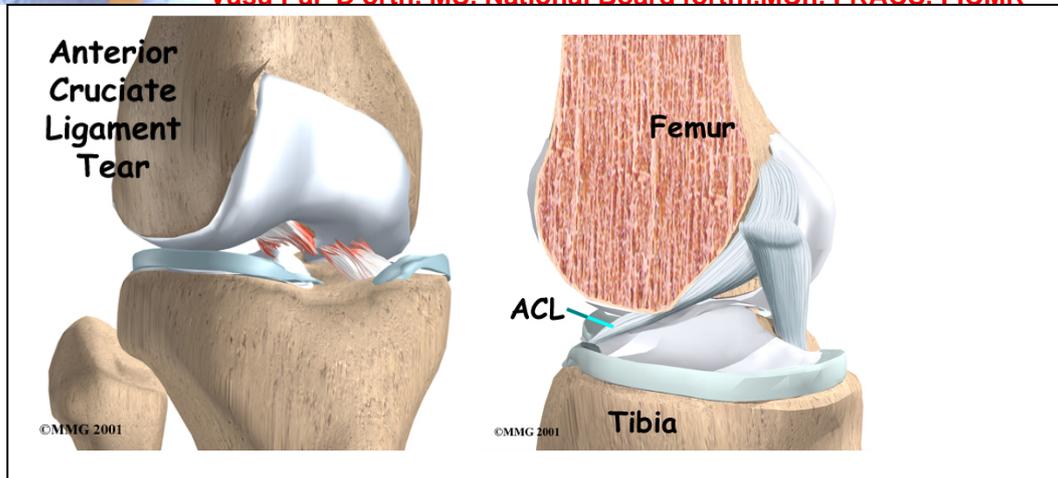




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The anterior cruciate ligament (ACL) is probably the most commonly injured ligament of the knee.

In most cases, the ligament is injured by people participating in athletic activity.

Main problem is instability of the knee [giving out of the knee] and recurrent swelling

May predispose to Meniscal injury in short term and arthritis in long term

In active and young: surgical treatment is usually indicated

Where is the ACL, and what does it do?

The ACL is located in the centre of the knee joint where it runs from the backside of the femur (thighbone) to connect to the front of the tibia (shinbone)

The ACL is the main controller of how far forward the tibia moves under the femur. The ACL is also the first ligament that becomes tight when the knee is straightened.

Other ligaments can be parts of the knee may be injured when the knee is twisted violently, as in a clipping injury in football.

It is not uncommon to also see a tear of the medial collateral ligament (MCL) on the inside edge of the knee

Causes

The major cause of injury to the ACL is sports. Those sports requiring the foot to be planted and the body to change direction rapidly (such as basketball) carry a high incidence of injury. Football is also frequently the source of an ACL tear. Football combines the activity of planting the foot and rapidly changing direction and the threat of bodily contact.

Downhill skiing is another frequent source of injury, especially since the introduction of ski boots that come higher up the calf. These boots move the impact of a fall to the knee rather than the ankle or lower leg. An ACL injury usually occurs when the knee is forcefully twisted or hyperextended.

Many patients recall hearing a loud pop when the ligament is torn, and they feel the knee give way. The number of women suffering ACL tears has dramatically increased. This is due in part to the rise in women's athletics. But studies have shown that female athletes are two to four times more likely to suffer ACL tears than male athletes in the same sports.

Recent research has shown several factors that contribute to women's higher risk of ACL tears. Women athletes seem less able to tighten their thigh muscles to the same degree as men. Women's sluggish hamstring response may allow the tibia to slip forward, straining the ACL. Other studies suggest that women's ACLs may be weakened by the effects of the female hormone estrogen. Taken together, these factors may explain why female athletes have a higher risk of ACL tears.

Symptoms

The symptoms following a tear of the ACL can vary.

Usually, the knee joint swells immediately after injury

There is a feeling of insecurity and giving way of the knee, especially when trying to change direction.

The pain and swelling settles in 4 weeks, but the knee may still feel unstable.

Important in the decision about treatment is the growing realization that long-term instability leads to early arthritis of the knee.

Diagnosis

1. The history and physical examination
2. A good rule of thumb is that any tense swelling that occurs within 2 hours of a knee injury usually represents injury to ACL
3. Doctor will determine how badly the ACL was injured
4. X-rays of the knee to rule out a fracture
5. Ligaments and tendons do not show up on X-rays
6. Magnetic resonance imaging (MRI): The most accurate test

Normal ACL

Torn ACL



Treatment

Nonsurgical Treatment

1. Initial treatment: Focuses on decreasing pain and swelling in the knee.
2. Rest and mild pain medications, such as acetaminophen
3. You may need to use crutches until you can walk without a limp.
4. Most patients receive physical therapy after having an ACL injury
5. Exercises are also given to improve the strength of the hamstring and quadriceps muscles.
6. An ACL brace is often recommended when the knee is unstable
7. A torn ACL that isn't corrected often leads to early knee arthritis.

Surgery

The main goal of surgery is to keep the tibia from moving too far forward under the femur bone and to get the knee functioning normally again.

Even when surgery is needed, most surgeons will have their patients attend physical therapy for several visits before the surgery. This is done to reduce swelling and to make sure you can straighten your knee completely. This practice also reduces the chances of scarring inside the joint and can speed recovery after surgery.

Surgery is indicated in active young adults.

Outline the surgical procedure in ACL

1. General anaesthetic.
2. Hamstring or patellar tendon harvesting and preparation.
3. Arthroscopy to clean up the knee joint, trim or repair any torn cartilages and prepare the femoral and tibial bone tunnels.
4. The graft is passed through the tunnels and secured either with screws
5. Many patients go home the same day as the surgery. Some patients stay one night in the hospital if necessary.

2 common methods: Recent studies suggest both work equally well

1. Patellar Tendon Graft

One type of graft used to replace the torn ACL is the patellar tendon. This tendon connects the kneecap (patella) to the tibia. The surgeon removes a strip from the center of the ligament to use as a replacement for the torn ACL. Incidence of pain on kneeling is more with this surgery.

2. Hamstring Tendon Graft

Surgeons also commonly use a hamstring graft to reconstruct a torn ACL. This graft is taken from one of the hamstring tendons that attaches to the tibia just below the knee joint.

Rehabilitation

Rehabilitation for a torn ACL will typically last six to eight weeks.

Exercises to improve knee range of motion and strength are added gradually.

A brace may be needed sometime.

You can return to your sporting activities : after 4 months

What may go wrong?

Infection.

Deep vein thrombosis.

Numbness just to the side of the incision.

Stiffness.

Reflex sympathetic dystrophy.

Rupture of the graft.

Damage to vessels and nerves.

Ongoing instability and pain.