

Helping Your Dog

Heal from Iliopsoas Injury

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HYDRO & VETERINARY PHYSIO

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Helping your Dog Heal from an Iliopsoas Injury

Canine iliopsoas strain is a commonly overlooked injury that occurs in as many as 32% of cases of hindlimb lameness in dogs. It often occurs in active or sporting dogs, and can be missed in performance dogs, where it may be seen simply as a reduction in performance instead of an obvious lameness.

Let's discuss how you can support your dog in rehabilitation and healing from an iliopsoas injury.



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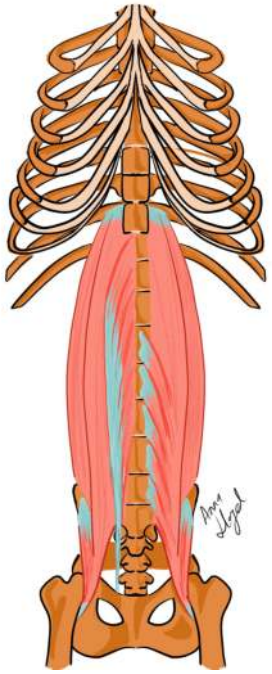
The iliopsoas muscle

The iliopsoas muscle group includes deep muscles on the inside of the hip and the base of the lumbar spine. It is an important postural muscle group, making up a part of the core muscles. It helps to stabilise and flex the hip, pelvis and lower back.

High-speed activities where the hips and lower back become maximally extended and are then rapidly brought forward into flexion again – such as jumping activities – can put the iliopsoas muscles at risk, as they need to contract from a maximally lengthened position.



Secondary injury

Because of its role as a postural muscle and stabiliser, the iliopsoas often becomes injured when there is another pathology in the hindlimb or the spine, such as hip dysplasia, cruciate disease, intervertebral disc disease, or spondylosis. In such cases, iliopsoas strain would be a secondary injury, complicating recovery from both conditions in your dog. Additionally, the iliopsoas can be placed under strain as a result of poor conformation, such as straight hind limb angulation, a long back, cow hocks, or croup high conformation. Biomechanical adaptations resulting from soft tissue injuries or pathology in the forelimb or other areas of the body can also place this muscle group at a higher risk of injury due to it's function as a core stabiliser.

For this reason, an injury to the iliopsoas muscle group should always guide us to fully assess the whole body of our dogs.

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Injury to the iliopsoas muscle

The iliopsoas muscle can become injured in one of three ways:

- chronic microtrauma
- acute muscle tear
- inflammation of the bursa

Chronic microtrauma is the most common means by which the iliopsoas becomes injured. This happens when the iliopsoas is exposed to wear and tear over time, or to regular repetition of strain. A concurrent condition like hip dysplasia causes the iliopsoas to shorten and remain in a contracted position; in this position, the muscle is easily aggravated by many activities, which causes microtrauma. In competition dogs, repeated low-grade trauma from sharp turns or changes in speed directly after a jump can also cause microtrauma to the muscle.

Remember that when we are building and strengthening muscle, microtrauma is a normal part of that building process. We want to balance this workload or trauma with a recovery period where the muscle is worked and used in a more gentle fashion to allow that microtrauma to heal and trigger remodelling in the muscle before the high-impact activity is repeated. A varied exercise programme, warm-ups, cool downs, and rest days will help to achieve this and prevent overuse injuries.

In these cases, it can be difficult to spot the injury as it develops. You might notice your dog slowing down – and in competitive dogs this can be hard to see. You might notice a bit of stiffness when they are warming up, or you may notice signs of fatigue earlier than normal as you exercise them.

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Acute muscle tears occur when there is a sudden traumatic incident that causes the muscle to tear. This is far less common in the iliopsoas than in certain other muscles , but can certainly happen. Incidents where the hind leg becomes stuck in extension, a slip and fall, or an explosive movement like jumping and twisting can all cause an acute tear.

There is a **bursa** underneath the tendon where the iliopsoas attaches on the hindleg. Bursas can become irritated, inflamed or injured, in some cases.



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Signs of injury

Chronic microtrauma causing either a primary or secondary injury to the iliopsoas is by far the most common presentation. Your dog may present with a slight lameness or gait abnormality in one or both hindlimbs. This can be difficult to see without comprehensive gait analysis.

You might notice an increase in stiffness early in the morning, or that warming up takes longer than usual. Your dog might be slower or show some intolerance to exercise, not wanting to go for their normal walks. You might notice a slight limp in the one or both hindlimbs which comes and goes, worse in the mornings, better in the afternoons, and potentially worse again after exercise or a long walk.

In competitive dogs, you may notice that their run times slow. This might be a very small change to their normal time, especially in border collies or very driven breeds. Some breeds are extremely driven and will work through pain, which will absolutely make the condition worse and delay healing. You may notice the biggest change as they travel through weaves, and they may also start to knock poles when jumping.



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Diagnosing an injury



Diagnosis of an iliopsoas injury can be challenging. A specialist sport and rehab veterinarian can be your biggest ally in confirming a diagnosis and determining the severity of the injury, as well as potential concurrent injuries.

They will start with a physical exam, palpating the iliopsoas to determine if it is painful. They may also include a comprehensive gait analysis to determine the extent of limb offloading and changes to the gait that may not be perceptible to the naked eye. From there, x-rays are used to assess for any concurrent pathology in the hips, stifles and back. This is important, as treating the iliopsoas without treating an underlying pathology to the hip, stifle or back will lead to a frustrating and unsuccessful recovery in the long term.

Diagnostic ultrasound can be used to assess the muscle itself. This allows the veterinarian to identify the location of the injury within the muscle or tendon, as well as the extent of the injury. MRI or CT scans can also be used to diagnose this injury.

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Risks of injury

Factors that can increase the risk of iliopsoas injury include:

- conditions like hip dysplasia, cruciate ligament ruptures, and spinal pathology;
- Poor conformation such as straight hind limb angulation, a long back, or croup high;
- a weak core;
- a lack of flexibility;
- inadequate warm-ups;
- overtraining in high-drive dogs.

Reduce the risk of injury

In competitive dogs, a comprehensive training programme that includes core strengthening, alternating between low-intensity and high-intensity exercise, comprehensive warm-up and cool-down periods that include active stretching, and rest days will help you to prevent injury and spot it early when it does develop.



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Treatment

Iliopsoas strains can be notoriously frustrating to treat. They require a long healing timeframe of 4 to 12 weeks or longer, coupled with an extensive rehabilitation programme where the muscle can be rested and then progressively loaded to return to function over a period of weeks and months. Successful recovery asks that we are patient, consistent and progressive in our approach to healing.

Rehabilitation will generally progress in four phases:

- rest and pain control
- stretching and strengthening
- active resistance
- return to activity

Progress through these phases will be closely monitored to ensure that healing is occurring as expected. Healing can be monitored through physical examinations and repeat ultrasound imaging, which will determine and guide the progression of exercise and rehabilitation.

Below we provide information on what you can expect in each of these phases of rehabilitation, as well as tips for rest and controlled activity in the initial phases of healing. An understanding of the recovery process and the many things you can do to promote healing will help you make the most of this ‘down’ time with your dog.

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1 Rest and pain control

While every phase of this rehabilitation programme is important for a successful outcome, the initial period of rest and pain control forms the foundation for healing, and will ultimately determine the success of the rest of the programme.

Restricted or controlled activity is essential. The iliopsoas is a core muscle that does active work in almost every physical activity; if movement is not restricted and controlled during recovery, the muscle will continue to experience trauma, which will prevent healing. A good rehabilitation programme will include activity that gradually loads the iliopsoas in a progressive manner, promoting healing and a gradual strengthening of the muscle without triggering microtrauma and inflammation. Your veterinarian and rehabilitation therapist will advise you on the degree of activity restriction that is necessary for the first phase of recovery. This may be as extensive as crate rest with only lead walking and specific therapeutic exercises for the first two to four weeks. Your dog's behaviour and temperament will also play a role in the extent of crate rest or restriction required. Highly active dogs that have a high drive or are excitable will need a stricter regimen of rest, with intentional exercises and strategies to engage their minds and burn off their excess energy.

Pain control strategies can include:

- pain control medication as prescribed by your veterinarian;
- laser therapy as performed by your rehabilitation therapist;
- pulsed electromagnetic field therapy as performed by your rehabilitation therapist;
- therapeutic ultrasound as performed by your rehabilitation therapist;
- Heat or ice applications at home.

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Prepare your home environment for restricted activity

Your environment can support rest and recovery, or hinder it. It is worth taking some time at the start of rehabilitation to consider your home environment and how you can optimise it for comfort and healing in the rest and initial phases of recovery.

Here are some pointers to consider:

A confined space

How you set up a confined space for your dog will depend on you, your home, your dog's activity levels and your veterinarian's recommendations.

- A **crate** is the safest and most restricting option. For most dogs recovering from iliopsoas strain, this will be the best option.
- A **play pen** can offer an alternative, but is only an option if your dog won't be tempted to jump over the sides.
- A **small room** can be an alternative if you have a dog that will be calm and relaxed and sleep through most of the day. The room will have to have a non-slip floor, and there should be no furniture that the dog will be tempted to jump onto. This is usually not a good option for competitive dogs, but can be a good option for pets.

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Factors to consider

As you consider the best space for your dog, think about **where you will be** during the day. If you work from home, a crate next to your desk or somewhere in your office will be perfect, as you will be able to monitor their movement and activity throughout the day. If you will be away from home for several hours each day, a crate in a calm and quiet area of the house is ideal.

Think about how you and your dog will **access** their safe space; the pathway from their space to outside should be short and easy to navigate if they are to walk it. Avoid stairs, slippery floors, and passageways that are too narrow.

Consider **the daily activity and traffic** in your home, and how your dog responds to it. For example, does your dog love to lie by a window and look out at the street or garden?

If so, placing their crate where they can look out is the considerate thing to do – for a calm dog. If your dog tends to get excited when they see activity outside, positioning them away from the window will be best, ensuring that they remain restful throughout the day. If you or someone else is home in the day, can the crate be placed in a position where the dog will be physically close to you? By simply placing your dog's bed or crate in a spot in the home where they will be happiest, you can significantly reduce anxiety during their rest period. The ideal spot will depend on your home and your dog.

Lastly, pay close attention to the **flooring** in your home. Any surface where your dog can or does slip can make recovery more difficult. Consider placing carpets, runners or yoga mats on the floor to provide traction for your dog as they walk.

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Equip yourself

There are a few simple pieces of equipment that can provide great benefit to you and your dog during the journey of recovery.

- **Heat and ice packs** can form a part of your pain management programme. Heat increases blood flow and helps ease stiffness and pain, warming up the area before activity, while ice helps to decrease pain and reduces swelling and inflammation. Heat should be used before exercise to warm up the muscles and joints, while ice can be used after exercise to reduce possible pain and inflammation. Ice can be used if your dog enjoys it – most dogs prefer heat packs.
- A comfortable **harness** is essential. During recovery, your dog should be on a lead any time they leave the crate. A harness provides multiple benefits over a collar from a biomechanical and control perspective.
- A **comfortable bed** is essential, too. Make sure your dog's bed is easy to get into and out of, and is supportive and comfortable. You will want a bed that is flat, even, and relatively firm. An orthopaedic bed fitted into your dog's crate is highly recommended, especially for heavy dogs, or dogs with additional pathologies like hip dysplasia, back pathology or cruciate disease. They are an investment that your dog will benefit from for the rest of their lives.



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Tips for managing rest and controlled activity

If you have an active dog, an extended period of crate rest can present multiple challenges, as energy levels remain high with little to no opportunity for release of that energy. You might be worried that you won't be able to keep your dog calm and quiet during their recovery. However, there are ways that you can help your dog release their mental and physical energy safely and effectively.

Mental stimulation

Mental stimulation can replace physical stimulation in situations of rest, and can be an effective way to mop up excess energy, leaving your dog exhausted and ready to sleep, even with little to no physical exertion. The best part about brain games is that they are incredibly fun and rewarding for both you and your dog.

Let's go through some ways that you can engage your dog's mind during recovery when physical activity is limited.

Environment

Your dog's physical environment can provide them with a great deal of mental stimulation during the day. Placing their crate or bed in an area where they can be with you throughout the day, or in a central position in the house where they can watch the comings and goings of family members, or at a window where they can watch outside activity, will help to keep their interest during the day.

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Food and food puzzles

Mealtimes can offer a wonderful opportunity for stimulation for your dog. Meals can be split into several smaller portions through the course of the day, presented in a food puzzle, a snuffle mat, a slow-release food toy, or as part of a simple training exercise. You could vary the ways in which you feed your dog – for instance, food portions can be frozen in ice balls or blocks during hot weather, requiring your dog to slowly lick the food out of the ice. There are many home-made puzzle options available, such as an egg carton or muffin tray containing small portions of food, with tennis balls blocking the openings. Your dog will have to figure out how to remove the ball to reach the food, and will find the stimulation enjoyable. There are also many food puzzles on the market that range from easy to challenging. Food puzzles may become a favourite in your household!

Fresh raw bones are another way to provide your dog with the opportunity to chew and keep themselves busy for extended periods. Please discuss the safest raw bone options with your vet if you would like to include this form of enrichment for your dog.

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Training games

You can also use small meal portions to play simple training games with your dog. For example, begin training your dog to target your hand or a tennis ball with their nose, or to target a hand or block with their feet. The benefit of targeting is that you can start by simply establishing the behaviour in the first two weeks of recovery, and progress to incorporate your dog's rehab exercises into targeting exercises in the weeks that follow. This makes your dog an absolute partner in the healing process, provides you with a great way to track and measure their ability and motivation, and it is mentally challenging and exhausting!

Nose work is another great way to include your dog's instinct to sniff in the provision of both food and mental stimulation. If you have any interest in tracking, this is a great time to teach it to your dog. Nose work in your garden or backyard can be used during toilet breaks, providing your dog with some purpose and enjoyment when they are in the yard.

If you would like to explore some of these training options further, speak to your vet rehab therapist about their recommendations for a trainer if you don't yet have one who can help you understand and master the basic techniques. If you already work with a trainer, ask your trainer and rehab therapists to work together to develop some mentally challenging and physically appropriate training exercises for your specific dog.



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2 Stretching and strengthening

The second phase of rehabilitation focuses on retraining and strengthening the postural control function of the iliopsoas muscle group. This requires slow and intentional exercises that focus on good biomechanics and posture.
Exercises will encourage the activation and strengthening of the iliopsoas muscles through progressive exercises while stretching will ensure that the muscle maintains a full functional range of motion.
At this point, muscle contractions are not performed when the muscle is lengthened, but rather from a neutral starting position. As the muscle continues to strengthen, contraction from a lengthened position will slowly start to be included intentionally and progressively to reduce the risk of reinjury.

Your rehabilitation therapist will develop an exercise programme specifically for your dog through this phase, while monitoring their response to exercise.

Your dog may need to remain on crate rest during this period to prevent them from unintentionally re-injuring the muscle. A re-injury at this point will necessitate a restart of the rehabilitation programme, and can reduce the chances of a successful outcome.



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3 Active resistance



Active resistance will form the next phase of strengthening, as the muscle will start to be activated in a lengthened position or with the added resistance of bodyweight.

Exercises will still primarily be slow and controlled in this phase, with a gradual introduction of fast contractions.

Your rehabilitation therapist will develop an exercise programme specifically for your dog through this phase, while monitoring their response to exercise to prevent reinjury.

Crate rest continues during this phase. As in the first phase, this aspect is essential if you are to prevent re-injuring the muscle, which will set your dog back and reduce the chances of a successful outcome.

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4 Return to activity

This final phase of rehabilitation is when the fun really begins. Normal activities as well as competitive activities are progressively retrained. It is important that normal activities are not simply re-introduced, but are progressively developed or built up over time. This starts with strengthening and developing plyometric contractions, and then integrating them into activities.

For example, jumps will be retrained by starting with short straight-line sprints, then adding in a pole on the ground, followed by a low jump, followed by a full height jump, all on a straight line and progressed over weeks. Turns will be introduced in a similar slow, progressive manner, in which you are retraining the muscle for the different kinds of activity required.

This period does come with an increased risk of re-injury, as it is necessary to start pushing the limits of what is available to the muscle to allow remodelling and optimal strength. By working closely with your rehabilitation therapist to progressively develop this return to activity you can ensure the greatest chance of success.

For non-competition dogs, this last phase of rehabilitation may not be necessary. After four to twelve weeks of the rehabilitation programme – depending on progress made – you may be able to safely taper their rehabilitation and allow the dog to return to normal activities.

Competitive dogs may need to remain on partial crate rest during this period to prevent them from unintentionally overextending the muscle when unsupervised. A re-injury at this point will necessitate a restart of the rehabilitation programme, which is obviously something you'd want to avoid. Free off-lead activity can be progressively introduced in the same way as other competitive activities.

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Pursuing additional treatment options

If injury continues to recur in your dog, your veterinarian may recommend additional treatments such as regenerative medicine or surgery. Discuss these options with your vet to determine the best option for you and your dog.

In recurring iliopsoas strain, make sure that any concurrent conditions are diagnosed and treated – a recurrent injury will most commonly occur as a result of a primary condition that isn't fully identified or adequately managed.

The team approach

Iliopsoas strain is notoriously difficult to treat, with a long recovery timeline and a high rate of recurrence. Your best chance of success is to surround yourself with a knowledgeable team to monitor the progression of healing and guide you through the phases of rehabilitation. A team that includes a rehab therapist can ensure that exercises are performed correctly from the start, ensuring maximum healing. They can also suggest modifications that are specific to your dog's presentation and recovery goals.

We would love to support you and your veterinarian on this journey of recovery. Get in touch with us today to book a consultation, or to learn more about our services.

Book an appointment

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Kirsty Hamilton

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