

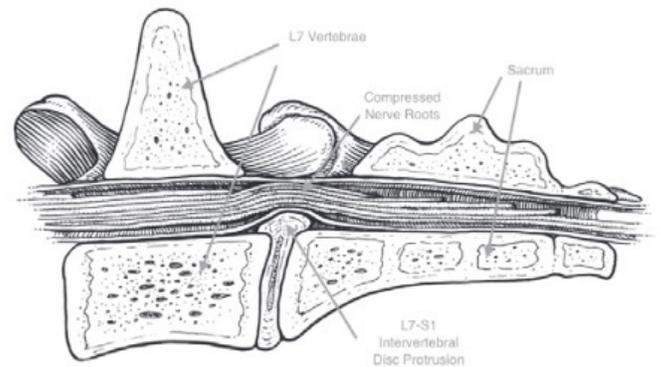


## What is Cauda Equina Syndrome?

Cauda Equina Syndrome (CES) is caused by compression of the nerve roots passing from the lower back toward the tail at the level of the lumbosacral junction (just in front of the tail). The most common cause of Cauda Equina Syndrome is narrowing of the vertebral canal at the level of the lumbosacral joint (called lumbosacral stenosis). Lumbosacral stenosis is most commonly caused by degenerative changes to the intervertebral disc, arthritis of the joints, and abnormal proliferation or scarring of the ligaments. Dogs with abnormal shape to their last lumbar or sacral vertebrae and German shepherd dogs are predisposed to developing lumbosacral stenosis. Neoplasia (cancer) and infection at the level of the lumbosacral disc (discospondylitis) may also cause signs of Cauda Equina Syndrome.

## What are the symptoms of Cauda Equina Syndrome?

The most common neurologic sign associated with CES is pain in the lower back. Signs of pain may include decreased willingness to jump up or climb up stairs, low tail carriage or reduced tail wagging, difficulty posturing to defecate, and whimpering/crying if the lower back is touched. In some cases, dogs will have a weakness or lameness in one or both hind limbs, which occurs secondary to compression of the nerve root supplying the sciatic nerve as it exits at the lumbosacral joint. If the compression of the nerve root causes significant pain, dogs may hold up a limb after exercise or cry out. Severe compression of some nerve roots can lead to fecal and urinary incontinence which is irreversible in most cases.



This diagram shows a disc pushing on the nerve roots in a dog with Cauda Equina Syndrome.

## How do you diagnose Cauda Equina Syndrome?

The first step in diagnosing Cauda Equina Syndrome is a neurologic examination. The doctor will observe the dog's gait for any lameness and/or stiffness. A physical examination will include palpation over the spine to determine the site where the dog is most painful. Manipulation of the hips and tail will elicit a pain response in most dogs suffering from cauda equina. The doctor will also test reflexes, proprioception (foot placement), and anal tone. Radiographs are taken to look for abnormal shape of the lumbosacral joint, spinal arthritis at the lumbosacral joint, infection of the disc space, or tumors. An MRI (magnetic resonance image) is the preferred imaging test to examine the nerve roots. In some cases CT (computed tomography) is used to better visualize the bone in dogs with lumbosacral disease.

## How do you treat Cauda Equina Syndrome?

The treatment directly correlates to the degree of the symptoms. Dogs who are exhibiting mild pain and have never had an episode of back pain before are usually treated with strict rest and pain medications. In cases where the dog is not responding to conservative medical therapy or is exhibiting worsening neurologic symptoms, surgical intervention is necessary. The procedure is called a dorsal laminectomy and involves removing the 'roof' of the spinal canal to release the entrapped nerve roots and remove the associated ruptured intervertebral disc if present. If necessary, a foraminotomy (a procedure involving a small hole cut into the vertebrae) is performed to open the nerve root canals and relieve the entrapped nerve roots. In some cases, if there is significant instability at the lumbosacral joint, the joint is surgically stabilized with pins and bone cement.

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### **What is the postoperative prognosis?**

Prognosis is very good in dogs with mild neurologic signs (i.e. pain only, mild weakness). Dogs with severe nerve root compression and subsequent urinary or fecal incontinence have a more guarded prognosis, and some dogs never become continent again, even with surgery. Surgery can work to alleviate the pain in these dogs, however.

Many dogs with lumbosacral disease have other back problems (e.g. chronic intervertebral disc disease) and hip or other orthopedic disease, which can affect their recovery after surgery. Recovery is also slower in overweight dogs and obese patients must be put on a strict diet to reduce their weight.

Strict cage rest is critical to a good surgical recovery. Specific complications that can occur after surgery include formation of a fluid pocket or scar tissue that compresses the nerve roots or fracture of the bones at the surgery site. Dogs who are overly active after surgery are much more likely to develop complications.

Usually dogs will be walked using a sling after surgery. This helps keep them from slipping after surgery, as well as provide some support to assist them in standing up and sitting down. We will show you how to provide this support when your pet is discharged.

Your neurosurgeon may also recommend physical rehabilitation for your dog. Many of the rehabilitation exercises may be performed at home under the direction of a physical therapist or other rehabilitation specialist. More specialized exercises—such as walking in a water treadmill—would need to be performed at a rehabilitation facility. A consultation with one of our physical therapists may be scheduled to determine if your dog should be treated with sessions at our facility or managed on an outpatient basis.