

Canine Soft Tissue Injuries

A “Soft tissue injury” is a generalised term used to describe damage to the soft tissues of the muscular skeletal system. The most common soft tissue injuries are strains and sprains, however other muscular injuries such as spasms, trigger points, hypertonicity and adhesions can also be considered as a soft tissue injury. This information leaflet will concentrate on strains and sprains.

A strain occurs when a muscle and / or its associated tendon is damaged and torn. A tendon attaches the muscle to bone and when a muscle contracts it results in movement. A Sprain occurs when there is damage to a ligament. A ligament attaches bone to bone, and they help to stabilize joints, guide joint motion and prevent excess motion of a joint.

Whilst trauma, such as a car accident, a mishap during agility or launching for a ball etc is usually the cause for the damage, it is just as possible for a dog to have an innocuous slip on a tiled floor surface resulting in a strain or sprain. Certain conditions and medications such as Cushings Disease and steroids can also affect the integrity of tendons and ligaments.

A grading system is used to help determine the severity of the injury and the prognosis for recovery.

Strains and sprains can occur in any dog regardless of their breed, size and age however, clinically significant soft tissue injuries are more likely to be seen in sporting and working dogs.

Strains and sprains can be acute or chronic in nature. Acute strains and sprains will present with the clinical signs described in the boxes. Chronic strains and sprains will have the addition of muscle atrophy (wastage), muscle deficits, osteoarthritis (due to unstable joint) and chronic pain.

Grading for Strains

Grade 1 (mild strain)

Minimal damage of the tissues.

Mild swelling, pain and lameness. The surrounding fascial sheath remains intact. Healing is generally rapid and only minor interventions are needed to aid recovery. Exercise restriction for around two weeks is recommended.

Grade 2 (moderate strain)

The tissue remains intact, but a greater degree of muscle fibres are damaged. There is obvious pain, swelling, bruising and lameness. Initial healing may take 6 – 10 weeks. Full stability and function may not be achieved until 3 – 6 months after initial injury.

Grade 3 (severe strain)

There is a complete rupture of the muscle fibres. There will be gross swelling and bruising, severe lameness and extreme pain on palpation. As all fibres are ruptured healing will be impossible without surgical intervention. The associate joints will be unstable and functionally compromised.

Grading for Sprains:

Grade 1 (mild sprain)

A minor tear or stretch to the ligament occurs and there is some micro-failure of the fibres. The signs of a grade 1 sprain are often negligible – there maybe a mild discomfort but no joint instability.

Grade 2 (moderate sprain)

There is a progressive failure of the fibres, and a partial ligament rupture occurs. As a result, there will be swelling, pain and instability of the joint. A lameness will be present.

Grade 3 (severe sprain)

There is a complete rupture of the ligament. There will be severe pain and swelling and an obvious lameness. The joint will be very unstable.

Grade 4 (fourth degree sprain)

There is a complete rupture of the ligament resulting in a fragment of bone at the ligament / bone junction pulling away – known as an avulsion fracture. There will be severe pain, swelling and bruising and the joint will be very unstable.

ACTIVITIES OF DAILY LIVING

By following some simple steps,
you can help your dog to manage his soft tissue injury

The healing of muscles and ligaments

Mild strains are quite rapid to heal – generally taking a couple of weeks of rest however, moderate strains can take a minimum of 2 – 3 weeks of strict rest and a severe strain can take much longer to repair; 4 – 8 weeks of strict rest followed by a slow return to function which can take up to 12 weeks. If a dog is allowed to return to normality before the strain has been allowed to heal fully there is a great chance of the tissue re straining and a chronic strain results. Chronic strains will heal with scar tissue, rather than muscle tissue. This is less desirable because scar tissue is firm and non-extensible/elastic and can reduce the muscles ability to produce tension by 50%. During healing it is essential that a small amount of load and stress is applied to the muscle as this will help to orientate the new tissue fibres.

The healing of ligaments that have sprained is less predictable. This is partly due to the fact that ligaments have poor blood supply and therefore healing is slow and it also depends on the location of the ligament – the cranial cruciate ligament for instance is highly unlikely to heal if ruptured. Depending on the grade of sprain they can take more than a year to heal. Only 50 – 70% of the strength returns at 1 year.



PLAY

Taking the above into account it is therefore really important to try preventing what caused the injury in the first place to prevent re injury during the healing process. For example, if a dog has strained a back muscle whilst launching for a ball then all ball play must be curtailed during recovery.



CARS

If a carpal (wrist) ligament has been damaged whilst jumping out of a car then measures should be put in place to aid getting out of the car (ramp/steps).



FLOORING

Tiled / laminate flooring should be avoided where possible as slips will nearly always result in re injury (use anti-slip mats where possible)

How can clinical canine massage help? Which muscles strain?

Clinical Canine Massage can play an integral role in the rehabilitation of muscle strains helping your dog make a quicker return to normal function.

It can:

Reduce swelling & inflammation.

Mobilize and soften adhesions which form in scar tissue.

Help align new collagen fibres along the lines of tension.

Maintain flexibility of the tissues, aid with suppleness and reduce possibility of reinjury.

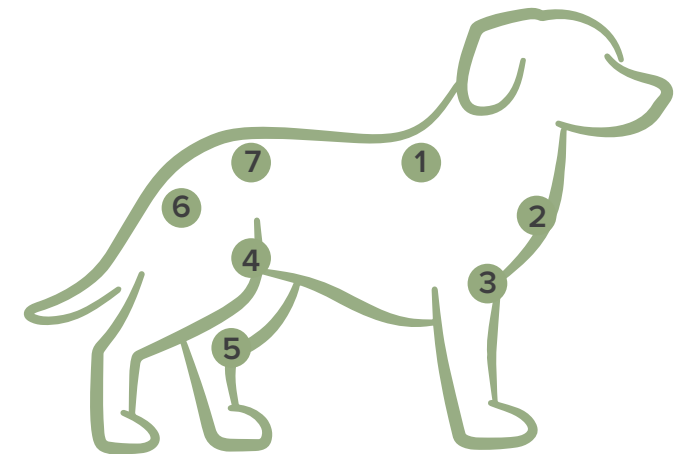
Address any areas of over compensation.

Address areas of myofascial pain.

Address trigger points which develop because of a strain or overcompensation.

Reduce pain.

Improve circulation to the injured area which accelerates the healing process by delivering oxygen and nutrients and removal of metabolic waste products.



Any muscle can experience an injury, but some are more prone to injury than others such as the Rhomboid (1), Biceps brachii (2) Superficial pectorals (3) of the forelimb and Iliopsoas (4), Gracilis (5) and the Gluteals (6) of the hind limb. The lumbar back muscles (7) are also prone to straining.