

The Neck and Forelimb

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Anatomy in Clay

Using Clay to learn

- Start with skeleton and add to it
- Origin, Insertion, Shape, Size, Muscle fibers
- Better recall
- Better understanding of biomechanics
- FUN 😊

Structures of the Cervical Spine

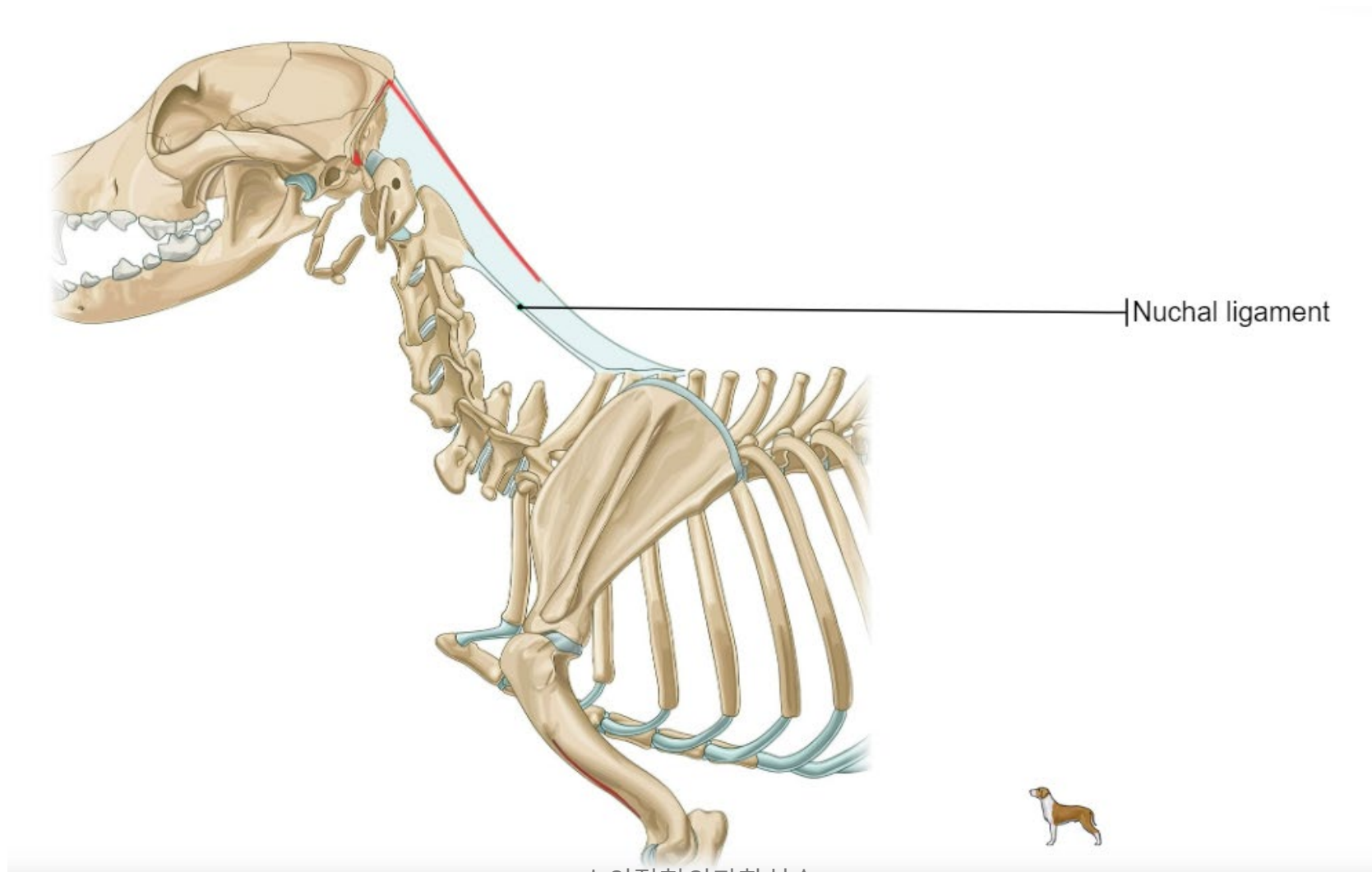
Epaxial Structures

- Nuchal ligament
- Median raphe

Nuchal Ligament

- **Origin:** First Three Thoracic Spinous Process
- **Insertion:** Dorsal Spinous Process of C2
- **Action:** Support head and prevent excessive ventroflexion

Nuchal Ligament



Muscles of the Thoracic Limb

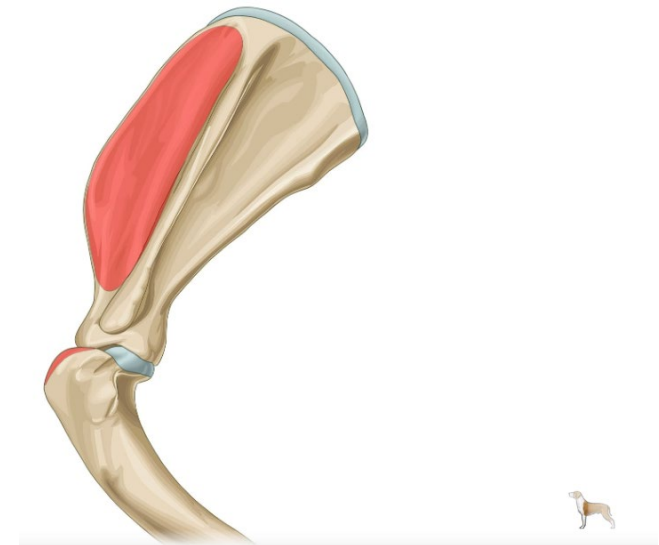
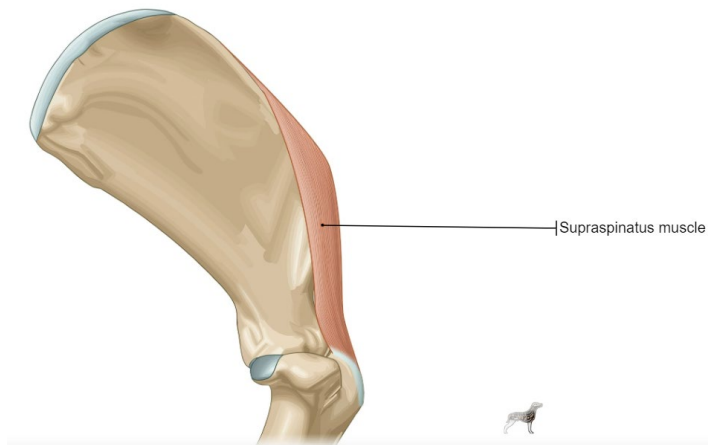
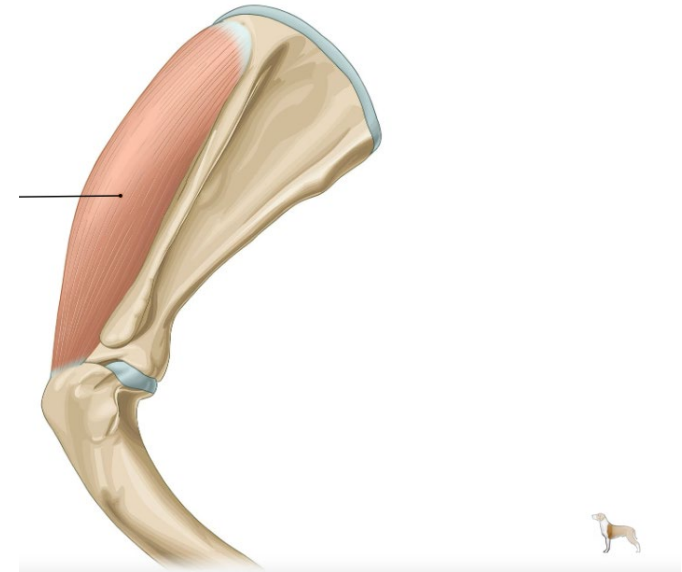
Intrinsic Muscles

- Lateral scapula and shoulder
- Caudal and cranial arm
- Cranio-Lateral forearm
- Caudo-Medial forearm

Lateral Scapula and Shoulder

Supraspinatus

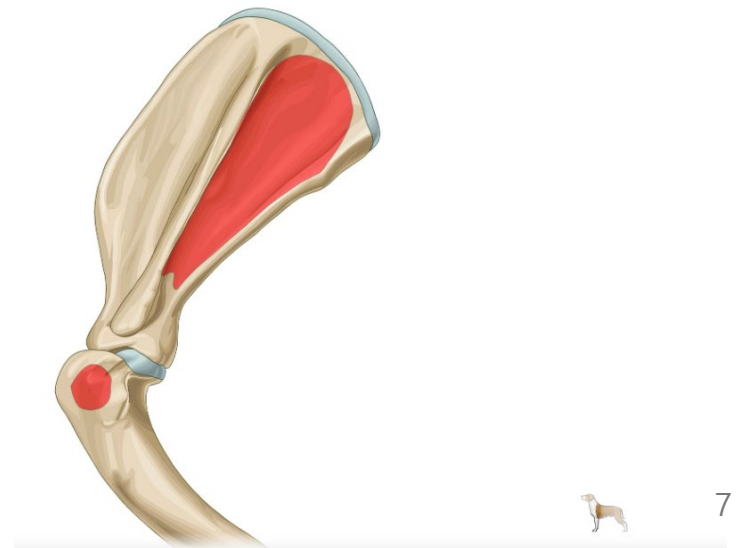
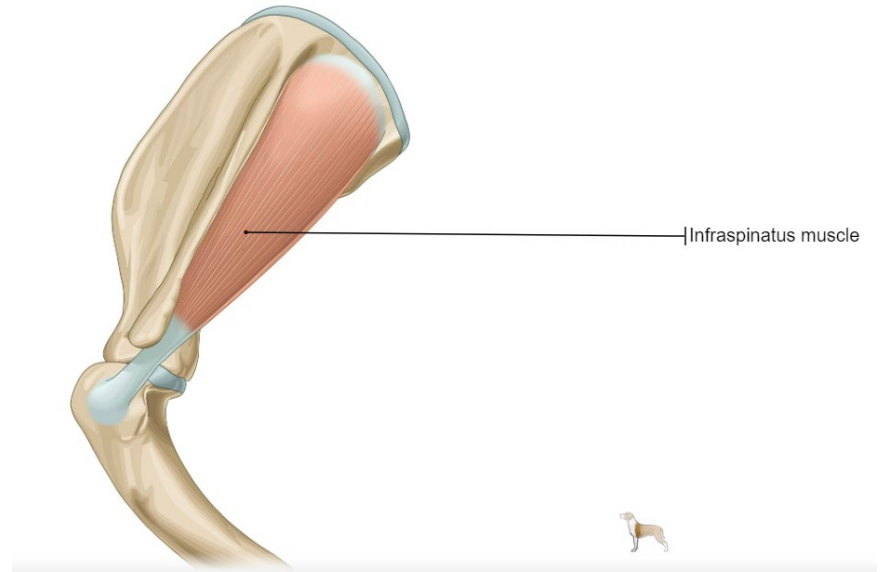
- **O:** Supraspinous fossa
- **I:** Greater Tubercle, anterior to the Infraspinatous
- **A:** Extend and stabilize the joint



Lateral Scapula and Shoulder

Infraspinatous

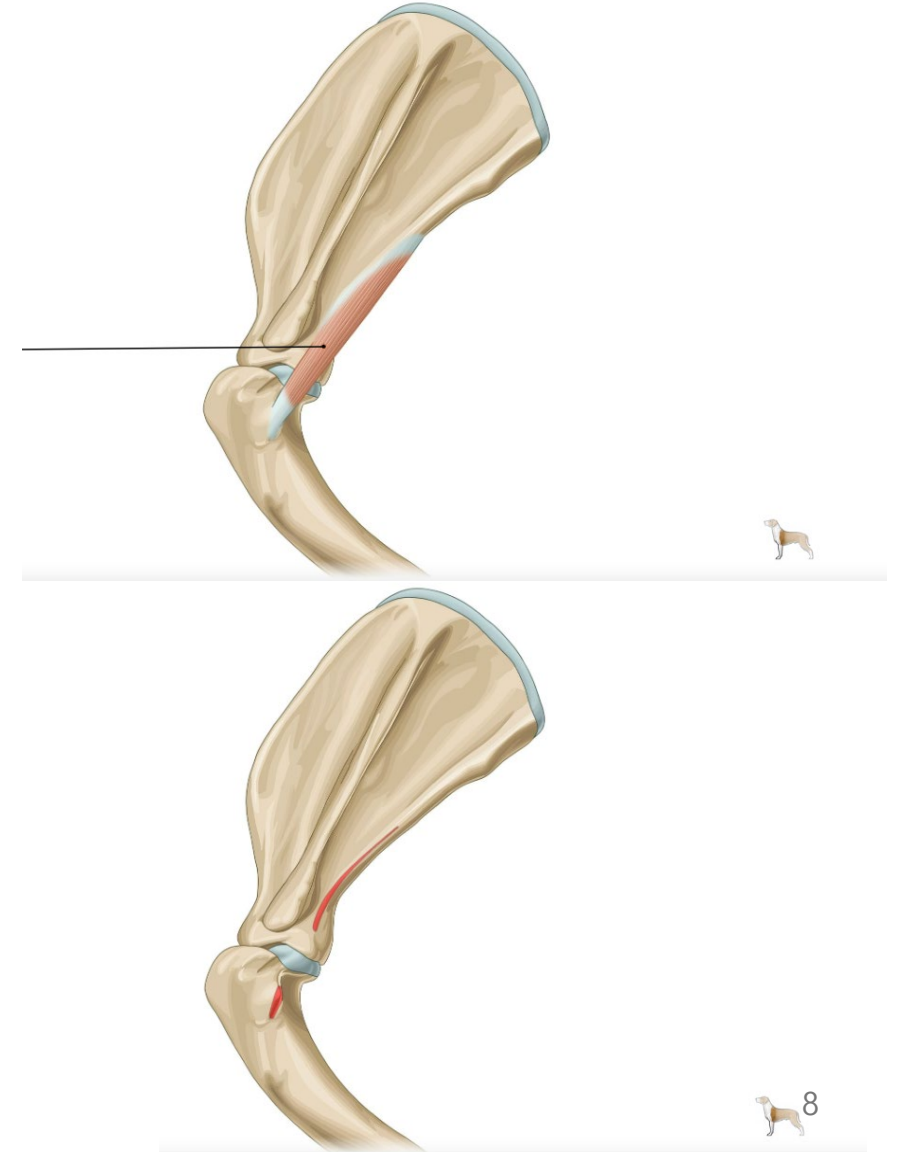
- **O:** Infraspinous fossa
- **I:** Lateral Greater Tubercle, between the Supraspinatus and Teres Minor tendons
- **A:** Extend or flex the joint
 - Abduct shoulder
 - Rotate arm laterally
 - Stabilize the joint



Lateral Scapula and Shoulder

Teres Minor

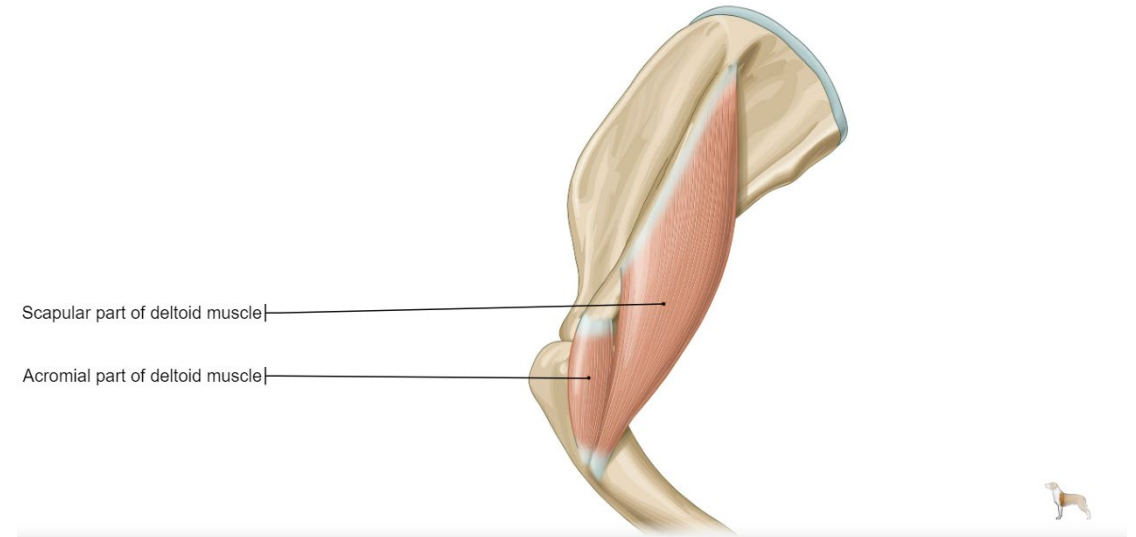
- **O:** Distal 1/3 of caudal border of scapula
- **I:** Greater Tubercle, caudal to infraspinatus tendon
- **A:** Flex shoulder and externally rotate arm



Lateral Scapula and Shoulder

Deltoides

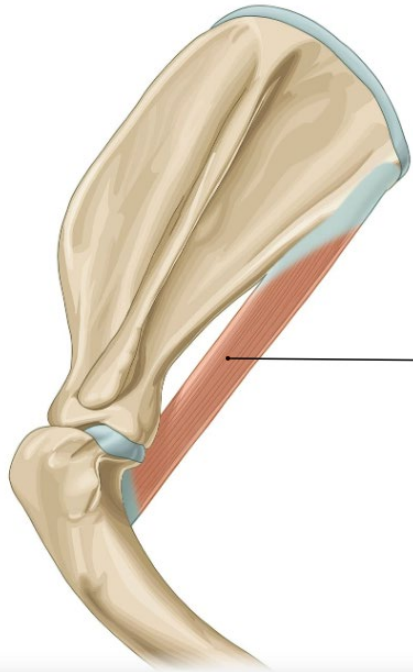
- **O: (2 heads)**
 1. Spine of Scapula, **Spinous Head**
 2. Acromion, **Acromial head**
- **I:** (both heads) Deltoid Tuberosity of Humerus
- **A:** Flex shoulder



Medial Scapula and Shoulder

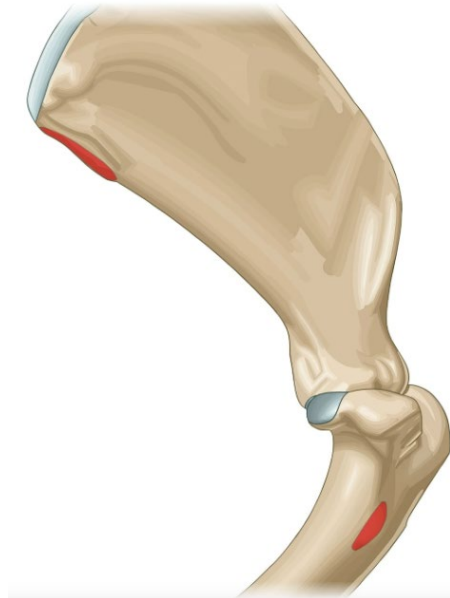
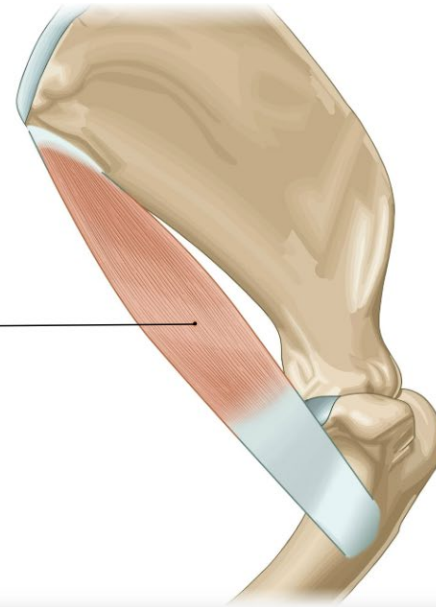
Teres Major

- **O:** Caudal angle and border of scapula
- **I:** Teres Major tuberosity of Humerus
- **A:** Flex shoulder, Rotate arm medially



|Teres major muscl

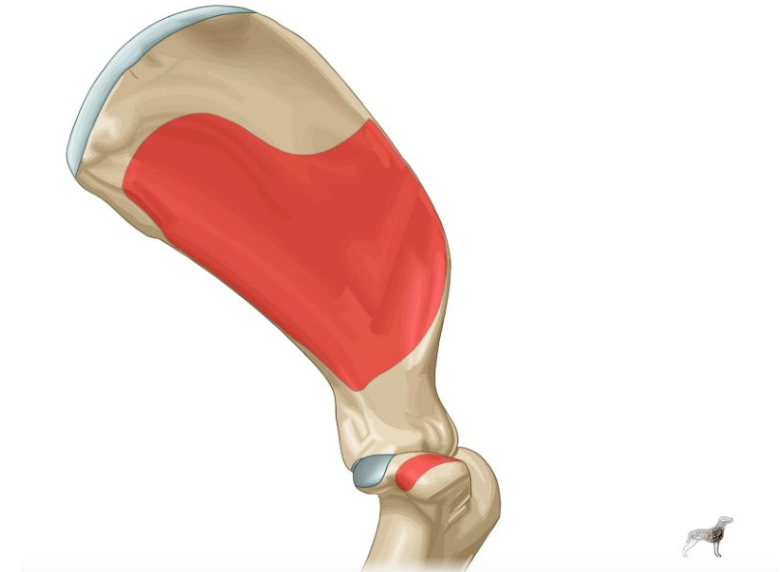
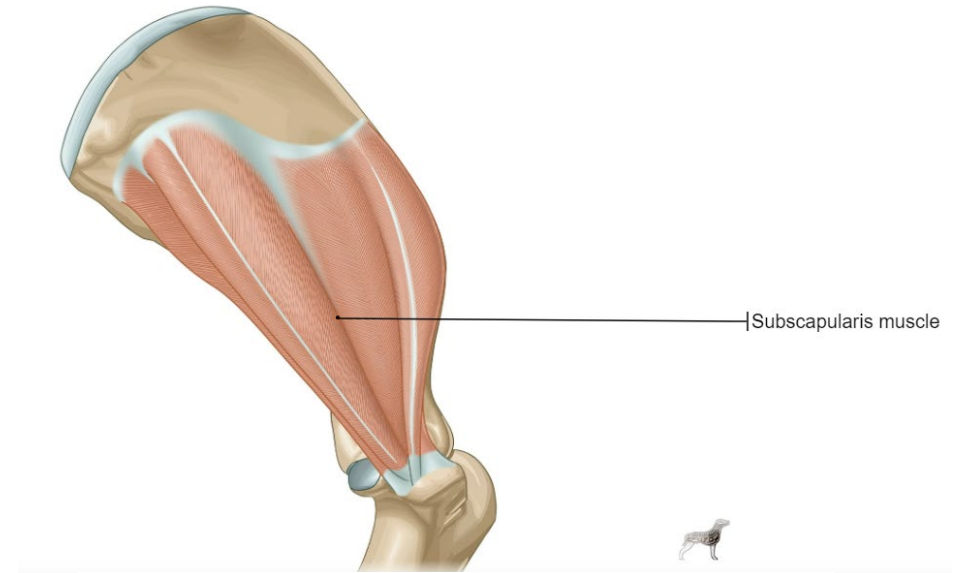
Teres major muscle|



Medial Scapula and Shoulder

Subscapularis

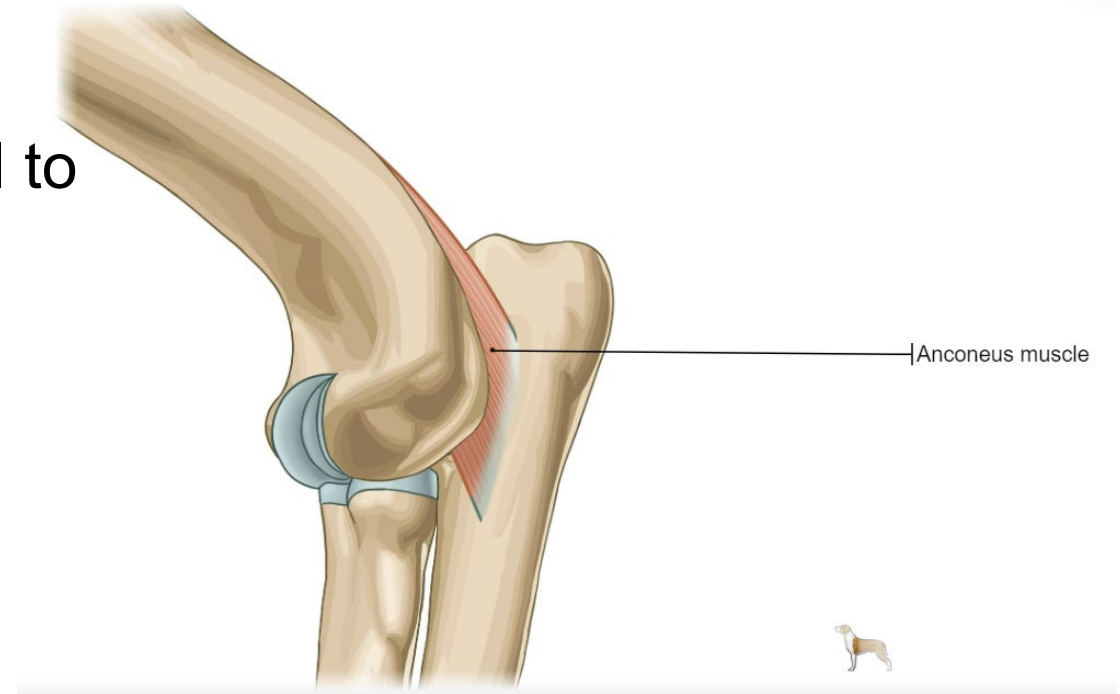
- **O:** Subscapular fossa of Scapula
- **I:** (via short strong tendon) minor(lesser) tubercle of the humerus
- **A**
 - Adduct and extend the shoulder
 - During flexion: aids in stabilizing the joint
 - Tendon functions as a medial collateral ligament



Caudal Arm

Anconeus

- **O:** Distal-Lateral Humerus, just proximal to elbow
- **I:** Lateral surface of proximal 1/8 of Ulna
- **A:** Extend elbow
- **Nerve:** Radial nerve



Caudal Arm

Triceps Brachii

- **Four Heads**
 - **Humeral Heads**
 - Medial Head
 - Accessory Head
 - Lateral Head
 - **Scapular Head**
 - Long Head

<Origins of Triceps' Three Humeral Heads>

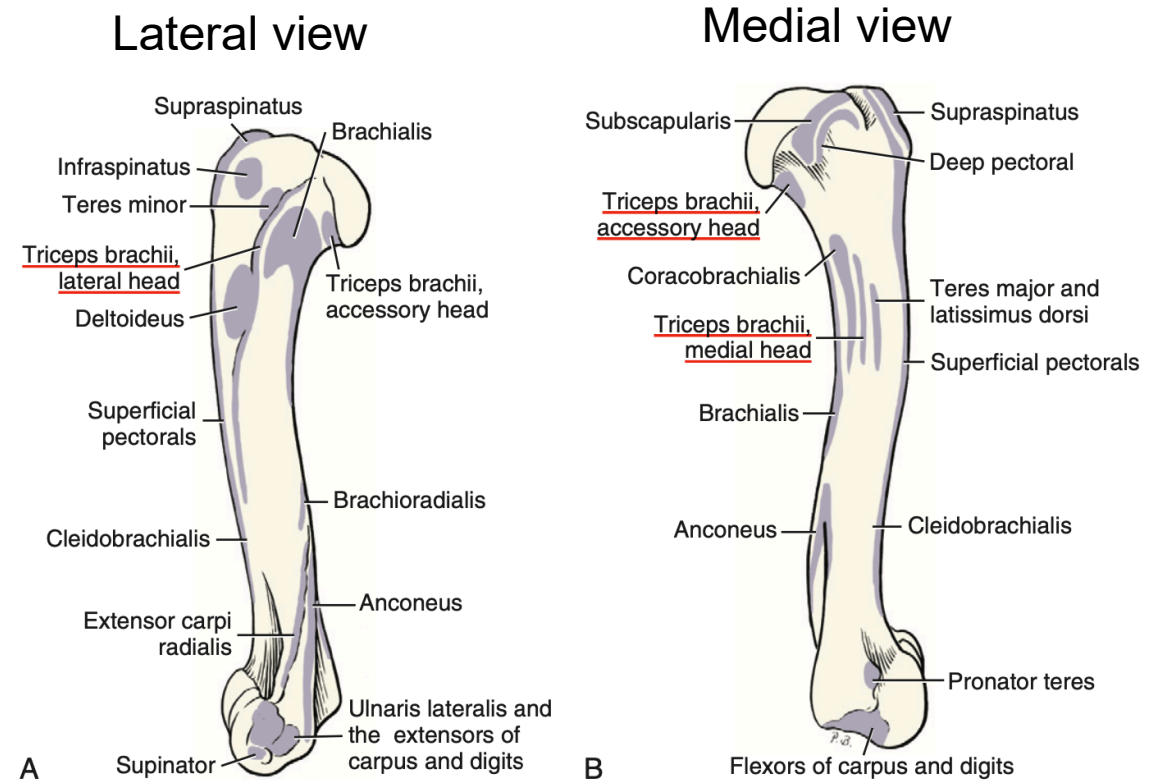


FIGURE 6-49 A, Left humerus, showing areas of muscle attachment, lateral aspect. **B,** Left humerus, showing areas of muscle attachment, medial aspect.

Caudal Arm

Triceps Brachii, Medial Head

- **O**: Medial surface of the Humerus
- **I**: Olecranon
- **A**: Extend elbow
- **N**: Radial n.

Triceps Brachii, Lateral Head

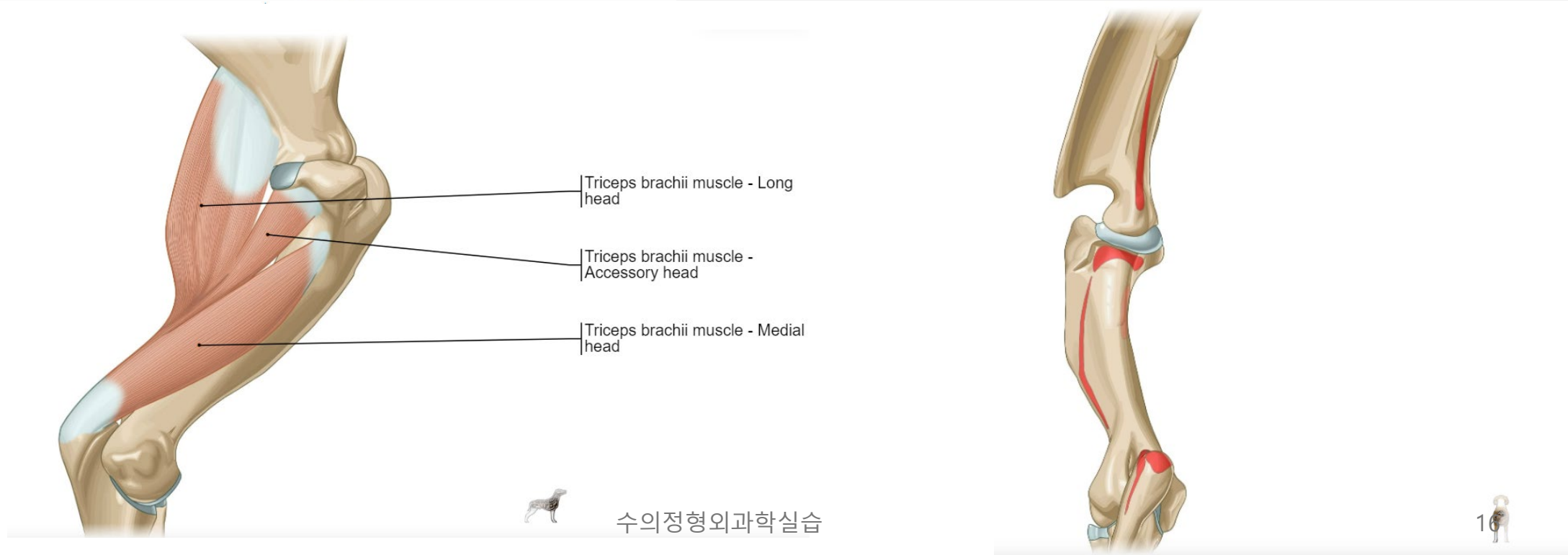
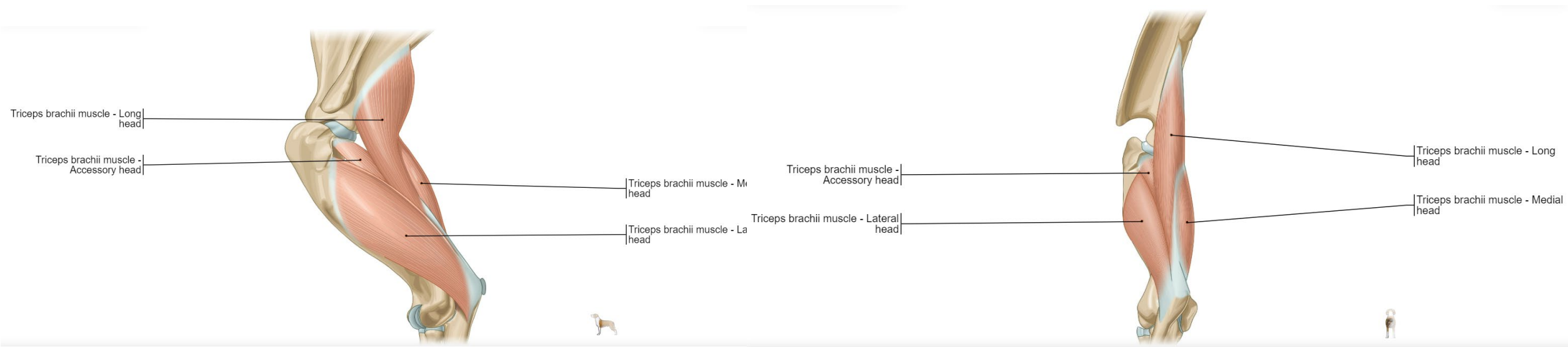
- **O**: Proximal Lateral Humerus
- **I**: Olecranon
- **A**: Extend elbow
- **N**: Radial n.

Triceps Brachii, Accessory Head

- **O**: Neck of Humerus
- **I**: Olecranon
- **A**: Extend elbow
- **N**: Radial n.

Triceps Brachii, Long Head

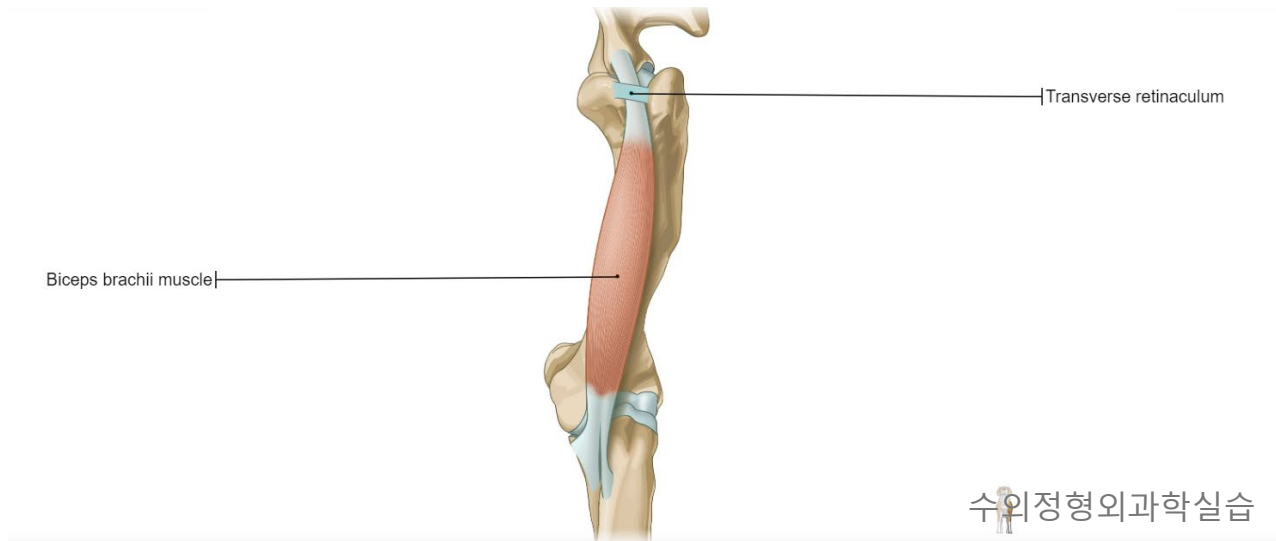
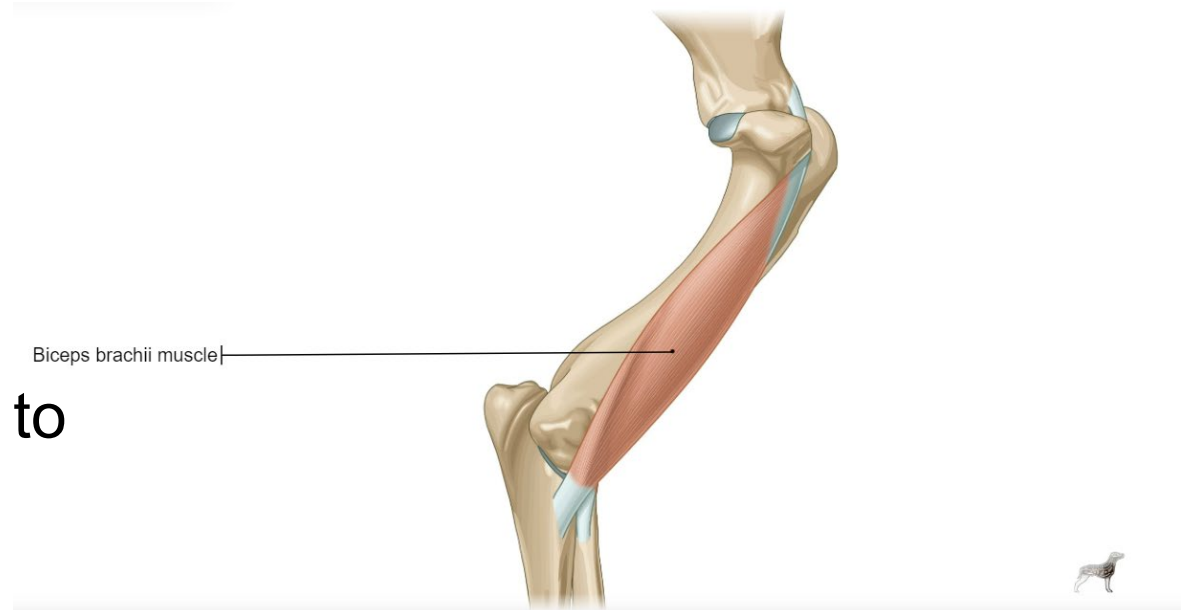
- **O**: Caudal border of Scapula
- **I**: Olecranon
- **A**: Extend elbow and flex shoulder
- **N**: Radial n.



Cranial Arm

Biceps Brachii

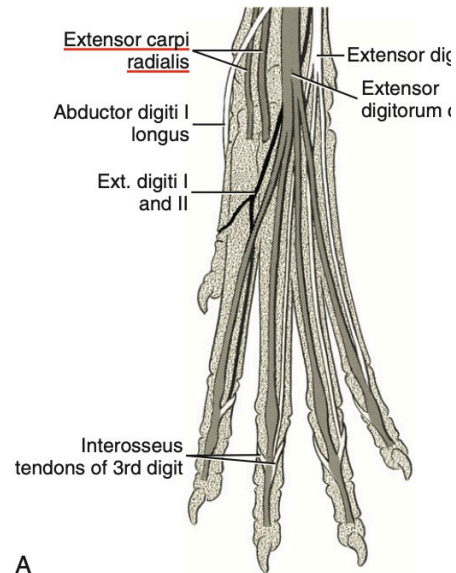
- **O:** Supraglenoid tubercle of Scapula
- **I:** Ulna and Radius, medially, just distal to elbow
- **A:** Flex elbow and extend shoulder



Cranio-Lateral Forearm

Extensor Carpi Radialis

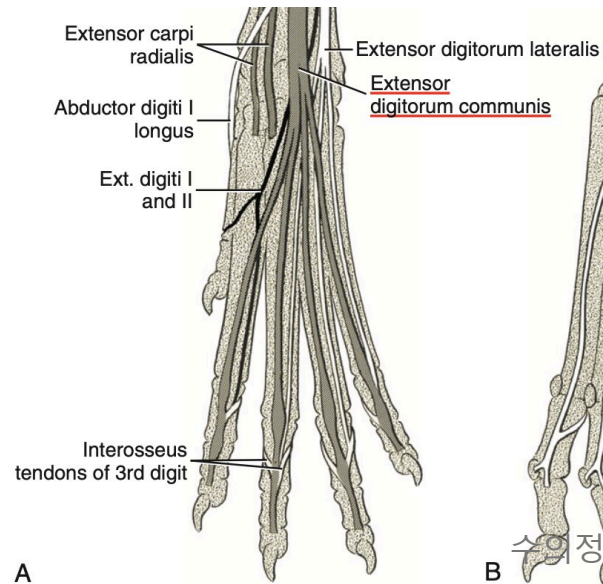
- **O:** Lateral epicondyle of Humerus
- **I:** Bases(Proximal ends) of metacarpals of 2 and 3
- **A:** Extend carpus
- **N:** Radial n.



Cranio-Lateral Forearm

Common Digital Extensor

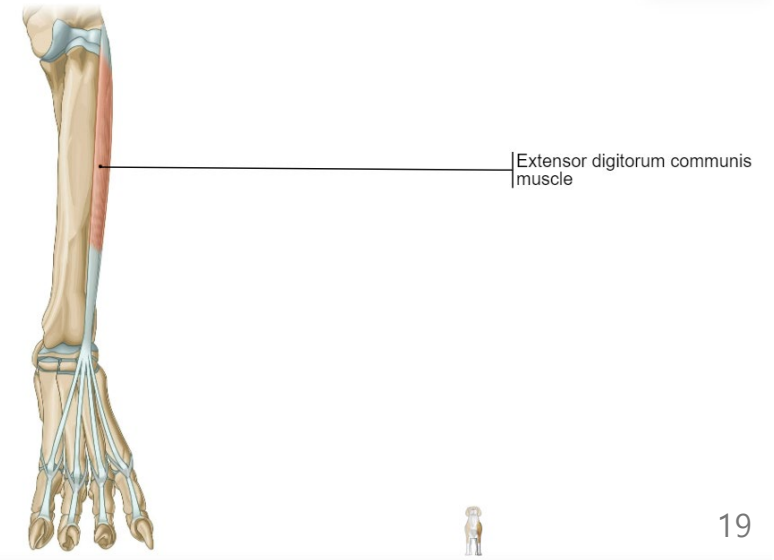
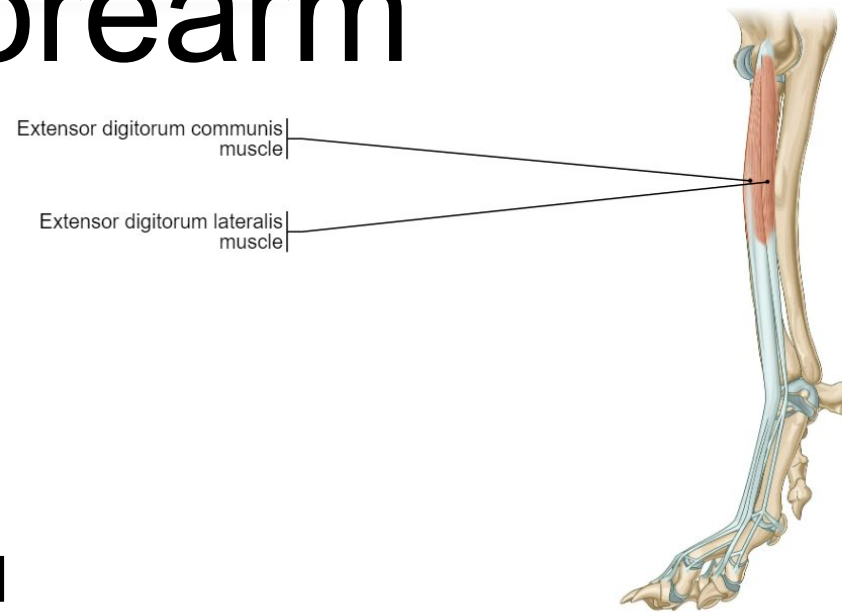
- **O:** Lateral epicondyle of Humerus
- **I:** Extensor processes of the distal phalanges of digits 2~5
- **A:** Extend joints of the four digits and carpus
- **N:** Radial n.



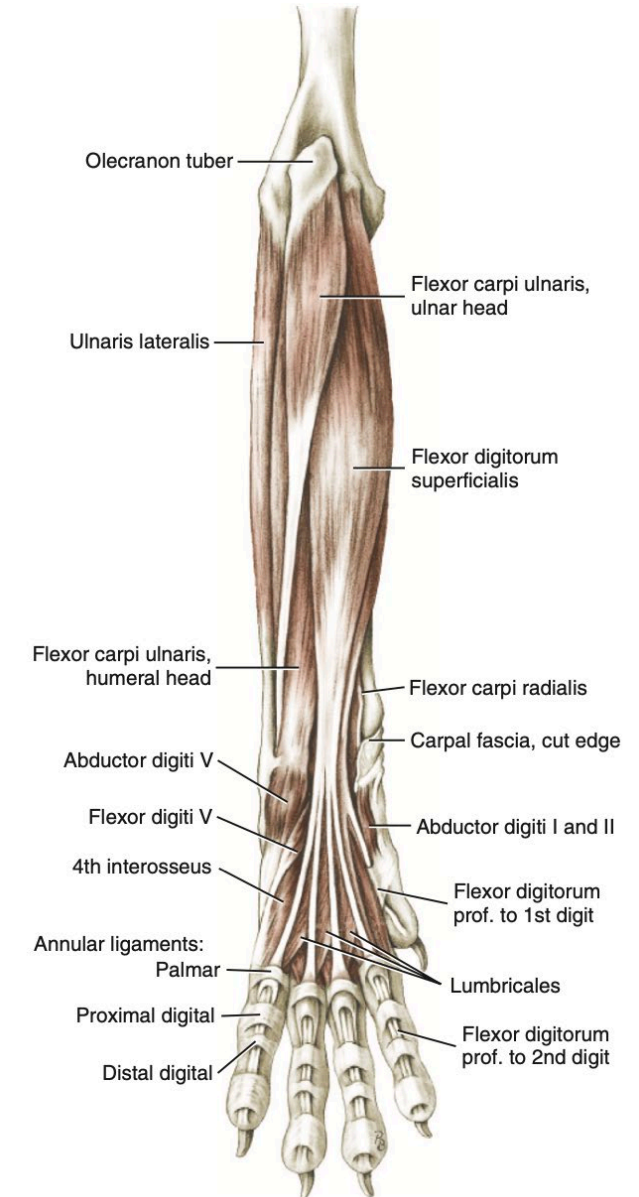
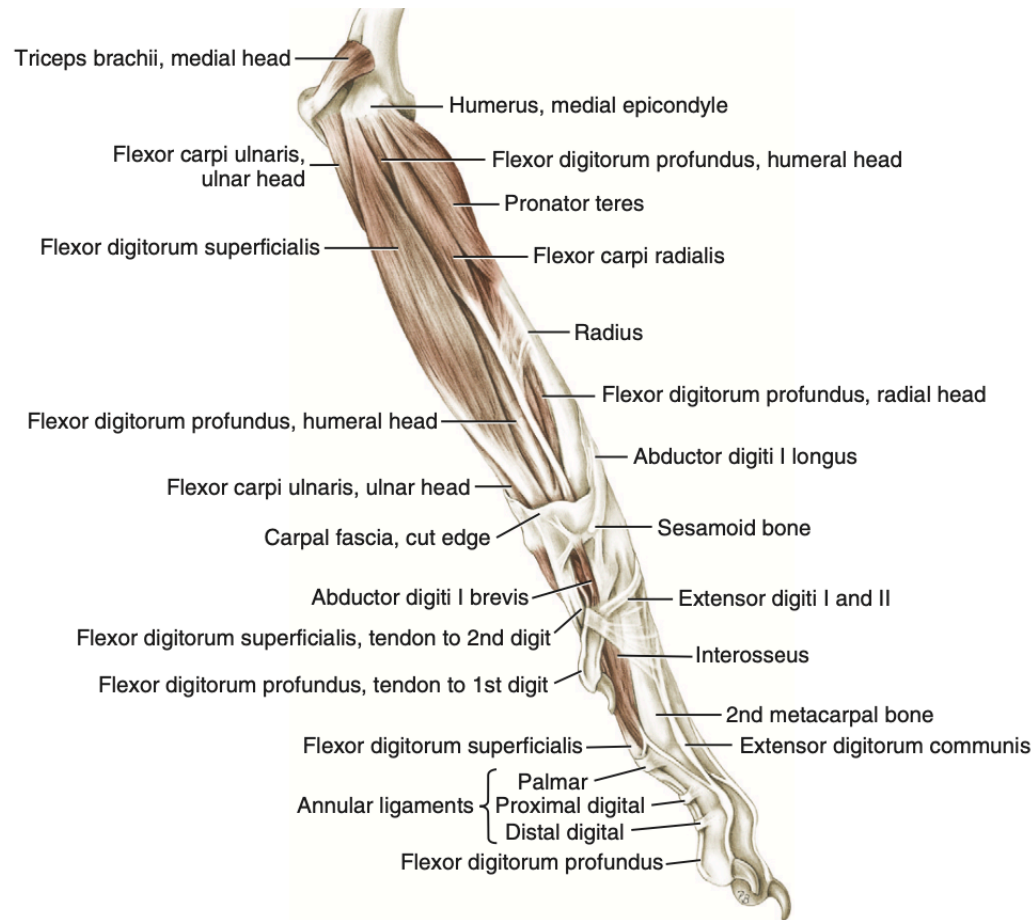
A

B

수의정형외과학실습



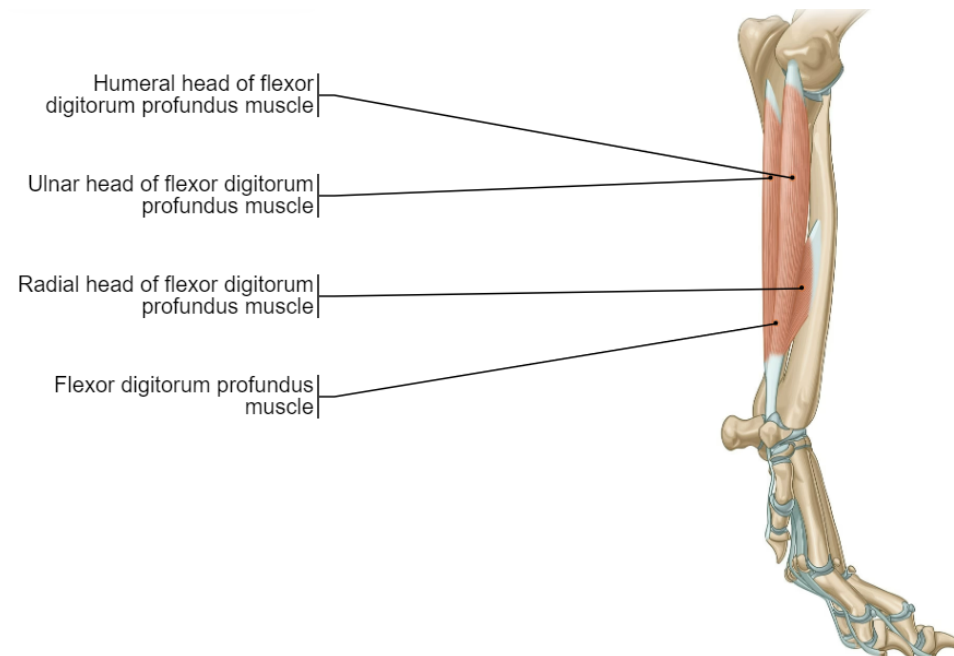
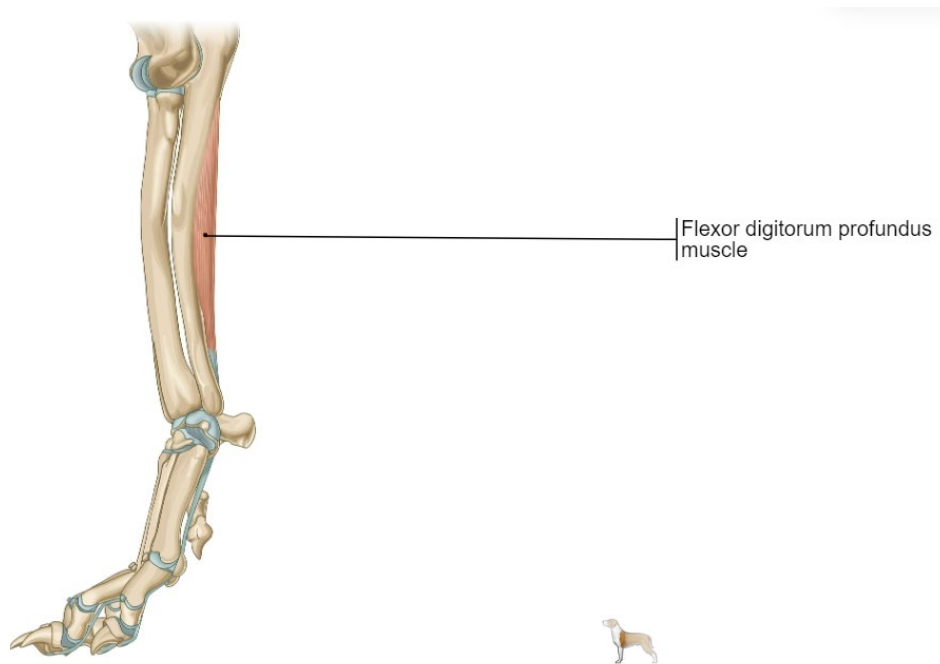
Caudo-Medial Forearm



Caudo-Medial Forearm

Deep Digital Flexor

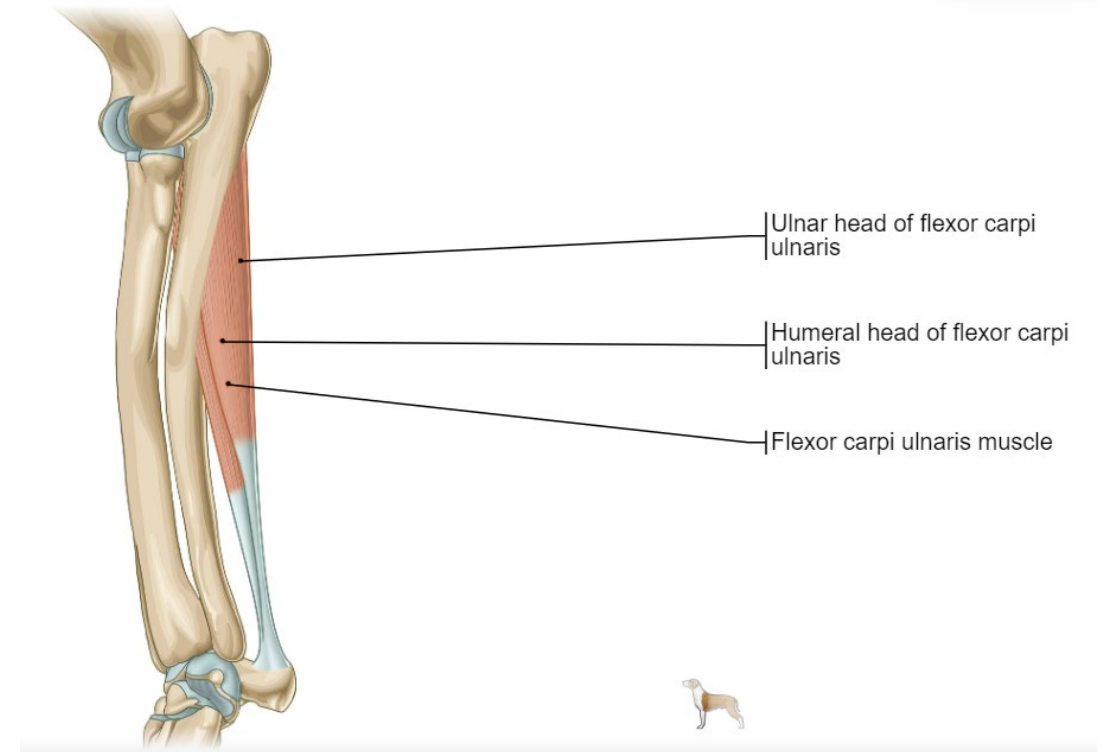
- **Three Heads of Origin**
 - **Humeral Head**
 - O: Medial epicondyle of Humerus
 - **Ulnar Head**
 - O: Proximal $\frac{3}{4}$ of caudal border of Ulna
 - **Radial Head**
 - O: Middle $\frac{1}{3}$ of medial border of Radius
- **I:** Palmar surface of base(proximal end) of distal phalanx of each digit
- **A:** Flex digits and carpus

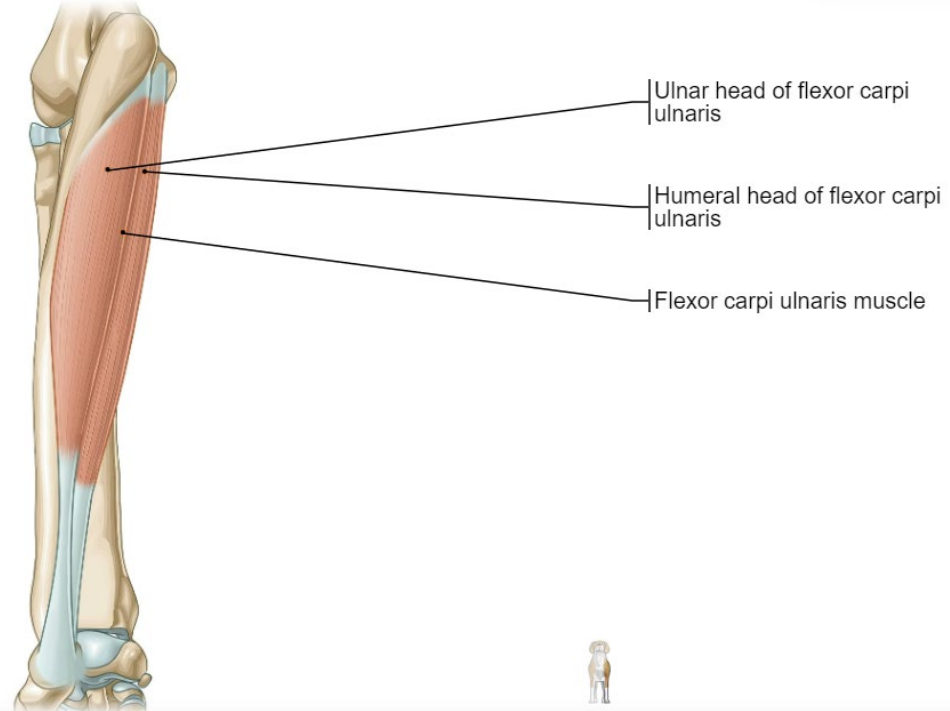
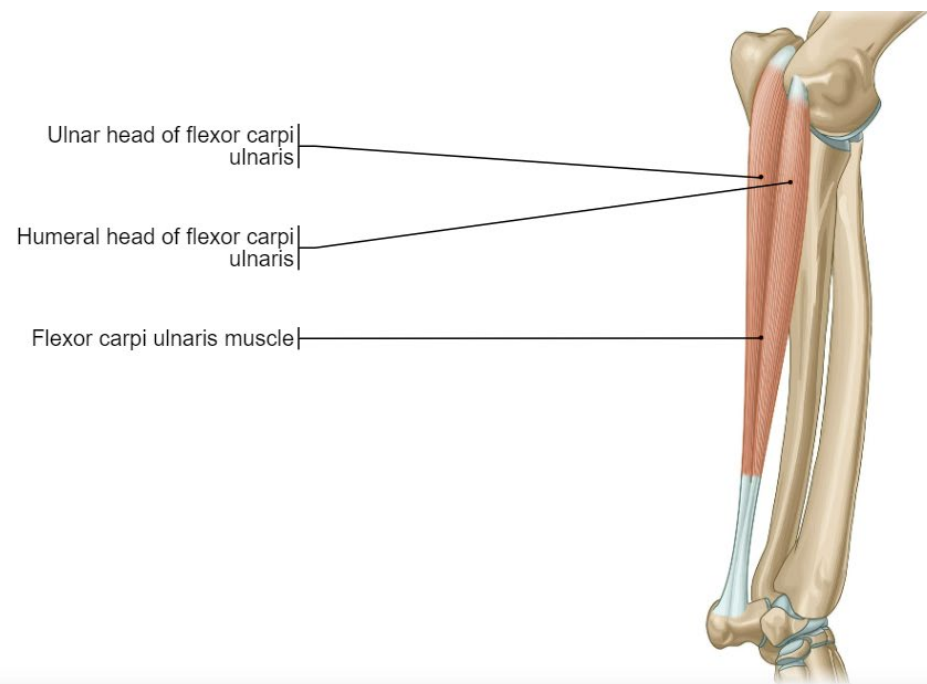


Caudo-Medial Forearm

Flexor Carpi Ulnaris

- **Two Heads of Origin**
 - **Ulnar Head**
 - **O:** Caudal border of medial surface of olecranon
 - **Humeral Head**
 - **O:** Medial epicondyle of Humerus
- **I:** Accessory Carpal bone
- **A:** Flex carpus

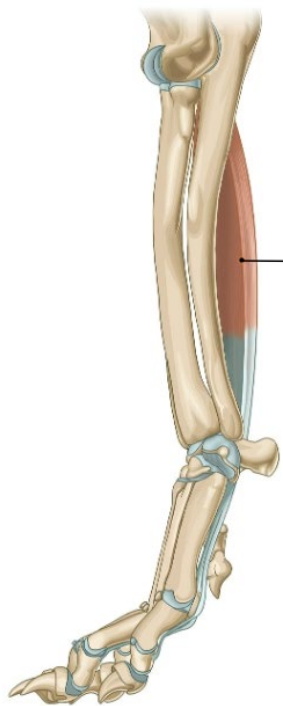




Caudo-Medial Forearm

Superficial Digital Flexor

- **O**: Medial epicondyle of Humerus
- **I**: Medial and lateral surfaces of the middle phalanges of digits 2~5 (wrapping around the Deep Digital Flexor tendon)
- **A**: Flex carpus, metacarpophalangeal, and proximal interphalangeal joints of digits 2~5



Proximal digital annular
ligament

Distal digital annular ligament

Flexor digitorum superficialis
muscle



Flexor digitorum superficialis
muscle

Flexor retinaculum



Tendons of the Toes

Digital extensor tendon



Deep digital flexor tendon

Superficial digital flexor tendon