

Canine Muscle Origins, Insertions, Actions and Nerve Innervations

The purpose of this document is to provide students of canine anatomy a simple reference for muscular origins, insertions, actions and nerve innervations without having to search through the overwhelming verbiage that accompanies most canine anatomy texts. Miller's Anatomy of the Dog was the source material for this document so you can count on its accuracy.

Students of canine kinesiology will find this document a helpful study guide. At the end of this document you will find the muscles grouped together in common actions and in future documents I will include agonist-antagonist relationships grouped together in common actions. This document has been created for students of the Ojai School of Massage Holistic Small Animal Massage program as a study guide for canine anatomy and locomotion. <http://www.ojaischoolofmassage.com>.

When we assess the body mechanics and posture of the dog we should be able to know which muscles have too much tone and which muscles are weak. Muscles move the bones, maintain proper skeletal alignment, put venous blood back to the heart and generate the majority of the body's heat. Any disruption of normal muscle tone whether it be over-toned or under-toned will cause a cascading set of imbalances in the functions of that muscle. When we are trying to correct posture and locomotion imbalances in the dog we should not just work at lengthening or relaxing the agonist but should also remember to strengthen the antagonist when it is necessary to bring the bones back into correct alignment. Strengthen and Lengthen. If the muscle is too tight we lengthen it through massage and stretching, if it is too weak we strengthen it through targeted exercise.

The fundamental way to assess why the dog is out of balance is to look at the relationships of muscles to bones and bone to bone. If there is a bony subluxation or misalignment that is not caused by an injury or genetic defect we should be able to trace the muscle or muscles that are acting upon that bone and determine whether there is too much tone in that muscle or too little tone. A weak muscle will not be able to maintain the bones relationship to other bones and a tight muscle will put pressure on

the joint its working on and drag it out of place or compress the joints or nerves that are coming from the vertebral column. Muscle weakness can have more than one causative factor. A muscle nerve might be compressed coming out of the spine, the nerve that innervates the muscle might be entrapped in scar tissue, the nerve innervating the muscle could have been damaged or cut, a misaligned bone might be rubbing on the nerve or an over-toned antagonist might be weakening the muscle. It is important for a massage therapist to check every possibility before forming our treatment plan.

If you see any mistakes in this document or have suggestions that would improve it please contact me at: osomhealth@gmail.com.

Muscles of Mastication

Masseter

O: Ventral border of the rostral half of the zygomatic arch.

I: Ventrolateral surface of the mandible and ventral margin of the masseteric fossa of the mandible.

A: Raises the mandible in closing the mouth.

N: Trigemini.

Temporalis

O: Parietal, temporal, frontal and occipital bones.

I: Medial surface of the condyle of the mandible just ventral to its articular surface.

A: Raises the mandible.

N: Trigemini.

Pterygoideus Medialis

O: Lateral surface of the pterygoid, palatine and sphenoid bones.

I: Caudal margin and slightly on the caudomedial surface of the mandible.

A: Raises the mandible.

N: Trigemini.

Digastricus

O: Paracondylar process of the occiput.

I: Ventromedial border of the mandible.

A: Opens the jaws.

N: Trigemini and facialis.

Muscles of the Neck

Splenius

O: From the end of the first and sometimes second thoracic spine and from the ligamentum nuchae in front of the first thoracic spine. Also form the medial dorsal raphe of the neck as far cranial as the first cervical vertebra. Final origin is by an aponeurosis from the cranial border of the thoracolumbar fascia.

I: Dorsal nuchal lines of the occipital bone and mastoid part of the temporal bone.

A: Extends and raises the neck. In unilateral action to draw the head and neck laterally. Fixation of the first thoracic vertebra.

N: Cervicales.

Longissimus cervicis

O: Continuation of the longissimus thoracis

I: First cervical vertebra.

A: Extends the neck; in unilateral action to raise the neck obliquely and turn it to one side.

N: Dorsal branches of the thoracic nerves.

Semispinalis Cervicis

O: Arises from the tendon of the most cranial thoracic segment of the semispinalis thoracis and from the cranial border of the first thoracic spine.

I: On the spinous processes of the fifth to second cervical vertebrae.

A: To fix the thoracic vertebral column and to raise the neck.

N: Medial branch of the dorsal branches of the cervical and thoracic nerves.

Semispinalis Capitis

O: First five thoracic vertebrae and last cervical vertebrae.

I: Occipital ridge.

A: Raises the head and neck and in unilateral action to flex the head and neck laterally.

N: Dorsal branches of the cervicales.

Biventer Cervicis

O: Transverse processes of the fourth through second thoracic vertebrae.

I: Occipital protuberance.

A: Raises the head and neck, in unilateral action to flex the head and neck laterally.

N: Dorsal branches of the cervicales.

Complexus

O: Caudal articular processes of the first thoracic to the third cervical vertebrae.

I: Dorsal nuchal line.

A: Raises the head and neck, in unilateral action to flex the head and neck laterally.

N: Dorsal branches of the cervicales.

Scalenus

O: Cranial border of the first rib.

I: Transverse processes of the seventh cervical vertebra and wing like process of the sixth cervical vertebra.

A: Draws the neck downward. In unilateral action, to bend the neck sideward. When the neck is fixed, the supracostal part can act in inspiration.

N: Rami ventrales of the cervicales and thoracales nerve.

Longus Capitis

O: Arises from caudal branches of the transverse processes of the sixth to second cervical vertebrae.

I: On the muscular tubercles of the basioccipital between the tympanic bullae.

A: Flexes the atlanto-occipital joint and to draw the neck downward.

N: Rami ventrales of the cervicales nerve.

Longus Colli

O: On the convex ventral surfaces of the first six thoracic vertebrae.

I: Ventral border on the wing of the sixth cervical vertebra, as well as on the transverse process of the seventh cervical vertebra.

A: Draws the neck downward.

N: Rami ventrales of the cervicales nerve.

Rectus Capitis Centralis

O: Ventral arch of the atlas.

I: Basioccipital bone.

A: Flexion of the atlanto-occipital joint.

N: Ramus ventralis of the cervicales.

Multifidus Lumborum

O: Articular processes of the sacrum, first caudal vertebra and from the mamillary processes of the seventh lumbar vertebrae to the twelfth thoracic vertebra.

I: Laterally on the ends of the spinous processes of the sixth lumbar to the ninth thoracic vertebra.

A: Fixes the vertebral column especially in bilateral action.

N: Medial branches of the rami dorsales in the lumbar, thoracic and cervical regions.

Multifidus Thoracis

O: It arises by nine distinctly isolated portions on the mamillary and transverse processes of the eleventh to the third thoracic vertebra.

I: Spinous processes of the eighth thoracic to the seventh cervical vertebra.

A: Fixes the vertebral column especially in unilateral action.

N: Medial branches of the rami dorsales in the lumbar, thoracic and cervical regions.

Obliquus Capitis Caudalis

O: Arises along the entire spinous process and the caudal articular process of the axis.

I: On the border of the wing of the atlas near the alar notch.

A: Unilateral: rotation of the atlas and thus the head on the axis; bilateral: fixation of the atlantoaxial joint.

N: Rami dorsales of the cervicales 1 and 2 nerve.

Obliquus Capitis Cranialis

O: Lateroventral surface and lateral border of the wing of the atlas.

I: Dorsal nuchal line.

A: Extension of the atlanto-occipital joint.

N: Cervicalis.

Sternohyoideus

O: Deep surface of the manubrium sterni and the cranial edge of the first costal cartilage.

I: Basihyoid bone.

A: Pulls the basihyoid bone and tongue caudally.

N: Cervicales.

Muscles of the Thoracic Trunk

Note: The dorsal trunk musculature, associated with the vertebral column and ribs, may be divided into three longitudinal muscle masses, each comprising many overlapping fascicles. The muscles act as extensors of the vertebral column and also produce lateral movements of

the trunk when acting only on one side. On the lateral aspect is the iliocostalis system, intermediately, the longissimus system, and deep medially the transversospinalis system. The muscles in each system are as follows:

Iliocostalis System: iliocostalis lumborum and iliocostalis thoracis.

Longissimus System: Longissimus thoracis, longissimus lumborum, longissimus cervicis, longissimus capitis, and longissimus atlantis.

Transversospinalis System: Semispinalis thoracis, semispinalis cervicis, semispinalis capitis, biventer cervicis, complexus, multifidus lumborum, multifidus thoracis, multifidus cervicis, rotatores longi, rotatores brevis, interspinales, intertransversarii lumborum, intertransversarii cervicis, intertransversarii dorsales cervicis, intertransversarii intermedii cervicis, intertransversarii ventralis cervicis, rectus capitus dorsalis major, rectus capitus dorsalis intermedius, rectus capitus dorsalis minor, obliquus capitus caudalis, and obliquus capitus cranialis.

Serratus Dorsalis Caudalis

O: Thoracolumbar fascia.

I: Caudal border of the eleventh, twelfth and thirteenth ribs.

A: Draws the last three or four ribs caudally for expiration

N: Intercostalis.

Serratus Dorsalis Cranialis

O: The thoracolumbar fascia and spines of the first six to eighth thoracic vertebra.

I: Cranial border and lateral surfaces of ribs two to ten.

A: Lift the ribs for inspiration.

N: Intercostales.

Longissimus Thoracis

O: Iliac crest to the last cervical vertebra.

I: All thoracic ribs.

A: Extension of the vertebral column. Raising of the cranial portion of the body from the pelvis, sacrum, and loin; in conjunction with the other muscles, fixation of the vertebral column; deflection of the back by fixation of the cervicothoracic junction; sudden raising of the caudal portion of the body; which is initiated by means of the rear extremities.

N: Dorsal branches of the thoracic nerve.

Intercostalis Externi

O: Caudal border of each rib.

I: Run caudoventrally to the cranial border of the next rib.

A: Draws the ribs together.

N: Muscular branches of the intercostales nerves one through twelve.

Intercostalis Interni

O: Thoracic vertebral column

I: Distal ends of the ribs.

A: Draws the ribs together.

N: Intercostales.

Intercartilaginei Externi

O: Unseparated continuations of the intercostales externi.

I: Interchondral spaces.

A: Draws the ribs together.

N: Intercostales.

Intercartilaginei Interni

O: Continuation of the intercostalis interni.

I: Bridges several ribs.

A: Draws the ribs together.

N: Intercostales.

Subcostalis

O: Beneath the internal intercostal muscles at the vertebral ends of the ribs.

I: Bridges several ribs.

A: Draws the ribs together.

N: Intercostales

Semispinalis Thoracis

O: Fascia of Longissimus.

I: Spinous processes of the sixth thoracic to sixth cervical vertebra.

A: Fixes the vertebral column and raises the neck.

N: Medial branch of the dorsal branches of the cervical and thoracic nerves.

Rotatares Longi

O: Medial surface of the multifidus muscle.

I: From the transverse processes of the tenth to the first thoracic vertebrae.

A: Rotation of the greater cranial portion of the thoracic vertebral column about the longitudinal axis in unilateral action; otherwise, fixation.

N: Medial branches of the rami dorsales of the thoracic nerves.

Rotatares Brevis

O: Medial surface of the multifidus muscle.

I: Spinous processes of the first through tenth thoracic vertebrae.

A: Rotation of the greater cranial portion of the thoracic vertebral column about the longitudinal axis in unilateral action; otherwise, fixation.

N: Medial branches of the rami dorsales of the thoracic nerves

Muscles of the Lumbar Trunk

Longissimus Lumborum

O: Iliac crest and ventral surface of the ilium and spinous processes and supraspinous ligament.

I: Ends on accessory processes of the sixth to first lumbar vertebrae.

A: Extension of the vertebral column. Raising of the cranial portion of the body from the pelvis, sacrum, and loin; in conjunction with the other muscles, fixation of the vertebral column; deflection of the back by fixation of the cervicothoracic junction; sudden raising of the caudal portion of the body; which is initiated by means of the rear extremities.

N: Dorsal branches of the thoracic and lumbar nerves

Iliocostalis Lumborum

O: Pelvic surface of the wing of the ilium, iliac crest and intermuscular septum.

I: Tenth through thirteenth ribs.

A: Fixation of the vertebral column or lateral movement when only one side contracts; aids in expiration by pulling the ribs caudally.

N: Dorsal branches of the thoracales and lumbales.

Muscles of Inspiration

Levatores Costarum

O: Transverse processes of the first through twelfth thoracic vertebrae.

I: Cranial borders of the second through twelfth ribs.

A: Inspiration.

N: Intercostales one to twelve.

Rectus Thoracis

O: First rib, opposite the most ventral portion of the scalenus muscle.

I: Ventral ends of the second through fourth ribs.

A: Inspiration.

N: Lateral branch of the intercostales.

Diaphragm

O: Ventral bodies of the second through fourth lumbar vertebrae via the diaphragmatic tendon.

I: Costal arch of the rib cage.

A: Inspiration.

N: Phrenic.

Scalenus

O: Cranial border of the first rib.

I: Transverse processes of the seventh cervical vertebra and wing like process of the sixth cervical vertebra.

A: Draws the neck downward. In unilateral action, to bend the neck sideward. When the neck is fixed, the supracostal part can act in inspiration.

N: Rami ventrales of the cervicales and thoracales nerve.

Serratus Ventralis

O: Facies serrata of the scapula.

I: Transverse processes of the last five cervical vertebrae and on the first seven or eight ribs.

A: Support of the trunk, to carry the trunk forward and backward; inspiration; to carry the shoulder forward and backward with respect to the limb.

N: Cervicales and thoracicales nerves.

Muscles of Expiration

Transversus Thoracis

O: By an aponeurosis on the lateral internal surface of the sternum, from the second sternebra to the caudal end of the xiphoid process.

I: Second through seventh costal cartilages.

A: Expiration.

N: Intercostales.

Obliquus Externus Abdominis (Pars Costalis)

O: From the middle parts of the fourth to twelfth ribs and the adjacent trunk fascia.

I: Pubic symphyses and xiphoid process via the linea alba.

A: Along with other abdominal muscles, compression of the abdominal viscera. This action, known as abdominal press, aids in such vital functions as expiration, urination, defecation, and parturition. Flexion of the vertebral column when fellow muscles contract. Lateral bending of the vertebral column.

N: Lateral branches of the last eight or nine intercostales and the lateral branches of the costoabdominalis, iliohypogastricus, and ilioinguinalis.

Obliquus Externus Abdominis (Pars Lumbalis)

O: Last rib.

I: Into twelfth rib.

A: Along with other abdominal muscles, compression of the abdominal viscera. This action, known as abdominal press, aids in such vital functions as expiration, urination, defecation, and parturition. Flexion of the vertebral column when fellow muscles contract. Lateral bending of the vertebral column.

N: Lateral branches of the last eight or nine intercostales and the lateral branches of the costoabdominalis, iliohypogastricus, and ilioinguinalis.

Rectus Abdominis

O: From the sternum and costal cartilage.

I: Unites with the tendon of origin of the pectineus muscle and the prepubic tendon.

A: Along with other abdominal muscles, compression of the abdominal viscera. This action, known as abdominal press, aids in such vital functions as expiration, urination, defecation, and parturition. Flexion of the vertebral column when fellow muscles contract. Lateral bending of the vertebral column.

N: Medial branches of the intercostales and medial branches of the costoabdominalis, iliohypogstricus and ilioinguinalis.

Iliocostalis Lumborum

O: Pelvic surface of the wing of the ilium, iliac crest and intermuscular septum.

I: Tenth through thirteenth ribs.

A: Fixation of the vertebral column or lateral movement when only one side contracts; aids in expiration by pulling the ribs caudally.

N: Dorsal branches of the thoracales and lumbales.

Muscles of the Abdominal Wall

Obliquus Internus Abdominus

O: Tuber coxae.

I: Thirteenth rib and cartilage of the twelfth rib.

A: Compression and support of the abdominal viscera.

N: Medial branches of the last few intercostales and costoabdominalis, iliohypogastricus and ilioinguinalis nerves.

Transverse Abdominus

O: Eighth costal cartilage, last lumbar transverse process and tuber coxae.

I: On the inner surface of the rectus abdominus.

A: Compression and support of the abdominal viscera.

N: Medial branches of the last few intercostales and costoabdominalis, iliohypogastricus and ilioinguinalis nerves.

Cutaneus Trunci

O: Superficial gluteal fascia.

I: Axilla and on caudal border of deep pectoral muscle.

A: Shakes the skin to remove foreign bodies and increase heat production. It also tenses the skin when required. The preputial muscle draws the prepuce over the glans after erection. The supramammary muscle aids in support of the mammary glands and perhaps in milk ejection.

N: Efferent supply, lateral thoracic nerve, afferent supply, lateral thoracic and lateral branches of the intercostal nerves and the costoabdominalis, iliohypogastricus, ilioinguinalis and genitofemoralis.

Obliquus Internus Abdominus

O: From the lamina of the thoracolumbar fascia caudal to the last rib, mainly from the tuber coxae.

I: Costal cartilage, thirteenth rib and on the cartilage of the twelfth rib.

A: Compression and support of the abdominal viscera.

N: Medial branches of the last few intercostales and costoabdomianlis, iliohypogastricus and ilioinguinalis nerves.

Note: Look at the muscles of inspiration and expiration to complete the muscles of the abdominal wall.

Muscles of the Tail

Sacrocaudalis Dorsalis Lateralis

O: Continuation of the longissimus, fleshy from the aponeurosis of the longissimus and a tendinous origin from the mamillary processes of the first to sixth lumbar vertebra, the articular processes of the sacrum, and the mamillary processes of at least the first eight caudal vertebrae.

I: Mamillary processes of the fifth to last caudal vertebrae.

A: Extension or lifting of the tail, possibly also to move it to the side.

N: Branches of the plexus caudalis dorsalis.

Sacrocaudalis Dorsalis Medialis

O: Small processes that are dorsolateral to the caudal edge of the caudal vertebrae. Direct extension of the multifidus muscle.

I: Mamillary processes of the fifth through last caudal vertebrae.

A: Extension of the tail and possibly lateral flexion.

N: Branches of the plexus caudalis dorsalis.

Sacrocaudalis Ventralis Lateralis

O: Ventral surface of the body of the last lumbar vertebra and from the sacrum; the remainder arise from the ventral surfaces and roots of the transverse processes of the caudal vertebrae..

I: Ventral lateral tubercle of the proximal end of the sixth through last caudal vertebrae.

A: Flexion of the tail and occasionally lateral movement.

N: Branches of the plexus caudalis ventralis.

Sacrocaudalis Ventralis Medialis

O: Starting from the last sacral vertebra on the ventral surface and running from each vertebra to the next.

I: Ventrolateral process of each vertebra.

A: Flexion of the tail and occasionally, lateral movement.

N: Branches of the plexus caudalis ventralis.

Intertransversarius Dorsalis Caudalis

O: Dorsalsacral iliac ligament on the lateral part of the third caudal vertebra.

I: Transverse process of the fifth and sixth caudal vertebra.

A: With the intertransversarius ventralis caudalis, lateral flexion of the tail.

N: Branches of the plexus caudalis ventralis.

Intertransversarius Ventralis Caudalis

O: Third caudal vertebra.

I: Ventral surface of each caudal vertebra.

A: Lateral flexion of the tail.

N: Branches of the plexus caudalis ventralis.

Coccygeus

O: Ischiatic spine, cranial to the internal obturator muscle.

I: Transverse processes of the second to fifth caudal vertebrae.

A: Bilateral to press the tail against the anus and genital parts and, in conjunction with the depressors, to draw the tail between the rear legs. Unilateral, lateral flexion.

N: Ventral branches of the third sacral nerve.

Levator Ani

O: Medial edge of the shaft of the ilium on the inner surface of the ramus of the pubis and on the entire pubic symphysis.

I: On the hemal process of the seventh caudal vertebra.

A: Bilateral: to press the tail against the anus and genital parts, unilateral: to bring the tail cranially and laterally. The levatores ani, in combination with the levatores of the tail, cause the sharp angulation between the sixth and seventh caudal vertebrae which is characteristic for defecation: compression of the rectum.

N: Ventral branches of the third sacral and first caudal nerve.

Sublumbar Muscles

Psoas Minor

O: Tendinous fascia of the quadratus lumborum at the level of the last thoracic vertebrae and on the ventral surface of the last thoracic vertebra and on the first four or five lumbar vertebrae.

I: Arcuate line as far as the iliopectineal eminence.

A: To steepen the pelvis, or to flex the lumbar part of the vertebral column.

N: Lateral branches of the rami ventrales of the lumbar nerves.

Iliopsoas

O: Transverse processes of the second and third lumbar vertebra and by means of the ventral aponeurosis to the third and fourth lumbar vertebrae, and finally on the ventral and lateral surfaces of the fourth to seventh lumbar vertebrae.

I: Along with the iliacus muscle to the lesser trochanter of the femur.

A: To draw the pelvic limb forward by flexion of the hip joint; when the femur is fixed in position, flexion and fixation of the vertebral column; when the leg is extended backward, it draws the trunk backward.

N: Branches of the rami ventrales of the lumbar nerve.

Quadratus Lumborum

O: Bodies of the last three thoracic vertebrae to the transverse processes of the lumbar vertebrae as far as the seventh lumbar vertebra.

I: Medial surface of the wing of the ilium between the articular surface and the caudal ventral iliac spine.

A: Fixation of the lumbar vertebral column.

N: Rami of the ventral branches of the lumbar nerves.

Rump Muscles

Tensor Fasciae Latae

O: Proximally to the tuber coxae and from the aponeurosis of the gluteus medius.

I: Over the biceps femoris to the patella.

A: Tension of the fascia lata and thus tension of the hip joint; extension of the stifle joint.

N: Gluteus cranialis.

Gluteus Superficialis

O: Gluteal fascia, tuber sacrale, caudal fascia, lateral border of the sacrum, first caudal vertebra, and half of the proximal part of the sacrotuberous ligament.

I: Trochanter tertius of the femur.

A: Extension of the hip joint.

N: Gluteus caudalis.

Gluteus Medius

O: Gluteal surface of the ilium, the iliac crest and from both angles of the ilium.

I: Greater trochanter of the femur.

A: Extension of the hip joint.

N: Gluteus cranialis.

Piriformis

O: Lateral surface of the third sacral and first caudal vertebrae.

I: Greater trochanter of the femur.

A: Extension of the hip joint.

N: Gluteus caudalis.

Gluteus Profundus

O: Shaft of the ilium near the ischiatic spine.

I: Greater trochanter of the femur.

A: Extension of the hip and abduction.

N: Gluteus cranialis.

Inner Pelvic Muscles

Obturator Internus

O: Medial to the obturator foramen internally and medial to the foramen on the pelvic surfaces of the rami of the pubis and ischium, and from the ischiatic arch.

I: Trochanteric fossa.

A: Lateral rotation of the hip joint.

N: Ischiadicus.

Gemelli

O: Outer surface of the ramus of the ischium in the arch.

I: Trochanteric fossa with the obturator internus.

A: Lateral rotation of the hip joint.

N: Ischiadicus.

Quadratus Femoris

O: Ventral surface of the ischium medial to the lateral angle of the ischial tuberosity.

I: Trochanteric fossa.

A: Extension and lateral rotation of the hip joint.

N: Ischiadicus.

Caudal Muscles of the Thigh

Biceps Femoris

O: Ventrocaudal end of the sacrotuberous ligament, lateral angle of the ischial tuberosity.

I: Tibial tuberosity, tibial crest, medial tuberosity of the tuber calcanei via the calcaneal tendon.

A: Antigravity in stance phase of locomotion, knee flexion at the start of the swing phase of locomotion and tarsal joint extension.

N: Ischiadicus and ramus distalis of the gluteus caudalis nerve.

Abductor Cruris Caudalis

O: Arises by a long, flat tendon, which lies on the aponeurosis of the deep surface of the biceps femoris on the ventrocaudal edge of the sacrotuberous ligament near the ischial tuberosity.

I: Crural fascia.

A: With the caudal branch of the biceps femoris, it abducts the limb and flexes the stifle.

N: Ischiadicus.

Semitendinosus

O: Lateral angle of the ischial tuberosity between the biceps femoris and semimembranosus.

I: Medial surface of the tibia in front of the flexor muscles and the tuber calcanei with the biceps femoris.

A: Extension of the hip and tarsal joints, flexion of the stifles joint in the free non-weight-bearing limb.

N: Tibialis.

Semimembranosus

O: Caudal and medial to the semitendinosus on the lower surface of the rough portion of the tuber ischiadicum.

I: Aponeurosis of origin of the gastrocnemius and the distal end of the medial lip of the femur and medial condyle of the femur.

A: Extends the hip when the foot is placed on a solid substrate. The cranial head extends the hip and is active during the stance phase of locomotion. The caudal head is a two-joint muscle and can flex the stifle and contribute to hip extension.

N: Tibialis.

Cranial Muscles of the Thigh

Quadriceps Femoris Group:

Rectus Femoris

O: Iliopubic eminence of the ilium

I: Tibial tuberosity.

A: Extension of the stifle joint and tension of the fascia cruris.

N: Femoralis.

Vastus Medialis

O: Proximal fifth of the femur on the intertrochanteric crest cranially. Medially on the line for the vastus medialis and somewhat farther distally, on the proximal portion of the medial lip.

I: Tibial tuberosity.

A: Extension of the stifle joint and tension of the fascia cruris.

N: Femoralis

Vastus Lateralis

O: Cranial lateral part of the proximal fifth of the femur on the transverse line and on the line of the vastus lateralis to the lateral lip.

I: Tibial tuberosity.

A: Extension of the stifle joint and tension of the fascia cruris.

N: Femoralis.

Vastus Intermedius

O: From the vastus lateralis which covers it and also from the lateral part of the proximal fourth of the femur.

I: Tibial tuberosity.

A: Extension of the stifle joint and tension of the fascia cruris.

N: Femoralis.

Medial Muscles of the Thigh

Sartorius

O: The cranial part arises from the iliac crest and the cranial ventral iliac spine, as well as from the lumbodorsal fascia. The caudal part arises on the bony ridge between the two ventral spines of the ilium.

I: Cranial border of the tibia.

A: To flex the hip and stifle while the limb is being protracted and to contribute to stifle extension during stance.

N: Saphenous.

Gracilis

O: Pubic symphysis via the symphyseal tendon.

I: Entire length of the cranial border of the tibia.

A: Adduction of the thigh, extension of the hip joint and extension of the hock.

N: Obturatorius.

Pectineus

O: It arises tendinously on the prepubic tendon and from the abdominal muscles that join this tendon, it also has a fleshy origin on the iliopubic eminence and cartilage.

I: Raised ridge of the medial femoral condyle and popliteal surface of the femur medial to the surface of the insertion of the adductor magnus

A: Adduction of the thigh.

N: Obturatorius.

Adductor Longus

O: Pubic tubercle

I: Lateral lip of the femur near the third trochanter.

A: adduction and extension of the hip joint

N: Obturatorius.

Adductor Magnus et Brevis

O: Arises along the entire pelvic symphysis and on the neighboring parts of the ischiatic arch, but primarily from the symphyseal tendon of the pelvic symphysis.

I: Over the whole length of the lateral lip of the femur from the trochanter tertius to the place near the origin of the gastrocnemius laterale.

A: Adduction and extension of the hip joint.

N: Obturatorius.

Craniolateral Muscles of the Crus

Tibialis Cranialis

O: Medial to the sulcus extensorius on the cranial portion of the articular margin of the tibia and on the lateral arched edge of the cranial border of the tibia.

I: Metatarsal 1 and the proximal end of metatarsal 2.

A: Flexion of the tarsus and rotation of the paw laterally.

N: Peroneus.

Extensor Digitorum Longus

O: It arises in the extensor fossa on the lateral epicondyle of the femur and passes through the sulcus extensorius of the tibia.

I: Distal phalanx of digits two through five.

A: Extension of the digits; flexion of the tarsus.

N: Peroneus.

Extensor Hallicis Longus

O: Arises on the cranial border of the fibula between the proximal and the middle third, and on the interosseous membrane cranial to the peroneus brevis.

I: Digit 1 and 2.

A: Extension of digit 1 and 2.

N: Peroneus profundus.

Peroneus (fibularis) Longus

O: Lateral condyle of the tibia, the fibular collateral ligament of the femorotibial joint, and the proximal end of the fibula.

I: Fourth tarsal and on the plantar surfaces of all of the metatarsals.

A: Rotation of the hind paw medially so that the plantar surface faces laterally; flexion of the tarsus.

N: Peroneus

Extensor Digitorum Lateralis

O: Proximal third of the fibula.

I: Digit 5.

A: Extension and abduction of digit 5.

N: Peroneus.

Peroneus (fibularis) Brevis

O: Lateral surface of the distal two thirds of the fibula and tibia, almost as far as the lateral malleolus.

I: Proximal end of metatarsal 5.

A: Flexion of the tarsal joint.

N: Peroneus profundus.

Caudal Muscles of the Crus

Gastrocnemius

O: Lateral head arises by a large tendon of the lateral supracondylar tuberosity of the femur. The medial head arises on the medial supracondylar tuberosity of the femur.

I: Via the calcaneal tendon to the tuber calcanei.

A: Primarily extends the tarsal joint; slight flexion of the stifle joint.

N: Tibialis

Flexor Digitorum Superficialis

O: Lateral supracondylar tuberosity of the femur and the lateral sesamoid.

I: Colaterally on the tuber calcanei, distal metatarsophalangeal joints.

A: Flexion of the digits, extension and fixation of the tarsus, flexion of the stifle.

N: Tibialis

Flexor Hallucis Longus

O: Caudal surface of the proximal three-fifths of the fibula and the proximal caudolateral border of the tibia and the interosseus membrane.

I: Via the deep flexor tendon to the hallucis.

A: Flexion of the hallucis.

N: Tibialis.

Flexor Digitorum Longus

O: Head of the fibula, the popliteal line and the fascial leaf separating it from the flexor hallucis longus.

I: Bases of the distal phalanges.

A: Flexion of the digits.

N: Tibialis.

Tibialis Caudalis

O: Medial part of the proximal end of the fibula.

I: Medial ligamentous masses of the tarsus.

A: Extension of the tarsus; outward rotation of the foot.

N: Tibialis.

Popliteus

O: Plantar surface of the lateral condyle of the femur by a long tendon that contains a sesamoid bone.

I: Proximal third of the medial border of the tibia.

A: Flexion of the stifle. Also, the muscle effects inward or medial rotation of the leg relative to the femur.

N: Tibialis

Extrinsic Muscles of the Thoracic Limb

Trapezius

O: Median fibrous raphe of the neck and the supraspinous ligament of the thorax. Its origin extends from the third cervical vertebra to the ninth thoracic vertebra.

I: Spine of the scapula.

A: Elevation of the limb and draws it forward. (protraction)

N: Accessorius

Omotransversarius

O: Distal portion of the scapular spine, as far as the acromion, and from that part of the omobrachial fascia that covers the acromial part of the deltoidius.

I: Caudal end of the wing of the atlas.

A: To draw the limb forward.

N: Accessorius.

Rhomboideus

O: Tendinous raphe of the neck and the ends of the spinous processes of the first through seventh thoracic vertebrae.

I: Medial and partly on the lateral edge of the base of the scapula.

A: To elevate the limb, pull the limb and shoulder forward or backward, to draw the scapula against the trunk.

N: Rami dorsales of the cervicales et thoracicales nerve.

Serratus Ventralis

O: Facies serrata of the scapula.

I: Transverse processes of the last five cervical vertebrae and on the first seven or eight ribs.

A: Support of the trunk, to carry the trunk forward and backward; inspiration; to carry the shoulder forward and backward with respect to the limb.

N: Cervicales and thoracicales nerves.

Sternocephalicus

O: It arises as a unit on the manubrium sterni.

I: Mastoid part of the temporal bone and to the dorsal nuchal line of the occipital bone.

A: To draw the head and neck to one side.

N: Ventral branches of the cervical nerves and branches of the accessory nerve.

Brachiocephalicus

O: Clavicular tendon and the distal end of the cranial surface of the humerus.

I: Dorsal surface of the neck.

A: Bilateral fixation of the neck.

N: Brachiocephalic.

Cleidocervicalis

O: Clavicular tendon.

I: Fibrous raphe of the cranial half of the neck.

A: To draw the limb forward, and acting bilaterally, to fix the neck.

N: Axilaris

Cleidomastoideus

O: Clavicular tendon.

I: Mastoid part of the temporal bone.

A: Draws the limb forward and acting bilaterally, to fix the neck

N: Accessorius.

Latissimus Dorsi

O: Begins as a wide, tendinous leaf from the superficial leaf of the lumbosacral fascia and thus from the spinous processes of the lumbar vertebrae and the last seven or eight thoracic vertebrae, and it arises muscularly from the last two or three ribs.

I: Teres tubercle and the greater tubercle of the humerus.

A: To draw the limb forward and possibly laterally; depression of the vertebral column; support the limb, draw the limb against the trunk, draw the free limb backward during flexion of the shoulder joint. Decelerates forward motion of the limb.

N: Pectorales caudales and thoracodorsalis.

Pectorales Superficiales

O: Paramedially on the cranial end of the sternum.

I: Entire crest of the greater tubercle of the humerus.

A: Supports the limb, draw back the limb inward, draw the limb forward or backward according to its position, and draw the trunk sideward.

N: Pectorales cranialis.

Pectoralis Profundus

O: First to last sternebra and with a superficial marginal portion as the pars abdominalis, from the deep fascia of the trunk to the region of the xiphoid cartilage.

I: Lesser tubercle of the humerus.

A: During locomotion, to move the trunk cranially over the advanced limb, extend the shoulder joint; draw the limb backward.

N: Pectorales caudales.

Lateral Shoulder Muscles

Supraspinatus

O: Entire surface of the supraspinous fossa, including the spine of the scapula, and from the edge of the neck of the scapula.

I: Greater tubercle of the humerus.

A: Extension of the shoulder joint and advancement of the limb.

N: Suprascapularis.

Infraspinatus

O: Infraspinous fossa, scapular spine and the caudal border of the scapula.

I: Distal to the greater tubercle of the humerus.

A: Outward rotator and abductor of the humerus and a flexor or extensor of the shoulder joint, depending on the position of the joint when the muscle contracts.

N: Suprascapularis.

Teres Minor

O: Arises by an aponeurosis which lies on the long head of the triceps muscle, from the distal third of the caudal edge of the scapula and primarily from the infraglenoid tubercle.

I: Greater tubercle of the humerus just above the deltoid tuberosity.

A: Flexion of the shoulder joint.

N: Axillaris.

Deltoideus

O: Opalescent aponeurosis and scapular spine and acromion process of the scapula.

I: Deltoid tuberosity of the humerus.

A: Flexion of the shoulder joint, lifting of the humerus.

N: Axillaris.

Medial Shoulder Muscles

Subscapularis

O: Subscapular fossa.

I: Lesser tubercle of the humerus.

A: Primarily to adduct and extend the shoulder joint and to draw the humerus forward, during flexion of the joint, it aids in maintaining flexion.

N: Axillaris

Teres Major

O: Caudal angle and adjacent caudal edge of the scapula.

I: Teres major tuberosity of the humerus.

A: Flexion of the shoulder joint, to draw the humerus backward.

N: Axillaris.

Cranial Brachial Muscles

Biceps Brachii

O: Proximal part of the caudal surface of the humerus or proximal part of the musculospiral groove.

I: Radial tuberosity and ulnar tuberosity.

A: Flexion of the elbow joint.

N: Musculocutaneous.

Coracobrachialis

O: Coracoid process of the scapula.

I: Crest of the lesser tubercle of the humerus.

A: Extension and adduction of the shoulder joint.

N: Musculocutaneous.

Caudal Brachial Muscles

Triceps Brachii

O: Distolateral two-thirds of the caudal edge of the scapula, the infraglenoid tuberosity, crest of the greater tubercle of the humerus, crest of the lesser tubercle and proximal caudal part of the neck of the humerus.

I: Olecranon of the ulna.

A: Extension of the elbow joint.

N: Radialis.

Anconeus

O: Lateral epicondylar crest, the lateral epicondyle and the olecranon fossa.

I: Lateral surface of the proximal end of the ulna.

A: Extends the elbow and tenses the antebrachial fascia.

N: Radialis.

Tensor Fasciae Antebrachii

O: Above the axillary arch from the thickened epimysium of the lateral surface of the latissimus dorsi.

I: Olecranon.

A: It supports the action of the triceps brachii and is the chief tensor of the antebrachial fascia.

N: Radialis.

Dorsolateral Antebrachial Muscles

Brachioradialis

O: Proximal end of the lateral epicondylar crest of the humerus.

I: Distal third of the radius.

A: Rotation of the radius dorsolaterally.

N: Radialis.

Extensor Carpi Radialis

O: Lateral epicondylar crest of the humerus.

I: Small tuberosity on metacarpals 2 and 3.

A: Extension of the carpal joint and flexion of the elbow joint.

N: Radialis.

Extensor Digitorum Communis

O: Lateral epicondyle of the humerus.

I: Dorsal portion of the edge of the horn of the distal phalanxes two to five.

A: Extension of the joints of the four principal digits.

N: Radialis.

Extensor Digitorum Lateralis

O: Cranial edge of the lateral collateral ligament and on the lateral epicondyle of the humerus.

I: Dorsal portion of the distal phalanxes three to five.

A: Extension of the joints of digits three to five.

N: Radialis.

Extensor Carpi Ulnaris

O: Lateral epicondyle of the humerus behind the ulnar collateral ligament.

I: Laterally on the proximal end of metacarpal five.

A: Extension of the carpal joint with weak lateral rotation.

N: Radialis

Extensor Digiti I and II

O: Middle third of the dorsolateral border of the ulna.

I: Metacarpophalangeal joint of of digits one and two.

A: Extension of digits one and two and adduction of digit one.

N: Radialis.

Abductor Pollicis Longus

O: Lateral surface of the ulna and radius, and the interosseous membrane.

I: Medial on the proximal end of metacarpal 1 where there is a sesamoid bone embedded in it.

A: Abduction and flexion of the first digit and medial deviation of the forepaw.

N: Radialis.

Caudal Antebrachial Muscles

Pronator Teres

O: Medial condyle cranial of the flexor carpi radialis.

I: Distal to the supinator on the medial border of the radius as far as its middle.

A: Rotation of the forearm so that the dorsal surface tends to become medial.

N: Medianus.

Flexor Carpi Radialis

O: Medial Epicondyle caudal to the radial collateral ligament of the elbow joint between the pronator teres and the flexor digitorum longus.

I: Palmar side of metacarpals two and three.

A: Flexion of the carpal joint.

N: Medianus.

Flexor Digitorum Superficialis

O: Medial or flexor epicondyle cranial to the humeral head of the flexor carpi ulnaris.

I: Second to fifth metacarpophalangeal joints.

A: Flexion of the proximal and middle digital joints of the four principal digits and thereby of the whole paw.

N: Medianus.

Flexor Carpi Ulnaris

O: Medially on the palmar border of the proximal end of the ulna and medial or flexor epicondyle of the humerus.

I: Accessory carpal.

A: Flexion of the forepaw with abduction.

N: Ulnaris.

Flexor Digitorum Profundus

O: Medial epicondyle of the humerus, immediately caudal to the tendon of origin of the flexor carpi radialis and on the caudal surface of the proximal three-fifths of the radius.

I: Tuberosities of the distal phalanges of digits two through five and digit one.

A: Flexor of the forepaw (carpus and digital joints).

N: Medianus.

Pronator Quadratus

O: Fills the space between the radius and ulna medially.

I: Radius.

A: Turns the forepaw inward.

N: Medianus.

Note: Muscle of the forepaw, hind paw, hyoid apparatus, superficial muscles of the face and head, pharynx, larynx, tongue and eyes are not included in this document for reasons of brevity and because we won't be doing much massage on these muscles of any therapeutic depth.

