## Evidence Based | Experience Driven

Reference for this material: Miller's Anatomy of the Dog, 5th Edition.

| Structure | Origin | Insertion | Action |
| :---: | :---: | :---: | :---: |
| Nuchal Ligament | First 3 Thoracic Spinous Processes | Dorsal Spinous Process of C2 | Support the head and prevent excessive ventroflexion |
| Supraspinatus <br> Work throughout the stance phase to stabilize joint for as long as the limb is load bearing | Supraspinous Fossa | Greater Tubercle, anterior to Infraspinatus <br> Via a short, thick tendon to the free edge of the Greater Tubercle. | Extend, advancement of the limb. <br> Stabilize the shoulder joint. <br> Both the medial and lateral glenohumeral ligaments are weak. The joint is stabilized mainly by muscles functioning as active collateral ligaments. |
| Infraspinatus <br> Antigravity ms | Infraspinous Fossa | Lateral Greater Tubercle, between the Supraspinatus and Teres Minor tendons. | Extend shoulder - during non-weight bearing assists supraspinatus because the tendon comes out so much in front near the supraspinatus. <br> Flex shoulder- during weight bearing, flexion <br> ABduct shoulder <br> Rotate arm laterally- rotation is distal to the joint; the humerus rotates laterally compared to the shoulder. Prevents medial rotation of the humerus, <br> Stabilizes the joint- inserts near the joint line, and functions as the lateral collateral ligament of the shoulder joint. |


| Structure | Origin | Insertion | Action |
| :---: | :---: | :---: | :---: |
| Teres Minor | Distal $1 / 3$ of caudal border of scapula | Greater Tubercle, caudal to Infraspinatus tendon (lateral humerus) <br> Proximal to deltoid tuberosity | Flex shoulder and externally rotate the humerus |
| Deltoideus Spinous Head Acromial Head | Spine of Scapula <br> Acromion | Deltoid Tuberosity of Humerus (both heads) | Flex Shoulder <br> ABduct humerus |
| Teres Major | Caudal angle and border of Scapula | Teres Major tuberosity of Humerus <br> Via a short, flat tendon <br> (proximal and medial humerus) | Flex Shoulder (draws humerus caudally) <br> ADduction <br> Rotate arm medially (internal rotation of humerus ) |
| Subscapularis | Subscapular Fossa of scapula | Minor tubercle of the humerus via thick, short strong tendon <br> This tendon unites intimately with the joint capsule of the shoulder | ADduct limb <br> Extend shoulder <br> Internal rotation (medial) <br> Stabilizes the joint during flexion <br> The tendon functions as a medial collateral ligament of shoulder joint |
| Anconeus | Distal-lateral Humerus, just proximal to elbow | Proximolateral ulna | Extend elbow (tenses antebrachial fascia) |



| Radial Head | Middle 1/3 of medial border of Radius |  |  |
| :---: | :---: | :---: | :---: |
| Flexor Carpi Ulnaris |  |  |  |
| Ulnar Head |  |  |  |
|  | Caudal Border and medial surface of Olecranon | Two muscle bellies converge into a single tendon and insert on the Accessory carpal bone | Flex carpus <br> ABduction of the carpus |
| Humeral Head | Medial epicondyle of humerus |  |  |
| Superficial Digital Flexor | Medial epicondyle of the | Medial and lateral surfaces of | Flexes carpus |
|  | Humerus | P2 digits 2-5 (wraps around | Flexes MC/P joints |
|  |  | the DDF) | Flexes proximal interphalangeal joints (P1-P2) of digits 2-5 |

Muscles of the Trunk \& Pelvis

| Structure | Origin | Insertion |  |
| :--- | :--- | :--- | :--- |
| Transversospinalis System |  | Mammillary, transverse <br> Srocess process | Spinous process 1 vertebrae <br> cranial to origin= short |
| Long Rotator | Spinous process 2 vertebrae <br> cranial to origin $=$ long | Rotate vertebrae |  |


| Longissimus | Crest and the medial surface of the wing of the ilium <br> Supraspinous ligament <br> Spines of the lumbar and thoracic vertebrae | Spinous, mamillary, and transverse process of the lumbar, thoracic vertebrae and ribs | Rotation, extension, and lateral flexion of the thoracic and lumbar spine |
| :---: | :---: | :---: | :---: |
| Iliocostalis thoracis et lumborum | Wing of the ilium (along w/longissimus) <br> And transverse processes of lumbar vertebrae | Transverse processes of the lumbar vertebrae and last 4 to 5 ribs | Lateral flexion of lumbar and thoracolumbar spine |
| Deep Pectoral | Ventral sternum \& Xiphoid | Lesser tubercle Greater tubercle Crest of the humerus | When weight bearing - draw trunk cranially and flex shoulder When not weight bearing- draw limb caudally and flex Shoulder |
| Superficial Pectoral | First 2-3 sternebrae, ventral median raphe | Crest of the greater tubercle | When weight bearing- prevents abduction <br> When non weight bearing - adduction |
| Brachiocephalicus | Clavicular tendon | Distal part: distal end of anterior humerus <br> Cervical part: cranial $1 / 2$ of the dorsal median raphe <br> Mastoid part: mastoid part of the temporal bone | Advance the limb <br> Extend the shoulder <br> Draw head and neck to the side |
| Serratus Ventralis | Dorso-medial 1/3 of the scapula | Transverse processes of the last 5 cervical vertebrae <br> First 7-8 ribs, ventral to middle | Supports the trunk and depresses the scapula |
| Latissimus Dorsi | Thoracolumbar fascia from the spinous processes of the lumbar and last 7-8 thoracic vertebrae | Proximo-medial humerus along with the Teres Major at the Teres Major tuberosity | Draw the forelimb caudally and flex the shoulder <br> Digging |
|  |  |  |  |


| Rhomboideus | Nuchal crest of the occipital bone Median Raphae Spinous processes of the first seven thoracic vertebrae | Dorsal border and adjacent surfaces of the scapula | Elevate the limb and draw the scapula against the chest |
| :---: | :---: | :---: | :---: |
| Trapezius <br> Cervical part <br> Thoracic part | Median Raphe of the neck <br> Supraspinous ligament T3-T9 | Spine of Scapula <br> Distal part of the spine remains free for omotransversarius. | Elevate the limb and draw it cranially, <br> ABduct the forelimb <br> Rotate the scapula |
| Omotransversarius | Distal spine of the scapula | Caudal end of the wing of the atlas and the transverse process of the axis | Draws the limb forward |
| Iliopsoas <br> Iliacus \& Psoas Major | Iliacus - cranioventral ilium <br> Psoas - Ventral bodies \& transverse processes of all lumbar and last 3-4 thoracic vertebrae | Less trochanter of the femur | Flexion of hip <br> External rotation of the hip <br> Flexion of the lumbar spine |
| Deep Gluteal | Body of ilium and ischial spine | Cranial aspect of the greater trochanter (distal to the insertion of the middle gluteal) | Extend the hip <br> Abduct the hip <br> Medially rotate the femur |
| Piriformis | Lateral surface of S3 and CD 1 | Dorsal greater trochanter (with middle glute) | Extend the hip |
| Middle Gluteal | Crest and gluteal surface of the ilium | Dorsal greater trochanter (with piriformis) | Extend the hip Medial rotation |
| Adductor | Entire pelvic symphysis, ventral pubis and ischium, symphyseal tendon of the pelvic symphysis | Entire lateral border of the caudal rough surface of the femur | Adduct the limb <br> Extend the hip |


| Pectineus | Body of the pubis from <br> the illiopubic eminence <br> to pubic tubercle | Distal end of the medial rough <br> surface of the femur | ADduct the limb |
| :--- | :--- | :--- | :--- |
| Sacrotuberous Ligament | Transverse process of <br> S3- CD1 | Lateral angle of the ischiatic <br> tuberosity <br> (just dorsal to where the <br> semitend originates) | No action - ligament |
| Superficial Gluteal | Lateral border of sacrum <br> and Cd1 and Proximal <br> $1 / 2$ of Sacrotub. Lig. | Third trochanter | Extend hip |

Muscles of the Pelvic Limb

| Structure | Origin | Insertion | Action |
| :--- | :--- | :--- | :--- |
| Quadriceps (Femoral Heads) | proximal end of the <br> cranio-medial femur <br> Vastus Medialis <br> Vastus Intermedius- <br> Vastus Lateralis <br> $1 / 4$ of femur proximal <br> Proximal lateral femur | Come together as a tendon to <br> the patella, then as a ligament <br> to the distal end of the tibial <br> tuberosity. | Extend the stifle |
| Rectus Femoris (Ilial Head) | ilium, cranial to the <br> acetabulum | Joins the other three heads by <br> common tendon to the patella, <br> then on to Tibial Tuberosity | Extend the Stifle Flex the Hip <br> Semimembranosus <br> Ischiatic Tuberosity |
| 2 insertions: <br> Distal Medial femur <br> Proximal end of tibia (broad <br> membranous attachment- Not a <br> small tendinous attachment) | Extend the Hip (cranial head) <br> EXTEND STIFLE |  |  |


| Semitendinosus | Ischiatic tuberosity | Medial surface of the body of the tibia via a prominent tendon and Tuber calcanei via the crural fascia | Extend the hip <br> Flex the stifle <br> Extends tarsus |
| :---: | :---: | :---: | :---: |
| Gracilis | Pubic Symphysis | Cranial border of the tibia, and with the Semitendinosus, the Tuber Calcaneus | Adduct the limb <br> Flex the stifle <br> Extend the Hip <br> Extend Tarsus |
| Tensor Fascia Latae | Tuber Coxae and adjacent ilium | Lateral Femoral Fascia | Tense the femoral fascia <br> Flexes the Hip <br> Extends the Stifle <br> ABducts the limb |
| Sartorius <br> Cranial Head <br> Caudal Head | Iliac Crest and cranial ventral iliac spine <br> Tuber coxae | Patella, with the Quadriceps <br> Cranial border of the Tibia with the Gracilis Muscle | Flex the Hip (both heads) <br> Cranial - also extends the stifle <br> Caudal - also flexes the stifle |
| Biceps Femoris | Sacrotuberous ligament and ischiatic tuberosity | By the tensor fascia to the patella, patellar ligament, and cranial tibia; via crural fascia to the tuber calcaneus | Extend the hip; flex and extends the stifle; and extend the tarsus (b/c of the contribution to the calcaneal tendon |
| Long Digital Extensor | Extensor fossa of the femur | Extensor process of the distal phalanges of digits II-V | Flex the taurus and extend the digits at P3 |
| Peroneus Longus | Lateral condyle of Tibia, proximal end of Fibula | 4th tarsal bone, plantar aspect of base of the II-V MT | Flex tarsus and rotate dorsum of paw medially, so plantar surface faces lateral (pronation) (eversion) |
| Deep Digital Flexor | Caudal aspect of Proximal $2 / 3$ of Tibia and proximal $1 / 2$ of Fibula | Plantar surface of base of each of the distal phalanges | Extend Tarsus <br> Flex digits |


| Cranial Tibial | Lateral edge of Cranial <br> Tibial border | Plantar surface of base of MTs I <br> and II meets up with Peroneus <br> longus | And rotation the paw laterally (supination) (inversion) |
| :--- | :--- | :--- | :--- |
| Superficial Digital Flexor | Distal Caudal Femur | Tuber Calcaneus (with the <br> Calcaneal Tendon) and bases of <br> middle phalanges of digits II-V | Flex digits <br> Flension and fixation of the tarsus <br> Gastrocnemius |
| Medial and Lateral Femoral <br> Sesamoid bones | Proximal dorsal surface of Tuber <br> Calcaneus | Flex stifle; extend the tarsus |  |

