

Cranial Cruciate Ligament Injury



Cranial cruciate ligament injury (also known as ACL injury in people) is probably the most common orthopaedic condition we

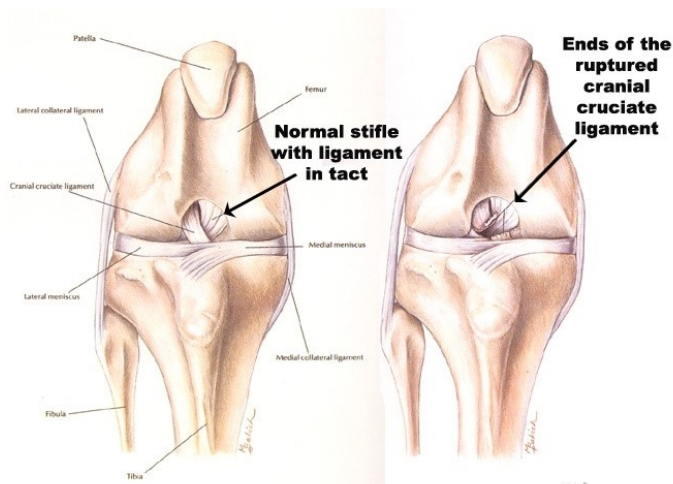
see in pet dogs, and occurs rarely in pet cats.

Causes

There are a number of possible causes for damage to the cruciate ligament including:

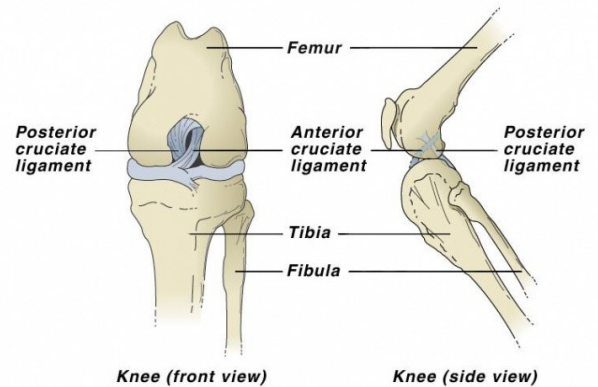
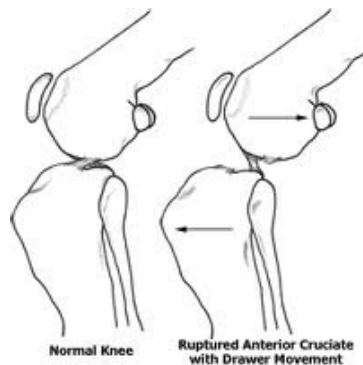
- Trauma due to landing awkwardly when jumping or stepping in a hole when running
- Weakening of the ligament due to arthritis (or inflammation) in the stifle joint
- Poor conformation of the stifle (knee joint) such as internal rotation of the front of the tibial crest (shin) or a steep tibial plateau angle (sloped top of the shin).

Sometimes the cruciate ligament ruptures in one action and your pet won't put much weight on their leg. At other times, the cruciate frays and it tears gradually in sections over several months. In this situation the lameness may be very subtle or only evident when you pet cools down after exercise.



Treatment

In almost all situations, surgical repair of the joint will be the best course of treatment for your pet. If we don't repair the stifle, the joint will remain unstable for several months in a small dog and possibly forever in a larger dog. While the joint remains unstable, it will be painful after exercise and the cartilage will be wearing away



causing a significant degree of arthritis. Additionally, this may lead to tearing of the meniscus and increased pain and damage in the stifle.

There are a vast number of procedures available for repair of the stifle joint after cruciate injury, and most have a similar long term outcome.

The first procedure we offer at NWVS is called a **lateral extracapsular repair** (or De Angelis technique). The ACL is replaced with an artificial ligament of nylon that runs behind the back of the femur (thigh bone) where the calf muscle attaches and runs in a figure of eight through two small holes in the tibial crest (front of the shin bone). This artificial ligament stabilizes the stifle and usually remains in place the rest of your pet's life.



There is a period of at least 6 weeks after this cruciate surgery when your pet will need to be confined to prevent any strenuous exercise, and taken out for short lead walks to gradually build up the strength in the hind leg again.

There are very few complications of this procedure, but they include rupture of the artificial ligament (usually from excessive force when running or jumping in the first few weeks after surgery) and infection in the joint or around the implant (usually from licking the wound in the first week after surgery). Your pet should return to almost full function on the damaged hind leg, but will get some osteoarthritis that will manifest as stiffness when first out of bed, or lameness after long or strenuous exercise sessions.



The second procedure is a **tibial tuberosity advancement** (or TTA). Essentially it involves making a cut in the front of the shin and pulling the bone forward to create extra tension on the patella ligament. This provides additional force towards the back of the knee so it can function without the torn cranial cruciate ligament. We actually perform a modified Macquet procedure (MMP) that stabilises this cut with a porous titanium foam wedge that becomes incorporated into the bone in only a few months.

The benefits of this method over an extracapsular repair are evident in dogs over 20kg, and include faster return to weight bearing, less loss of mobility and no loosening of the repair over time. Your dog will need to be kept quiet and confined for 8 weeks after surgery. For the first 4 weeks, they should have several 5 minute lead walks each day. We will perform a follow-up Xray after 4 weeks, and if the bone is healing well, will start to increase the length of lead walks over the second month after surgery.

Again there are few complications of this procedure. They include fracture of the bone from jumping in the first month after surgery and infection in the joint or implants (mainly from licking the surgery site in the first week after surgery).

The third procedure is a **triple tibial osteotomy** (or TTO). This involves making 3 cuts in the top of the tibia (shin) to remove a small wedge of bone and change the angle of the tibial plateau. This is a similar procedure to the TTA, but used specifically in larger breed dogs when the tibial plateau angle is significantly steep. Recovery is usually a little slower than the TTA procedure.

Your vet will discuss the reasons for choosing a particular method in more detail during your consultation.

Following surgery

With all methods of cruciate repair, we will provide a short course of antibiotics to reduce the risk of infection and a combination of pain medications to keep your pet comfortable.

We also administer a course of Cartrophen injections in the first 4 weeks after surgery to help the cartilage repair inside the damaged stifle. There is a large array of supplements that assist with reducing inflammation in the joint or minimizing the progression of osteoarthritis. We can recommend a good combination for your pet as required.

There are some basic physiotherapy exercises that will help to maintain strength in the muscles and mobility in all the joints of the hind leg that we can show you how to perform.

There is also an excellent animal physiotherapist on the Sunshine Coast that we can refer to if required.

Preventing further trauma

Last but not least, we need to discuss your pet's weight. Any extra kilos your pet is carrying will cause more pain in the stifle, and more wear and tear on the cartilage. There is also a significant increase in the risk of rupturing the cranial cruciate ligament in the opposite stifle if your pet is overweight. You won't be able to increase your pet's exercise in the next few months, so reducing calorie intake is very important. We will discuss this in more detail if required.

