



### Disc disease in dogs (type I)

The spine of a dog (or person) is made up of a line of block-shaped bones (the vertebrae), with the delicate spinal cord running along the top. The bones are separated by cartilage discs.

The cartilage discs have a structure a little bit like a doughnut - with a tough, fibrous outer surface, and a squidgy centre. In some dogs, the centre of the disc changes texture over time, becoming hard and brittle. This can happen in any breed or age of dog, but it is much more common in certain breeds, including dachshunds, bassets, shih Tzu, cocker spaniels and French bulldogs. It tends to happen in dogs over 2 years old.

Once the centre of the disc has become hard, the disc stops being a good shock-absorber and there is a risk that when the dog undertakes normal exercise and activity (especially jumping, climbing and twisting), the outer surface of the disc can suddenly tear. When this occurs, it is very painful for the dog.

Worse still, once the outer surface of the disc has torn, it is possible for the centre of the disc to squeeze out through the torn area. This results in the abnormally hard disc centre moving upwards and pressing on the spinal cord. If the disc is pressing on the spinal cord it can cause weakness, wobbliness or even paralysis in the legs.

### How is disc disease diagnosed?

The early signs of disc disease include pain and reluctance to jump up or climb stairs. Sometimes dogs show pain by yelping or crying, but other dogs just become quieter and less active. Your veterinary surgeon will carefully apply pressure along the spine to detect the painful area.

If the disc contents are pressing on the spinal cord, there will be abnormal movement and/ or sensation as well. The exact symptoms depend on how deeply the disc is pressing on the spinal cord. In order of severity, we see:

- • mild weakness / wobbliness of the legs
- • obvious weakness / wobbliness of the legs
- • paralysis of the legs (unable to move, dragging behind as the dog tries to walk)
- • inability to pass urine
- • inability to feel pain in the toes, even if they are pinched strongly with forceps

The more deeply the disc is pressing into the spinal cord, the more of these symptoms can be detected. Your veterinary surgeon can carry out some simple tests to assess your dog's sensation and movement. These tests are carried out for each leg, the flank, the tail and the bottom area.

There are vertebrae and discs all along the spine, from the head to the top of the tail. The parts of the body affected by a damaged disc will depend on the location of the damaged disc. For example, a disc that presses on the spinal cord in the neck will cause neck pain and weakness / paralysis of the front and hind legs; whilst a damaged disc in the middle of the back will cause pain in the centre of the back and weakness / paralysis of the hind legs only.

In this way, the veterinary surgeon can work out which disc is causing the problem, and how far it is pressing into the spinal cord.

## Further testing

The above tests offer a quick, cheap and safe way for the veterinary surgeon to make a provisional diagnosis of disc disease. However, it is sometimes advisable to take some pictures of the spine and discs to confirm the diagnosis. Discs and nerves do not show up on an Xray (although the vertebrae do) so in most cases, the best way to see exactly what is going on in the back is to perform an MRI scan. This scan is carried out under anaesthetic at a specialist centre such as Davies Veterinary Specialists, and generally costs around £2500 (fees are significantly higher at weekends and overnight). The MRI scan can confirm the diagnosis, location and number of discs affected; or may, in rare cases, find an alternative cause of the problem (such as a clot, bleed, infection or tumour in the spinal cord).

## Treatment

### 1. PAIN RELIEF AND SUPPORTIVE CARE

In many cases, if the dog is given strict rest and good pain relief, whilst being helped out to the toilet and moved regularly to prevent pressure sores, further leakage from the damaged disc can be avoided and the spinal cord will gradually recover. This treatment is most appropriate for cases where the main symptom is pain and there are no signs / mild signs of leg weakness or difficulty urinating.

Dogs must be rested very strictly, usually in a small cage or crate, with short lead walks of 5 minutes only to allow toileting. There should be no off-lead exercise, even in the garden, and no climbing up or down stairs or steps, into or out of the car or on and off furniture. Dogs often appreciate a raised feeding bowl so that they don't have to bend the spine when putting their head down to eat.

Some dogs need to stay at the hospital to be rested appropriately (especially if they need very strong painkillers such as morphine), but the majority can be treated at home.

Typically this type of management should be continued for 4 weeks for mild cases.

### 2. SURGERY

For severe cases with lack of movement or sensation in the legs and inability to urinate, it is better to perform surgery to remove the leaking disc material and thus relieve the pressure on the spinal cord. An MRI scan is performed prior to surgery so that the surgeon knows exactly which discs are involved. The surgery is carried out by a specialist surgeon and dogs usually spend several days in the hospital, and several weeks being rested strictly at home. Costs can be £6,572-8,735.

In general, surgery is reserved for cases that involve paralysis of the legs, or milder cases that are gradually worsening with rest or that seem to get better with rest but then recur.

## Success rates

Severity grade of disc disease	Success rate of rest and pain relief	Success rate of surgery
Grade 1 (painful only)	100% should be better in 3 weeks (BUT 1/3 of these dogs will go on to have another episode in the future)	97% should be better within 2 weeks (surgery reduces the risk of future episodes with this disc compared to rest alone)
Grade 2 (painful plus slow reactions on neurological examination)	84% should be better in 6 weeks	95% should be better within 2 weeks
Grade 3 (can walk but have an abnormal gait and reactions on neurological examination)	84% should be better in 6 weeks	93% should be better within 2 weeks
Grade 4 (cannot walk but can feel strong pain applied to toes)	81% should be better in 9 - 12 weeks (but this is a long time to care for a dog that cannot move - might need hoists, pressure sore management, urinary catheter).	95% should be better within 1-4 weeks
Grade 5 (cannot walk and cannot feel strong pain applied to toes)	only 7% will recover	64% should recover but only if the surgery is carried out within 48 hrs and recovery will take 5-10 weeks after surgery

In general, surgery leads to a faster and better improvement for more dogs, and reduces the risk of future problems *with that disc*. However it is expensive and carries some risk of surgical complications.

In all cases, even if one disc is repaired, there are many other discs in the spine and it will always be possible for another disc to have a problem in the future. For dachshunds with type I disc disease at one disc, there is a 15-20% risk of another disc having a problem in the future.

#### How can you reduce the risk of disc disease occurring?

- • Keep your dog at a healthy, lean body weight
- • Use a harness rather than a collar
- • Teach your dog to walk calmly on the lead without pulling
- • Do not encourage jumping or climbing on and off furniture and stairs
- • Rest your dog if he/she seems to have back pain or be reluctant to jump up

However, since the main cause of disc disease is genetic, it is impossible to completely prevent disc disease from occurring.

#### Summary

- • Certain breeds are at increased risk of this type of disc disease
- • Definite diagnosis requires an MRI scan but it is possible to get a lot of information from a careful physical examination
- • Mildly affected dogs are usually treated with rest and pain relief
- • Severely affected dogs and those that are not improving with rest, should consider surgery