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## CRUCIATE LIGAMENT RUPTURE

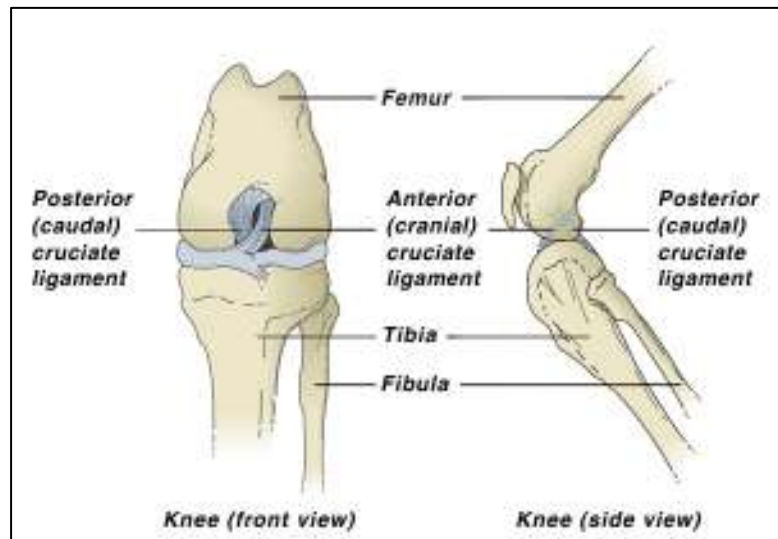
### *What and where are the Cruciate Ligaments?*

The knee is a relatively unstable joint because there are no interlocking bones in the joint. Instead, the two main bones, the femur and tibia, are joined by ligaments. The cruciate ligaments are two bands of fibrous tissue inside the joint that enable the knee to work as a hinge. They are called cruciate ligaments because they "cross over" inside the knee joint. One ligament connects from inside to outside the knee joint and the other outside to inside, crossing each other in the middle.

Humans have the same anatomical structure of the knee. Cruciate ligament rupture is a common knee injury of athletes.

### *How does the injury occur?*

- The knee joint is a hinged joint and only moves in one plane, backwards and forwards. Traumatic cruciate damage is caused by a twisting injury to the joint. This is most often seen in running dogs that suddenly change direction so that the majority of the weight is taken on this single joint. The stress and the angle causes the ligament to snap. The cranial (or anterior) ligament is the most commonly affected. This injury also occurs commonly in obese dogs, often with very little cause.
- A more chronic form of cruciate damage can occur due to a gradual weakening of the ligament. The ligament becomes stretched or partially torn and lameness may be only slight and intermittent. With continued use of the joint, the condition gradually gets worse until rupture occurs.



- The joint is then unstable with the bones moving in an abnormal fashion in relation to each other, and the result is lameness. Pain is caused initially by the tear of the ligament. When the pet attempts to weight bear there is a partial dislocation of the knee which stretches the joint capsule and other associated ligaments, causing more discomfort. This instability will lead to arthritis and a more chronic pain if left untreated.

### *How is it diagnosed?*

- With traumatic cruciate rupture, the usual history is that the dog was running and suddenly stopped or cried out and was then unable to bear weight on the affected leg.
- Many pets will “toe touch” and place only a small amount of weight on the injured leg.
- During the examination, the veterinarian will try to demonstrate a particular movement, called a drawer sign. This indicates instability in the knee joint. If the dog is in pain, has very strong leg muscles, or is uncooperative, it is often necessary to use sedation in order to examine the joint thoroughly.
- Other diagnostic tests such as radiographs (x-rays) may also be necessary.

### *Treatment*

Unfortunately, correction of this problem requires surgery. Occasionally, dogs under 10 kgs (22 lbs) may heal without surgery. These patients are often restricted to cage rest for two to six weeks. Dogs over 10 kg (22 lbs) require surgery to heal. Most dogs will eventually require surgery to correct this painful injury.

A skilled surgeon can fashion a replacement ligament and stabilize the joint so it functions normally or near normally. There are various techniques available to replace the action of the cruciate ligaments. These surgeries most often involve the placement of artificial ligaments along the outside of the knee joint. Occasionally the injury that causes a ruptured anterior cruciate ligament will also result in tearing of one or both of the menisci or "cartilage's" in the joint. At the time of surgery, these are examined and removed if necessary. There are newer surgical technique available (Tibial Plateau Leveling Osteotomy =TPLO and Tibial Tuberosity Advancement =TTA) that are especially beneficial for larger, more athletic dogs. Your veterinarian will discuss with you the best treatment option for your pet.

### *Post-operative Care*

It is important that your dog have limited activity for six to eight weeks after surgery. Provided you are able to carry out our instructions, good function should return to the limb within three months. Unfortunately, regardless of the technique used to stabilize the joint, some arthritis is likely to develop. As your dog ages, stiffness is likely to develop in the joint. Weight control and nutritional supplements such as glucosamine / chondroitin may help reduce the risk of arthritis in your pet.

### *Is obesity such a problem?*

Obesity alone can result in cruciate ligament rupture and knee arthritis. If your dog is overweight, the recovery time will be much longer. Obesity also increases the risk of injury to the other knee. We will be happy to prescribe a weight reduction diet. Weight loss is as important as surgery in ensuring rapid return to normal function.

