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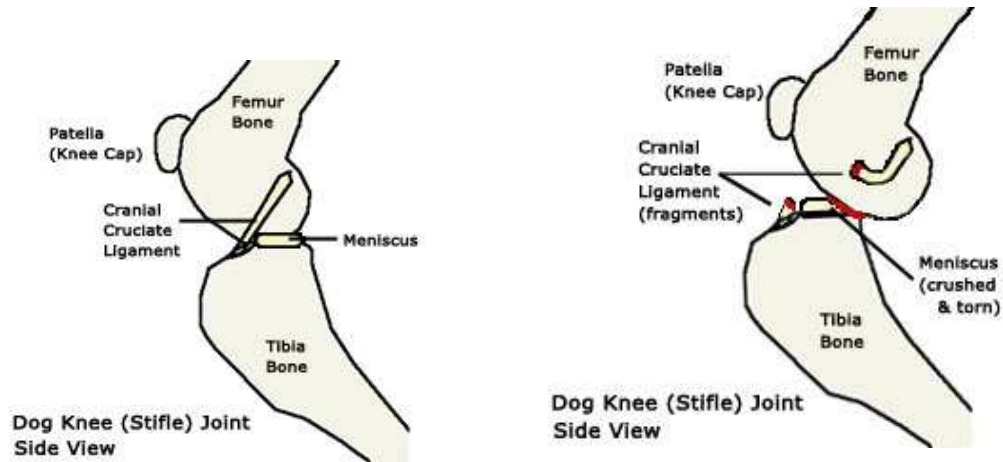
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# Cranial Cruciate Ligament Injury

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## What is cranial cruciate ligament injury?

Cranial cruciate ligament (CCL) rupture is one of the most common orthopaedic injuries seen in dogs. The CCL is an important ligament in the stifle (knee) of the dog. Its major function is to stabilise the stifle joint. When the ligament ruptures, a mechanical instability occurs. The instability contributes to cartilage damage and inflammation which results in osteoarthritis. Osteoarthritis is a lifelong condition which usually worsens with time. There is no cure for osteoarthritis and its treatment involves medication to reduce pain and inflammation and slow down the rate of its progression.

Two types of presentation are seen with CCL rupture. They are acute and chronic. Acute (sudden) rupture is usually associated with athletic activity, e.g. ball chasing, fence running, etc, where extreme forces overload the ligament and it tears. Pain and lameness are immediately evident.

In cases of chronic rupture, dogs suffer partial tears of the CCL which cause mild, intermittent lameness. Over a period of time (weeks to months to years) the bouts of lameness become more severe and more prolonged. There is slow degeneration of the ligament culminating in complete rupture. Often precipitous worsening of the lameness occurs at this stage. Damage to other cartilaginous structures in the joint (meniscus) is common with chronic injuries. The cause of chronic ruptures is incompletely understood and is not usually associated with athletic activity. Poor conformation, obesity, immune mediated diseases and genetics have been proposed as contributing factors.

## What are the treatment options for cruciate ligament injury?

Non-surgical therapy does not address the biomechanical instability in the stifle but is aimed at reducing pain and the progression of arthritis. Non surgical therapy includes anti-inflammatory medication, other drugs which optimise joint health (Cartrophen/Pentosan, glucosamine), and physiotherapy. It is generally agreed that conservative treatment of cruciate ligament rupture does not produce as good results as surgical treatment. The recommended treatment for CCL rupture is surgery.

Surgical treatment is aimed at returning greater stability to the joint, reducing secondary damage, and consequently reducing the progression of osteoarthritis. It provides better results as measured by limb function and joint comfort. There are several surgical techniques for treating CCL rupture.

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The most common surgical method utilised in small, non-athletic dogs is **extracapsular stabilization**. This involves placing suture material or a tape prosthesis across the joint to provide a physical restraint against instability.

For large, athletic dogs, or those with abnormal bone structure an **osteotomy technique** is recommended. Osteotomy is a term that denotes cutting of the bone. There are several different osteotomy techniques available for treatment of cruciate rupture in dogs and these include tibial tuberosity advancement (**TTA**), tibial wedge osteotomy (**TWO**), tibial plateau levelling osteotomy (**TPLO**) or triple tibial osteotomy (**TTO**). Decisions about which technique is the best for your dog are made after careful orthopaedic examination and assessment of x-rays of your dog's stifle. More detailed information on the **extracapsular stabilisation** and tibial **tuberosity advancement (TTA)** techniques is available in separate information sheets on this website.

### Is my dog a candidate for cruciate surgery?

Your veterinarian can diagnose cruciate ligament injury by a physical examination, and will recommend referral for surgery if appropriate. On occasions, sedated examination, radiographs and possibly a specialist assessment will be required to confirm the diagnosis.

### What is the cost of knee surgery?

Currently (2010) the cost of extracapsular stabilisation surgery is approximately \$2,500 and TTA stabilisation is about \$3,500. You or your veterinarian can obtain up-to-date costing by contacting our hospital.

### How long will my dog be in hospital?

A one to two day hospital stay is usual for all knee surgeries. Your dog will be admitted the morning of surgery for preoperative checks, surgical planning and pre-emptive pain control. Continuous observation and pain control is maintained postoperatively until your dog is comfortably up and about.

### What after-care will my dog need?

Rechecks are required at two weeks postoperatively for suture removal. Commencement of physiotherapy is also recommended at this time. Final assessment is at eight weeks postoperatively to confirm limb strength and bone healing. For osteotomy techniques, X-rays are taken at eight weeks post-op.

Antibiotic and anti-inflammatory pain medication is required once or twice daily until suture removal.

Activity restriction is essential for your dog's comfort and healing; typically this means room confinement when not attended, and controlled exercise (slow leash walks) several times daily for toileting. Physiotherapy is very beneficial. Rehabilitation with our animal physiotherapist can be arranged and is recommended. To learn more about Physiotherapy you can visit our physiotherapist's website [www.holisticanimalphysiotherapy.com.au](http://www.holisticanimalphysiotherapy.com.au)

### Will my dog return to normal activity?

Return to normal activity is almost always achieved. Unrestricted activity can usually resume at about eight to twelve weeks, however improvement in muscular strength will continue for up to six months. All dogs with cruciate ligament rupture have arthritis in their joint. Surgical treatment reduces the progression of the arthritis compared with non-surgical treatment, but arthritic changes persist even in dog's that do have surgery.

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**Are there any complications with cruciate surgery?**

Cruciate surgery is a complex procedure requiring general anaesthesia and exposure of the stifle joint and bone. Potential minor complications include wound bleeding and swelling. Infection may occur as with any orthopaedic procedure, but it is infrequent. More serious complications include movement or loosening of the bone or implants. This is uncommon but may be the consequence of too much activity in the early postoperative period. Late re-injury of the menisci can occur weeks to months after the surgery. On occasion, these complications may require re-operation

**Financing surgical treatment for your pet**

BVSC understands that surgical treatments are both unexpected and costly. To assist you, access to third party external finance companies is available. These companies require a detailed application and credit check. BVSC is not an agent for these companies and may request a deposit to allow treatment to proceed if finance approval is pending.

**Where is BVSC and how do I make an appointment for my pet?**

BVSC is located on Brisbane's north side on the corner of Old Northern and Keong Roads, Albany Creek 4035.

To make an appointment for your pet you will be required to have a referral from your vet, to get a referral contact your veterinarian and request referral to BVSC then contact our friendly reception staff on (07) 3264 9400.

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