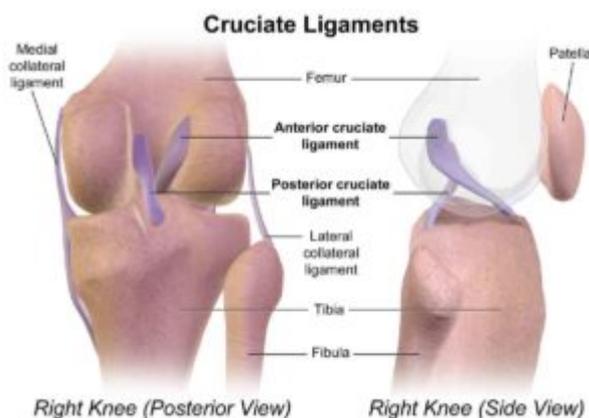


## **My Dog Has Damaged the Anterior Cruciate Ligament!**

The *anterior cruciate ligament* - ACL - is one of four ligaments that are critical to the stability of the knee. It is the most frequent one injured.

You've probably heard of anterior cruciate ligament injury in human sports, and in fact dogs are very similar.



There are actually two cruciate ligaments in each knee: cranial & caudal (or anterior & posterior). As the name suggests, they cross over inside the joint. Their job is to stop the bones above and below from sliding forwards or backwards when the stifle is weight bearing.

An odd feature of the canine stifle (knee) is that the weight bearing surface (the tibial plateau) slopes backwards at an angle. Whenever a dog puts weight on their knee the cranial cruciate ligament must therefore take the strain. It's like parking a car on a slope and relying on the handbrake to keep it there. If it fails, the tibia slides forwards and the joint capsule is stretched.

We call this motion tibial thrust or cranial drawer, and it hurts! It's why when a cruciate **ligament** is ruptured a dog won't put much weight on the leg.

### **Signs of Cruciate Disease**

A cruciate ligament usually ruptures in the course of normal activities. The ligament is often ruptured due to weakness and inflammation caused by the ongoing strain. For

example, a dog will be running along and suddenly lift the hind leg and start limping. Sometimes they will yelp but there is often no obvious cause. After the injury, the leg does not appear painful as long as the dog avoids full weight bearing.

## Why Do Dogs Rupture Their Cruciate?

We don't know! It's almost never a sporting injury like in humans. In dogs we talk about 'cruciate ligament disease' not 'cruciate ligament rupture'. There are a number of factors that seem to be important:

Genetics: some breeds are much more likely to do it than others

Weight: overweight dogs are more likely to rupture cruciate ligaments

Age: it seems to be a degenerative process with a peak at 6 to 8 years of age

These factors explain why dogs who rupture their ligaments often do it without any special activity. This also explains why 60 % dogs that rupture one are very likely to rupture the second within a few years. It's important to have the first injured leg back functioning comfortably before this happens.

## How Common Is Cruciate Ligament Injury?

It is...

- The number one cause of chronic hind limb lameness
- The most common orthopaedic surgery of dogs
- The leading cause of stifle arthritis

A week would not go by without a new diagnosis. Each of these will join the many other dogs who are living with the effects of this condition.

## How Do We Repair Cruciate Ligaments?

Dogs with cruciate ligament rupture almost always require surgery. Some small dogs can get adequate return to function with other treatments, but these are rare.

All dogs who have suffered a cruciate ligament rupture will develop arthritis in that knee. In fact, many already have significant arthritis at the time of diagnosis. Our job is to:

- Stabilise the joint
- Treat the arthritis

## Which Cruciate Procedure Is Best For you Dog?

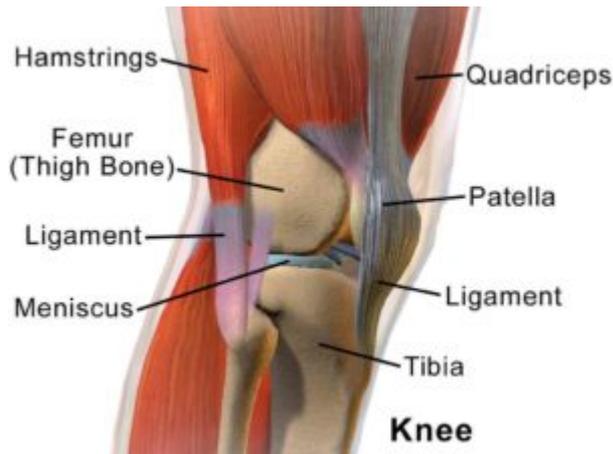
TPLO is performed on medium to large or very active dogs (see page 3)

Most small breeds currently receive extra capsular techniques (see page 4)

Whichever procedure is chosen, complications are always possible. These can include infection, implant loosening or failure, fracture at the implant site or secondary damage to the meniscal cartilages ('meniscus' on diagram).

Complications are reduced by closely following your vet's rec recommendations for postoperative care.

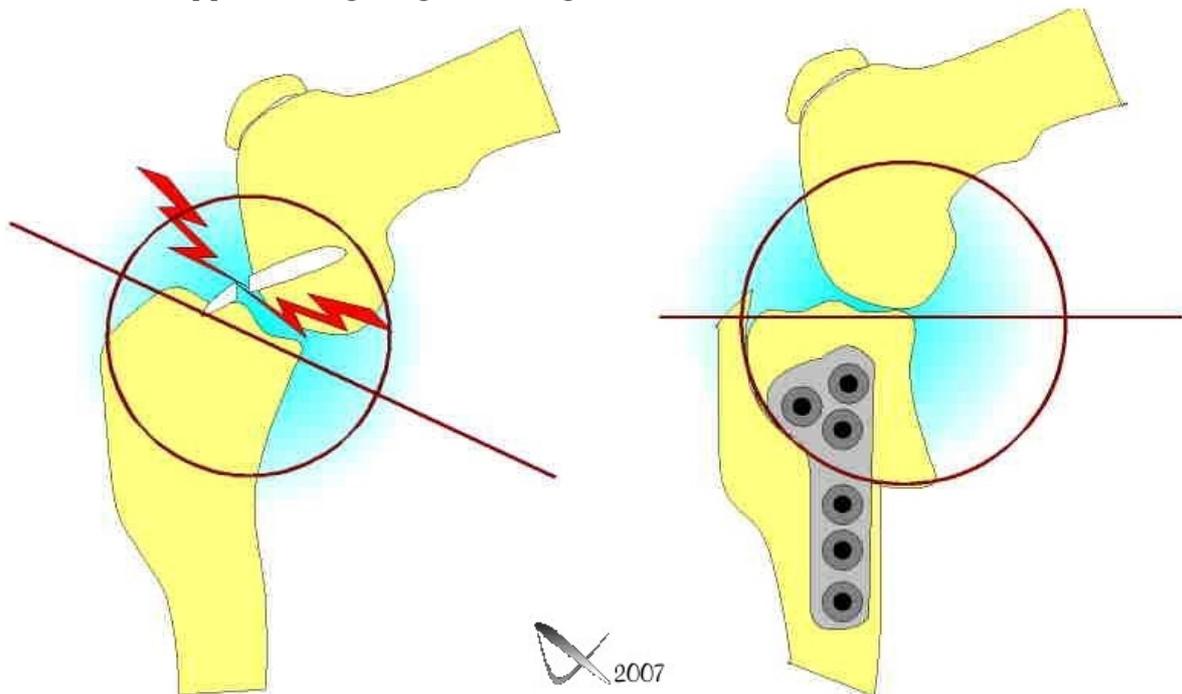
Here, at the Belmont Vet Centre, we use two different techniques.



## Tibial Plateau Levelling Osteotomy (TPLO)

The aim of TPLO is to reduce the angle of the tibial plateau. After successful surgery, tibial thrust and joint capsule stretching

should not happen during weight-bearing.



The surgery involves a curved or radial cut which avoids the patellar tendon but includes the entire tibial plateau. The plateau is then rotated by a pre-measured amount and a specially designed plate and screws are placed to hold the tibia.

Most specialists now agree that the TPLO surgery to be most likely to return dogs to full function and give the lowest complication rates (Christopher et al, 2013; Gordon-Evans et al, 2013; Krotscheck et al, 2016)

## Extra Capsular Repair (ECR) or De Angelis Technique

A nylon suture is placed around the outside of the joint in the same alignment as the cranial cruciate ligament.

ECR is technically the easiest procedure to perform, and results appear very good for small dogs. However active medium and large dogs appear to do poorly and rarely achieve full return to function.

Recent data supports this. In a clinical study using pressure plate analysis to measure leg use (rather than relying on owner and vet impressions), only 40% of animals treated with ECR improved and only 15% returned to normal function. Complications are more likely in younger and larger dogs.

The latest developments in improved surgical outcomes for dogs with cruciate ligament rupture are the techniques involving reshaping the proximal tibia.

In a consultation with your vet we work to understand individual circumstances to help you make the best decision for your pet. Once the decision has been made, a more detailed explanation of the procedure, hospital stay arrangements and rehabilitation/aftercare instructions will be discussed

## **Managing Stifle Arthritis**

No matter how good the surgeon or the technique, dogs who damage or rupture their ACL will always develop arthritis in that knee. It seems clear that the newer techniques reduce its severity, not prevent it.