Canine Massage Techniques, Anatomical Relationships, and Effects

This sequence offers a template for sequencing specific techniques. As practitioners develop comfort with the concepts of flow and the simultaneity of palpation and treatment, a natural evolution will ensue, allowing the tailoring of sequences to patients’ unique demeanors, medical conditions, and contraindications.

Table 1 presents an introductory template that proceeds as follows:

Whole Body --> Head and Neck --> Chest / Trunk --> Thoracic Limb --> Back and Belly --> Pelvic Limb

Table 1, General Sequence Template

<table>
<thead>
<tr>
<th>Stroke</th>
<th>Purpose</th>
<th>Muscle Group</th>
<th>Neural Influences</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passive Touch</td>
<td>Calm, ground, set the tone for the session</td>
<td>(L) hand - shoulder/chest (R) hand - hip</td>
<td>Reduce sympathetic overdrive and pain through mechanoreceptor stimulation</td>
<td>1 - 2 minutes</td>
</tr>
<tr>
<td>Effleurage</td>
<td>Warm muscles, prepare for deeper work</td>
<td>Work down entire body from head to tail including legs</td>
<td></td>
<td>As above</td>
</tr>
<tr>
<td>Slow digital circles on muzzle between eyes and ear</td>
<td>Physiologic and psychological relaxation</td>
<td>Mm¹ of facial expression and mastication</td>
<td>CN² V, VII</td>
<td>2 - 3 times</td>
</tr>
<tr>
<td>Felling-dorsal to ventral on both sides of muzzle over gums</td>
<td>Introduce to facial and oral work. Relax mm, improve circulation</td>
<td>As above</td>
<td>As above</td>
<td>3 - 5 times</td>
</tr>
<tr>
<td>Scooping under each ear</td>
<td>Relaxation, free peri-auricular tissues</td>
<td>Auricular mm</td>
<td>CN V, VII, X, C², C³</td>
<td>2 - 3 times</td>
</tr>
<tr>
<td>Tiny friction circles over entire ear using thumb and fingers</td>
<td>General homeostatic effects</td>
<td>Auricular myofascia and connective tissue</td>
<td>As above</td>
<td>Repeat until entire ear have been covered</td>
</tr>
<tr>
<td>Felling across the top of head</td>
<td>Reduce tension</td>
<td>Frontalis, temporalis mm</td>
<td>CN V, VII</td>
<td>3 - 5 times</td>
</tr>
<tr>
<td>Petrissage neck</td>
<td>Free myofascial restrictions, increase ROM, reduce pain, improve circulation⁴</td>
<td>Cervical myofascia</td>
<td>CN X, XI, and cervical spinal nn⁵</td>
<td>Work entire neck area</td>
</tr>
</tbody>
</table>

¹ Muscles (MM)
² Cranial Nerves (CN) are noted with Roman numerals
³ Spinal nerves shown according to spinal segmental level (e.g., cervical spinal nerve 2 = C2)
⁴ Range of motion (ROM)
⁵ Nerves (NN)
<table>
<thead>
<tr>
<th>Procedure</th>
<th>Technique Description</th>
<th>Areas of Action</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crisscross friction on neck</td>
<td>As above</td>
<td>As above</td>
<td>1 time</td>
</tr>
<tr>
<td>Jostling neck</td>
<td>As above</td>
<td>As above</td>
<td>Cover all neck muscles on 1 side</td>
</tr>
<tr>
<td>Effleurance neck ending in the pectoral region</td>
<td>Smooth and close neck work - transition stroke</td>
<td>Cervical flexors, pectoral mm</td>
<td>2 - 3 times</td>
</tr>
<tr>
<td>Petriassage chest</td>
<td>Loosen restrictions of the neck and thoracic limb</td>
<td>Pectorals</td>
<td>Cover entire chest area</td>
</tr>
<tr>
<td>Scoop under forelegs</td>
<td>Improve ROM</td>
<td>Pectorals</td>
<td>2 - 3 times</td>
</tr>
<tr>
<td>Rake chest up to shoulder</td>
<td>Free the thoracic inlet, improve lymphatic drainage. Smooth and close neck work - transition stroke</td>
<td>Pectorals, cervicothoracic musculature, thoracic limb myofascial attachments, intercostal mm</td>
<td>3 - 5 times</td>
</tr>
<tr>
<td>Sun/moon effleurance around shoulder</td>
<td>Warms shoulder tissue, releases fascia</td>
<td>Intrinsic, extrinsic shoulder mm</td>
<td>3 – 5 times</td>
</tr>
<tr>
<td>Curved palm compression on front limb</td>
<td>Interstitial fluid exchange, muscle relaxation</td>
<td>All thoracic limb mm</td>
<td>1 time</td>
</tr>
<tr>
<td>Effleurance to distal thoracic limb and manus</td>
<td>Tissue relaxation, analgesia</td>
<td>Superficial myofascial layers</td>
<td>3 – 5 times</td>
</tr>
<tr>
<td>Back and Ribs</td>
<td>Improve rib and thoracic spinal motion and respiration, reduce restrictions, pain. Somatovisceral benefits</td>
<td>Thoracic and abdominal wall musculature, erector spinae</td>
<td>Work muscles in a cranial -- caudal direction</td>
</tr>
<tr>
<td>Hips and thigh Sun/moon effleurance</td>
<td>Warms hip/thigh tissue, releases fascia</td>
<td>Hip extensors, quadriceps, hamstrings</td>
<td>3 – 5 times</td>
</tr>
<tr>
<td>Gluteal region Cross fiber friction</td>
<td>Frees the joint, reduces pain</td>
<td>Gluteal mm</td>
<td>Cover entire gluteal region 1 time</td>
</tr>
<tr>
<td>Pelvic limb Curved palm compression</td>
<td>Interstitial fluid exchange, muscle relaxation</td>
<td>All pelvic limb mm</td>
<td>1 time</td>
</tr>
<tr>
<td>Tail rock and pull Traction circles Efflearence/Smooth</td>
<td>Free tail motion Improve perineal proprioception</td>
<td>Tail mm</td>
<td>3-5 times</td>
</tr>
<tr>
<td>Closing</td>
<td>Balance body and mind</td>
<td></td>
<td>~ 1 minute</td>
</tr>
</tbody>
</table>
Massage for Specific Conditions

Head and Neck

Cervicogenic headache: Dizziness and unsteadiness may result from aberrant cervical afferent inputs to brain and spinal cord structures that govern posture and head position. Tension in the neck and head also lead to headache.  

Palmar Glide: Apply to back, shoulders, chest, and neck. Warms tissue and improves local circulation.

Myofascial Release: Implement “listening palpation”, laying hands on neck, supporting suboccipital and cranial cervical segments, palpate for tension and asymmetric fascial pulls.

Ischemic Compression, Cross-Fiber Friction, and Trigger Point Release: Reduce myofascial trigger point activity in the cervical trapezius, suboccipital muscles, brachiocephalicus, omotransversarius, and splenius muscles.

Gentle Stretch and Relaxation: Lateral flexion of the cervical spine to the right and left to stretch one side of the neck while passively shortening the other, in order to reset alpha-gamma motor neuron coactivation.

Circular Massage, Fascial Release: Reduce tension in the muscles of mastication, including the masseter, temporalis, and occipitofrontalis muscles.

Temporomandibular Joint (TMJ) Dysfunction and Syndrome: Includes the TMJ joint and the muscles of mastication. Includes spasm and/or pain in the head, neck, shoulder, and muscles of mastication. May lead to ear aches, headaches, joint pain, and dizziness. Anxiety, stress, whiplash (for example, when collar/neck is pulled rapidly and forcefully connected to a leash), trigger points in the head/neck/shoulders, and dental problems/malocclusion.

Warm-up: Small finger circles and gentle muscle stripping to the masseter muscle.

Intra-oral/Trans-Buccal Compression and Release: To masseter and buccal region.

Indirect Myofascial Release: Stretch, hold, and follow the myofascia in the direction of restriction. Neck, cervicothoracic to thoracolumbar paraspinal regions, pectorals.

Facial Massage: Light petrissage to the temporalis, frontalis, and muscles of facial expression, including the platysma muscle. Trace the eyebrows, under the zygomatic arch, top of the snout to the forehead, and around the mandibular rami. Finger circles over the temporalis and masseter muscles.

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Effleurage of Head and Neck: Balance proprioception and unify muscle activity.

Chest

**Recovery from Intrathoracic Interventions:** Massage significantly reduces anxiety, pain, and muscle tension in humans after cardiac surgery. It also improves relaxation.9

**Effleurage:** Applied to thoracic cage, reduces pain from incisions and bruising to the thoracic cage. Free ribs and relax intercostal muscles.

**Gentle Compression:** Applied to spine, supporting thoracic cage motion and extension of the spine to facilitate inspiration.

**Respiratory Difficulty:** Improves pulmonary function in children with asthma.10 Chronic impediments to normal respiration recruit involvement of assistive respiratory structures including spinal muscles, joints, and connective tissues. Using massage to improve the mobility of accessory muscles and structures of respiration helps reduce chest wall rigidity and limits respiratory muscle fatigue.11

**Petrissage:** The erector spinae muscles link the caudal rib cage, lumbar spine, and sacrum. As a group, they extend the spine. Individually, subgroups of erector spinae help depress several ribs during expiration.

**Myofascial release:** Freeing the aponeurosis of the erector spinae group (comprising tendons of the longissimus thoracic and iliocostalis thoracis) allows these muscles to act as independent stabilizers of the caudal thoracic cage as respiration proceeds.

**Compression:** Applied to the rib heads and paraspinal region on the caudal thorax where each rib articulates with two thoracic vertebrae and their intervening intervertebral disk. Imparts neuromodulatory effects to nearby paraspinal sympathetic ganglia. Applied to the spine and sternum simultaneously or alternately, manual therapy can influence the costovertebral and costotransverse joints as they counterbalance forces generated by sternocostal joints, thereby influencing chest wall recoil and reducing rigidity.

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Thoracic Limb

Shoulder, Muscular Anatomy

**Intrinsic Shoulder Muscles:** Deltoid, teres major, and rotator cuff muscles (subscapularis, supraspinatus, infraspinatus, teres minor)

**Extrinsic Shoulder Muscles:** Trapezius, omotransversarius, rhomboid major and minor, serratus ventralis, pectorals

**Bicipital Tendinitis or Tendinosis**

**Deep Friction**\(^{12}\): Apply in multiple short bursts of 20-30 seconds interspersed with other techniques in order to minimize discomfort for the patient

*For tendinitis, deep friction reduces adhesion, promotes functional scar tissue formation once inflammation has resolved.*

*For tendinosis, deep friction stimulates fibroblast activity and collagen production. Goal for tendinosis: Break the cycle of injury, improve connective tissue health, help avoid tendon thickening, optimize the production and maturation of collagen production in order to promote the recovery of more normal tensile strength.*

**Light Stretching:** Moving the limb through its natural range of motion while minimizing pain reduces shortening of affected muscles, thereby preserving active range of motion and flexibility.

**Degenerative Joint Disease (DJD)**

**Trigger point release:** Palpate intrinsic and extrinsic shoulder muscles at midpoint and attachment sites.

**Myofascial release:** Place hands on the scapula. Tune into its intrinsic motion. Follow directions of release. Hold at a still point, then follow as it unwinds.

**Petrissage, rolling applied to regional muscle tension**\(^{13}\): Reduces pain and improves range of motion.

**Light Stretching:** Moving the limb through its natural range of motion while minimizing pain reduces shortening of affected muscles, thereby preserving active range of motion and flexibility.

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Elbow

*Articular (Joint-related) Problems: Elbow Dysplasia or DJD*

**Compression:** Warm tissue, reduce pain.

**Myofascial Release:** Loosen fascia, improve blood flow, and reduce pain.

**Friction at the tenoperiosteal junction of attaching tendons:** Encourage blood flow, stimulate healing, and reduce adhesive scar tissue.

**Trigger Point Release:** Palpate for and address myofascial trigger points in digital and carpal flexors attaching to the medial epicondyle of the humerus, digital and carpal extensors originating on the lateral epicondyle, brachial extensor (triceps m), and brachial flexor (biceps brachii, brachialis mm).

**Gentle Stretch:** Counter contraction generated by myofascial shortening, whether accentuating pronation for lateral epicondylar tension or supination for medial epicondylar restriction.

**Be patient!** Elbow problems can be painful; dogs are within biting distance if you hurt them. Move slowly and pay keen attention to the cues the canid is giving you regarding comfort or pain.

*Non-Articular*

Same as above but omit friction to tendons if no tendinopathy is present.

Carpus

*Carpal Laxity Syndrome Resulting in Flexural Deformity*¹⁴

**Compression:** Warm tissue, reduce pain.

**Myofascial Release:** Loosen fascia, improve blood flow, and reduce pain in the flexor surface of the thoracic limb. Expand to entire thoracic limb, neck, back, as needed.

**Friction applied to flexor tendons inserting on the carpus:** Stimulate Golgi tendon organs (GTOs) to reduce muscle tension.

**Trigger Point Release:** Focus on carpal and digital flexors, pectorals.

**Carpal Flexor Stretch:** Counter contraction in the flexors by extending the carpus.

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Be gentle! The carpus is fragile, especially in puppies and geriatric individuals.

**Carpal Laxity Syndrome Resulting in Hyperextension**

**Pettrissage:** Applied to myofascia involved in stabilization and unopposed extension of the carpus, eventually inducing strain and overuse: Pectorals, triceps brachii, infraspinatus, carpal and digital extensors at the elbow.

**Myofascial Release:** Applied to antebrachium, to reduce intermuscular adhesion. Expand to entire thoracic limb, neck, back, as needed.

**Friction applied to tendons inserting on the flexor surface of carpus:** Stimulate healing and promote contraction of flexor muscles.

**Trigger Point Release:** Reduce tension and shortening in the carpal and digital extensors.

**Carpal Extensor Stretch:** Counter contraction in the extensors by flexing the carpus.

Be gentle! The carpus is fragile, especially in puppies and geriatric individuals.

**Abdomen**

**Constipation**

[Massage may be contraindicated in cases of abdominal obstruction, mass, bleeding, radiation therapy, strangulated hernia, or history of abdominal surgery within the previous 6 weeks.]

**Effleurage over the entire abdomen:** Warm tissues.

**Clockwise Effleurage over the Abdomen:** Reduce discomfort, stimulate motility through cutaneovisceral and somatovisceral reflexes. 6-10 repetitions in the direction of colonic transit.

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Gentle Petrissage: Follow the direction of colonic transit. 1-2 times. Stimulate motility.

Vibration: Apply to small and large intestines, 30-90 seconds depending on the size of the patient. Stimulate motility.

Moderate Pressure Effleura ge to Paralumbar Region:18 Stimulate baroreceptors and mechanoreceptors (e.g., Pacinian corpuscles) in the dermis supplied by vagal afferent fibers that project to the vagal nucleus of the solitary tract. These inputs provide the major source of afferent signals to the efferent neurons housed in the dorsal motor nucleus of the vagus and the nucleus ambiguus. In addition, applying input to the lumbar spinal cord segments modulates nerve traffic to the viscera via the somatovisceral reflexes affecting sympathetic neural control over intestinal motility.

Petrissage to the Sacrum:19 Autonomic neuromodulation.

Petrissage to the Cranial Tibialis Muscle: Issue afferents to the nucleus tractus solitarius to modulate intestinal motility.

Effleurage to the trunk: Relax the region.

Back

“Low Back Pain”20 21

Compression: Gentle contact with the patient. Assess spinal and truncal pliability.

Effleurage: Relax and warm the trunk.

Gentle Finger Pressure to Paraspinal Regions: Neuromodulation to spinal nerves, begin to release tissues associated with the spine. Reduce pain. Relax the patient.

Myofascial Trigger Point Release: Reduce pain and restriction.

Rocking/Jostling: Reduce pain and fascial restriction. Loosen muscles.

Cross Friction, Circular Friction: Apply to resistant myofascial dysfunction.

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18 Field T, Diego M, and Hernandez-Reif M. Moderate pressure is essential for massage therapy effects. *International Journal of Neuroscience.* 2010;120:381-385.


Oblique Pressure, Combining Lengthening and Cross-Fiber Strokes, Anchor and Stretch: Free entrapment of muscles, fascia, and nerves. Reduce pain.

Myofascial Release: Free the thoracolumbar fascia and release its hold of the erector spinae muscle groups that the fascia surrounds and invests.

Distal Pelvic Limb Petrissage: Neuromodulate caudal spinal cord segments for more widespread analgesia.

Gentle Stretch: Assist the spine in regaining proper posture, whether extension or flexion is required. Be very gentle and work slowly. Gentle side-bending both ways.

Debilitated Patients with Poor Sleep Quality\textsuperscript{22}

Slow-Stroke Back Massage: Long, slow, gliding, repetitive strokes along the spine. Calming, relaxing, mechanoreceptor activation and therefore analgesic.

Effleurage: Relax and unify.

Pelvic Limb

Hip

Degenerative Joint Disease or Dysplasia

Effleurage to the Hip Region: Warm tissues, improve blood flow.

Friction around the Joint: Stimulate tendon healing, influence Golgi tendon organs, free adhesive capsular restrictions of hip joint.

Compression, Petrissage: Apply to gluteal muscles, hamstrings, quadriceps, adductors to improve range of motion\textsuperscript{23} and improve unconscious proprioceptive function.

Stretching: Address iliopsoas contracture, improve flexibility of hamstrings\textsuperscript{24} and quadriceps.

Address Secondary Regions: Neck, back, thoracic limbs, contralateral pelvic limb will show changes due to alterations in weightbearing and central sensitization from OA.

\textsuperscript{22} Harris ML, Richards KC, and Grando VT. The effects of slow-stroke back massage on minutes of nighttime sleep in persons with dementia and sleep disturbances in the nursing home: a pilot study. \textit{J Holist Nurs.} 2012; September 24. [Epub ahead of print].


**Stifle**

*Osteoarthritis of the Knee/Stifle* \(^{25}\)

**Effleurage to the Pelvic Limb:** Warm tissues, improve blood flow.

**Friction to Medial and Lateral Collateral Ligaments:** Stimulate ligamentous healing, improve proprioception, reduce pain.

**Compression, Petrissage:** Apply to local stifle musculature on the cranial, caudal, medial, and lateral attachments.

**Stretching:** Address hamstring contracture, improve flexibility \(^{26}\).

**Address Secondary Regions:** Neck, back, thoracic limbs, contralateral pelvic limb will show changes due to alterations in weightbearing and central sensitization from OA.

**Hock**

*Tarsal Instability, Hyperextension Injuries* \(^{27}\)

**Effleurage to the Pelvic Limb:** Warm tissues, improve blood flow.

**Friction to Involved Tarsal Ligaments:** Stimulate ligamentous healing, improve proprioception, reduce pain.

**Compression, Petrissage:** Apply to local calf musculature and tendinous attachments to reduce myofascial restriction, modify mechanoreceptor firing, and reverse muscle shortening. Assess and address fibularis tendinopathy and trigger points.

**Stretching:** Address gastrocnemius contracture, improve flexibility.

**Address Secondary Regions:** Neck, back, thoracic limbs, contralateral pelvic limb will show changes due to alterations in weight bearing and central sensitization from OA.

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Tail

**Limber Tail, Limp Tail, Cold Tail**

Abnormal tail carriage, often in Pointers and Labrador Retrievers. Tail is flaccid. Hair on the dorsal aspect of the proximal tail may be raised. Dogs are often tender to palpation in this region. Most spontaneously recover is a few days. Causes include prolonged cage transport, underconditioning, overexertion, and exposure to cold, wet weather.

**Pathophysiology:** Coccygeal muscle damage (mildly elevated CK early after onset of clinical signs, EMG evidence of abnormal spontaneous discharges restricted to the coccygeal muscles several days after onset, skeletal muscle fiber pathology on histopathologic examination with normal intramuscular nerves). Most severe lesions in the intertransversarius ventralis caudalis muscle in some dogs. Thermographic studies reveal reduced temperatures in the sacrococcygeal junction and in the entire tail for acute cases, indicating decreased vascular flow. May represent acute compartment syndrome; muscles of the tail are enclosed by thick fascial layers adjacent to bone. Lateral caudal arteries arise from the caudal gluteal artery and likely supply the intertransversarius muscles. Repeated muscle strain can cause histopathologic changes in muscle, including fibrosis. The intertransversarius ventralis caudalis muscles are segmental and abut the transverse processes of the third coccygeal vertebra to the tip. They act to laterally flex the tail along with the intertransversarius dorsalis caudalis muscles.

**Effleurage to the Pelvis and Tail:** Warm tissues, improve blood flow through lateral caudal arteries.

**Traction:** Reduce neurologic compression, free fascia.

**Compression, Petrissage:** Facilitate return of circulation to muscles, nerves, and connective tissue.

**Acupressure:** Stimulate caudal/coccygeal nerves at foramina from base to tip of tail, especially at the junction between the most proximal and middle thirds.

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