

# Tightrope Cruciate Ligament Repair

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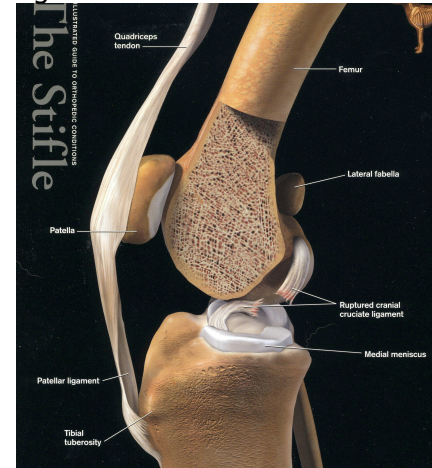
**Cranial cruciate ligament (CCL)** rupture is a very common injury in the dog. The cranial and caudal cruciate ligaments help to stabilize the stifle (knee) as the joint moves through a normal range of motion. The CCL can rupture due to trauma or more commonly as a result of premature degeneration of its structure. When the CCL is injured the femur is free to slide down the tibial slope and push the tibia forward or cranial. This results in pain, inflammation, increased joint fluid (effusion) and eventually arthritis in the joint.

**The meniscal cartilages** also act as minor stabilizers in the joint. The **medial meniscus** can be injured after CCL rupture. It frequently gets crushed as the tibia slides too far forward. Joint exploration is required to inspect for meniscal injury. The damaged portion of the meniscus is excised to reduce further injury and inflammation. Corrective surgery is then performed to stabilize the joint and return the limb back to function.

The **TightRope® CCL repair**, as developed by Arthrex, stabilizes the CCL deficient stifle by using braided polyester suture (FiberTape) material to replace the stabilizing function of the ligament. (Fig 4) The suture restricts the forward translation and internal rotation of the tibia while still permitting flexion and extension of the joint. Over the initial months after surgery the body develops a fibrous tissue reaction around the stifle which ultimately provides long term stability. The fibrous tissue reaction must mature before the dog can return to full activity. Off-leash activity, running and jumping must be avoided until the fibrous tissue repair has matured (~10-12 weeks). This technique can return the majority of dogs back to full activity. Because the suture is placed through the bones and uses toggles it is a secure repair for medium and large breed dogs.

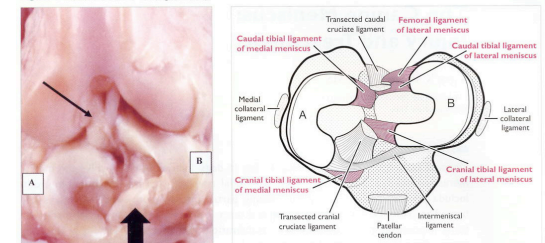
The use of **Physical therapy** after surgery helps to restore and strengthen the muscles of the hind limb. Controlled activity and prescribed exercises will help result in successful outcomes after CCL surgery.

Figure 1



Figures 2 and 3

Figure 1. Menisci and surrounding anatomy.



Dissected stifle held in a cranial drawer position exposing the medial meniscus (A), lateral meniscus (B), transected cranial cruciate ligament (thick arrow), and caudal cruciate ligament (thin arrow).

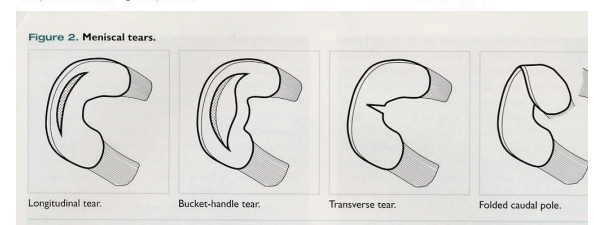
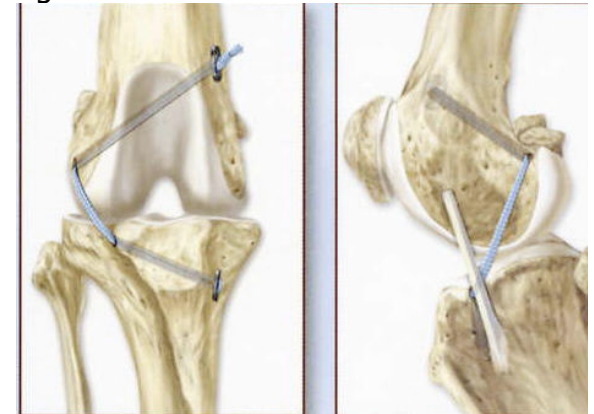


Figure 4



Illustrations are reproduced from the following sources:

Image 1: Novartis Animal Health "An Illustrated Guide to Orthopedic Conditions"

Images 2 & 3: Briggs KK. The Canine Meniscus: Injury and Treatment. Compendium. 2004, pp 687-695.

Image 4: Arthrex Vet Systems, Bonita Springs, FL commercial brochure