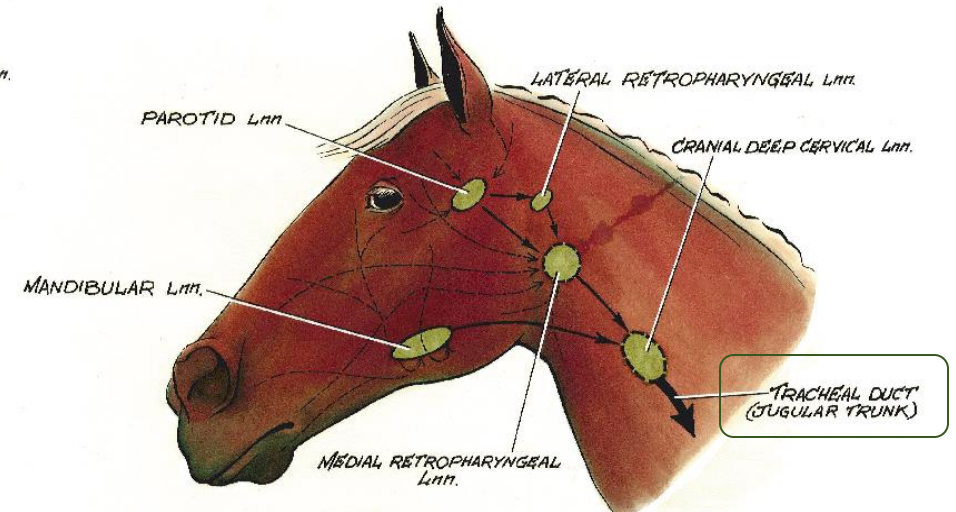
- |                                    |   |
|------------------------------------|---|
| 1 Lc. retropharyngeum              | 11 Lc. mesentericum craniale                |
| 2 Tr. trachealis                   | 12 Lc. mediastinale caudale                 |
| 3 rechte Achsellymphgefäße         | 13 Tr. lumbalis                             |
| 4 Tr. lymphaticus dexter           | 14 Lnn. iliaci mediales des Lc. iliosacrale |
| 5 Ductus thoracicus                | 15 V. jugularis interna                     |
| 6 Lendenzisterne (Cisterna chyli)  | 16 V. jugularis externa                     |
| 7 Tr. visceralis                   | 17 V. subclavia                             |
| 8 Efferenzen des Lc. celiacum      | 18 V. brachiocephalica,                     |
| 9 Lc. celiacum                     | 19 V. cava cranialis                        |
| 10 Efferenzen der Lcc. mesenterica |   |



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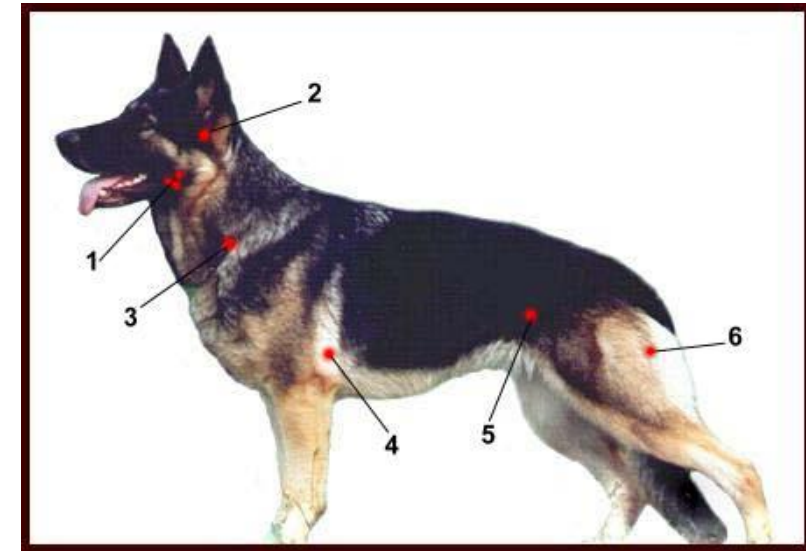
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# LYMPHKNOTEN DES HALSES

am Hals der Hsgt. sind zwei Lymphzentren zu unterscheiden:

1. Lc. cervicale superficiale

2. Lc. cervicale profundum



1. Unterkieferlymphknoten – Lnn. mandibulares
2. Ohrspeicheldrüsenlymphknoten – Ln. parotideus
3. Oberflächliche Halslymphknoten – Lnn. cervicales superficiales
4. Achselhöhlenlymphknoten – Ln. axillaris proprius
5. Oberflächliche Leistenlymphknoten – Lnn. inguinales superficiales
6. Kniekehlymphknoten – Ln. popliteus superficialis

<https://www.drei-hunde-nacht.de/gesundheit/anatomie-des-hundes/lymphsystem/>

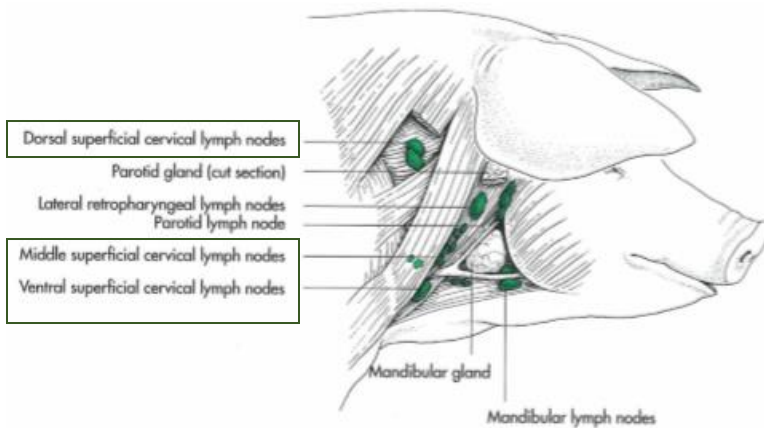
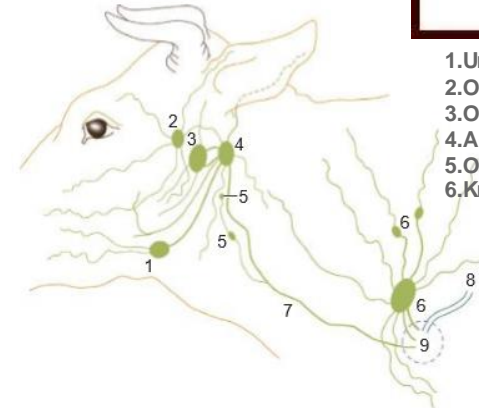
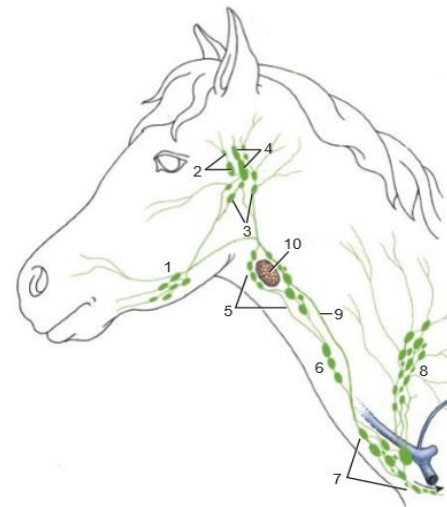


Fig. 13-8. Lymph nodes of the head and the cranial part of the neck of the pig, schematic (Najbrt, 1982).



## 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



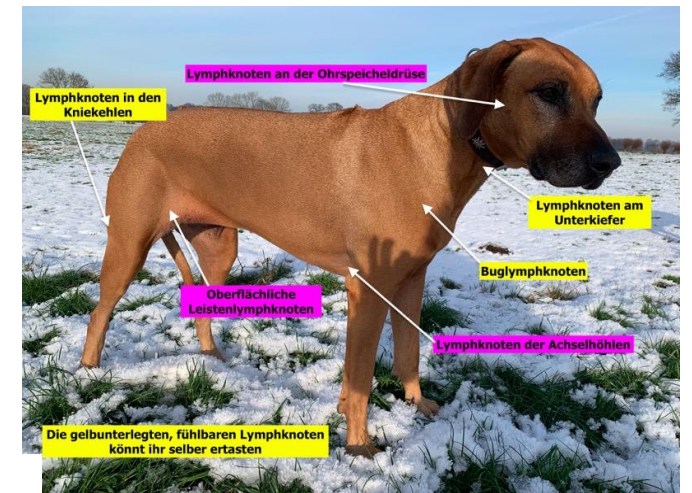
## Bovine: Lymph Drainage of the Head and Neck

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

# LYMPHKNOTEN DES HALSES

## LYMPHOCENTRUM CERVICALE SUPERFICIALE:

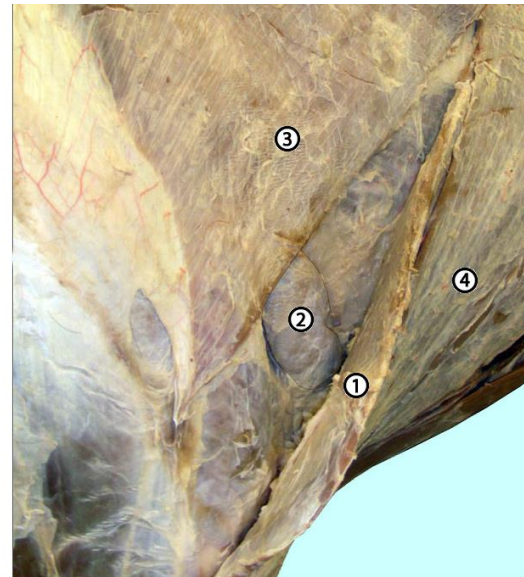
- die größte der oberflächlichen Halslymphknoten ist der sog. Buglymphknoten – Nll. cervicales superficiales
- a. Nll. cervicales superficiales (Buglymphknoten):
  - liegt kraniodorsal vor dem Schultergelenk (Buggelenk)
  - liegt unter dem M. brachiocephalicus und dem M. omotransversarius
  - bei Schw., Wdk., Pfd. in besonderen Fällen in die Fleischschau einbezogen



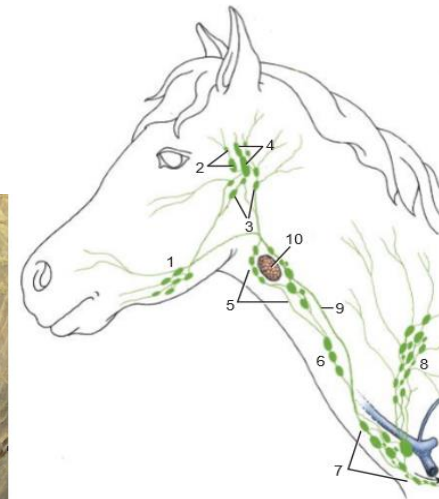
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Deeper dissection of Jersey cow: 1. sternomandibularis m. reflected; 2. sternomastoides m.; 3. mastoid part of the brachiocephalicus m.; 4. occipital part of the brachiocephalicus m.; 5. omotransversarius m.; 6. cervical trapezius m. reflected; 7. cervical serratus ventralis m.; 8. splenius m.; 9. cervical rhomboideus m.; 10. external jugular v.; 11. linguofacial v.; 12. mandibular salivary gland; 13. parotid salivary gland.

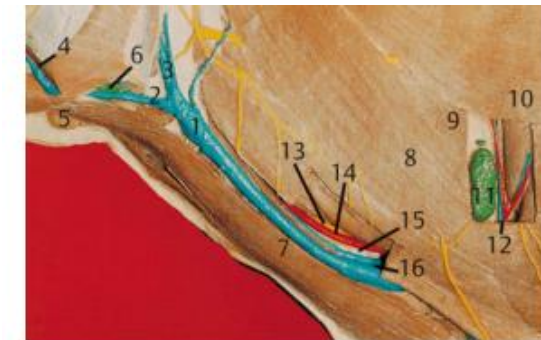


Reflection of the omotransversarius m. (1) to expose the superficial cervical lymph node (2). 3. cervical trapezius m.; 4. brachiocephalicus muscle.



### 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



### Abb. 6.51 Hals eines Rindes

- 1 V. jugularis externa (Blutentnahme und i. v. Injektion)
- 2 V. linguofacialis
- 3 V. maxillaris
- 4 V. facialis, A. facialis (Pulsfühlstelle) und Ductus parotideus
- 5 Gl. mandibularis
- 6 Ln. mandibularis (tastbar, lateral von 5, Verwechslungsgefahr!)
- 7 M. sternocephalicus
- 8 M. brachiocephalicus
- 9 M. omotransversarius (gefenstert)
- 10 M. trapezius
- 11 Buglymphknoten (Lnn. cervicales superficiales, durch die Muskeln 8 und 9 tastbar)
- 12 R. prescapularis der A. bzw. V. cervicalis superficialis
- 13 Tr. vago sympatheticus
- 14 Halsschlagader (A. carotis communis)
- 15 Trachea
- 16 V. jugularis interna

<http://vanat.cvm.umn.edu/ungDissect/Lab08/lmg8-18.html>

Wdk

[https://www.narayana-verlag.com/homeopathy/pdf/Anatomie-fuer-die-Tiermedizin-Franz-Viktor-Salomon-Hans-Geyer-Uwe-Gille.17774\\_3aus\\_dem\\_Inhalt.pdf](https://www.narayana-verlag.com/homeopathy/pdf/Anatomie-fuer-die-Tiermedizin-Franz-Viktor-Salomon-Hans-Geyer-Uwe-Gille.17774_3aus_dem_Inhalt.pdf)

# LYMPHKNOTEN DES HALSES

## LYMPHOCENTRUM CERVICALE SUPERFICIALE:

### a. NII. cervicales superficiales (Buglymphknoten):

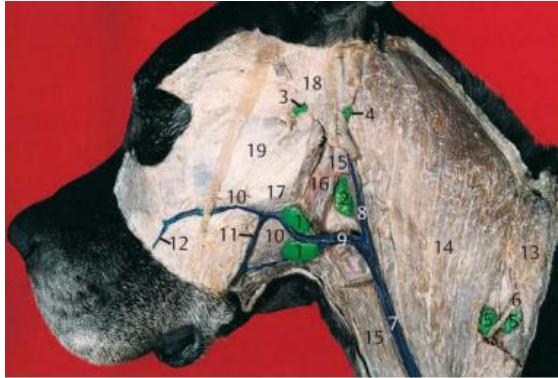
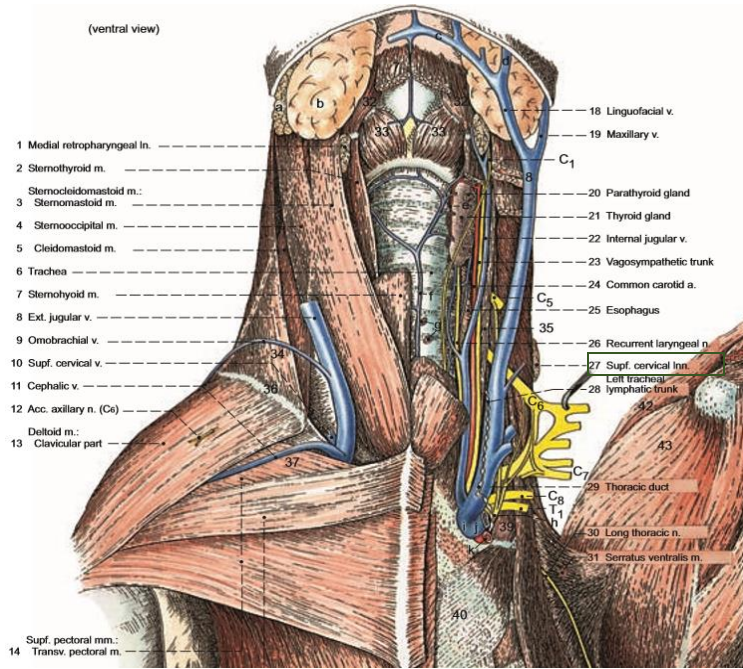


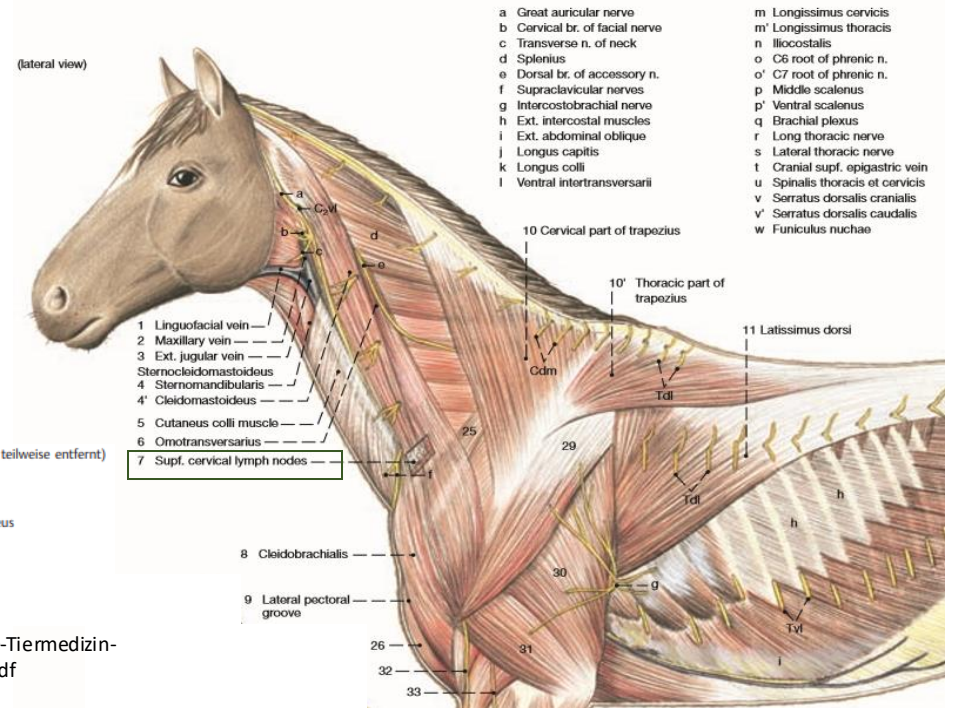
Abb. 6.48 Kopf und Hals eines Hundes (Gl. mandibularis ganz, M. sternocephalicus und M. omotraversarius teilweise entfernt)

- |  |                         |                      |
|--|-------------------------|----------------------|
| 1 Lnn. mandibulares (tastbar)                                    | 7 V. jugularis externa  | 16 M. digastricus    |
| 2 Ln. retropharyngeus medialis                                   | 8 V. maxillaris         | 17 M. masseter       |
| 3 Ln. parotideus (tastbar)                                       | 9 V. linguofacialis     | 18 Gl. parotis       |
| 4 Ln. retropharyngeus lateralis (tastbar, aber selten vorhanden) | 10 V. facialis          | 19 Ductus parotideus |
| 5 Buglymphknoten, Lnn. cervicales superficiales (tastbar)        | 11 V. labialis inferior |                      |
| 6 R. prescapularis der A. cervicalis superficialis               | 12 V. labialis superior |                      |
|  | 13 M. trapezius         |                      |
|  | 14 M. cleidocephalicus  |                      |
|  | 15 M. sternocephalicus  |                      |

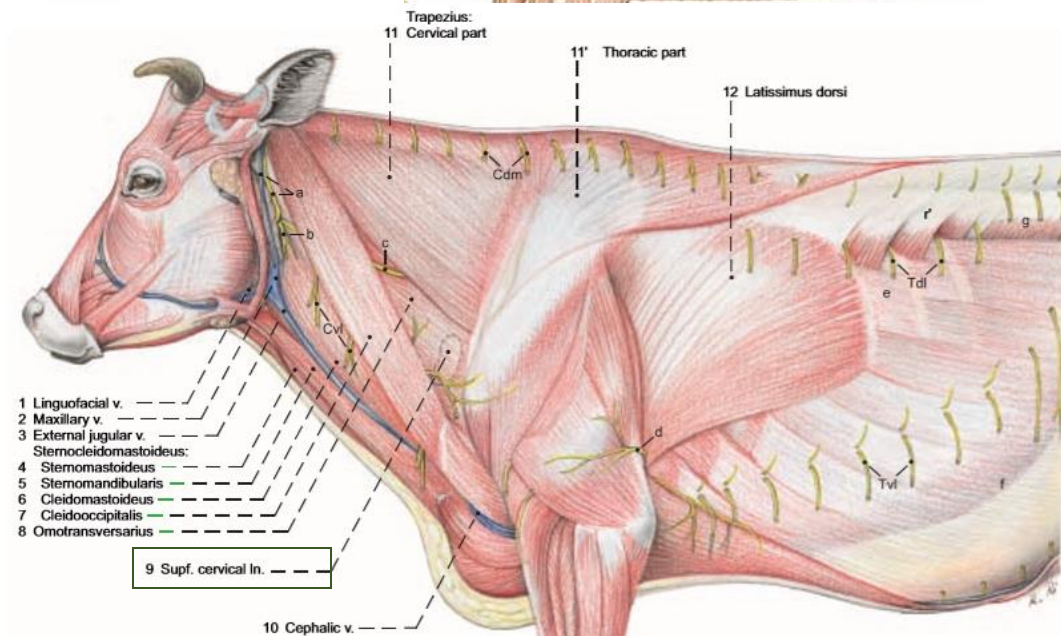
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Hund



- |                                |                                  |
|--------------------------------|----------------------------------|
| a Great auricular nerve        | m Longissimus cervicis           |
| b Cervical br. of facial nerve | m' Longissimus thoracis          |
| c Transverse n. of neck        | n Iliocostalis                   |
| d Splenius                     | o C6 root of phrenic n.          |
| e Dorsal br. of accessory n.   | o' C7 root of phrenic n.         |
| f Supraclavicular nerves       | p Middle scalenus                |
| g Intercostobrachial nerve     | p' Ventral scalenus              |
| h Ext. intercostal muscles     | q Brachial plexus                |
| i Ext. abdominal oblique       | r Long thoracic nerve            |
| j Longus capitis               | s Lateral thoracic nerve         |
| k Longus colli                 | t Cranial suprl. epigastric vein |
| l Ventral intertransversarii   | u Spinalis thoracis et cervicis  |
|                                | v Serratus dorsalis cranialis    |
|                                | v' Serratus dorsalis caudalis    |
|                                | w Funiculus nuchae               |



10 Cephalic v.

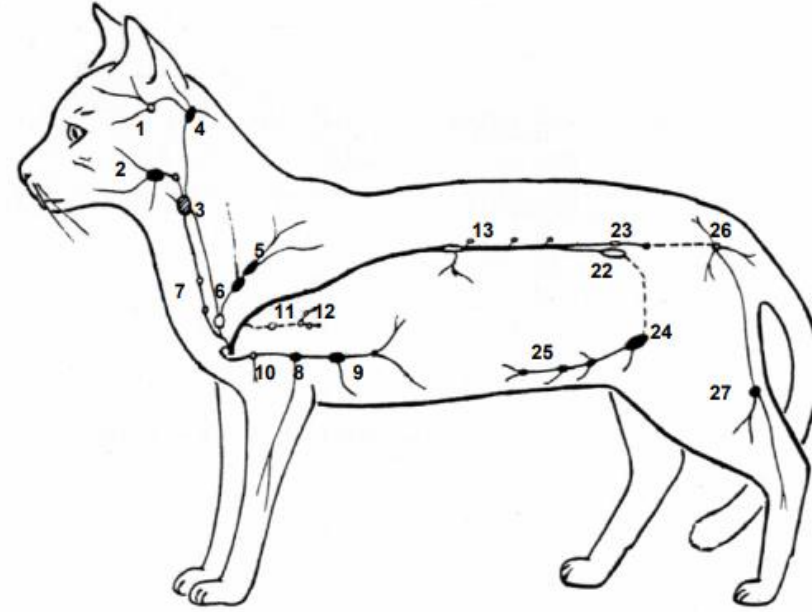
# LYMPHKNOTEN DES HALSES

## LYMPHOCENTRUM CERVICALE SUPERFICIALE:

- bei der Katze, dem Schw. weitere oberflächliche Halslymphknoten:

bei der Katze:

- Nll. cervicales superfic. dorsales
- Nll. cervicales superfic. ventrales



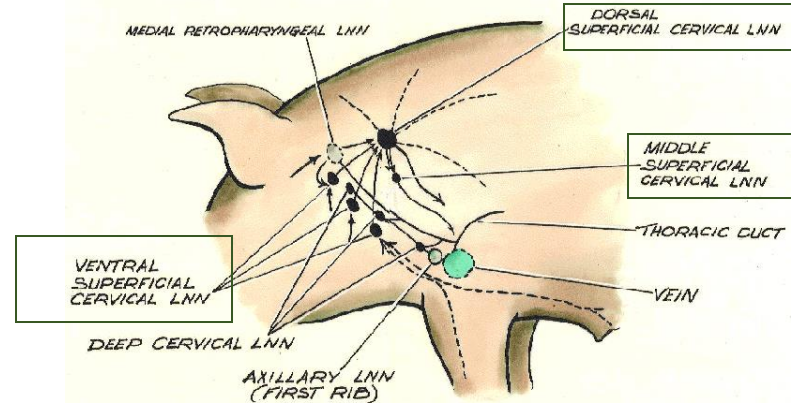
1: Nl. parotideus, 2: Nll. mandibulares et mandibulares acc., 3: Nl. retropharyngeus med., 4: Nll. retropharyngei lat., 5: Nll. cervicales sup. dors., 6: Nl. cervicalis sup. ventr., 7: Nll. cervicales prof. caud., 8: Nl. axillaris proprius., 9: Nll. axillares acc., 10: Nl. sternalis cran., 11: Nll. mediastinales cran., 12: Nl. bifurcationis dexter, sinister, medius, 13: Nll. lumbales aortici, 22: Nll. iliaci medialis, 23: Nll. sacrales, 24: Nl. inguinalis sup., 25: Nll. epigastrici caud., 26: Nl. ischiadicus, 27: Nl. popliteus sup.

# LYMPHKNOTEN DES HALSES

## LYMPHOCENTRUM CERVICALE SUPERFICIALE:

beim Schw.:

- Nll. cervicales superfic. dorsales
- Nll. cervicales superfic. medii
- Nll. cervicales superfic. ventrales: die Lymphgefäße aus vorderen Abschnitten des Gesäuges zufließen – weshalb diese Knoten bei geschlachteten Zuaunen in die Fleischschau einbezogen werden



<https://www.ucd.ie/vetanat/images/61.gif>

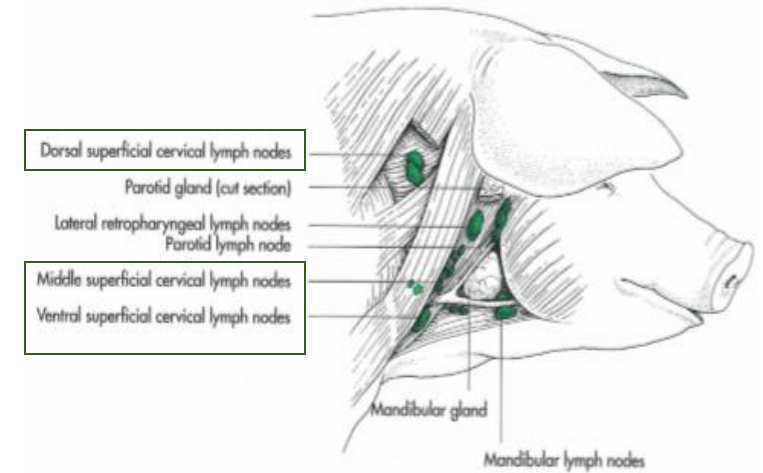
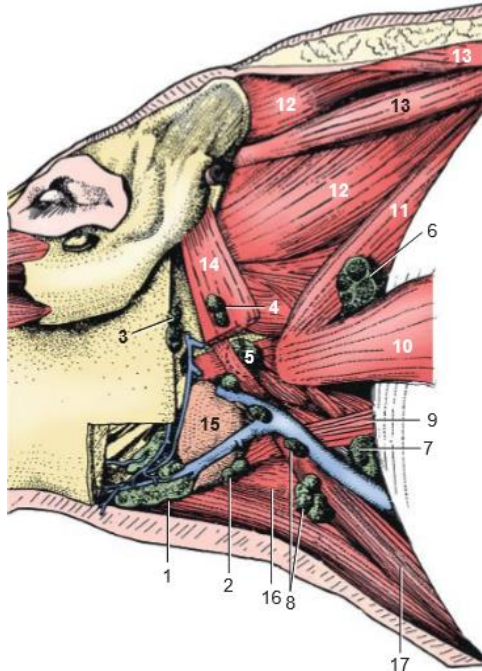


Fig. 13-8. Lymph nodes of the head and the cranial part of the neck of the pig, schematic (Najrbt, 1982).



### 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. Sternocephalicus

Note: Left, lateral view.

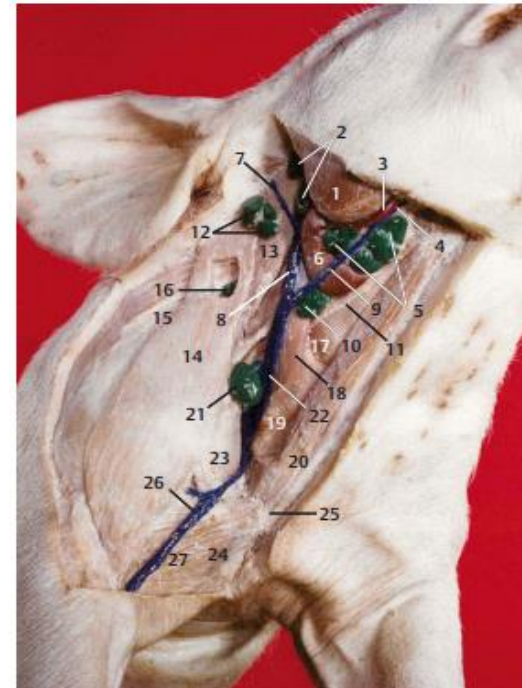


Abb. 6.49 Hals eines Schweines, Ventrolateralansicht, Gl. parotis entfernt

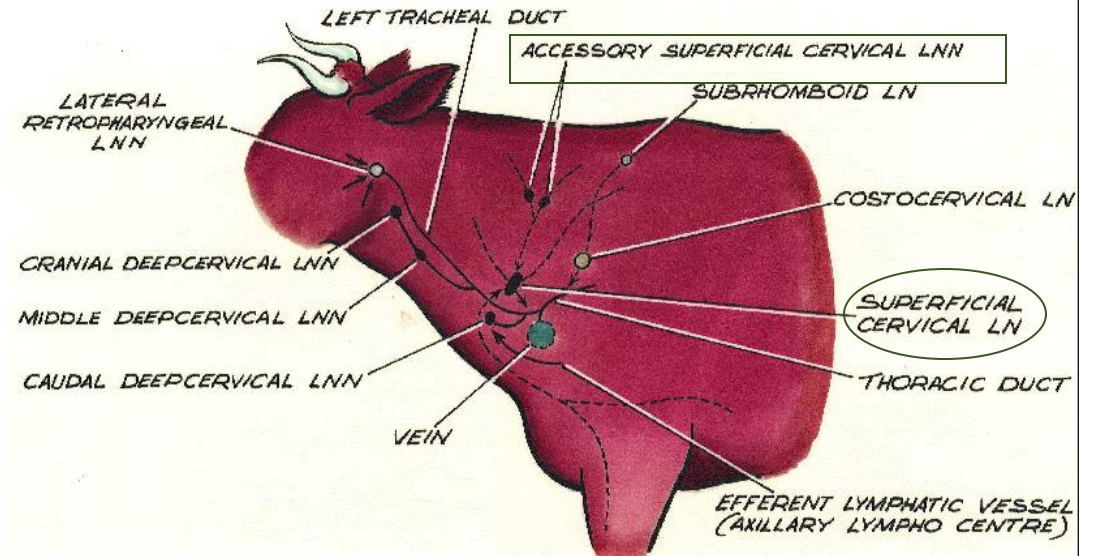
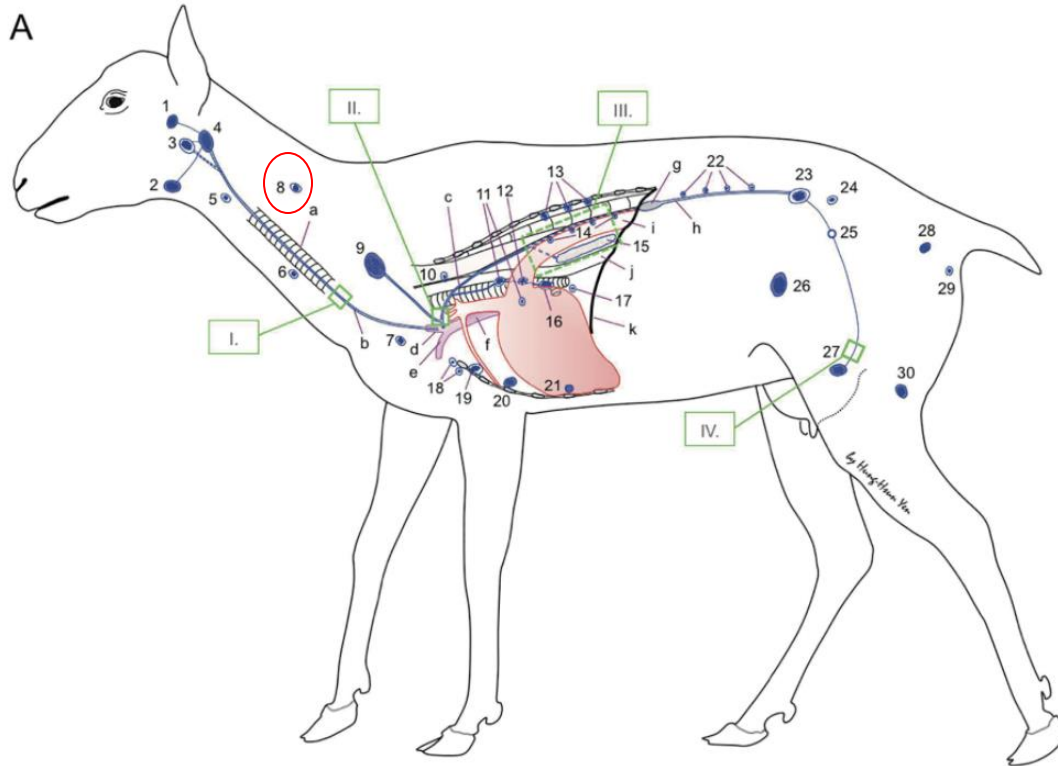
- 1 M. masseter
- 2 Lnn. parotidae des Lc. parotideum
- 3 Ductus parotideus
- 4 A. et V. facialis
- 5 Lnn. mandibulares des Lc. mandibulare
- 6 Gl. mandibularis
- 7 V. auricularis caudalis
- 8 V. maxillaris
- 9 V. linguofacialis
- 10 Lnn. mandibulares accessorii des Lc. mandibulare
- 11 M. omohyoideus
- 12 Lnn. retropharyngei laterales des Lc. retropharyngeum
- 13 M. cleidocephalicus, Pars mastoidea
- 14 M. cleidocephalicus, Pars occipitalis
- 15 Lnn. cervicales superficiales dorsales des Lc. cervicale superficiale
- 16 M. omotransversarius
- 17 M. thyrohyoideus
- 18 M. sternocephalicus (teilweise entfernt); unter der am Proc. mastoideus inserierenden Endsehne liegen die Lnn. retropharyngei mediales des Lc. retropharyngeum
- 19 Thymus
- 20 M. sternohyoideus
- 21 Lnn. cervicales superficiales ventrales des Lc. cervicale superficiale
- 22 V. jugularis externa; Punktionsstelle 2 Finger breit vor und 2 Finger breit seitlich des Manubrium sterni
- 23 M. subclavius
- 24 M. pectoralis descendens der Mm. pectorales superficiales
- 25 Manubrium sterni
- 26 V. cephalica
- 27 M. pectoralis transversus der Mm. pectorales superficiales

# LYMPHKNOTEN DES HALSES

## LYMPHOCENTRUM CERVICALE SUPERFICIALE:

beim Rd, Schf. gibt es:

- **III. cervicales superfic. accessorii** – die den Buglymphknoten vorgeschaltet sind – und der Lymphe der Nackengegend als **Primärstation** dienen



<https://www.ucd.ie/vetnat/images/75.gif>

Survey diagram of the lymph nodes of sheep.

Two schematic images illustrate the principal lymphatic vessels and the lymph nodes of sheep. I. Images showing the tracheal trunks are available in the previous report by Yen et al (Yen et al., 2006) [7]. II. The image showing the junction of the thoracic duct and the efferent lymphatic of the superficial cervical lymph node(s) on the left can be found in the previous report by Yen et al (Yen et al., 2009) [8]. III. A segment of the thoracic duct dorsal to the aorta and the caudal mediastinal lymph node in the caudal thoracic cavity on the right are illustrated in Fig 2. IV. Images showing the efferent lymphatic vessels of the mammary glands are available in the previous reference by Yen et al (Yen et al., 2016) [9]. V. The right lymphatic duct, the tracheal trunk and the efferent lymphatic of the superficial cervical lymph node(s) on the right are depicted in Fig 3. VI. The visceral, hepatic and intestinal trunks are depicted in Fig 4. VII. The afferent and efferent lymphatic vessels of a hepatic lymph node are depicted in Fig 5. VIII. The efferent lymphatic of the ileocolic lymph nodes and the jejunal trunk are shown in Fig 6. 1&1': left and right parotid lymph nodes; 2&2': left and right mandibular lymph nodes; 3&3': left and right medial retropharyngeal lymph nodes; 4&4': left and right lateral retropharyngeal lymph nodes; 5: cranial deep cervical lymph nodes; 6: middle deep cervical lymph nodes; 7: caudal deep cervical lymph nodes; 8&8': left and right accessory superficial cervical lymph nodes; 9&9': left and right superficial cervical lymph nodes; 10: costocervical lymph nodes; 11: cranial mediastinal lymph node(s); 12: middle mediastinal lymph node(s); 13: intercostal lymph nodes; 14: thoracic aortic lymph nodes; 15: caudal mediastinal lymph nodes; 16: tracheobronchial lymph center; 17: pulmonary lymph nodes (left and right); 18: cranial and caudal sternal lymph nodes; 19: costoaxillary lymph nodes; 20&20': left and right axillary lymph nodes; 21&21': left and right accessory axillary lymph nodes (inconstant); 22: lumbar aortic lymph nodes; 23: medial iliac lymph node(s); 24: sacral lymph nodes; 25&25': left and right iliofemoral lymph nodes (inconstant); 26&26': left and right subiliac (or prefemoral) lymph nodes; 27&27': left and right mammary (or superficial inguinal) lymph nodes; 28&28': left and right sciatic (or ischiadic) lymph nodes; 29&29': left and right anorectal lymph nodes; 30: left and right popliteal lymph nodes; 31: atrial lymph nodes; 32: reticular lymph nodes; 33: omasal lymph nodes; 34: dorsal abomasal lymph nodes; 35: right ruminal lymph nodes; 36: hepatic lymph nodes; 37: renal lymph nodes; 38: celiac and cranial mesenteric lymph nodes (inconstant); 39: pancreaticoduodenal lymph nodes; 40: jejunal lymph nodes; 41: ileocolic lymph nodes; 42: colic nodes; 43: caudal mesenteric lymph nodes (inconstant); a: trachea; b&b': left and right tracheal trunks; c: thoracic duct; d&d': left and right external jugular veins; e: left subclavian vein; f: cranial vena cava; g: cisterna chyli; h: lumbar trunk; i: aorta; j: esophagus; k: diaphragm; l: right lymphatic duct; m: visceral trunk; n: gastric trunk; o: hepatic trunk; p: intestinal trunk; q: jejunal trunk.

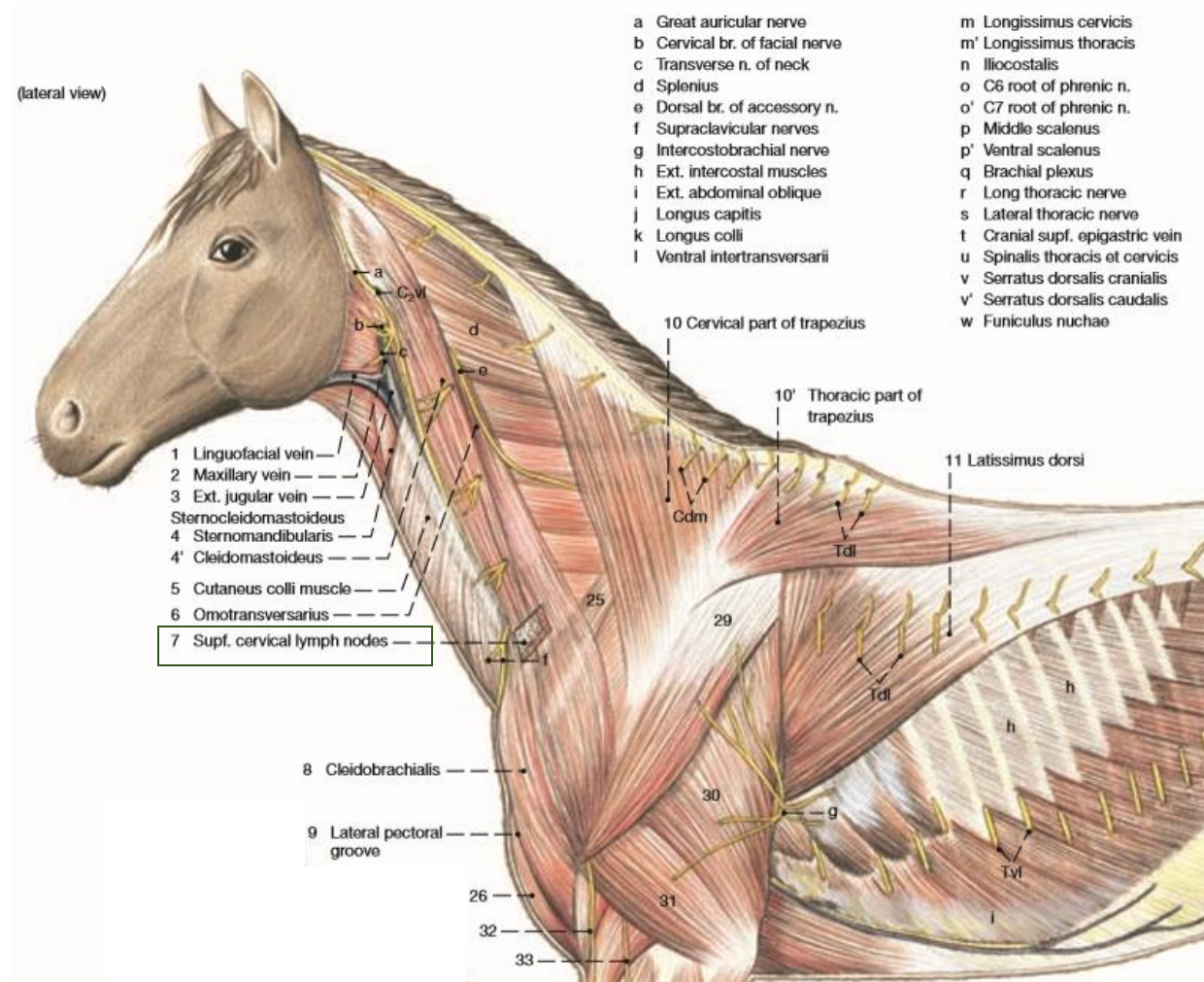


# LYMPHKNOTEN DES HALSES

## LYMPHOCENTRUM CERVICALE SUPERFICIALE

### TRIBUTÄRES GEBIET:

1. Hals, seine Haut, oberflächliche Halsmuskeln
2. Scheitel, Ohr, Masseter, Parotisgend
3. dorsale, seitliche, ventrale Brustwand
4. Schultergliedmasse



# LYMPHKNOTEN DES HALSES

## LYMPHOCENTRUM CERVICALE SUPERFICIALE

### LYMPHABFLUSS:

beim Hd.:

- die efferente Lymphgefäße treten in den Endabschnitt des Truncus jugularis oder in den Mündungsteil des Ductus thoracicus, gelegentlich direkt in die V. jugularis ext. ein

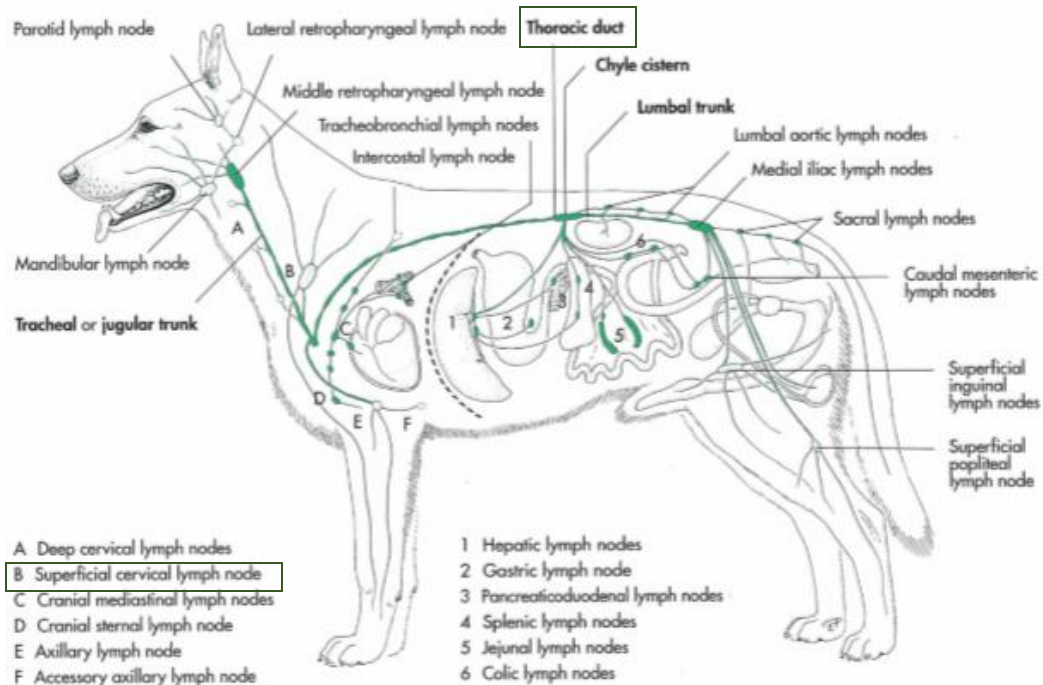
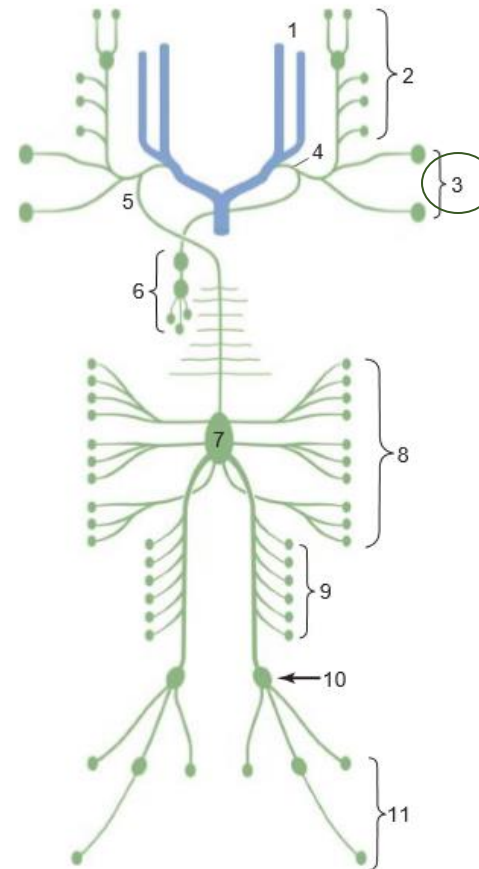


Fig. 13-12. Lymphatic system of the dog, schematic (Budras, Fricke and Richter, 1996).



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.

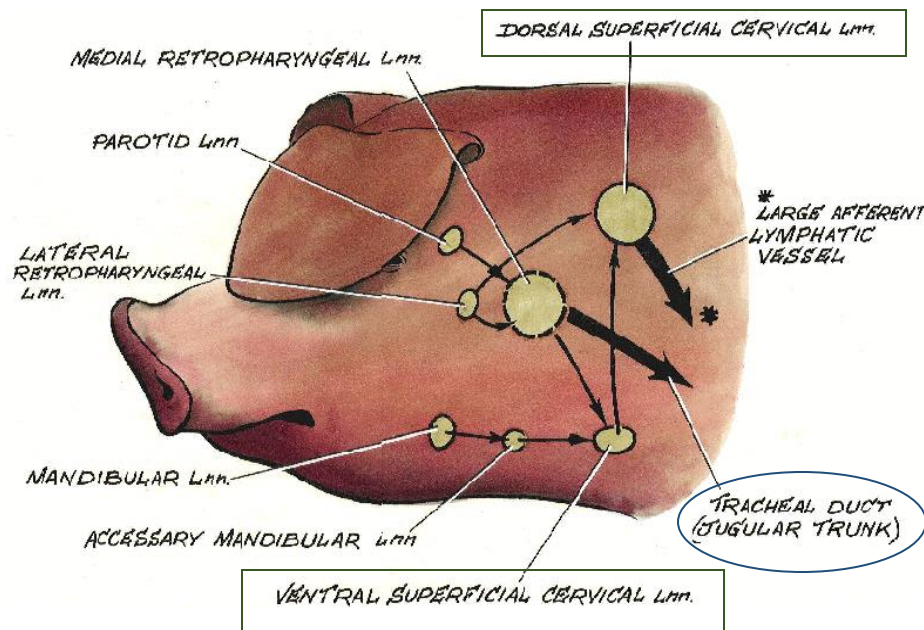
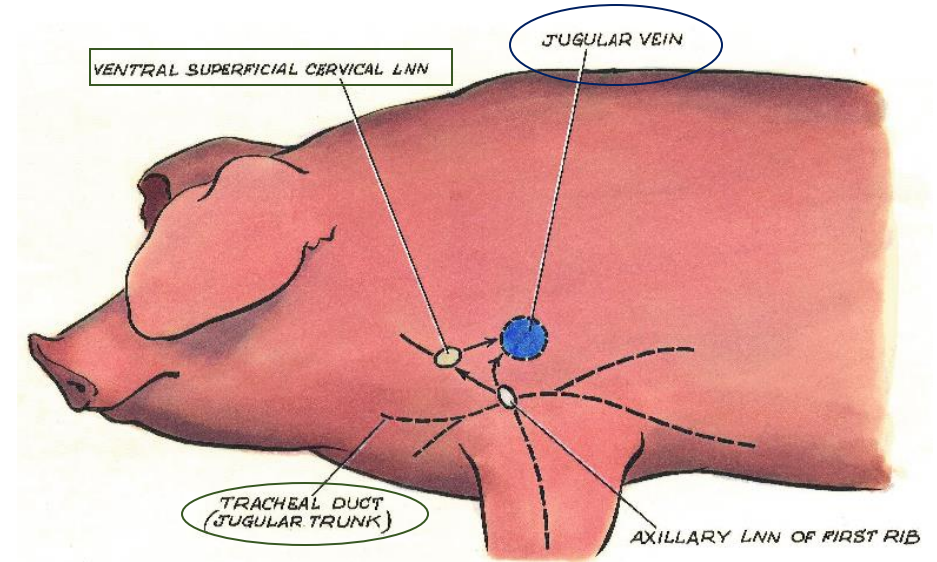
# LYMPHKNOTEN DES HALSES

## LYMPHOCENTRUM CERVICALE SUPERFICIALE

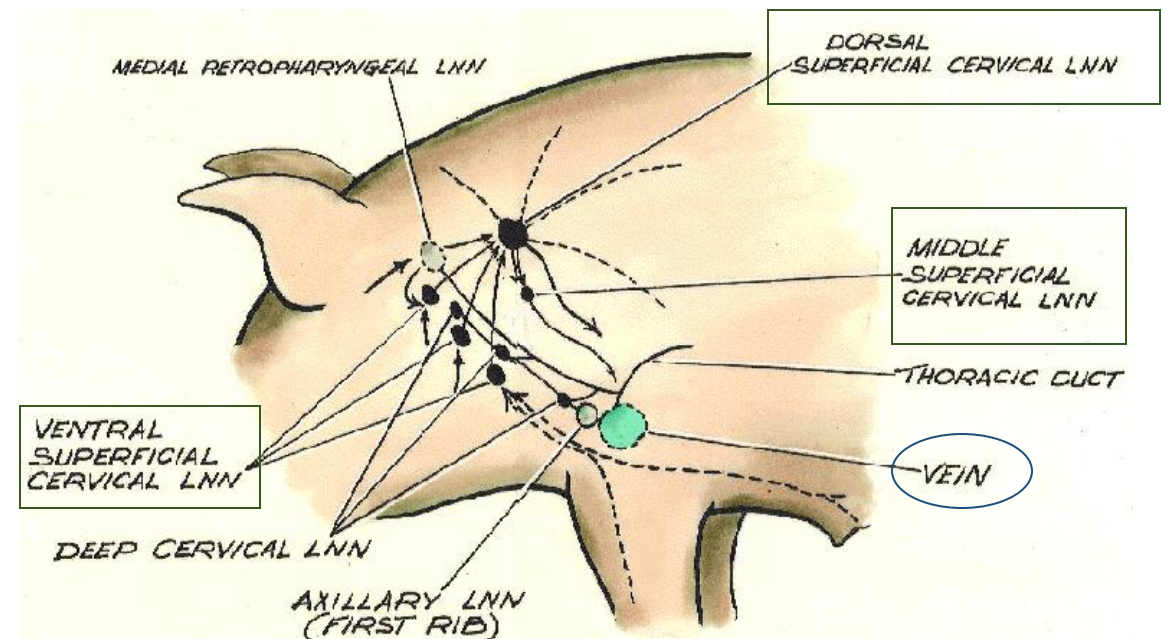
### LYMPHABFLUSS:

beim Schw.:

- die ventrale Gruppe gibt ihre Lymphe an die mittlere oder dorsale Gruppe ab
- die efferenten Gefäße der mittleren Gruppen fließen direkt zum Venenwinkel
- diejenigen der dorsalen Gruppen zum Truncus jugularis oder zur mittleren Gruppe



<https://www.ucd.ie/vetanat/images/25.gif>



<https://www.ucd.ie/vetanat/images/75.gif>

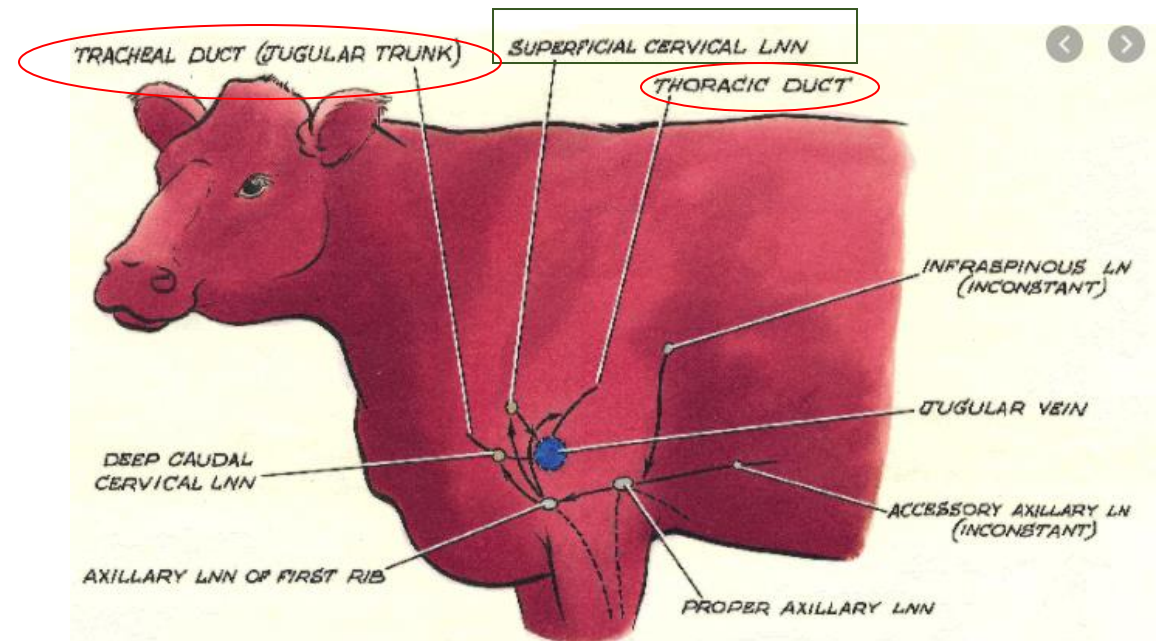
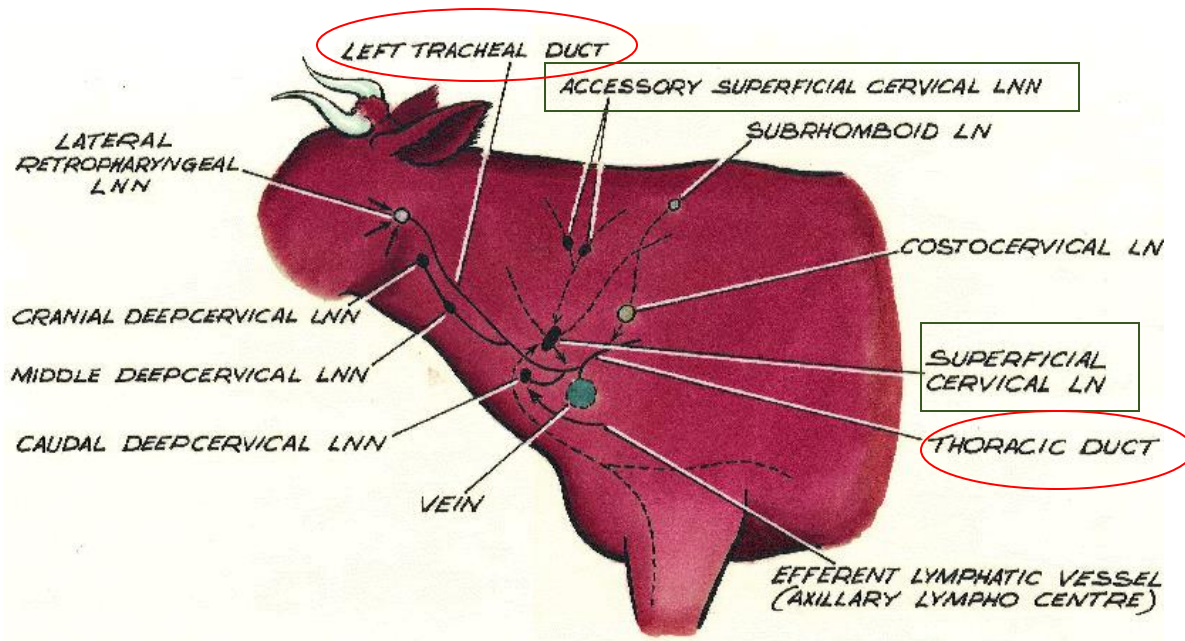
# LYMPHKNOTEN DES HALSES

## LYMPHOCENTRUM CERVICALE SUPERFICIALE

### LYMPHABFLUSS:

beim Rd.:

- münden die efferenten Bahnen in den Truncus jugularis oder Ductus thoracicus



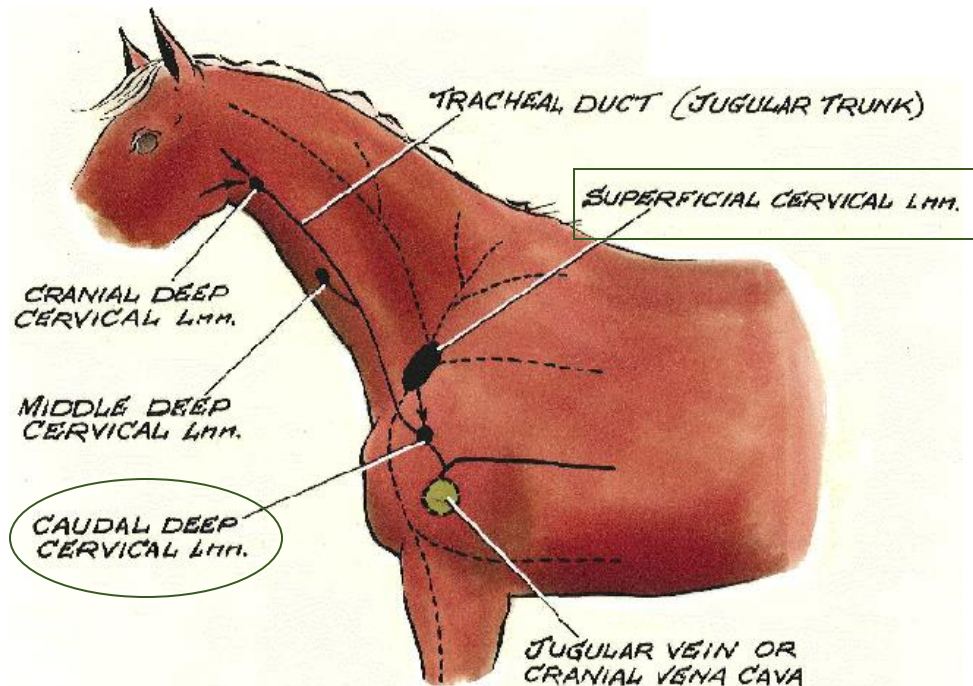
# LYMPHKNOTEN DES HALSES

## LYMPHOCENTRUM CERVICALE SUPERFICIALE

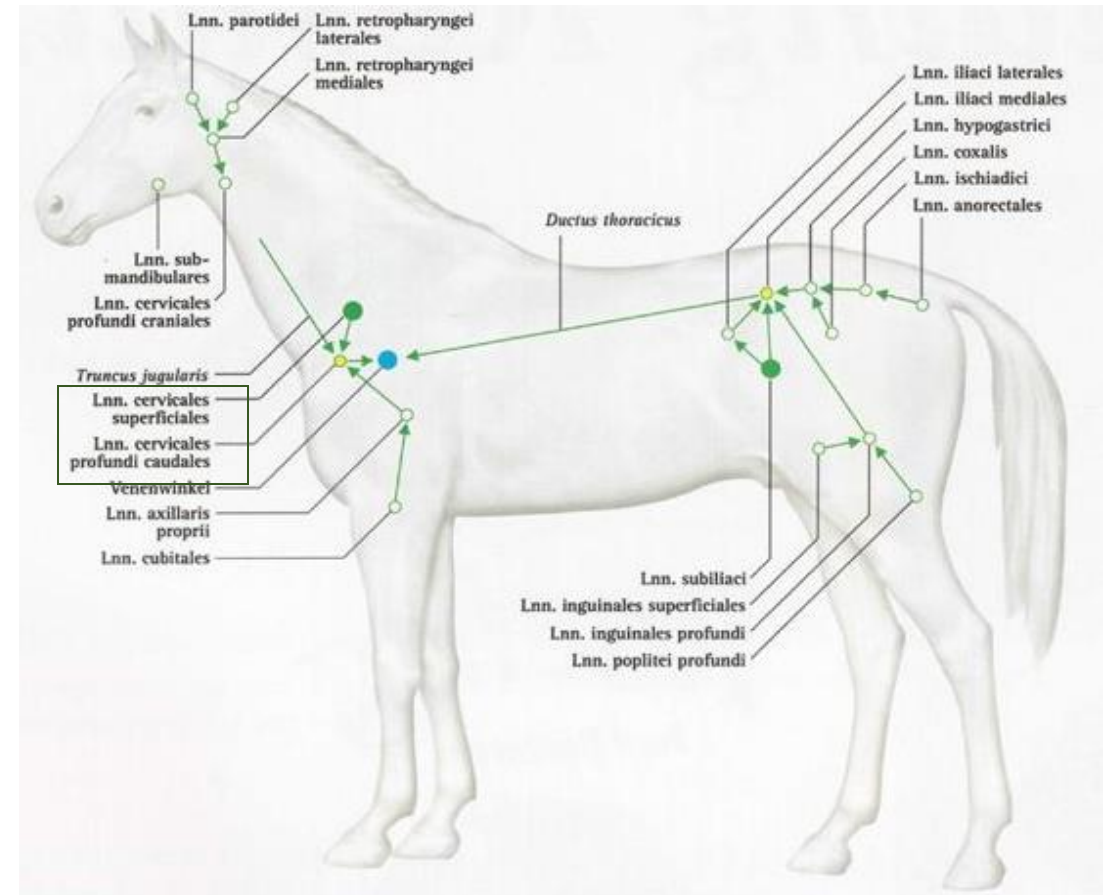
### LYMPHABFLUSS:

beim Pfd.:

- münden die efferenten Bahnen in die Nll. cervicales profundi caudales
- teilweise rechtsseitig direkt in den Ductus lymphaticus dexter



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<https://www.pinterest.co.uk/pin/813110907708487871/>

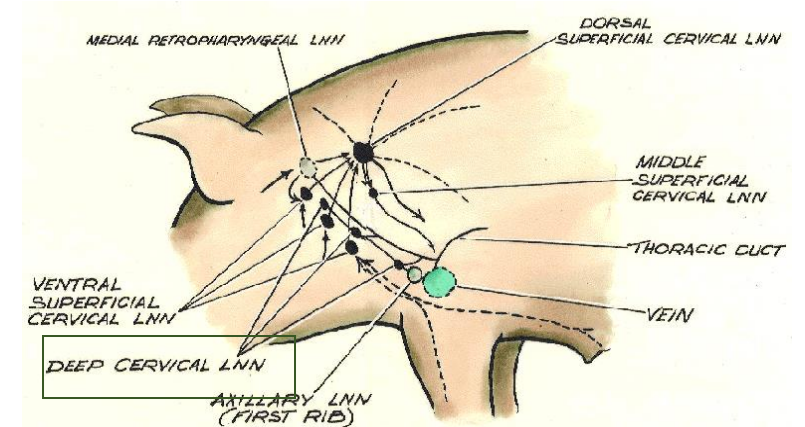
# LYMPHKNOTEN DES HALSES

## LYMPHOCENTRUM CERVICALE PROFUNDUM:

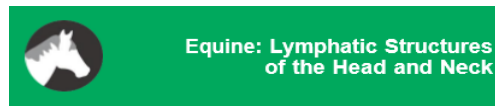
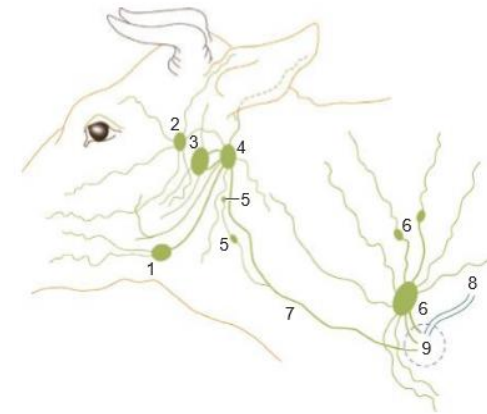
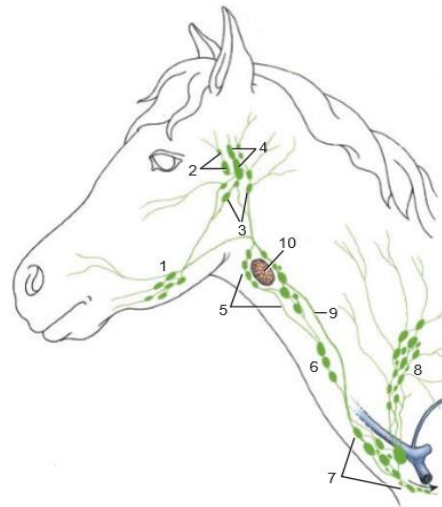
- tiefe Halslymphknoten
- dem Halsteil der Trachea und den tiefen Blutgefäßen benachbart

lassen drei Gruppen unterteilen:

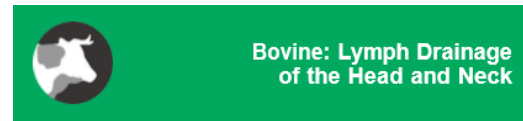
- NII. cervicales profundi craniales
- NII. cervicales profundi medii
- NII. cervicales profundi caudales



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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

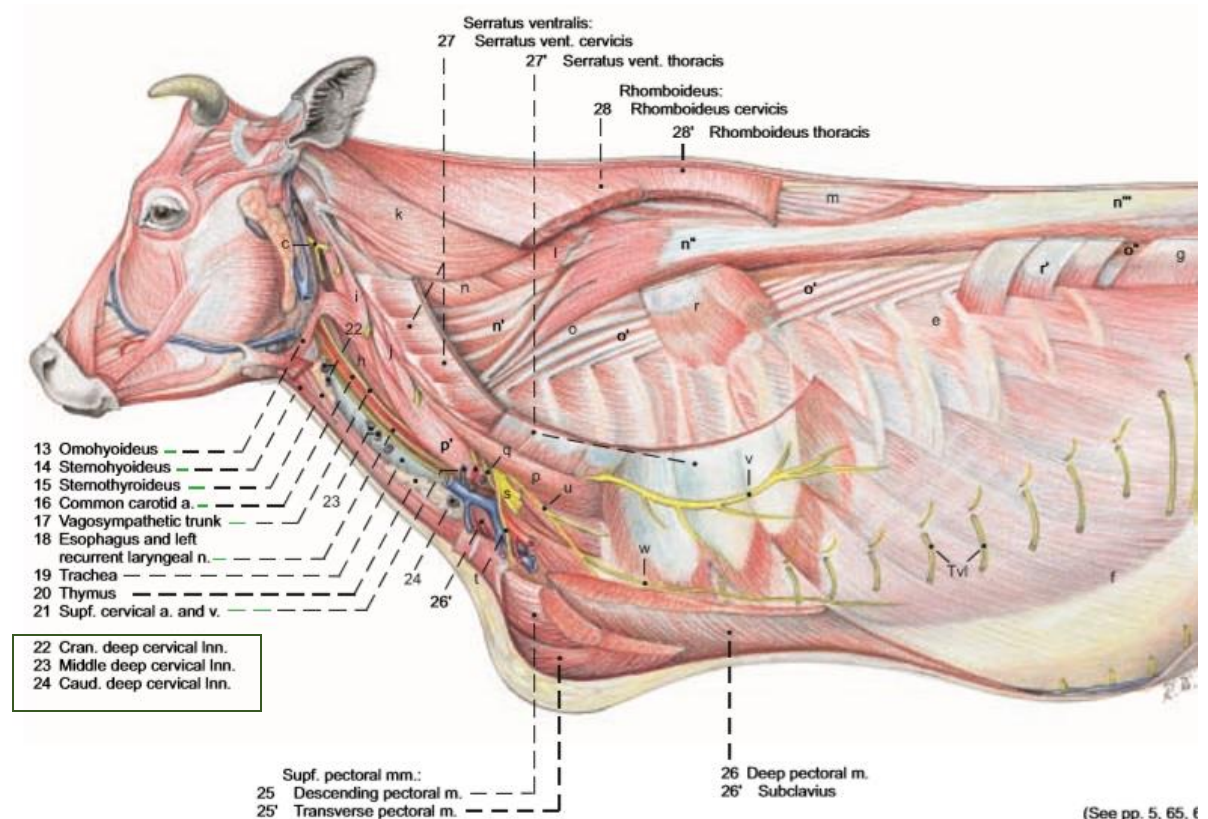
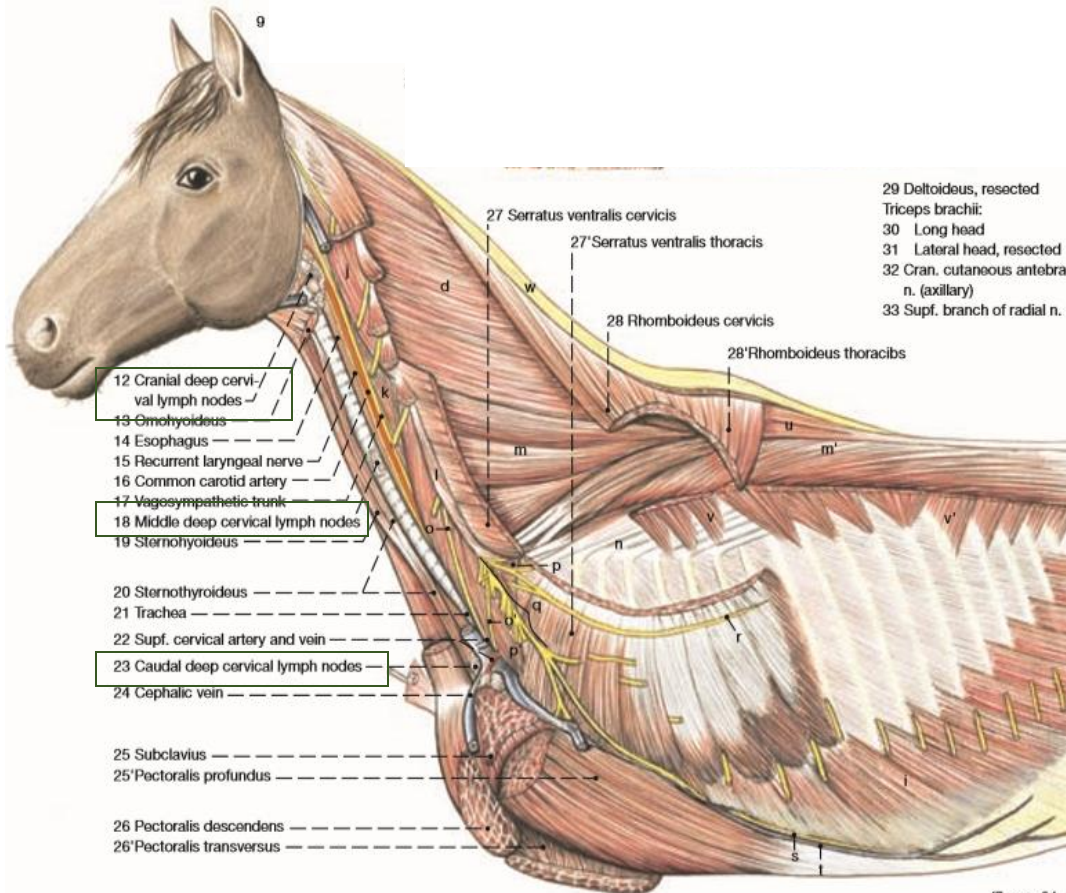


1. Mandibular lymph node
2. Parotid lymph node
3. Medial retropharyngeal lymph node
4. Lateral retropharyngeal lymph node
5. Deep cervical lymph nodes
6. Superficial cervical lymph nodes
7. Tracheal trunk
8. Thoracic duct
9. Area within which lymphatic vessels enter veins

# LYMPHKNOTEN DES HALSES

## LYMPHOCENTRUM CERVICALE PROFUNDUM:

- a. Nll. cervicales profundi craniales
- b. Nll. cervicales profundi medii
- c. Nll. cervicales profundi caudales

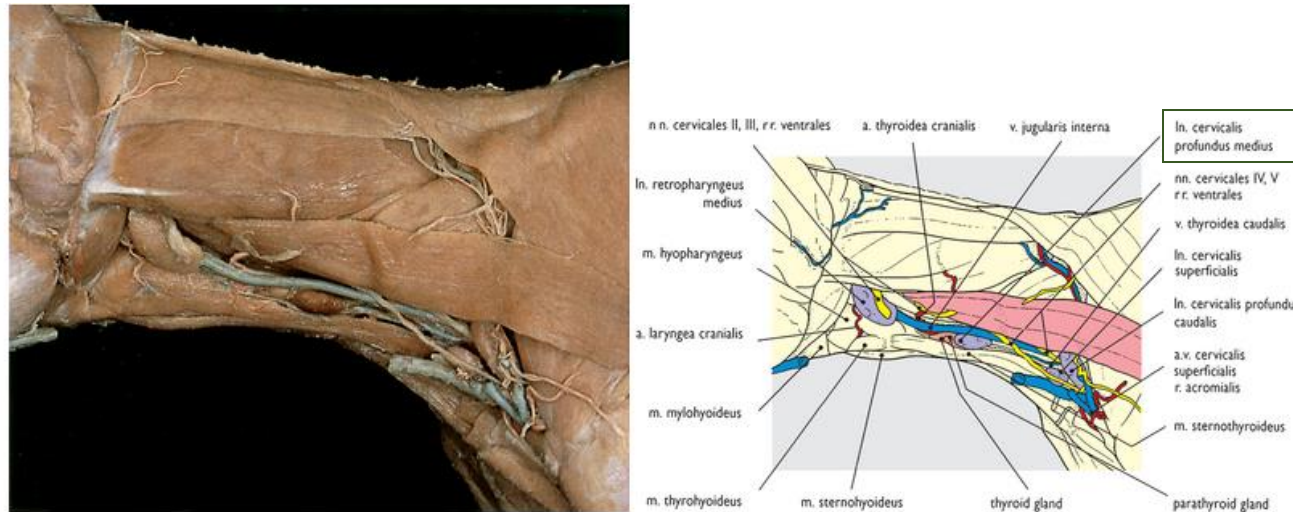


# LYMPHKNOTEN DES HALSES

## LYMPHOCENTRUM CERVICALE PROFUNDUM:

### II. cervicales profundi craniales et medii:

- schwächer, oder können fehlen bei Hd., Ktz., Schw., kl. Wdk.



**Fig. 10.18** Thyroid gland and lymph nodes of the neck: left lateral view. Removal of the mastoid components of both brachiocephalic and sternocephalic muscles exposes the 'visceral' compartment of the neck. Medial retropharyngeal and superficial cervical lymph nodes are evident, and in addition a prominent deep cervical node is displayed midway down the neck, not evident in the dog (see Figs 3.14 and 3.16). Craniomedial to this lymph node the thyroid gland is just visible with a noticeable parathyroid component (see Fig. 3.20). The internal jugular vein is also exposed, a significantly larger vessel than its counterpart in the dog.

Katze

<https://veteriankey.com/cat-comparative-aspects/>

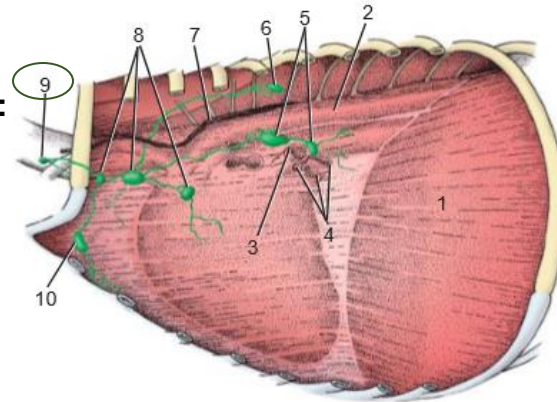


# LYMPHKNOTEN DES HALSES

## LYMPHOCENTRUM CERVICALE PROFUNDUM:

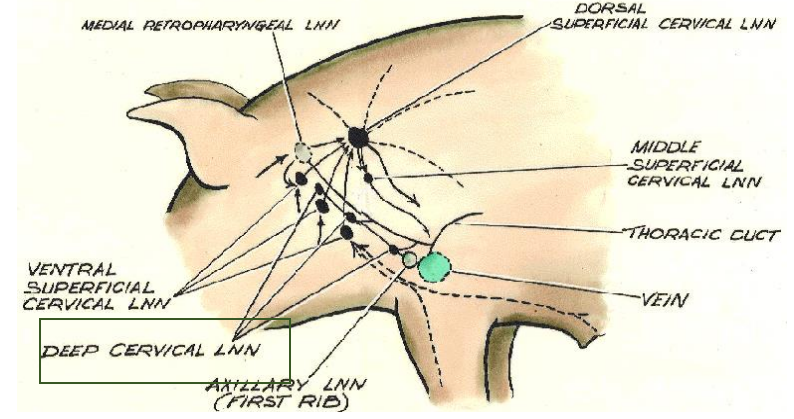
### III. cervicales profundi caudales:

- stets vorhanden
- besonders kräftig ausgebildet (excl. Hd.)
- beim Schw., Wdk., Pfd. in Verdachtsfällen bei der Fleischschau berücksichtigt

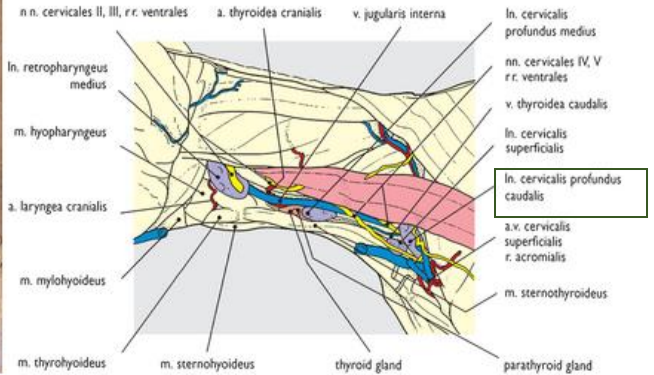


### Canine: Thoracic Lymph Nodes

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

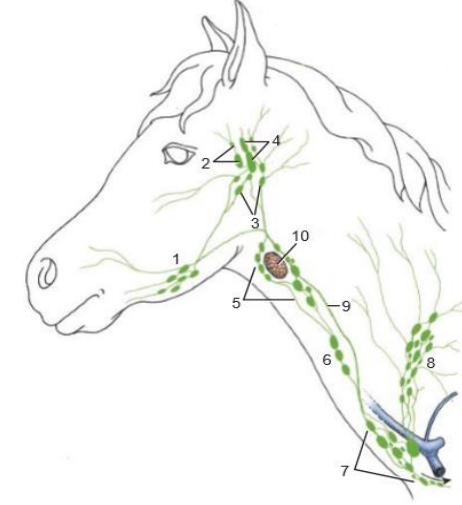


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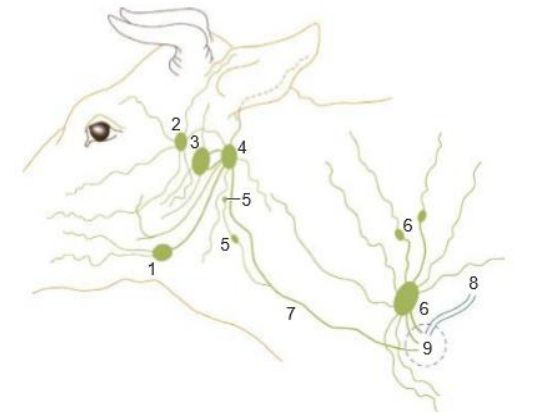
**Fig. 10.18** Thyroid gland and lymph nodes of the neck: left lateral view. Removal of the mastoid components of both brachiocephalic and sternocephalic muscles exposes the 'visceral' compartment of the neck. Medial retropharyngeal and superficial cervical lymph nodes are evident, and in addition a prominent deep cervical node is displayed midway down the neck, not evident in the dog (see Figs 3.14 and 3.16). Craniomedial to this lymph node the thyroid gland is just visible with a noticeable parathyroid component (see Fig. 3.20). The internal jugular vein is also exposed, a significantly larger vessel than its counterpart in the dog.

Katze  
<https://veteriankey.com/cat-comparative-aspects/>



### 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



### 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

# LYMPHKNOTEN DES HALSES

## LYMPHOCENTRUM CERVICALE PROFUNDUM:

### NII. costocervicalis:

- bei Rd., Schf., Zg.:
- ist der kaudalen Gruppe noch ein NII. costocervicalis vorgeschaltet
- unter dem M. scalenus primae costae

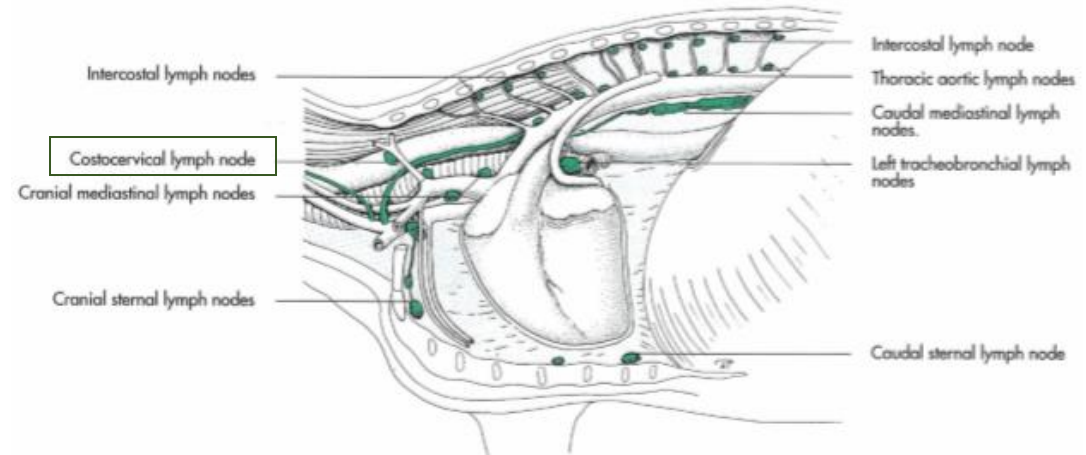
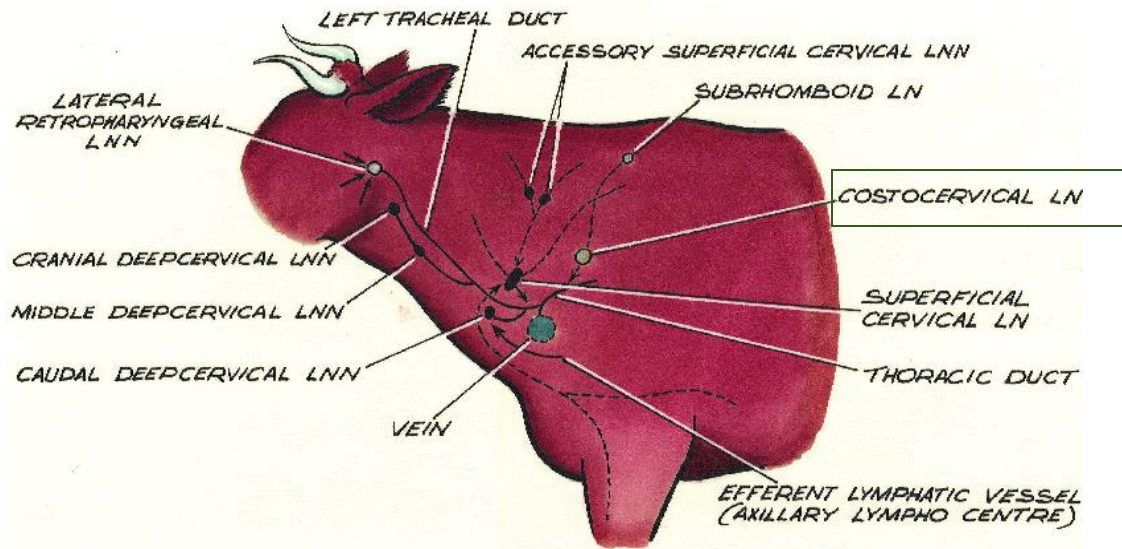
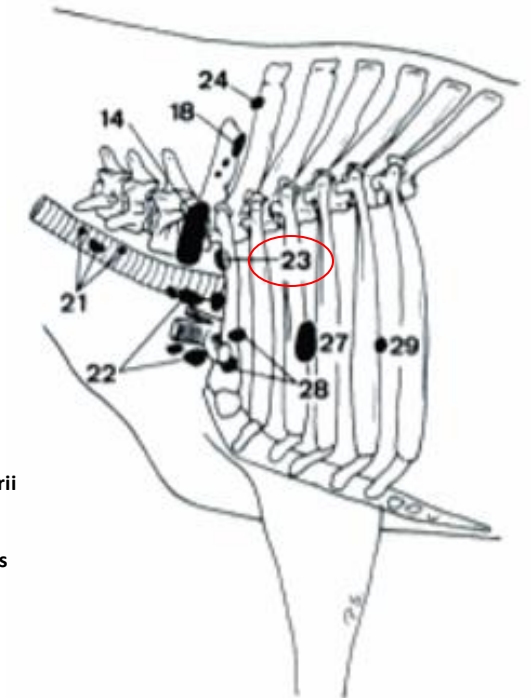


Fig. 13-10. Lymph nodes of the thorax of the ox, schematic (Najbrt, 1982).



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- 14. Lymphonodi cervicales superficiales
- 18. Lymphonodi cervicales superfic. accessorii
- 21. Lymphonodi cervicales profundi medii
- 22. Lymphonodi cervicales profundi caudales
- 23. Lymphonodus costocervicalis
- 24. Lymphonodus subrhomboideus
- 27. Lymphonodi axillares proprii
- 28. Lymphonodi axillares primae costae
- 29. Lymphonodus axillaris accessorius

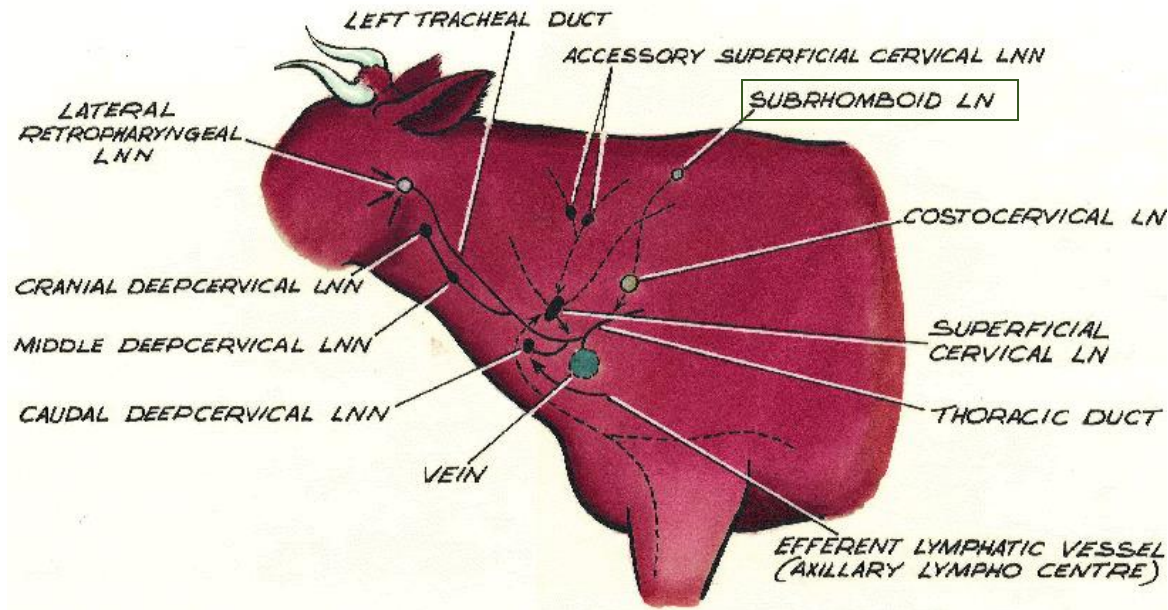
C Cervical and axillary lymphocentres (bo)

# LYMPHKNOTEN DES HALSES

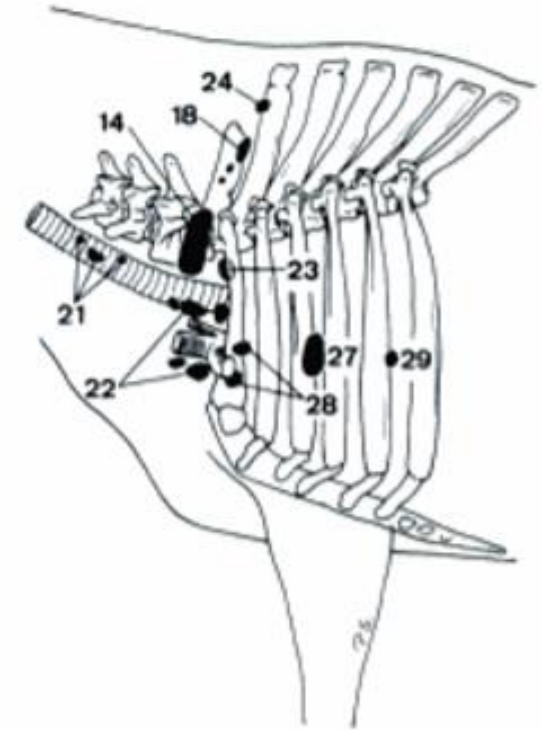
## LYMPHOCENTRUM CERVICALE PROFUNDUM:

### NI. subrhomboideus:

- beim Rd.
- inkonstant
- unter dem Halsteil des M. rhomboideus



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- 14. Lymphonodi cervicales superficiales
- 18. Lymphonodi cervicales superfic. accessorii
- 21. Lymphonodi cervicales profundi medii
- 22. Lymphonodi cervicales profundi caudales
- 23. Lymphonodus costocervicalis
- 24. **Lymphonodus subrhomboideus**
- 27. Lymphonodi axillares proprii
- 28. Lymphonodi axillares primae costae
- 29. Lymphonodus axillaris accessorius

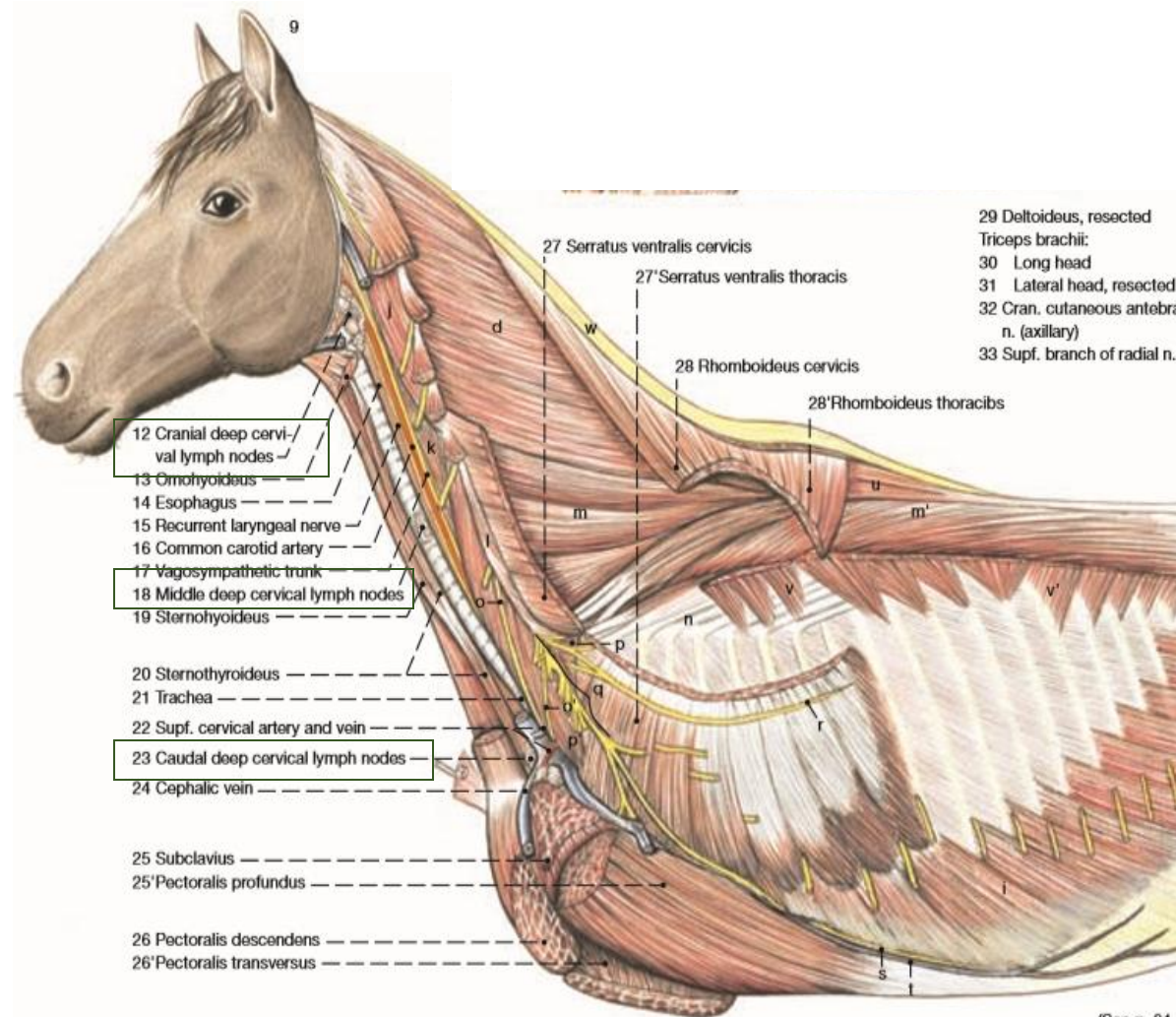
C Cervical and axillary lympho-centres (bo)

# LYMPHKNOTEN DES HALSES

## LYMPHOCENTRUM CERVICALE PROFUNDUM:

### TRIBUTÄRES GEBIET:

1. tiefen Partieren des Halses
2. Kehlkopf
3. Luft – Speiseröhre
4. Schilddrüse
5. Thymus



# LYMPHKNOTEN DES HALSES

LYMPHOCENTRUM CERVICALE PROFUNDUM:

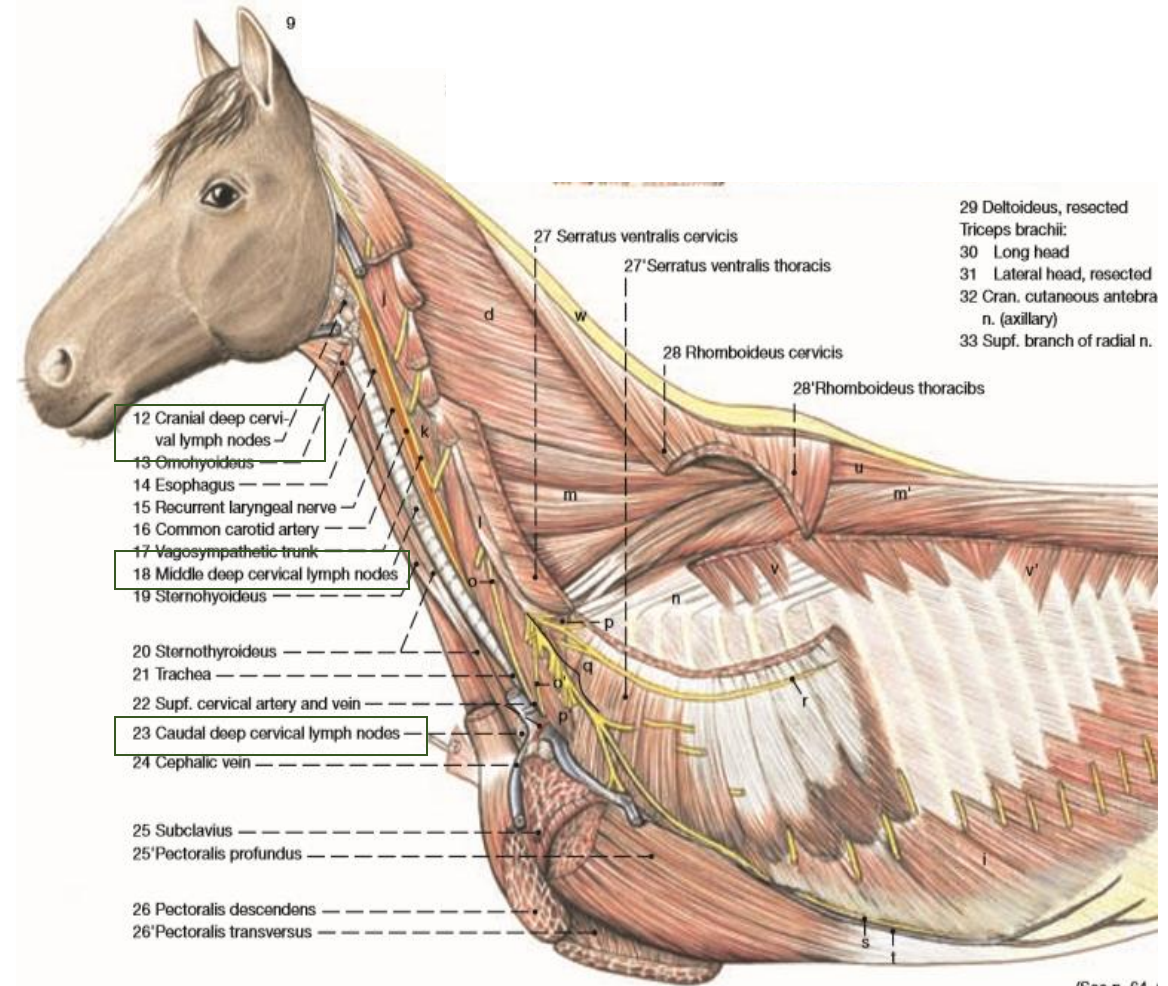
TRIBUTÄRES GEBIET:

a. die kranialen tiefen Lymphknoten erhalten Lymphe vom:

- Kopf
- Parotis
- Masseter
- Nackengegend

b. die kaudale tiefen Lymphknoten erhalten Lymphe vom:

- Schulter-, Oberarmgegend
- Muskulatur des Schultergürtels
- Muskulatur des Schulter – Ellbogengelenks
- Schulterblatt
- Humerus
- Schultergelenk



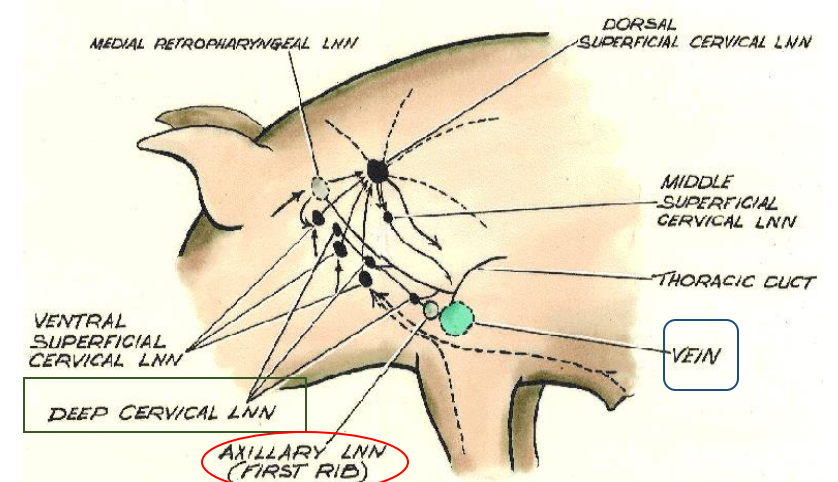
# LYMPHKNOTEN DES HALSES

LYMPHOCENTRUM CERVICALE PROFUNDUM:

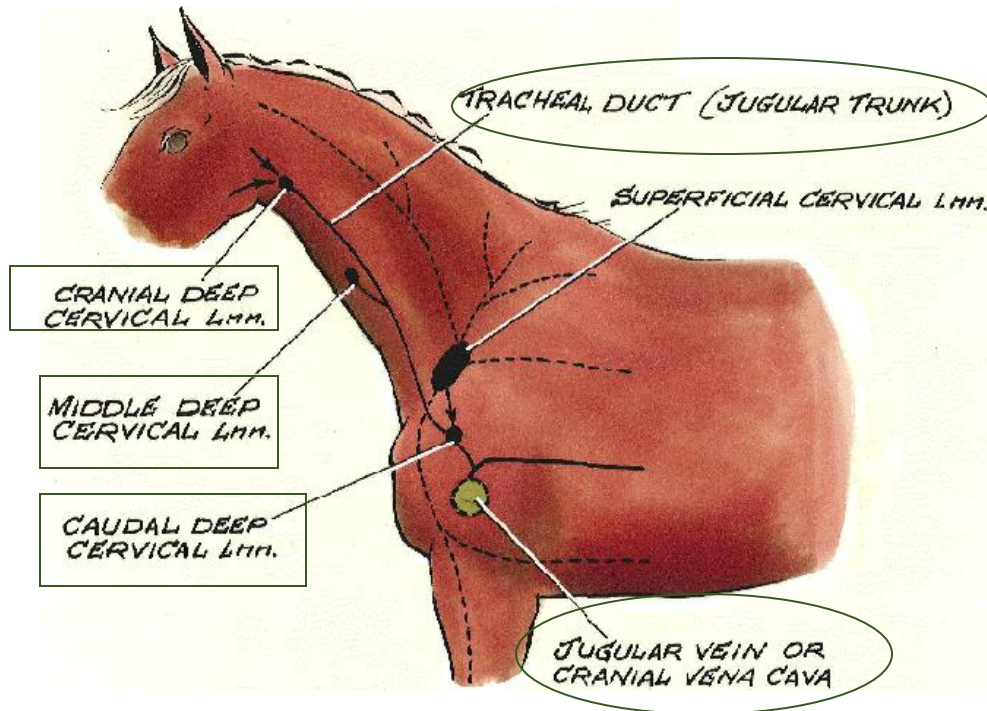
ABFLUSS:

die efferenten Lymphgefäße gehen:

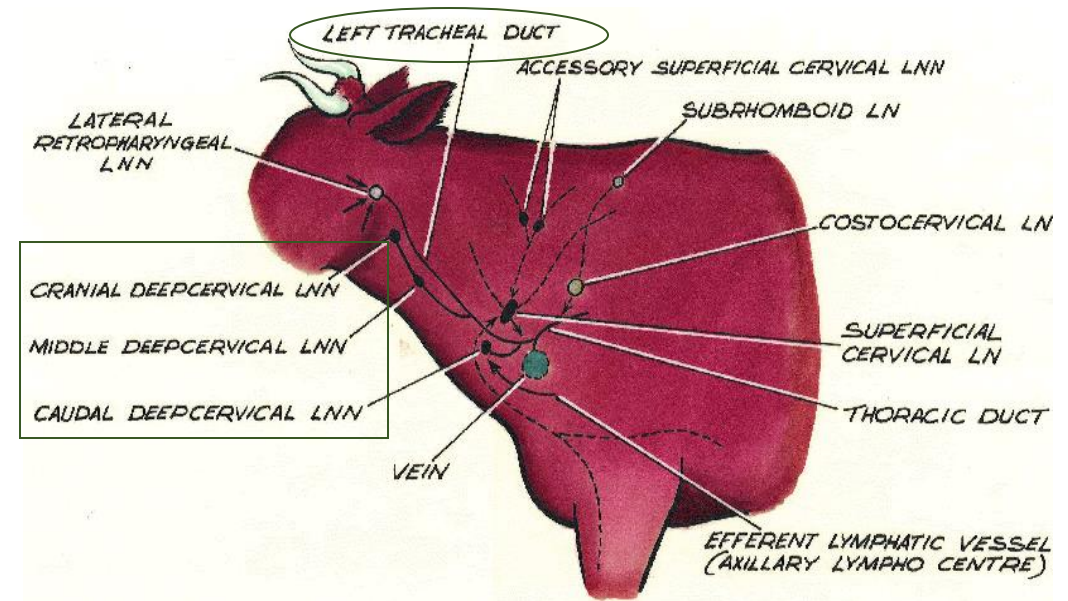
- direkt oder indirekt in den Truncus jugularis
- beim Schw. ziehen sie zu den Nll. axillares primae costae oder in die kraniale Hohlvene



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<https://www.ucd.ie/vetnat/images/95.gif>



<https://www.ucd.ie/vetnat/images/75.gif>

# LYMPHGEFÄßSYSTEM DES HALSES

## TRUNCUS JUGULARIS (seu Truncus trachealis):

- großes Lymphsammelgefäß des Halses
- beidseitig ausgebildet:

  - a. Truncus jugularis dext.
  - b. Truncus jugularis sin.

- nehmen die Vasa efferentia der Kopf- Halslymphzentren auf
- führen deren Lymphe direkt oder indirekt dem Venenwinkel zu

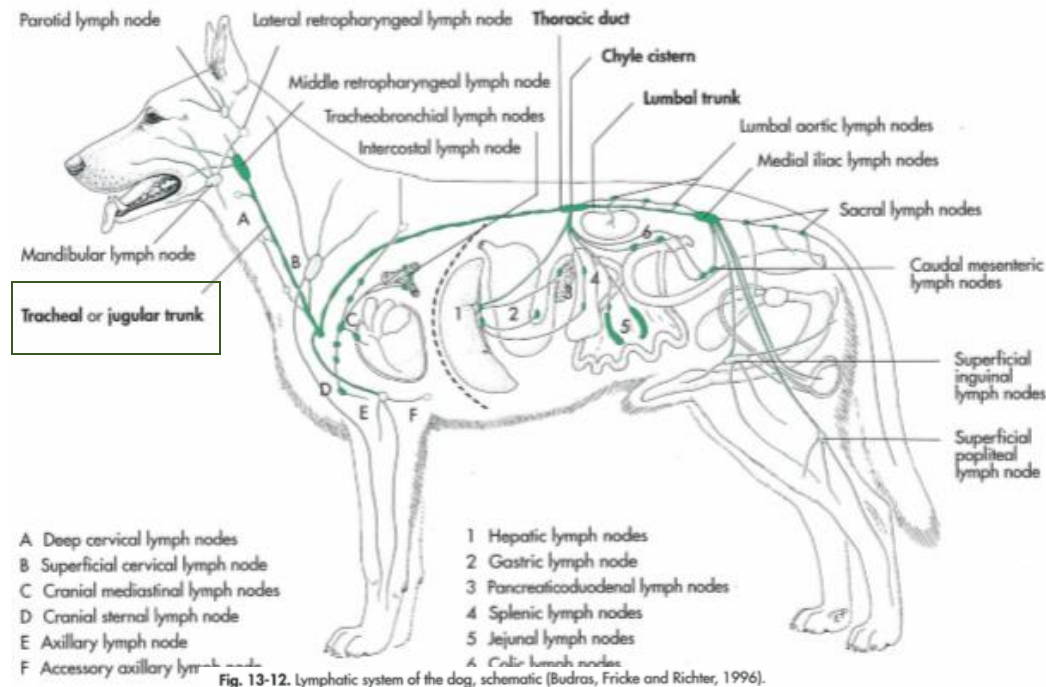


Fig. 13-12. Lymphatic system of the dog, schematic (Budras, Fricke and Richter, 1996).

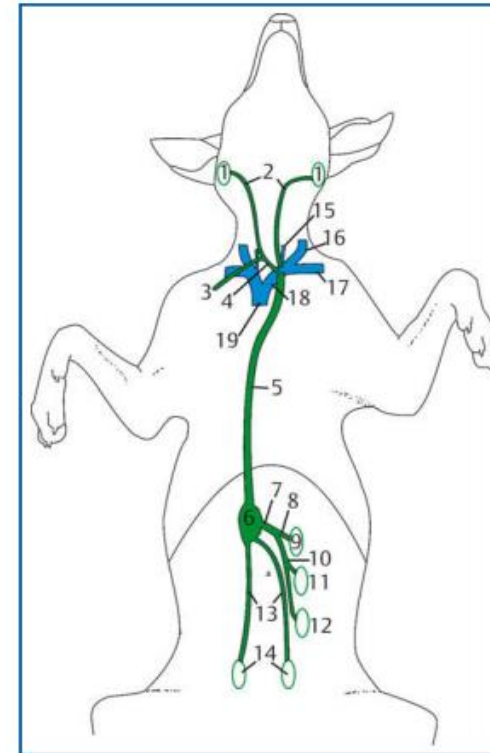
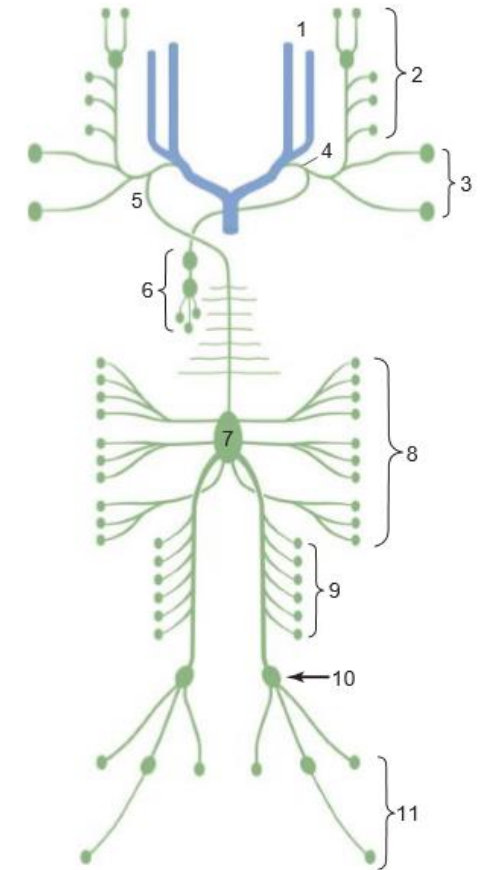


Abb. 6.47 Schema der Lymphsammelstämme beim Hund

- |                                    |   |
|------------------------------------|---|
| 1 Lc. retropharyngeum              | 11 Lc. mesentericum craniale                |
| 2 Tr. trachealis                   | 12 Lc. mediastinale caudale                 |
| 3 rechte Achsellymphgefäße         | 13 Tr. lumbalis                             |
| 4 Tr. lymphaticus dexter           | 14 Lnn. iliaci mediales des Lc. iliosacrals |
| 5 Ductus thoracicus                | 15 V. jugularis interna                     |
| 6 Lendenzisterne (Cisterna chyli)  | 16 V. jugularis externa                     |
| 7 Tr. visceralis                   | 17 V. subclavia                             |
| 8 Efferenzen des Lc. celiacum      | 18 V. brachiocephalica,                     |
| 9 Lc. celiacum                     | 19 V. cava cranialis                        |
| 10 Efferenzen der Lcc. mesenterica |   |

[https://www.narayana-verlag.com/homeopathy/pdf/Anatomie-fuer-die-Tiermedizin-Franz-Viktor-Salomon-Hans-Geyer-Uwe-Gille.17774\\_3aus\\_dem\\_Inhalt.pdf](https://www.narayana-verlag.com/homeopathy/pdf/Anatomie-fuer-die-Tiermedizin-Franz-Viktor-Salomon-Hans-Geyer-Uwe-Gille.17774_3aus_dem_Inhalt.pdf)



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.

# LYMPHGEFÄßSYSTEM DES HALSES

## TRUNCUS JUGULARIS (seu trachealis) DEXTER:

- liegt auf seiner ganzen Länge dem Halsteil der Luftröhre an – weshalb als Truncus trachealis dexter genannt
- sind ihm die A. carotis comm., der N. laryngeus recurrens, V. jugularis int. benachbart
- an der Apertura thoracis cranialis tritt zum Ductus lymphaticus dexter zusammen oder mündet selbständig in den Venenwinkel ein

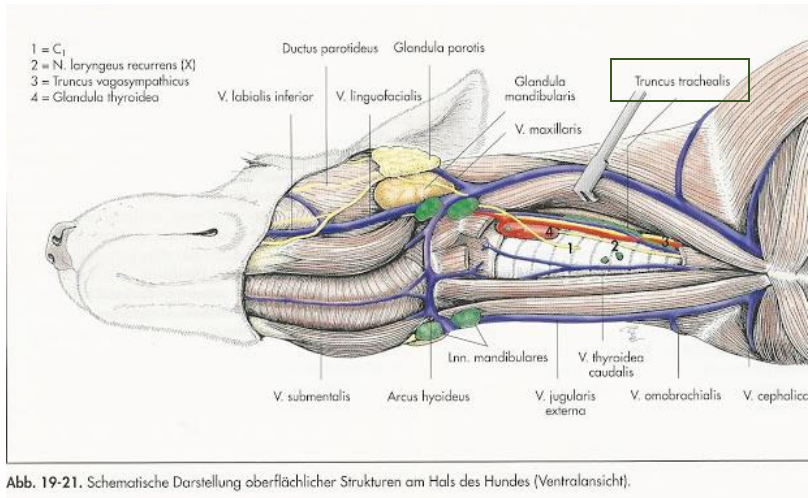
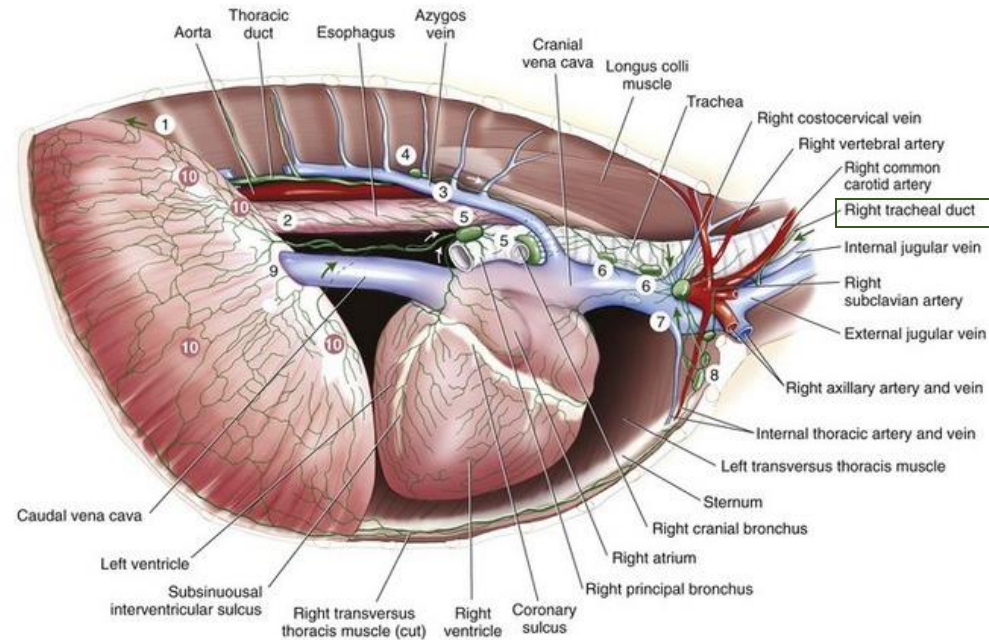
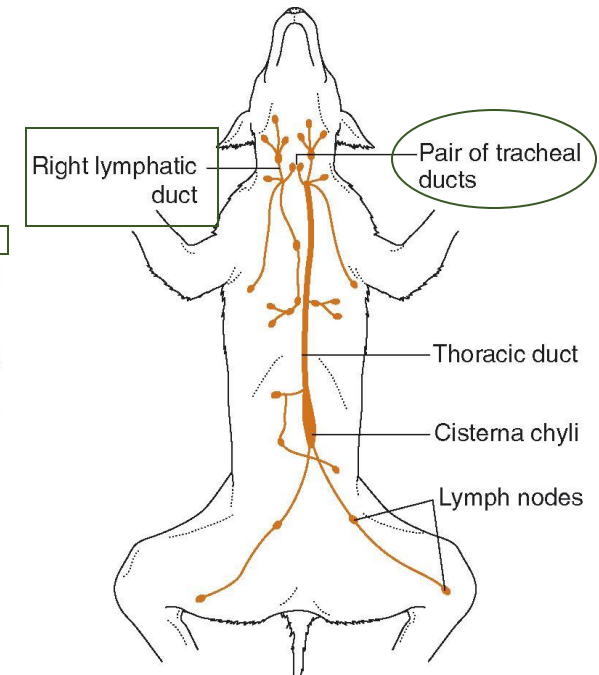


Abb. 19-21. Schematische Darstellung oberflächlicher Strukturen am Hals des Hundes (Ventralansicht).



- |   |   |
|---|---|
| 1. To cranial lumbar lymph node   | 6. Cranial mediastinal lymph nodes                                    |
| 2. Lymph vessels of the esophagus that enter the abdominal cavity   | 7. Efferent vessel of a left cranial mediastinal lymph node           |
| 3. Lymph vessels of the esophagus that turn to the left and empty into the left tracheobronchial lymph node | 8. Cranial sternal lymph node   |
| 4. Intercostal lymph node   | 9. To gastric, splenic, hepatic or cranial lumbar lymph nodes         |
| 5. Middle and right tracheobronchial lymph nodes  | 10. Pars costalis, pars lumbalis and tendinous parts of the diaphragm |

<https://veteriankey.com/thoracic-cavity/>



[http://medical-dictionary.thefreedictionary.com/\\_/viewer.aspx?path=vet&name=gr254.jpg&url=http%3A%2F%2Fmedical-dictionary.thefreedictionary.com%2Flymphoid](http://medical-dictionary.thefreedictionary.com/_/viewer.aspx?path=vet&name=gr254.jpg&url=http%3A%2F%2Fmedical-dictionary.thefreedictionary.com%2Flymphoid)



# LYMPHGEFÄßSYSTEM DES HALSES

## TRUNCUS JUGULARIS SINISTER:

- legt sich im oberen Halsdrittel der Speiseröhre an
- tritt auf die Seite der Luftröhre
- erreicht im Brusteingang den Mündungsteil des Ductus thoracicus
- kann selbständig in den Venenwinkel münden

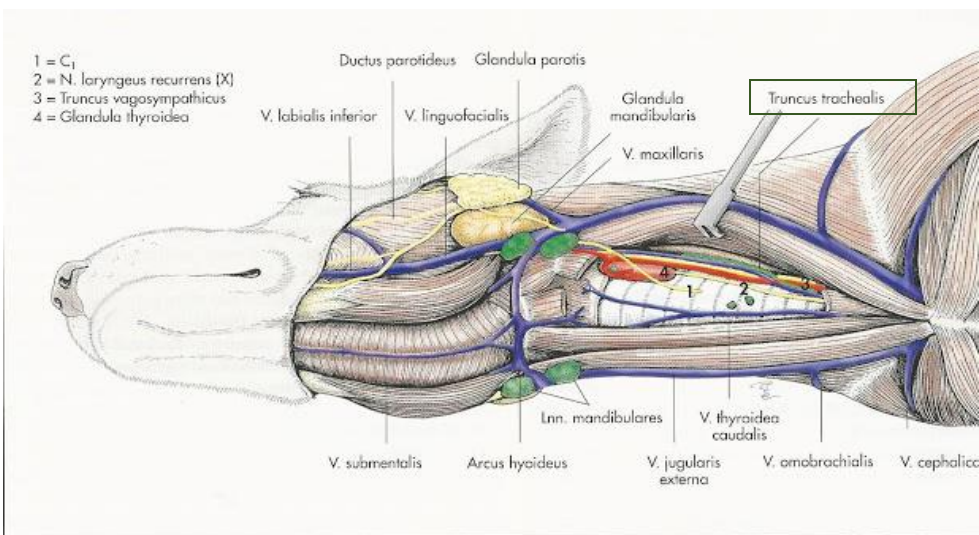


Abb. 19-21. Schematische Darstellung oberflächlicher Strukturen am Hals des Hundes (Ventralansicht).

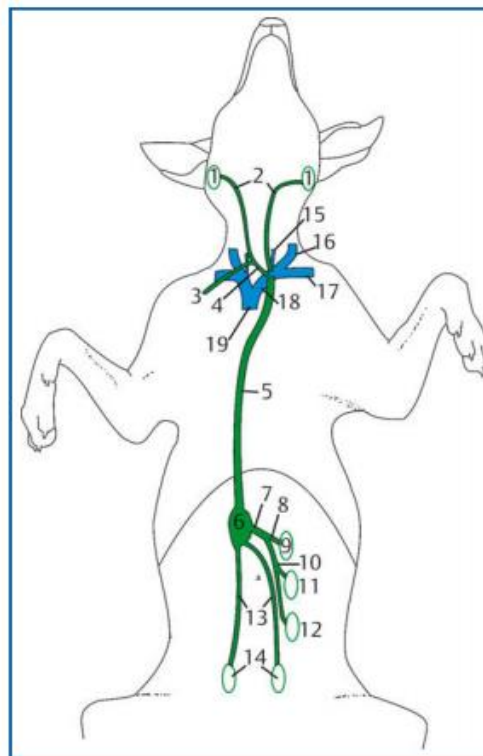
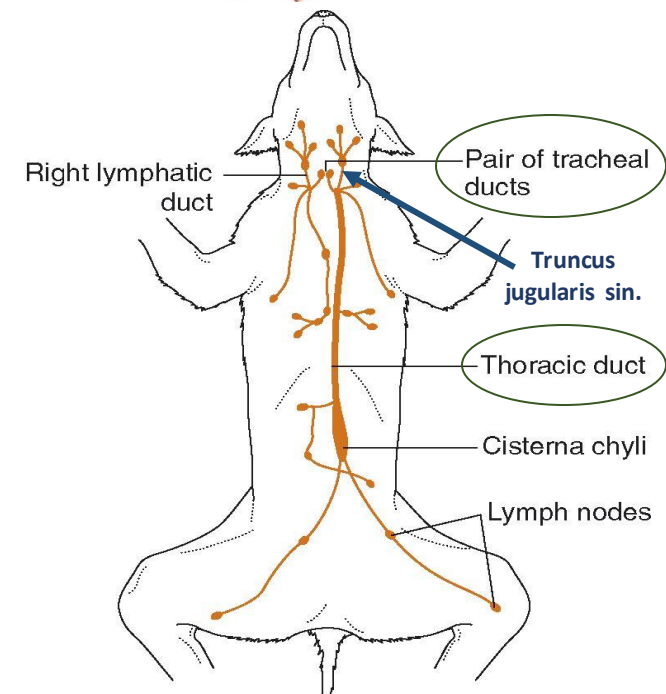
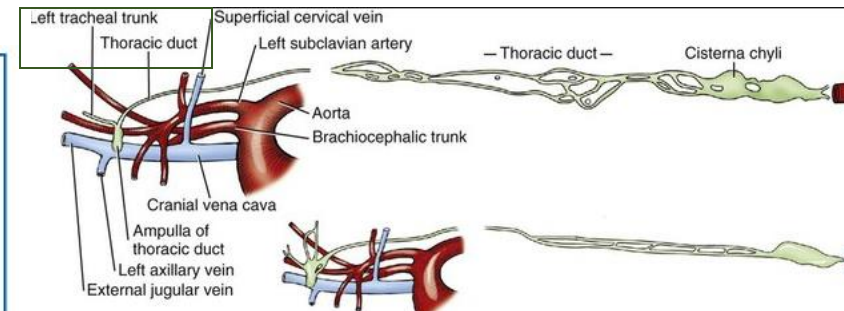


Abb. 6.47 Schema der Lympfsammelstämme beim Hund

1 Lc. retropharyngeum	11 Lc. mesentericum craniale
2 Tr. trachealis	12 Lc. mediastinale caudale
3 rechte Achsellymphgefäße	13 Tr. lumbalis
4 Tr. lymphaticus dexter	14 Lnn. iliaci mediales des Lc. iliosacrale
5 Ductus thoracicus	15 V. jugularis interna
6 Lendenzisterne (Cisterna chyli)	16 V. jugularis externa
7 Tr. visceralis	17 V. subclavia
8 Efferenzen des Lc. celiacum	18 V. brachiocephalica
9 Lc. celiacum	19 V. cava cranialis
10 Efferenzen der Lcc. mesenterica	

[https://www.narayana-verlag.com/homeopathy/pdf/Anatomie-fuer-die-Tiermedizin-Franz-Viktor-Salomon-Hans-Viktor-Geyer-Uwe-Gille.17774\\_3aus\\_dem\\_Inhalt.pdf](https://www.narayana-verlag.com/homeopathy/pdf/Anatomie-fuer-die-Tiermedizin-Franz-Viktor-Salomon-Hans-Viktor-Geyer-Uwe-Gille.17774_3aus_dem_Inhalt.pdf)



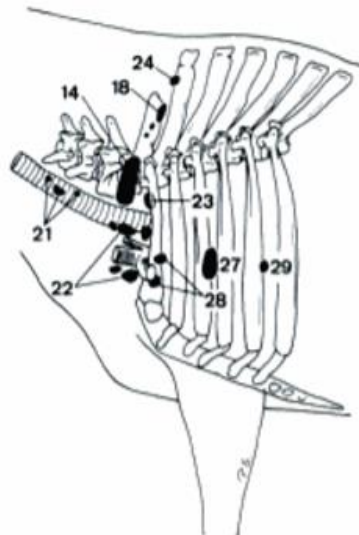
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# LYMPHGEFÄßSYSTEM DER SCHULTERGLIEDMASSE

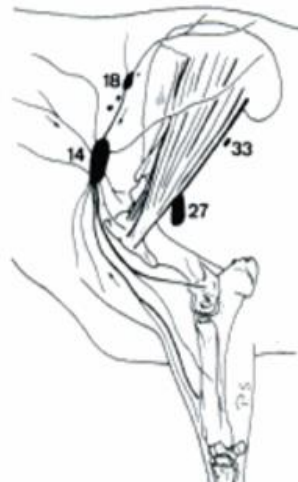
- die oberflächliche Lymphgefäße der Schultergliedmasse ziehen zum größten Teil ins Lc. cervicale superficiale
- für den tiefen Lymphgefäße der Schultergliedmasse ist ein eigenes Lymphzentrum – Lc. axillare - ausgebildet

## LYMPHOCENTRUM AXILLARE (Lc. axillare):

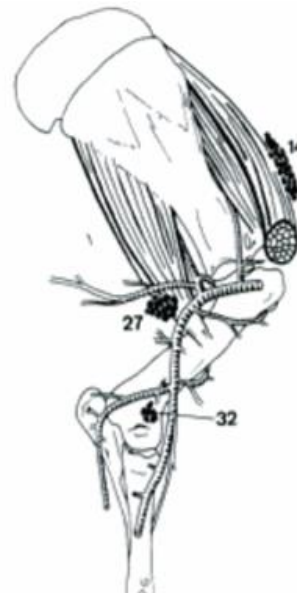
- für die tiefe Lymphgefäße der Schultergliedmasse
- für die seitliche Bauchwand
- beim Hd. für das Gesäuge zuständig ist



C Cervical and axillary lymphocentres (bo)

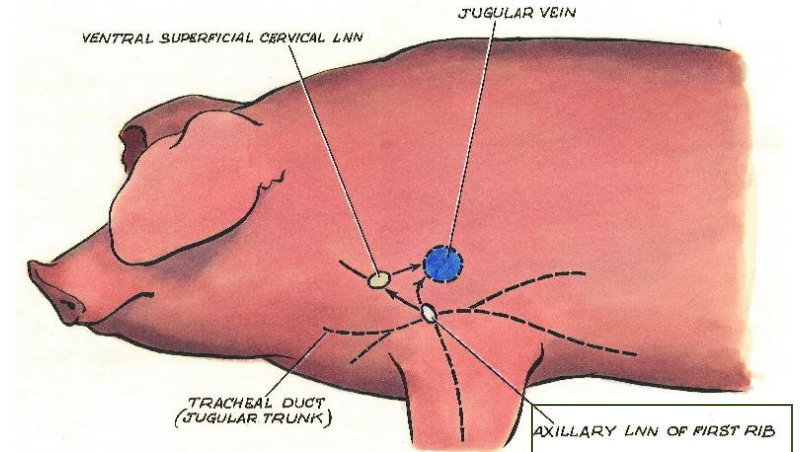


D Cervical and axillary lymph nodes (bo)

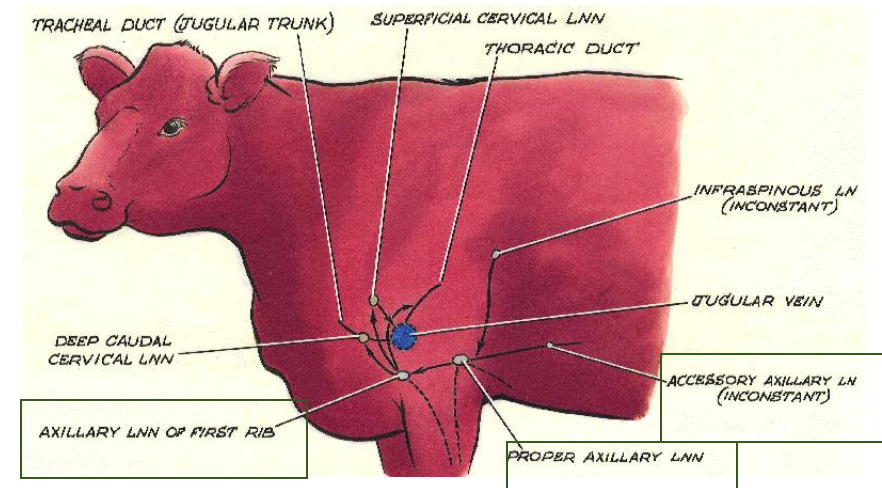


E Cervical and axillary lymph nodes (eq)

- 14. Lymphonodi cervicales superficiales
- 18. Lymphonodi cervicales superfic. accessorii
- 21. Lymphonodi cervicales profundi medii
- 22. Lymphonodi cervicales profundi caudales
- 23. Lymphonodus costocervicalis
- 24. Lymphonodus subrhomboideus
- 27. Lymphonodi axillares proprii
- 28. Lymphonodi axillares primae costae
- 29. Lymphonodus axillaris accessorius
- 32. Lymphonodi cubitales
- 33. Lymphonodus infraspinatus



<https://www.ucd.ie/vetnat/images/60.gif>



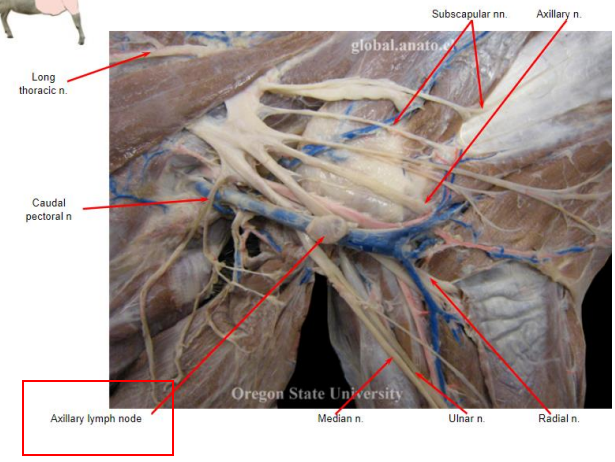
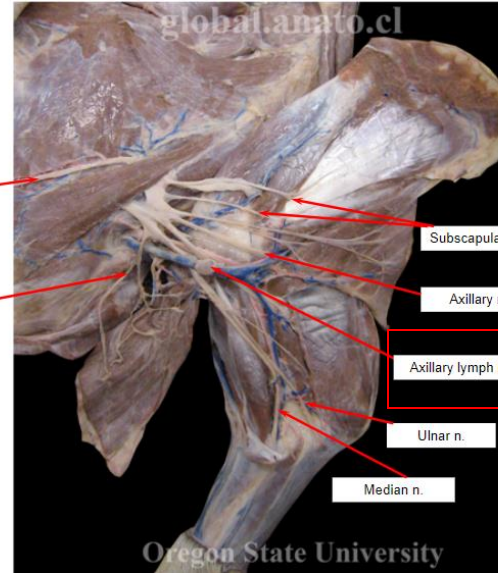
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# LYMPHKNOTEN DER SCHULTERGLIEDMASSE

ZUM LYMPHOCENTRUM AXILLARE (Lc. axillare) GEHÖREN:

1. NII. axillares proprii
2. NII. axillares primae costae
3. NII. axillares accessorii
4. NII. cubitales
5. NI. infraspinatus

## ACHSELLYMPHKNOTEN



<https://slideplayer.com/slide/3368337/>

die von den genannten Lymphknoten sind tastbar:

- a. beim Hd. die Achsellymphknoten
- b. beim Pfd. die Ellbogenlymphknoten

- die Achsellymphknoten werden bei allen Schlachttieren anlässlich der Fleischbeschau

in besonderen Fällen untersucht

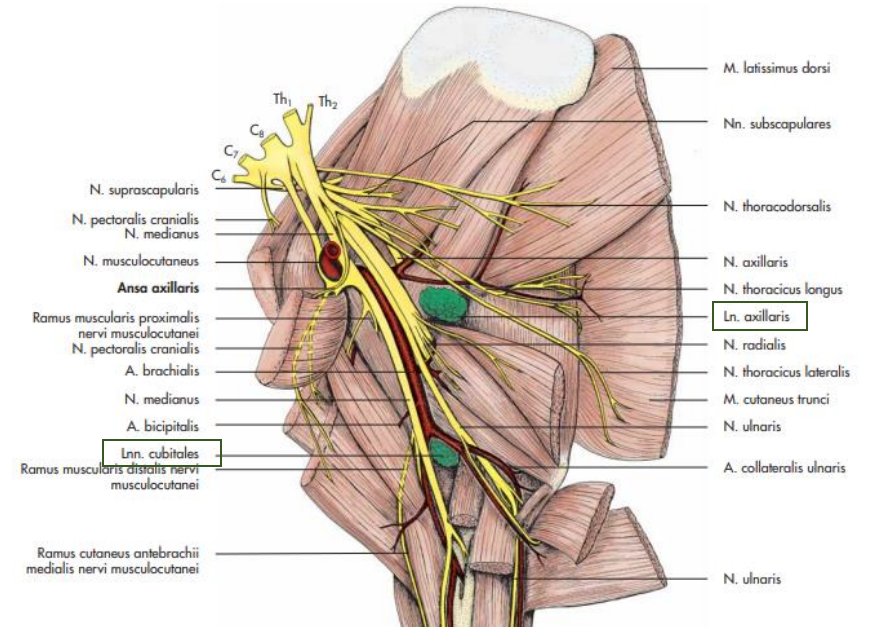


Abb. 14-60. Topographie des Plexus brachialis der rechten Vordergliedmaße des Pferdes (Medialansicht).

# LYMPHKNOTEN DER SCHULTERGLIEDMASSE

ZUM LYMPHOCENTRUM AXILLARE (Lc. axillare) GEHÖREN:

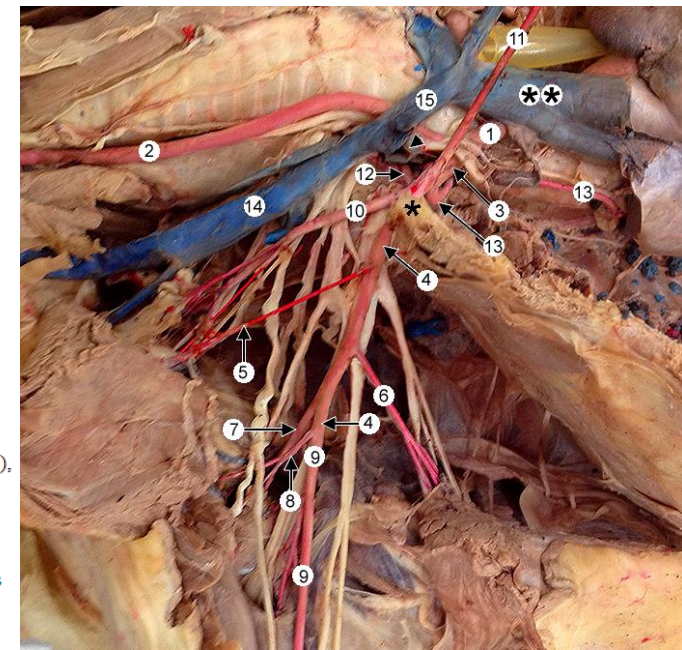
1. NII. axillares proprii:

– liegen kaudal des Schultergelenks im Teilungswinkel der Aa. axillares et subscapulares

- fehlen dem Schw.

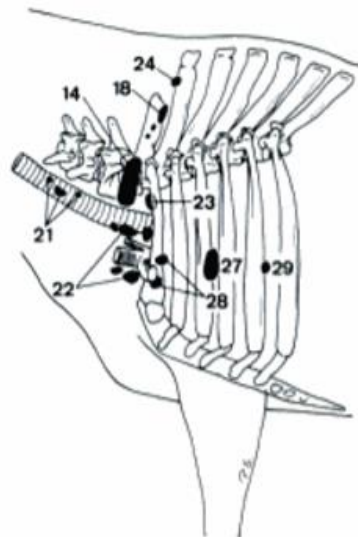
*Canine axillary a.:* The brachiocephalic trunk (1) gives off left and right (2) common carotid aa. and continues as the right subclavian a. (3). Lateral to the first rib (asterisk) the subclavian is re-named axillary a. (4). Branches of the axillary a. are: external thoracic a. (5), lateral thoracic a. (6), subscapular a. (7), and cranial circumflex humeral a. (8). Thereafter the axillary is re-named brachial a. (9).

The four branches of the subclavian a. are: superficial cervical a. (10), internal thoracic a. (11), vertebral a. (12), and costocervical trunk (13). Notice that the right external jugular v. (14) joins the stump of the right subclavian v. (arrowhead) to form the right brachiocephalic v. (15). The two brachiocephalic vv. join to form the cranial vena cava (double asterisk).

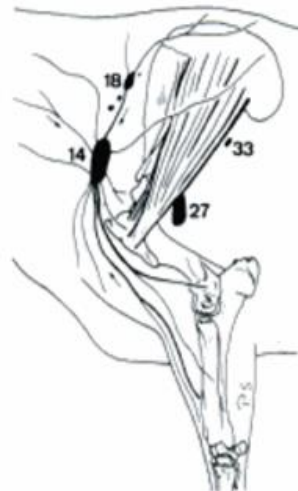


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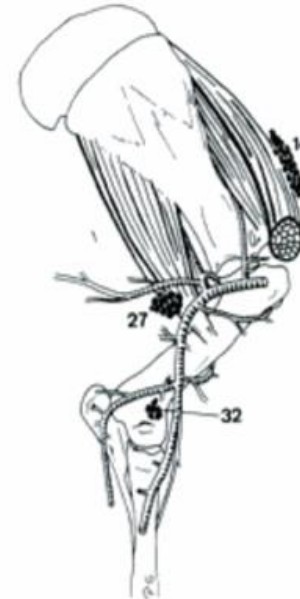
- 14. Lymphonodi cervicales superficiales
- 18. Lymphonodi cervicales superfic. accessorii
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- 32. Lymphonodi cubitales
- 33. Lymphonodus infraspinatus



C Cervical and axillary lymph-centres (bo)



D Cervical and axillary lymph nodes (bo)



E Cervical and axillary lymph nodes (cq)

# LYMPHKNOTEN DER SCHULTERGLIEDMASSE

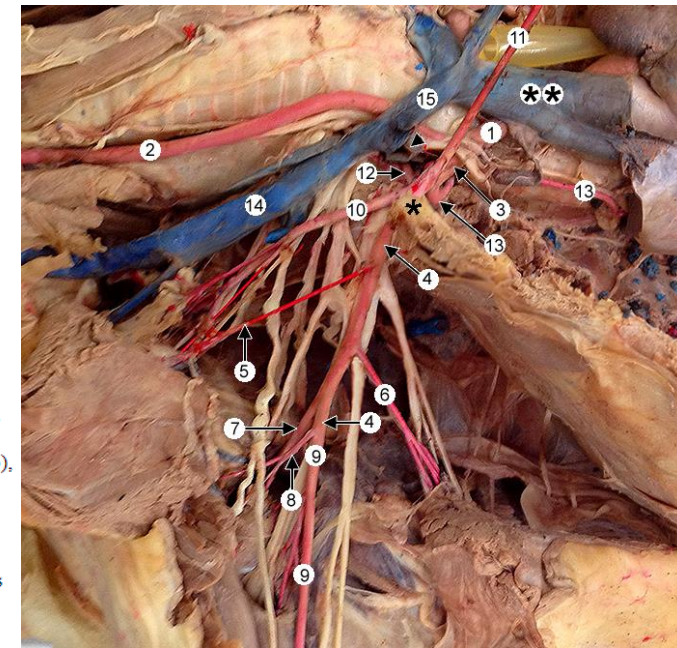
ZUM LYMPHOCENTRUM AXILLARE (Lc. axillare) GEHÖREN:

2. NII. axillares primae costae:

- liegen seitlich der ersten Rippe in Höhe der A. axillaris
- fehlen dem Hd., Pfd.

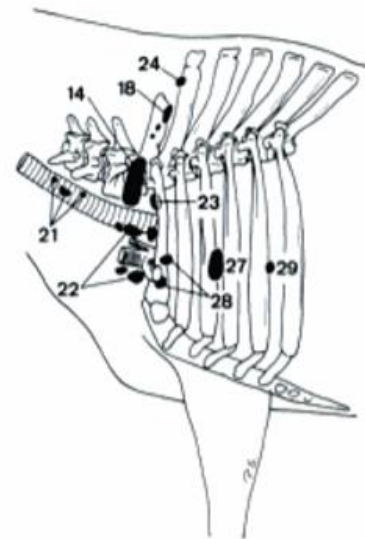
*Canine axillary a.:* The brachiocephalic trunk (1) gives off left and right (2) common carotid aa. and continues as the right subclavian a. (3). Lateral to the first rib (asterisk) the subclavian is re-named axillary a. (4). Branches of the axillary a. are: external thoracic a. (5), lateral thoracic a. (6), subscapular a. (7), and cranial circumflex humeral a. (8). Thereafter the axillary is re-named brachial a. (9).

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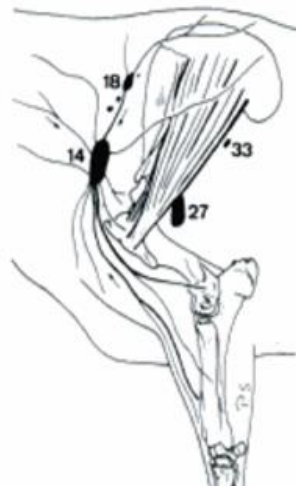


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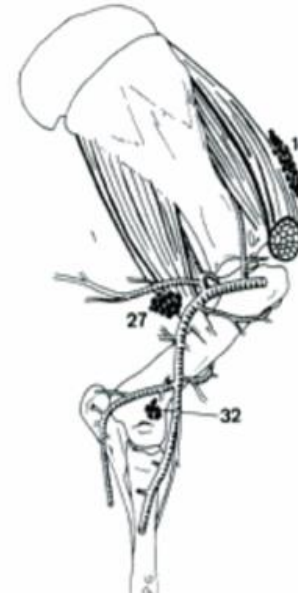
- 14. Lymphonodi cervicales superficiales
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C Cervical and axillary lymph-centres (bo)



D Cervical and axillary lymph nodes (bo)



E Cervical and axillary lymph nodes (cq)

# LYMPHKNOTEN DER SCHULTERGLIEDMASSE

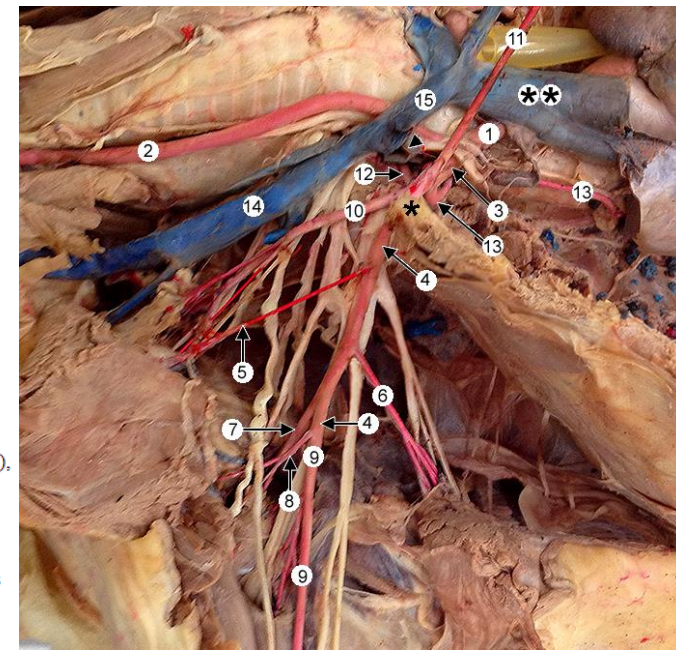
ZUM LYMPHOCENTRUM AXILLARE (Lc. axillare) GEHÖREN:

## 3. NII. axillares accessorii:

- liegen der 3. oder 4. Rippe seitlich in Höhe der V. thoracica lat. auf
- beim Hd., Ktz.,
- gelegentlich beim Rd., Schf.

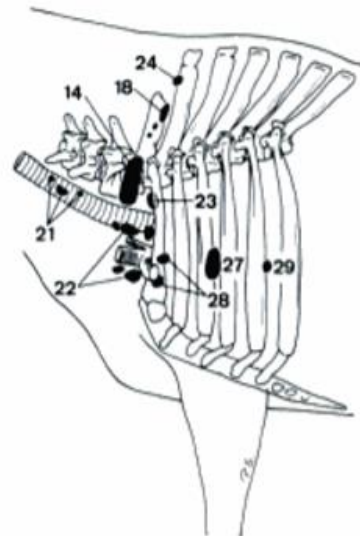
*Canine axillary a.:* The brachiocephalic trunk (1) gives off left and right (2) common carotid aa. and continues as the right subclavian a. (3). Lateral to the first rib (asterisk) the subclavian is re-named axillary a. (4). Branches of the axillary a. are: external thoracic a. (5), lateral thoracic a. (6), subscapular a. (7), and cranial circumflex humeral a. (8). Thereafter the axillary is re-named brachial a. (9).

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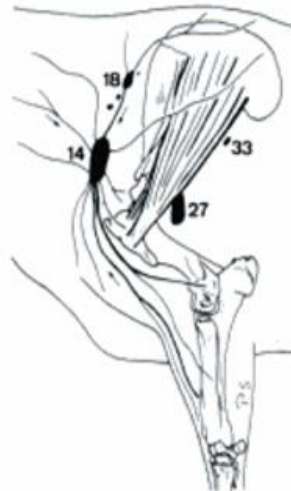


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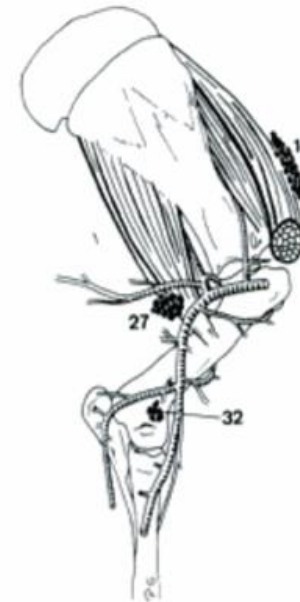
- 14. Lymphonodi cervicales superficiales
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C Cervical and axillary lymph-centres (bo)



D Cervical and axillary lymph nodes (bo)



E Cervical and axillary lymph nodes (eq)

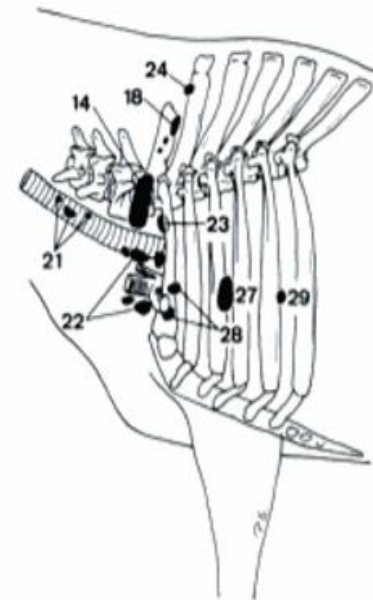
# LYMPHKNOTEN DER SCHULTERGLIEDMASSE

ZUM LYMPHOCENTRUM MAXILLARE (Lc. axillare) GEHÖREN:

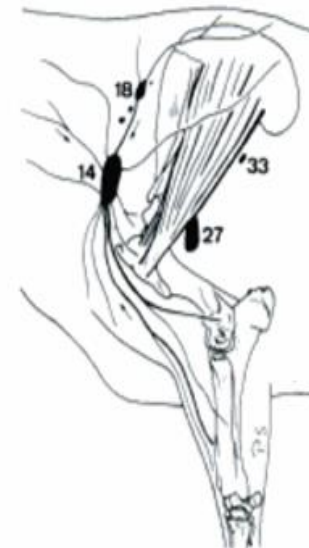
## 4. NII. cubitales:

- liegen medial des Ellbogengelenks
- kommen nur beim Pfd., inkonstant beim Schf. vor

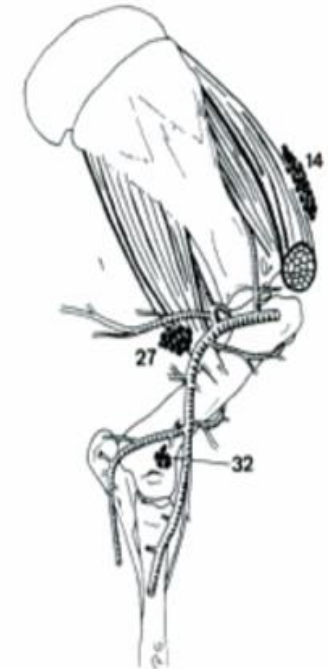
- 14. Lymphonodi cervicales superficiales
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C Cervical and axillary lymphocentres (bo)



D Cervical and axillary lymph nodes (bo)



E Cervical and axillary lymph nodes (eq)

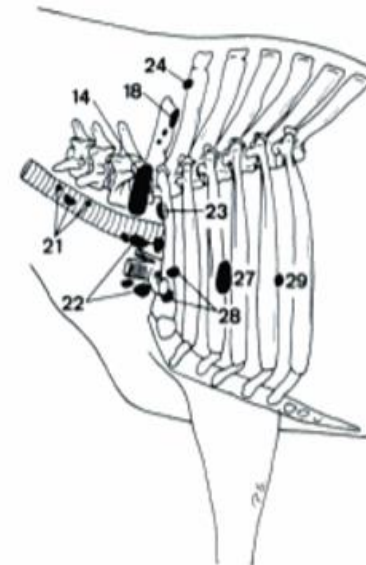
# LYMPHKNOTEN DER SCHULTERGLIEDMASSE

ZUM LYMPHOCENTRUM AXILLARE (Lc. axillare) GEHÖREN:

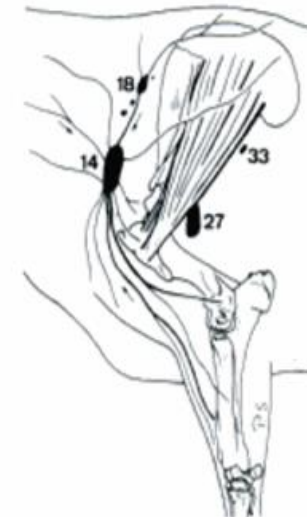
5. NI. infraspinatus:

- inkonstans
- nur beim Rd.
- liegt im oberen Drittel und kaudalen Rand des M. infraspinatus

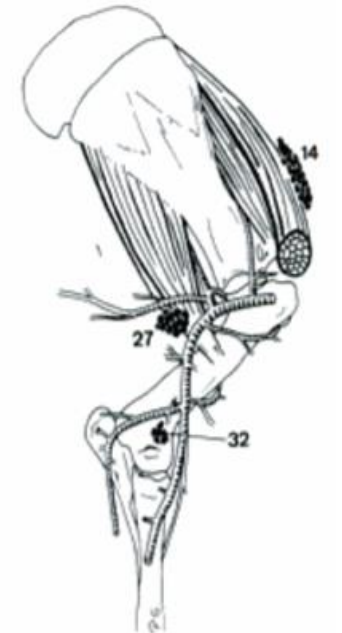
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C Cervical and axillary lymphocentres (bo)



D Cervical and axillary lymph nodes (bo)



E Cervical and axillary lymph nodes (eq)



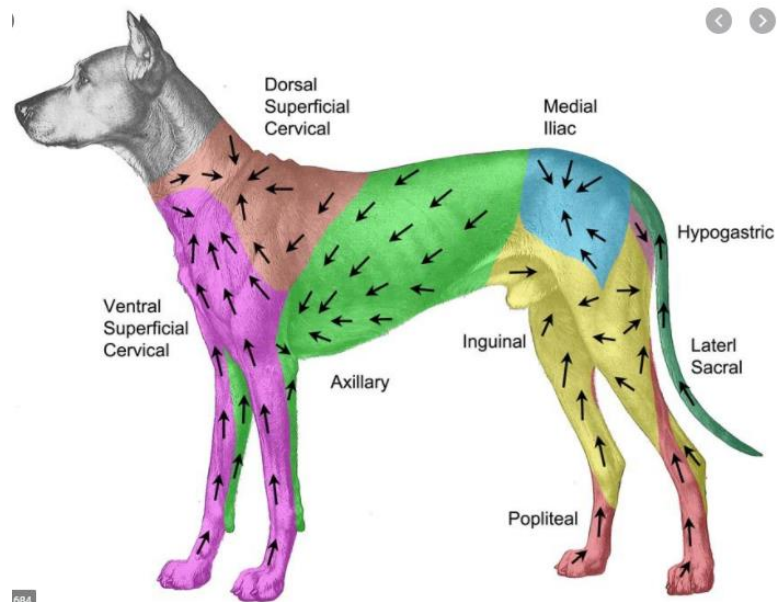


# LYMPHKNOTEN DER SCHULTERGLIEDMASSE

ZUM LYMPHOCENTRUM AXILLARE (Lc. axillare):

TRIBUTÄRES GEBIET:

1. Vor – und Unterbrust
2. Gebiete der gesamten Schultergliedmasse
3. beim Schw. – die ventrale Halsgegend
4. beim Pfd. – die seitliche Brustwand
5. beim Hd. – die dorsale Brustwand, die ventrale Bauchwand, thorakale und vordere abdominale Komplexe des Gesäuges



<https://hu.pinterest.com/pin/512495632571790257/>

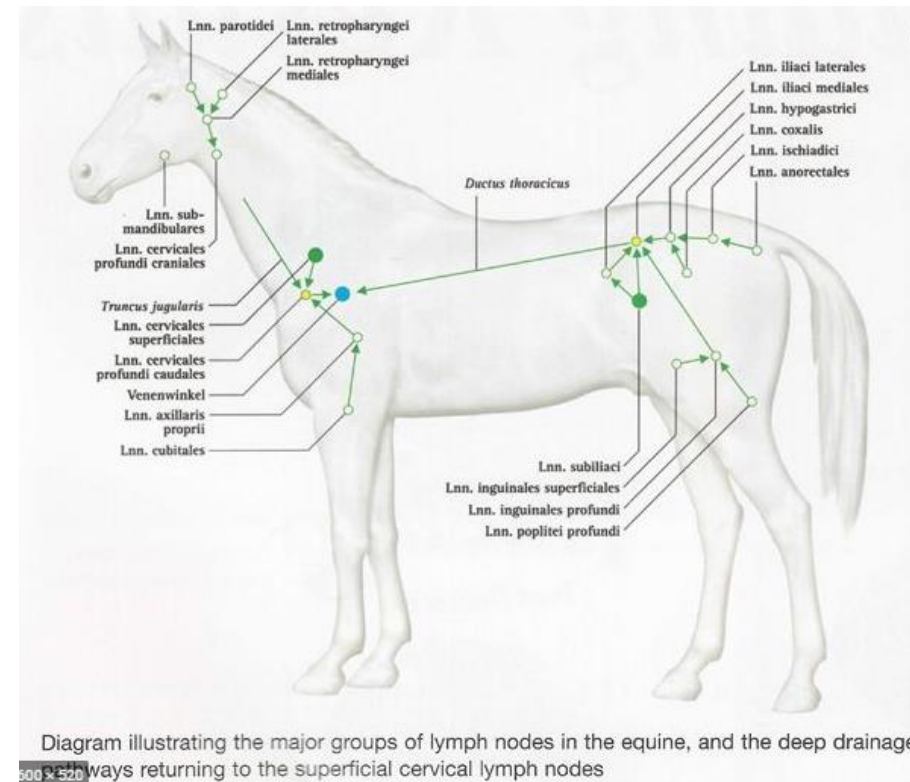


Diagram illustrating the major groups of lymph nodes in the equine, and the deep drainage ways returning to the superficial cervical lymph nodes

<https://www.pinterest.co.uk/pin/813110907708487871/>

# LYMPHGEFÄßSYSTEM DER SCHULTERGLIEDMASSE

## LYMPHOCENTRUM AXILLARE (Lc. axillare)

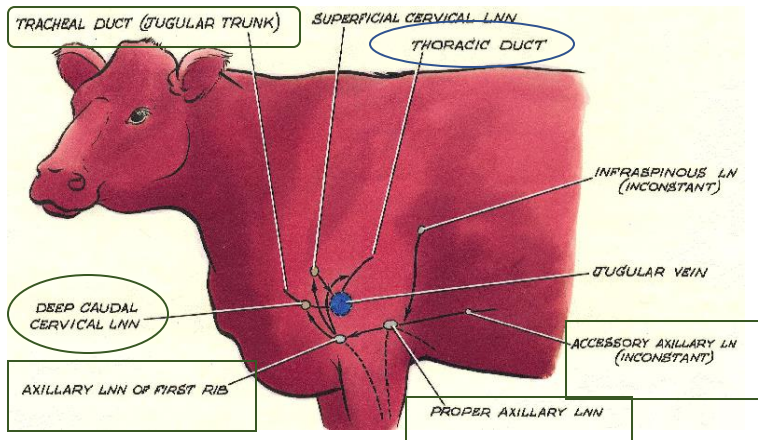
### LYMPHABFLUSS:

- von den Nll. axillares primae costae bzw. Nll. axillares proprii bei der Ktz. von beiden ziehen die Vasa efferentia direkt (Ktz.) oder indirekt (Rd., Pfd.) oder auf beiden Wegen (Hd., Schw.) zum Venenwinkel

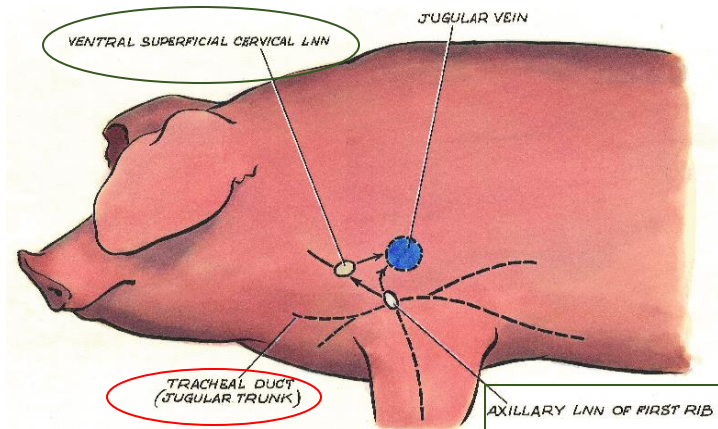
a) beim Hd. führt der indirekte Weg über den Truncus jugularis oder das Mündungsstück des Ductus thoracicus

b) beim Schw. über die Nll. cervicales superfic. ventrales und den Truncus jugularis

c) beim Rd. über den Ductus thoracicus, über Halslymphknoten



<https://www.ucd.ie/vetnat/images/94.gif>



<https://www.ucd.ie/vetnat/images/60.gif>

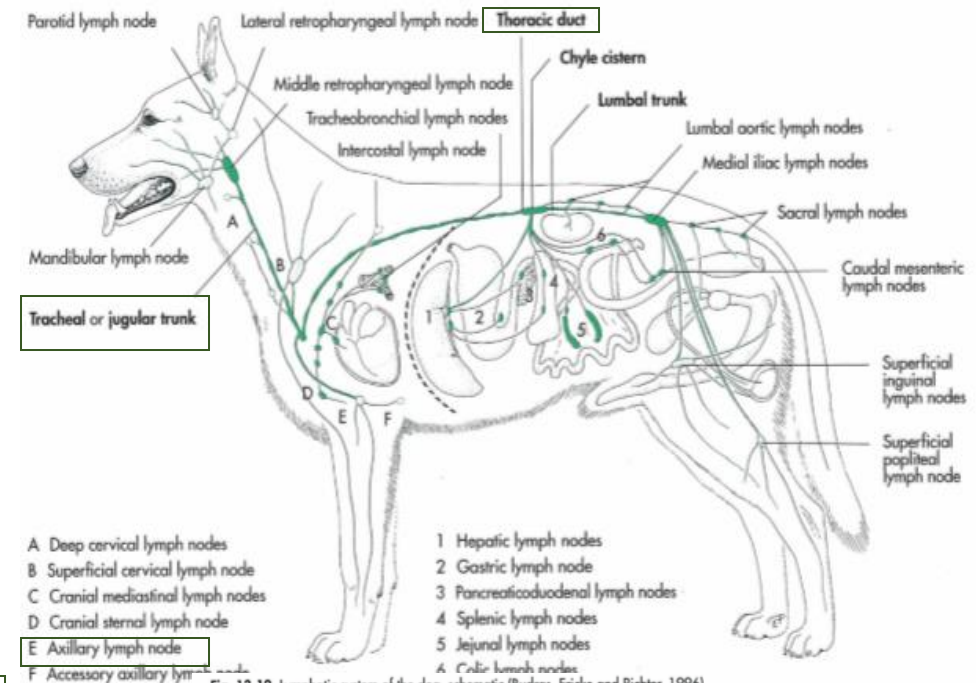


Fig. 13-12. Lymphatic system of the dog, schematic (Budras, Fricke and Richter, 1996).

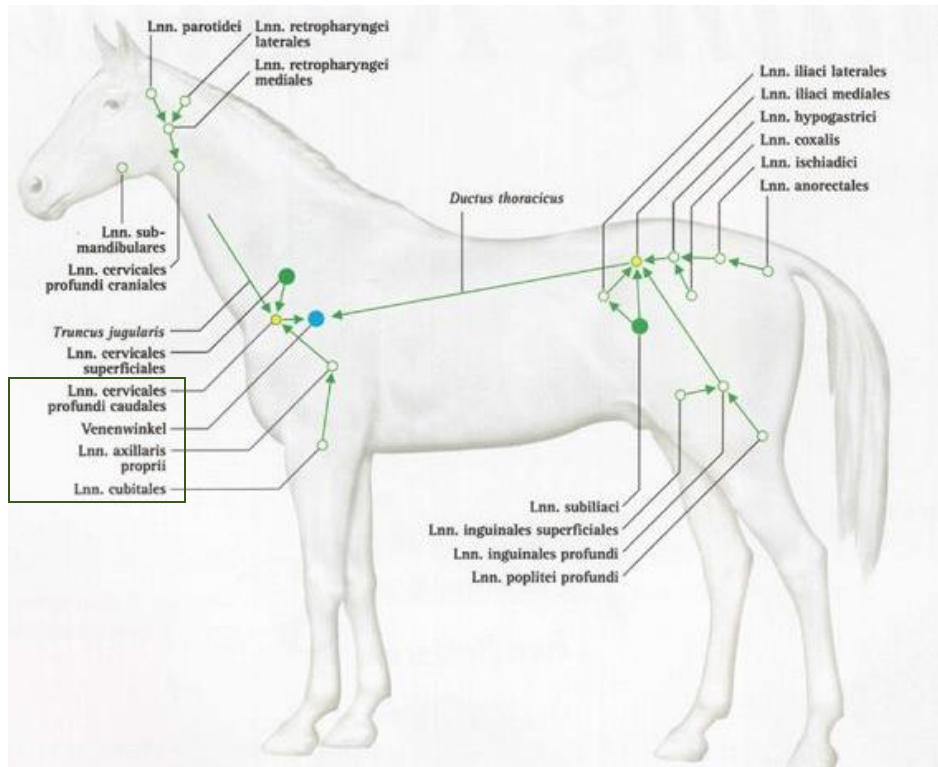
# LYMPHGEFÄßSYSTEM DER SCHULTERGLIEDMASSE

## LYMPHOCENTRUM AXILLARE (Lc. axillare)

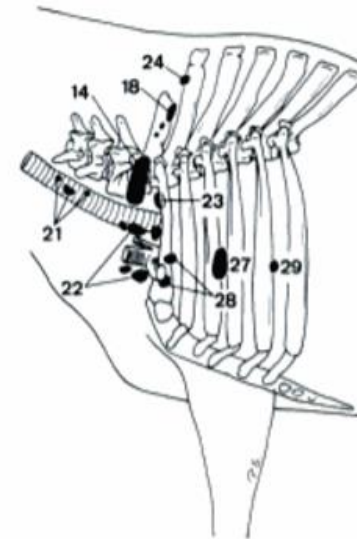
### LYMPABFLUSS:

d. beim Pfd. über Nll. cervicales profundi caudales

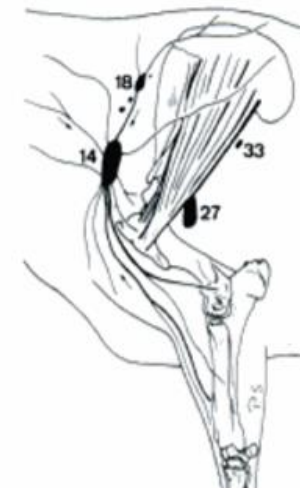
e. die Kubitallymphknoten geben ihre Lymphe an die Nll. axillares proprii (Pfd., Schf.) und Nll. axillares pirmae costae (Schf.) ab



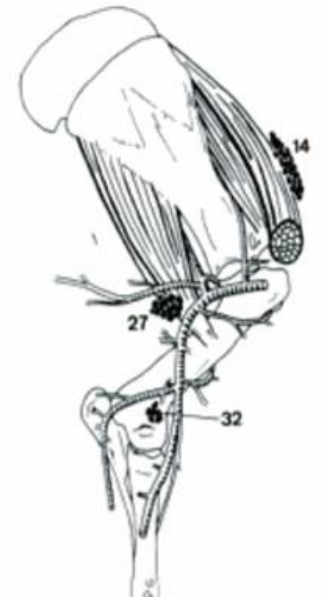
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C Cervical and axillary lymphocentres (bo)

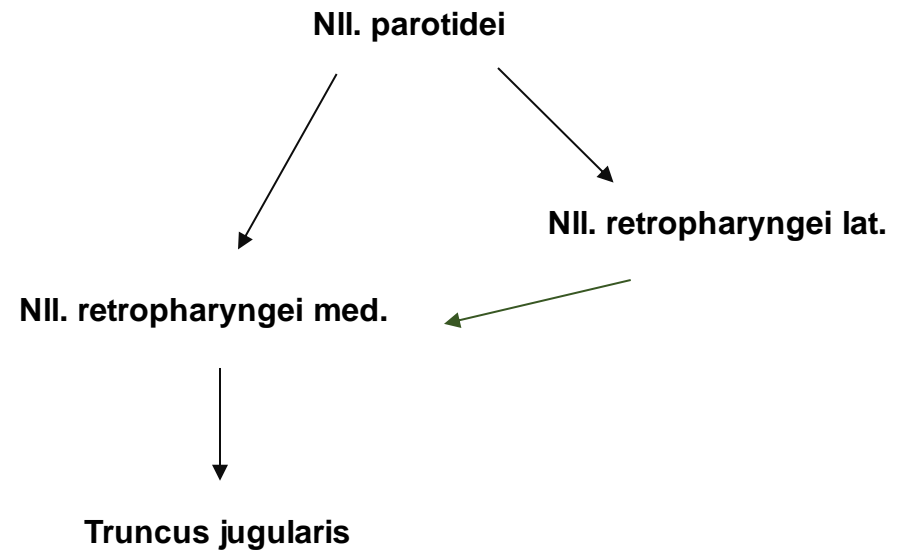


D Cervical and axillary lymph nodes (bo)

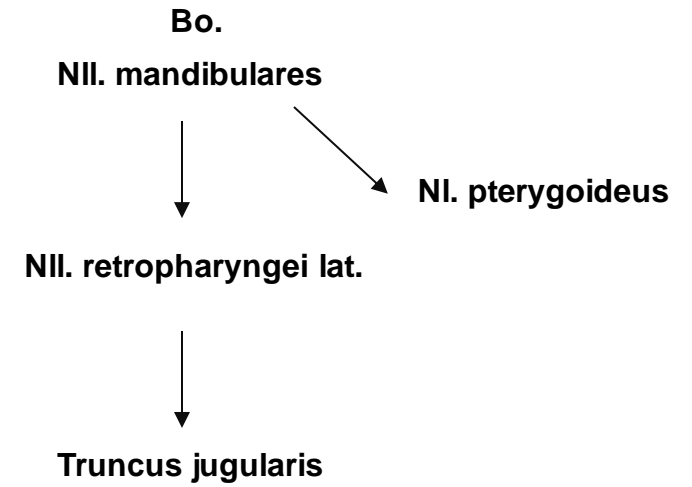
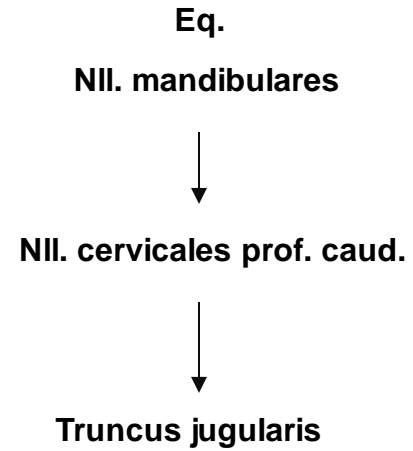
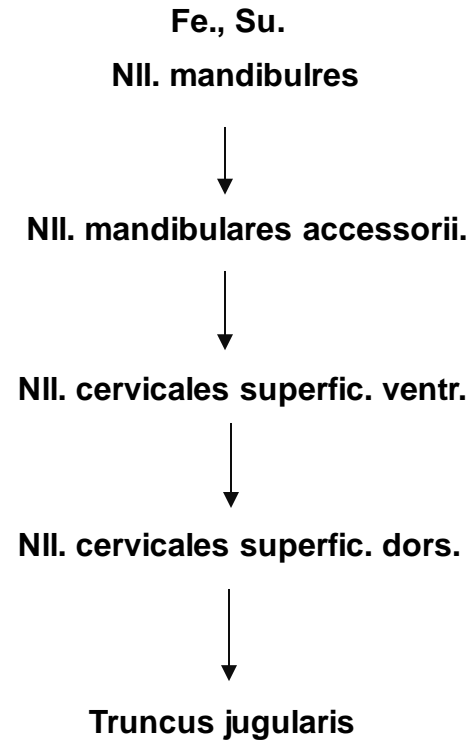


E Cervical and axillary lymph nodes (eq)

# LYMPHABFLUSS



# LYMPHABFLUSS



# LYMPHABFLUSS

**Bo.**

**NII. hyoideus rostralis et caudalis**

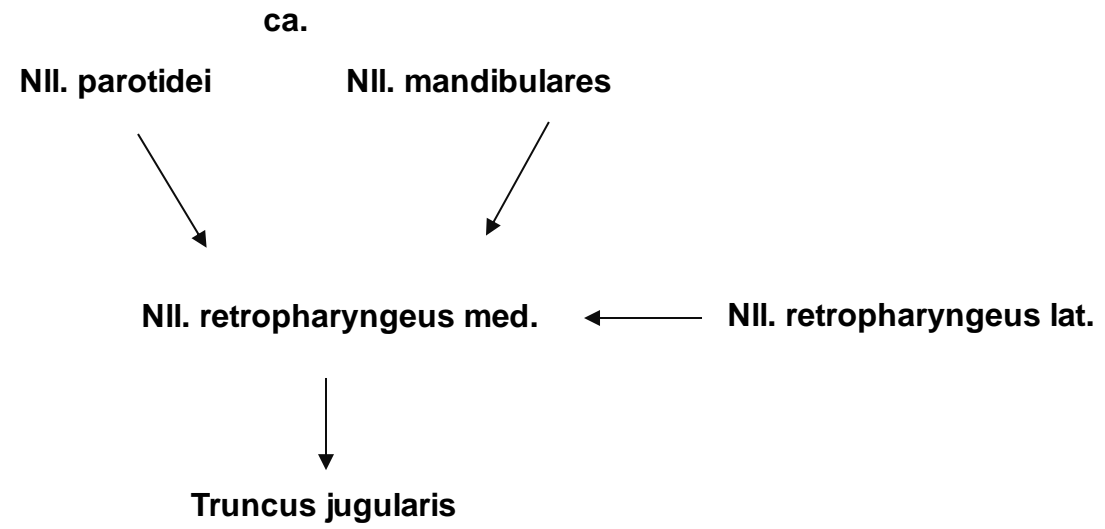


**NII. retropharyngei lat.**



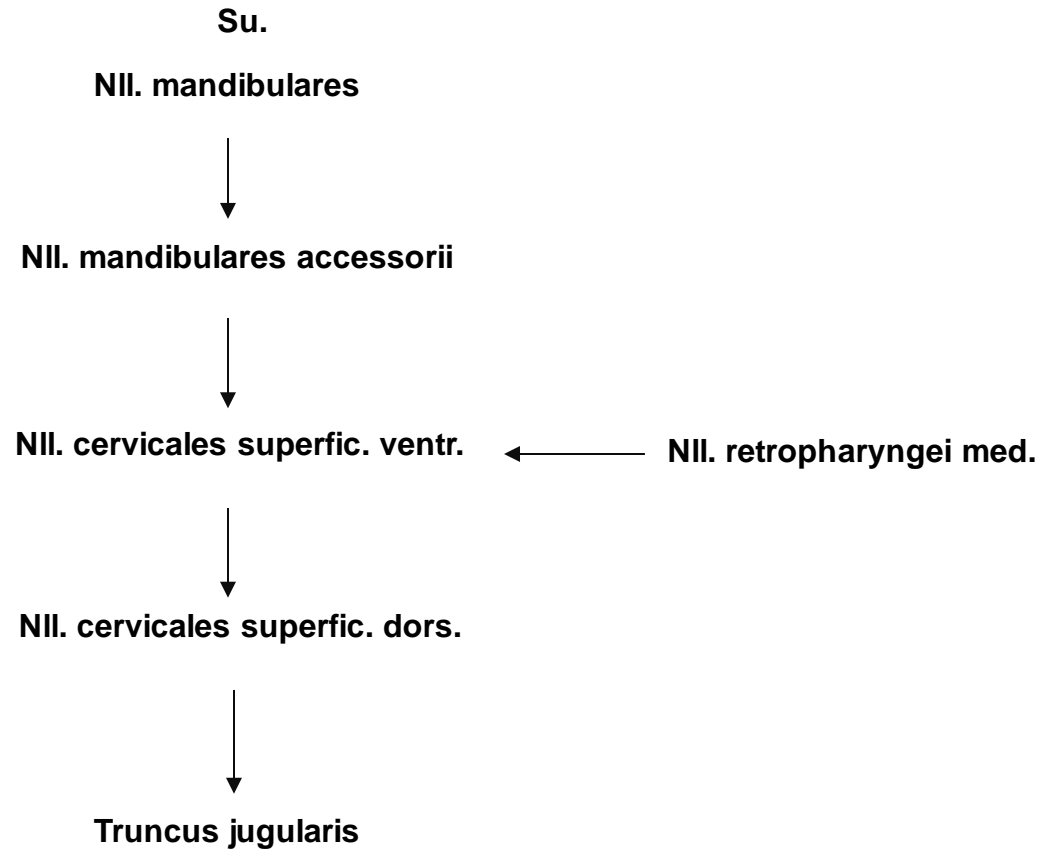
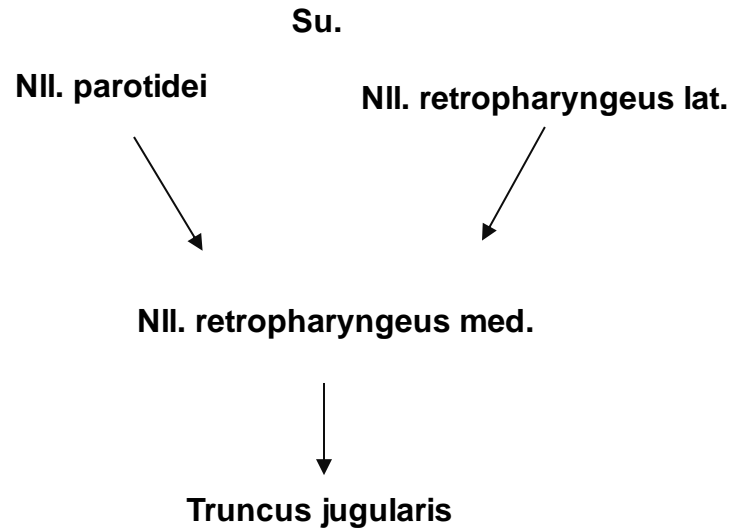
**Truncus jugularis**

# LYMPHABFLUSS

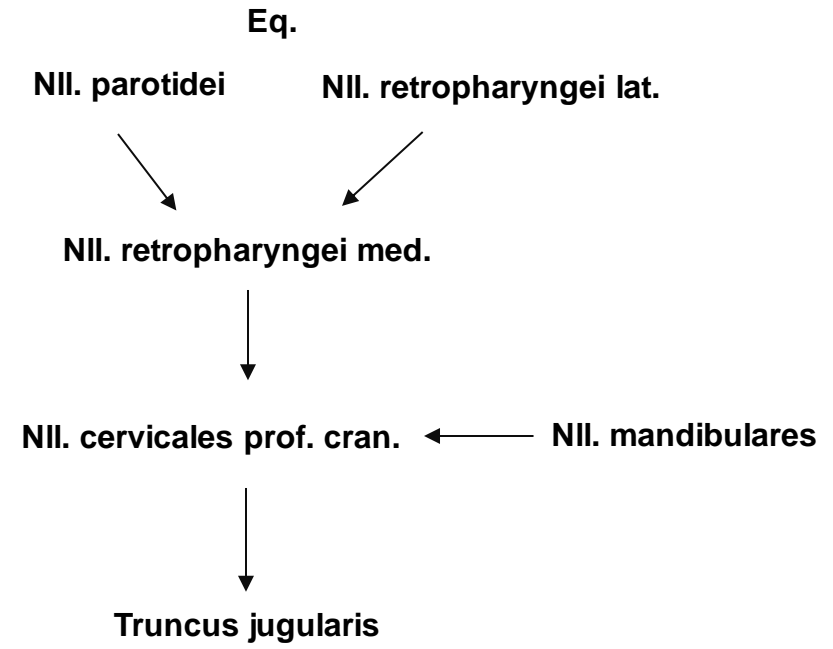
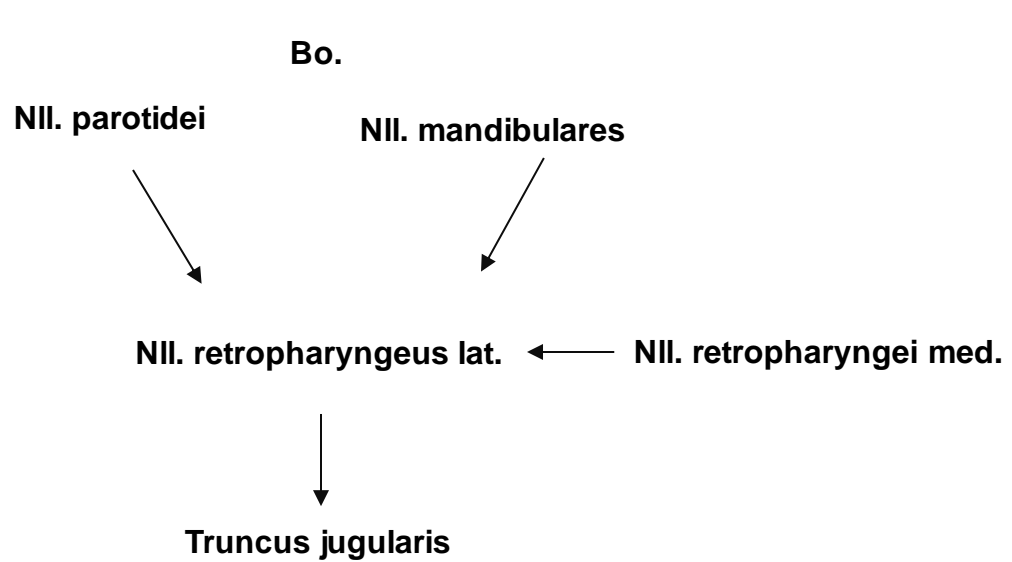




# LYMPHABFLUSS

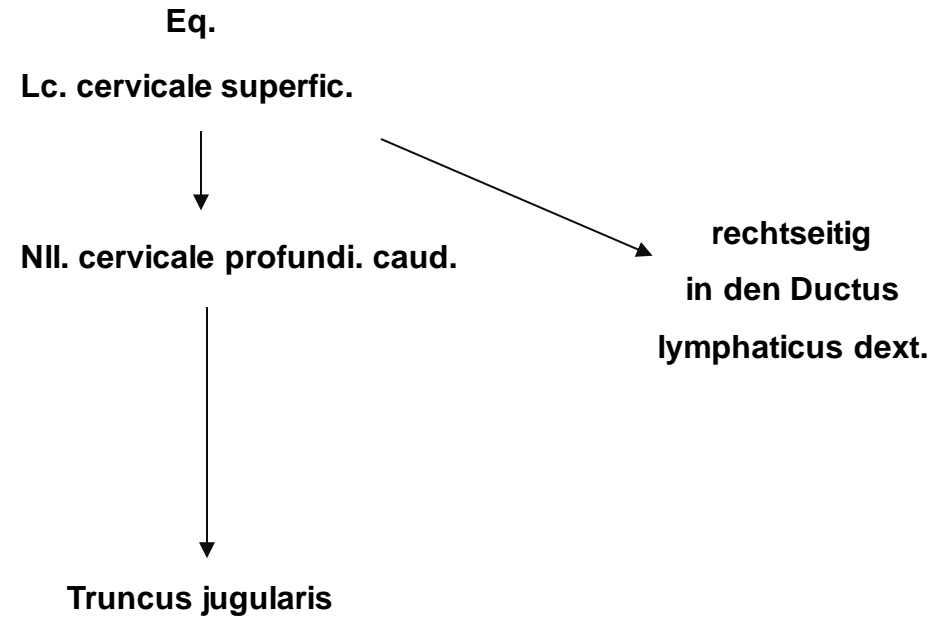
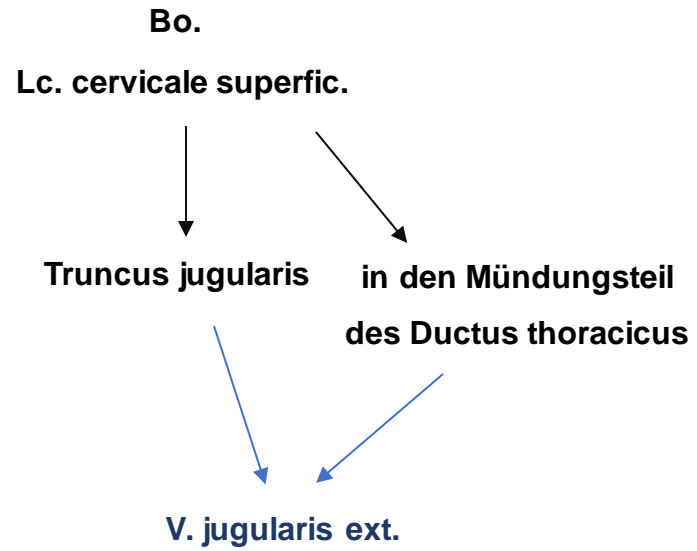


# LYMPHABFLUSS





# LYMPHABFLUSS



# LYMPHABFLUSS

Lc. cervicale prof.



direkt oder indirekt

Truncus jugularis

Su.

Lc. cervicale prof.

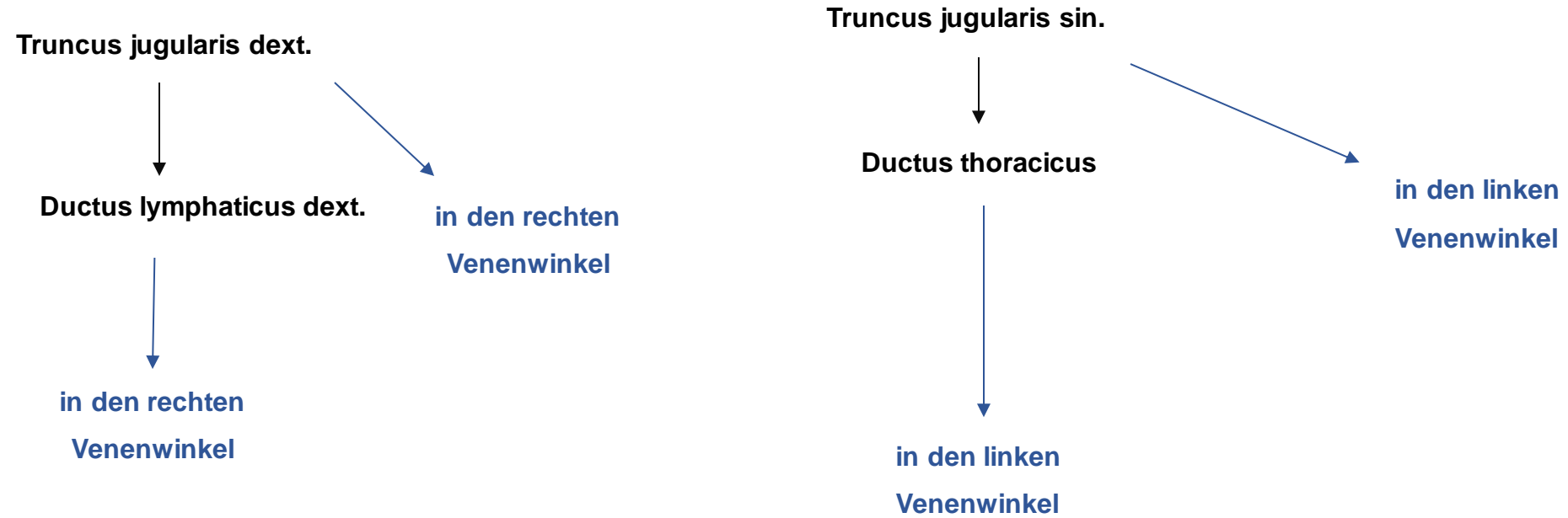


NII. axillares primae costae

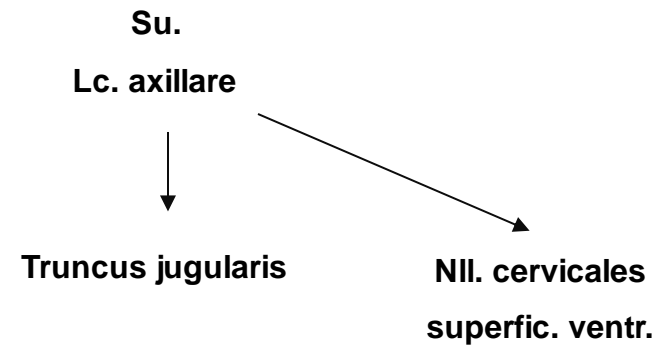
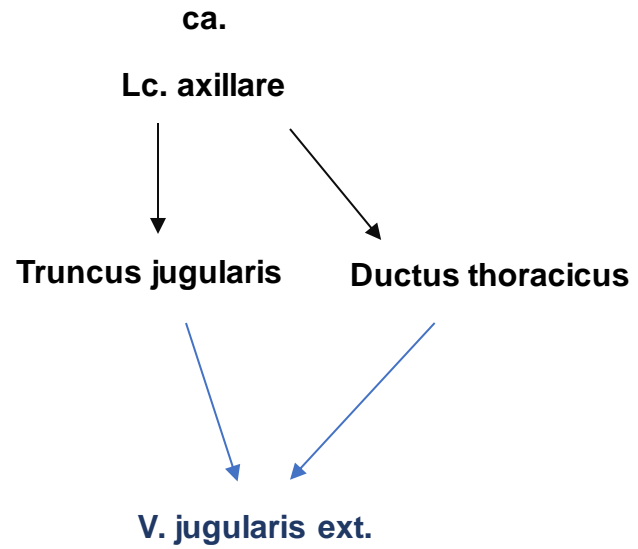


V. cava cran.

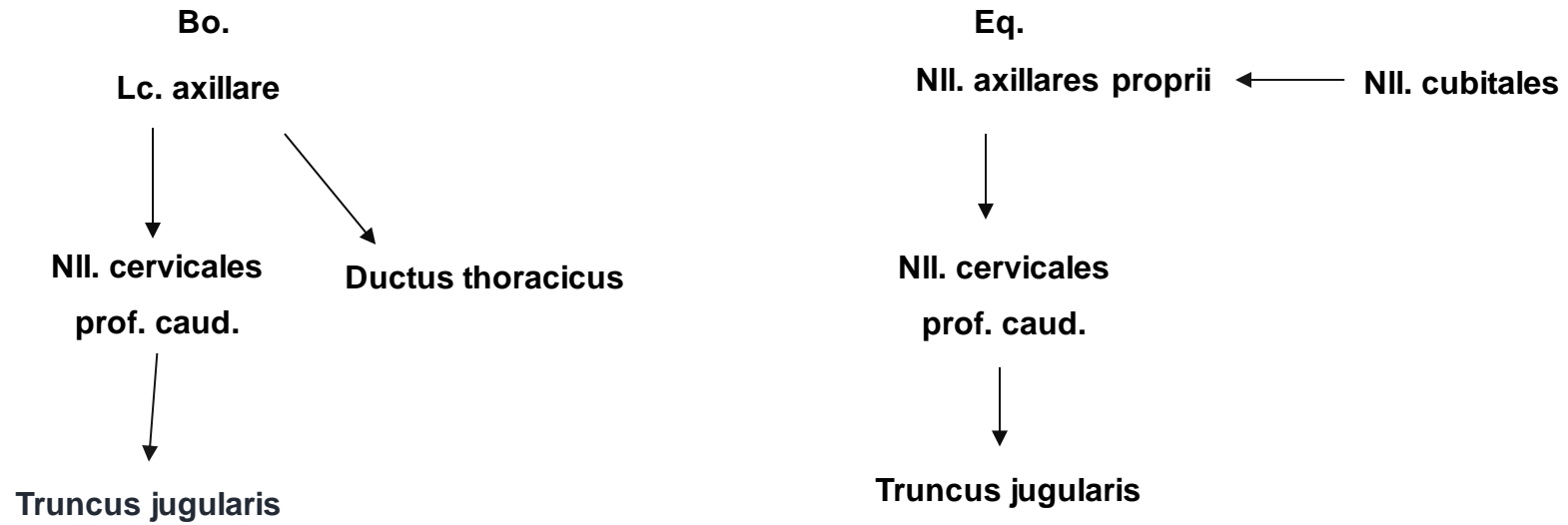
# LYMPHABFLUSS



# LYMPHABFLUSS



# LYMPHABFLUSS



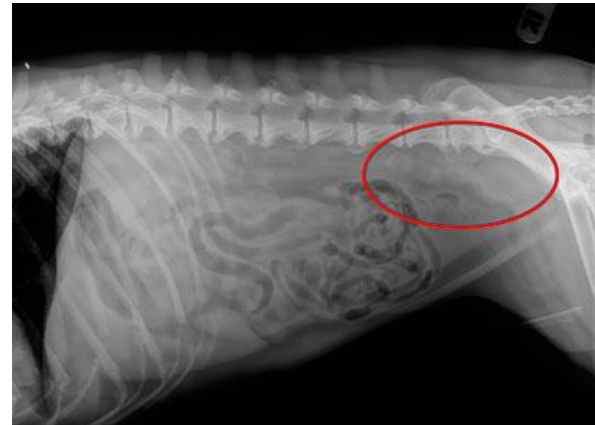


# KLINISCHE HINWEIS

- die Untersuchung der Lymphknoten ist ein wichtiger Teil der klinischen Diagnostik
- oberflächlich gelegene Lymphknoten kann man im Rahmen der körperlichen Untersuchung mit den Fingern palpieren - damit lassen sich Lymphknotenschwellungen feststellen
- tiefer gelegene Lymphknoten stellt man mithilfe bildgebender Verfahren (Sonografie, CT, MRT) dar



<https://dogtime.com/dog-health/56305-swollen-lymph-nodes-dogs-symptoms-causes-treatments>



*The greatly enlarged sublumbar lymph nodes are circled in this dog with cancer. See the close up below*



*The enlarged sublumbar lymph nodes are visible as the whitish areas under the red circle. This is from a dog with a cancer called adenocarcinoma.*

<https://www.lbah.com/feline/lymph-node-diseases/>

# KLINISCHE HINWEIS

## **PATHOLOGIE:**

### **1. Lymphadenitis:**

- die Entzündung eines Lymphknotens
- die in den meisten Fällen aufgrund einer akuten oder chronischen Infektion entsteht
- mit einer Lymphknotenschwellung verbunden



# KLINISCHE HINWEIS

## LYMPHOCENTRUM MANDIBULARE (Lc. mandibulare):

beim Pfd. :

- dessen Drusekatarrh bei junger Pferde charakteristisch

## DRUSE (*Coryza contagiosa equorum* oder *Adenitis equorum*):

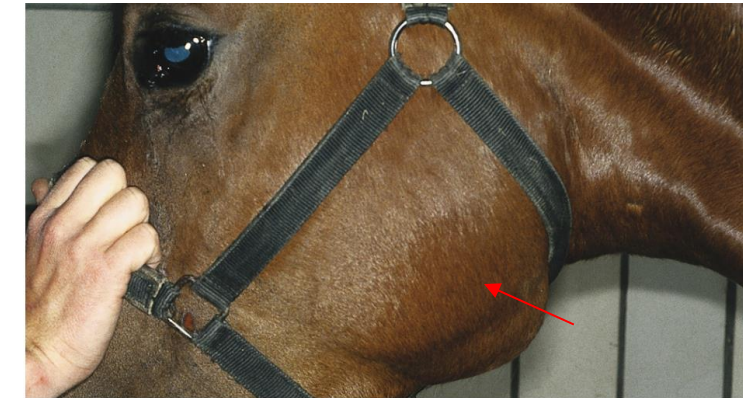
- ist eine Pferdekrankeheit
- sehr ansteckende Infektionskrankheit befällt die oberen Luftwege beim Pferd
- verursacht wird die Druse durch das *Streptococcus equi ssp. Equi*
- die Ansteckung erfolgt durch direkten Kontakt mit dem Maul- oder Nasenbereich eines infizierten Pferdes oder indirekt durch mit Bakterien behaftete Gegenstände

## KATARRH:

- eine Entzündung von Schleimhaut häufig der Atmungsorgane, die mit einer vermehrten Absonderung wässrigen oder schleimigen Sekretes verbunden ist
- kommt es häufig zu einer Vereiterung der zugehörigen *Lnn. mandibulares* und *Lnn. retropharyngei*
- bei Befall der Kehlganglymphknoten kann die Erkrankung auf den Luftsack übergreifen
- zu einer Vereiterung des Luftsacks führen
- durch Übergreifen auf die Lunge kann sich eine Lungenentzündung entwickeln.



<https://www.eqwo.net/druse-wie-kann-ich-mein-pferd-schuetzen/sonstiges/news/>

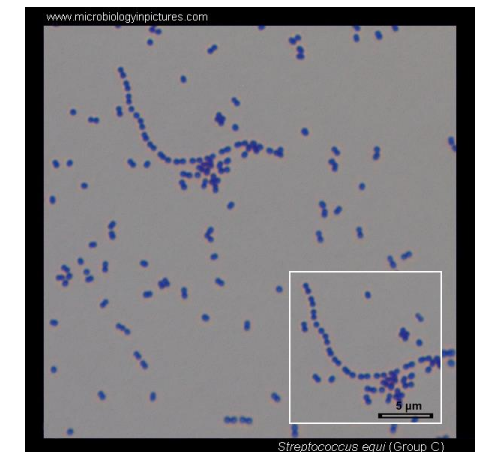


Das an Druse erkrankte Pferd zeigt eine deutliche Schwellung der Lymphknoten. Foto: <http://www.cavallo.de/pferde-medizin/kompodium-die-wichtigsten-krankheiten-beim-pferd/100-krankheiten-das-grosse-cavallo-symptom-lexikon.282031.233219.htm?skip=4> hochgeladen von Teresa

[https://www.meinbezirk.at/amstetten/c-lokales/pferdeseuche-druse-in-oesterreich\\_a880835](https://www.meinbezirk.at/amstetten/c-lokales/pferdeseuche-druse-in-oesterreich_a880835)

*Streptococcus equi* ssp. *zooepidemicus* micrograph. Smear made from a liquid culture (brain heart infusion medium, Oxoid)  
Morphology: Gram-positive cocci in chains.

<https://www.microbiologyinpictures.com/bacteria-micrographs/gram-stain/gram-positive/streptococcus-equi-group-c.html>



# KLINISCHE HINWEIS

## PATHOLOGIE:

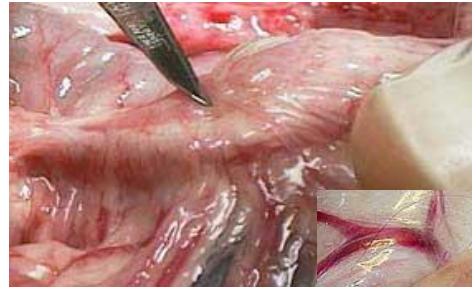
2. im Rahmen maligner Erkrankungen kommt es zur Bildung von:

a. Lymphknotenmetastasen:

- finden sich meist in den Lymphknoten, die dem vom Primärtumor betroffenen Organ am nächsten liegen, in denen die Lymphflüssigkeit des betroffenen Organs als erstes gefiltert wird - über diesen lymphatischen Weg gelangen die Tumorzellen in die Lymphknoten, wo sie verweilen und proliferieren- dieses Anwachsen der Krebszellen in den Lymphknoten führt auch zu einer Vergrößerung der betroffenen Lymphknoten

b. Lymphoma (Lymphdrüsenkrebs, früher auch *Lymphosarkom*):

- eine Gruppe von bösartigen Erkrankungen des lymphatischen Systems
- hierzu zählen Lymphknoten, Tonsillen, Milz und Knochenmark
- auch andere Organe können befallen werden
- beruht auf einer malignen Transformation von lymphatischen Zellen unterschiedlicher Reifungs- und Differenzierungsstufen



The scalpel blade is pointing to the mesenteric lymph node. This node is found at the center of the small intestine loops. This one is enlarged because this cat has [kidney cancer](#), which has spread to the mesenteric node.



Here is another enlarged mesenteric lymph node from a cat with intestinal cancer called lymphosarcoma

<https://www.lbah.com/feline/lymph-node-diseases/>



Lymphoma in a Golden Retriever

<https://www.dailydogdiscoveries.com/wp-content/uploads/2016/04/dog-enlarged-lymph-node-neck.png>

# KLINISCHE HINWEIS

## PATHOLOGIE:

### 3. die chirurgische Entfernung eines oder mehrerer Lymphknoten nennt man Lymphadenektomie

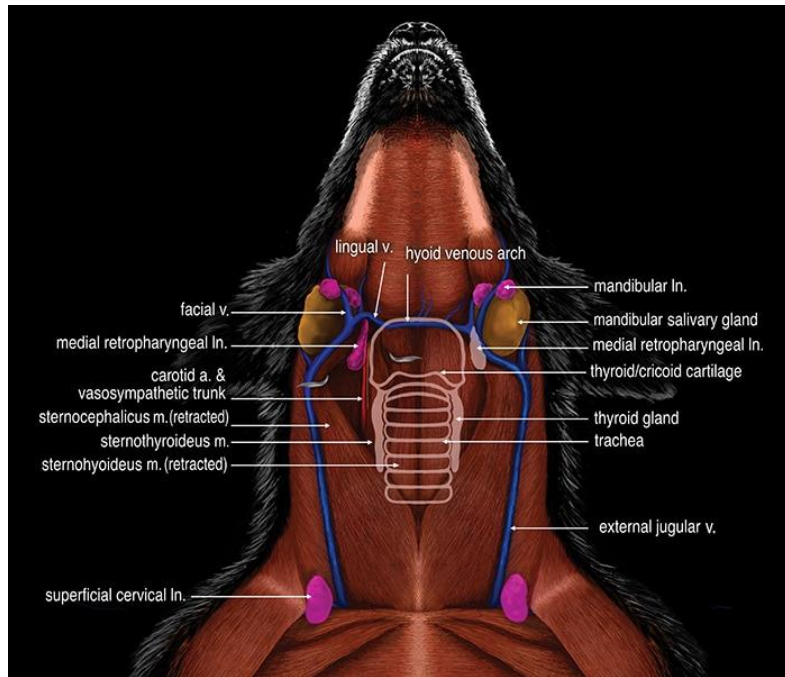


FIGURE 1. Illustration of the pertinent regional anatomy of the neck.

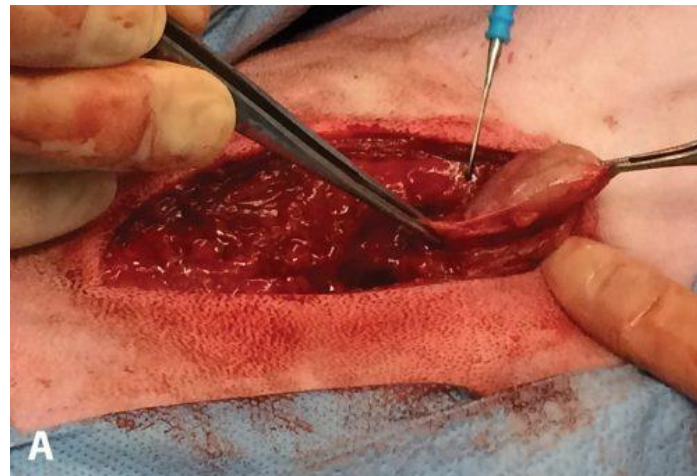


FIGURE 5. Removal of retropharyngeal lymph node (A); note the typical tubular or elongated shape (B) of this normal lymph node.

# DANKE FÜR IHRE AUFMERKSAMKEIT!



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