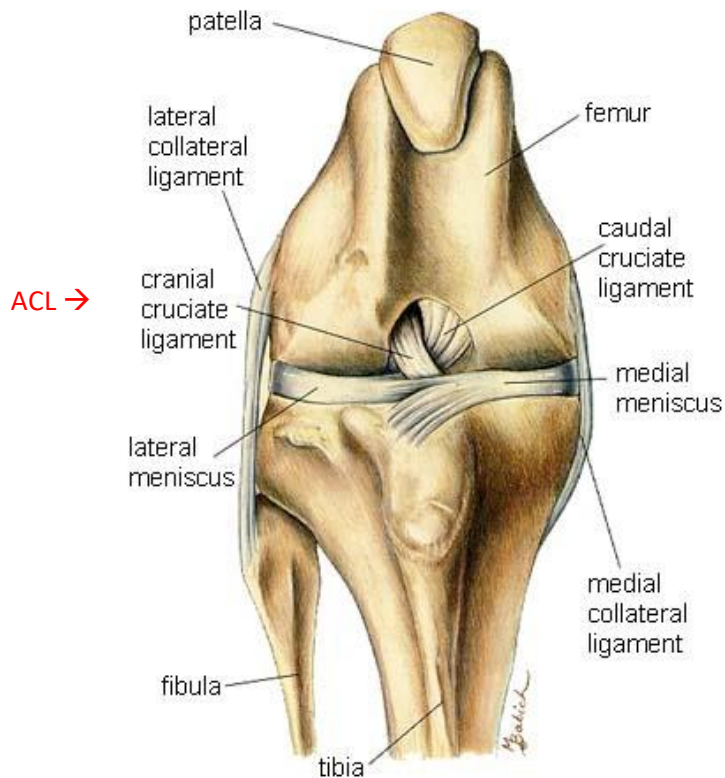


Cruciate Injury and Repair

What does the cruciate ligament do?

The knee is a joint that is formed by three bones: Femur (the long bone extending down from the hip); Tibia (the bone between the knee and ankle); and Patella (the kneecap). These bones are joined together by a number of ligaments. These ligaments prevent the ends of the femur and tibia from moving back and forth across each other.



The cruciate ligament is a band of tough fibrous tissue that attaches the femur (thigh bone) to the tibia (shin bone), preventing the tibia from shifting forward relative to the femur. It also helps to prevent the stifle (knee) joint from over-extending or rotating.

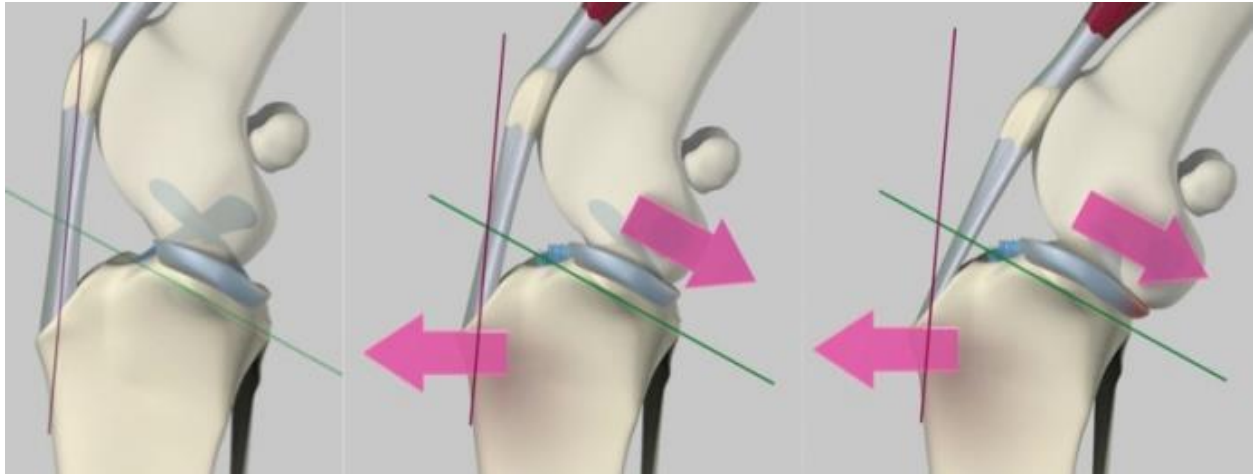
Both the caudal and the cranial cruciate ligaments can be torn, but it is the cranial cruciate ligament (ACL) that is most commonly torn.

What is the cause of cruciate ligament injury in dogs?

Cruciate ligament injury can be caused by long-term degeneration of the ligament in older animals, but in younger and more active animals it is often caused by a sudden trauma to the knee. For example, if a dog is running and the foot becomes caught suddenly, pulling the leg while the foot remains stationary can tear the cruciate ligament.

What happens to the knee once the cruciate ligament is torn?

Fraying of the ligament triggers a cascade of events resulting in knee pain and lameness.



The femur slips backwards as the animal walks, causing the animal to limp, as well as pain and possible cartilage damage. This leads to osteoarthritis that gets worse as the animal ages.

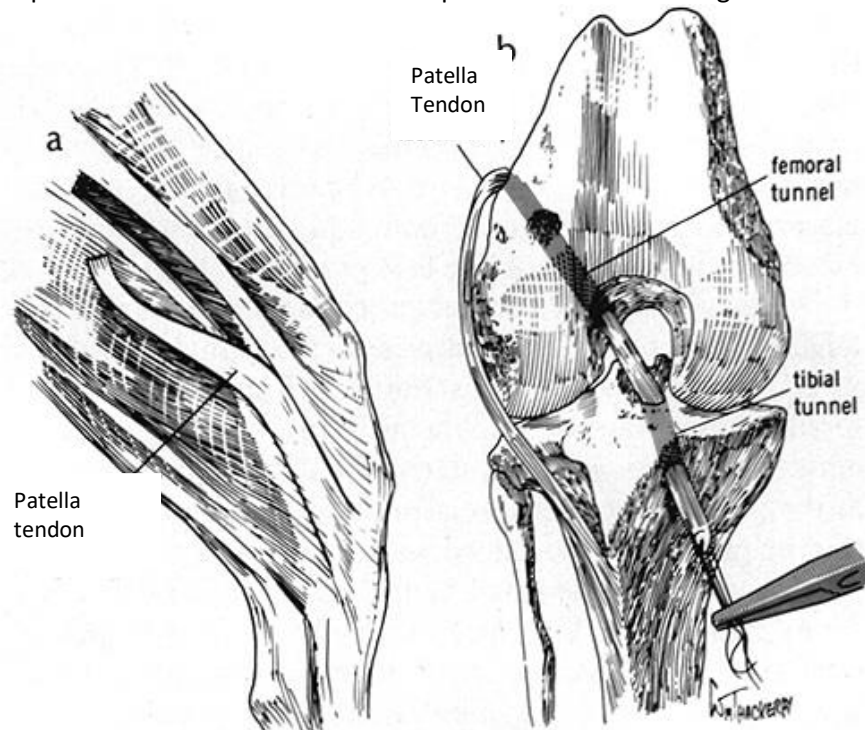
What are the options?

Surgery is strongly recommended to repair the ligament and stabilize the knee.

Fascial Graft Repair:

A fascial graft or "over the top" repair is a soft tissue repair where a strip of the dog's (or cat's) own tissue is harvested from the patella tendon and placed within the joint to mimic the path and function of the failed ligament. The graft of the patella tendon helps to reconstruct the cruciate ligament and acts in

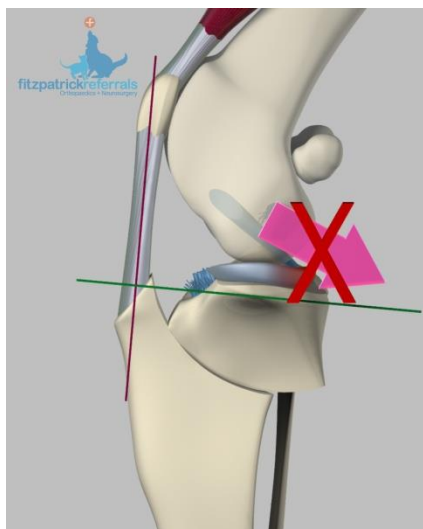
its place to stabilize the knee and keep the femur from sliding on the tibia.



Tissue from the patella tendon is taken and passed through the femur (thigh bone) and the tibia (shin bone) to act in place of the damaged ACL.

TPLO (Tibial Plateau Leveling Osteotomy):

A curved cut is made near the top of the tibia (shin bone). The top of the bone is then rotated to reduce the slope on the top of the tibia (this is where the “leveling” comes from). A stainless steel bone plate is held to the tibia with bone screws to secure the tibia in position while the bone heals. Since the top of the tibia is leveled, the femur can no longer slip backwards as the animal walks, reducing pain and lameness.



The abnormal force (femur sliding backwards) is prevented.

Fascial Graft Repair vs. TPLO

While both options are effective in reducing pain and restoring activity, the advantages and outcomes of each surgery are different.

Fascial grafts are recommended for smaller dogs and cats, dogs that are less active, and dogs that are not obese. A fascial graft is also good for any client who may have financial concerns since it is significantly less expensive than a TPLO.

Some disadvantages to the fascial graft are that it requires a much longer healing period of activity reduction and rehabilitation typically lasting for 12-18 months. There is an increased risk of injury to the ACL on the opposite leg. The relief from the surgery is not as good, especially for active or obese dogs.

TPLOs are recommended for dogs over 35 pounds, especially dogs over 70 pounds. They are also the best option for dogs that are very active or obese. A TPLO has a better long-term result than a fascial graft, and requires a much shorter recovery period of restricted activity and physical therapy of around 10-12 weeks once the bone cut is healed.

The major disadvantage of TPLO surgery is that it is considerably more expensive than a fascial graft. It is also not an option for cats and most dogs under 35 pounds since the bone plate used to hold the tibia together is only available in certain sizes and are not small enough for these pets.

Overall

Neither procedure will make the leg like new nor will the knee ever be totally normal. It is very likely that the animal will develop arthritis in the repaired knee over time. There is also a possibility that the other knee may become injured due to compensation for the injured knee. However, lifestyle changes can preserve the knee and the comfort of your pet for as long as possible. Joint supplements such as glucosamine can help maintain the joint and NSAIDS can help with pain. In addition we now offer laser therapy which can help reduce inflammation, speed up healing right after surgery, and can help manage pain during the recovery period as well as any arthritis that may develop. Weight control is crucial to preventing pain and joint degeneration.

How do we start getting ready for surgery?

1. Send out pre-anesthetic blood work (a CBC profile) and do a full exam. We will draw blood from your pet and send it out for analysis in addition to giving it a thorough examination. This ensures that your pet is healthy and eligible for surgery.
2. In most cases, pre-operative x-rays will be needed to determine the extent of the damage and to rule out other possible diagnoses. These are especially important for TPLOs in order to plan the surgery and get the proper measurement for the plate to be inserted. Your pet will likely need to be sedated in order to take these x-rays.
3. A \$500 deposit is required prior to the surgery. If you need to cancel, 5 working days notice must be given in order to get the deposit back.
4. Talk to a technician to schedule the surgery. We will coordinate everyone's schedules to find a date that is best for you.

Dr. Havemann's Website: <http://ambulatoryveterinarysurgery.com/>