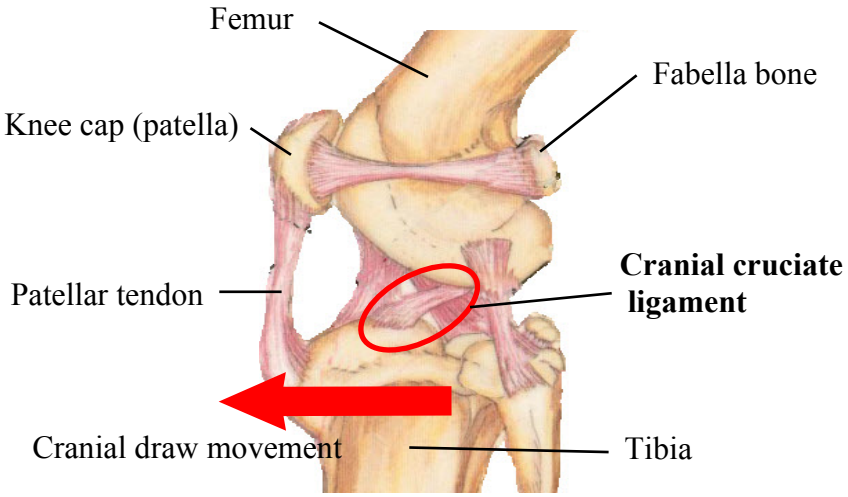
# Cruciate disease

**Injury to the cranial (or anterior) cruciate ligament is the most common cause of lameness affecting the hind legs in dogs. The condition usually causes progressive arthritis in the affected joint, however appropriate treatment will significantly reduce pain and improve mobility in most dogs.**

## What is the cruciate ligament?

The cranial cruciate ligament is a ligament in the middle of the "stifle" (knee) joint. It prevents the top of the tibia (or shin bone) from sliding forward on the femur (or thigh bone). Damage to the ligament causes the tibia to slide forward - this is called the **"cranial draw"** movement.




## What causes cruciate ligament damage?

In people, damage to the cruciate ligament usually occurs as a sporting injury. In dogs, sudden damage to the ligament can occur from twisting the leg. However, more commonly, it is seen as a gradual "wear and tear" injury occurring over months or years - rather like the strands of a rope snapping one at a time. Some breeds of dog - such as Labradors, Rottweilers, and Boxers, are more commonly affected. It is also common in overweight dogs.

## What are the symptoms?

Affected dogs are noticeably lame on one back leg, due to instability of the joint, and developing arthritis. The lameness may develop suddenly, or more gradually with the "wear and tear" injuries. A clicking noise is sometimes heard due to damage to the cartilage

## How is cruciate disease diagnosed?

The presence of cranial draw movement confirms a complete tear of the cruciate ligament, however in large dogs, this may only be detected under anaesthesia. With incomplete tears, cranial draw may not be apparent, however the presence of arthritis in the stifle joint, either on x-ray or on clinical examination, is strongly suggestive of cruciate disease - as cruciate injuries account for over 95% of stifle arthritis.

Normal joint

Arthritic joint

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## Treatment of Cruciate disease

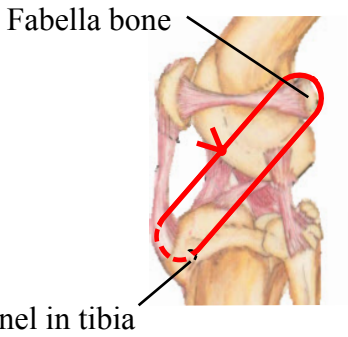
Several treatments have been described, and none of them are entirely successful. Arthritis is likely no matter what treatment is used. Smaller dogs can often be treated with rest and anti-inflammatory pain killers. Larger dogs usually benefit from surgery. Surgery has also been shown to slow the development of arthritis.

The main surgical procedures used today are the fabellotibial suture, and tibial osteotomy.

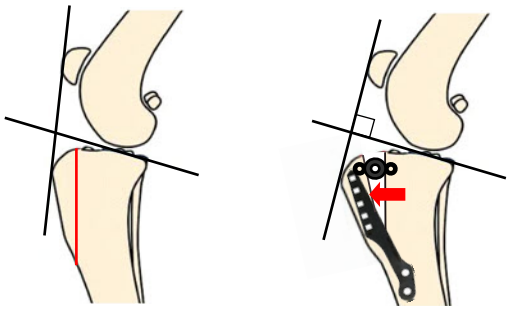
### Fabellotibial suture

This technique depends on placing a thick loop of nylon around the fabella bone at the back of the femur, and through a tunnel drilled in the tibia, to replace the torn cruciate ligament. The nylon usually snaps after six to twelve weeks - however by this time scar tissue stimulated by surgery and arthritis helps to stabilise the joint.

Damaged cartilage and ligament are also removed during surgery.




Tibial tuberosity advancement



1. Bone cut 2. Advancement

(diagrams courtesy of Veterinary Instrumentation Ltd.)

### Tibial oseotomy

In this technique, full thickness cuts are made through the tibia, to realign the joint. This redistributes the forces acting through the joint, so that the ligaments, tendons and muscles surrounding the joint replace the role of the cruciate ligament. The cuts are stabilised using a bone plate and screws. Again, damaged cartilage and ligament are removed during surgery.

There are four variations to this technique. Hawthorne Lodge Veterinary Practice currently uses the tibial tuberosity advancement (TTA) technique.

### Surgical complications

The most common complication is infection. Usually this can be controlled with antibiotics, although sometimes removal of the nylon or bone plate is necessary.

Excessive activity following TTA can cause loosening of the bone plate.

### What is the prognosis?

No matter what treatment is used, some degree of long term intermittent lameness is common. The success with a fabellotibial suture is more variable than with TTO.

Arthritis is inevitable following cruciate injuries, but with appropriate long term management, most dogs will cope well.

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