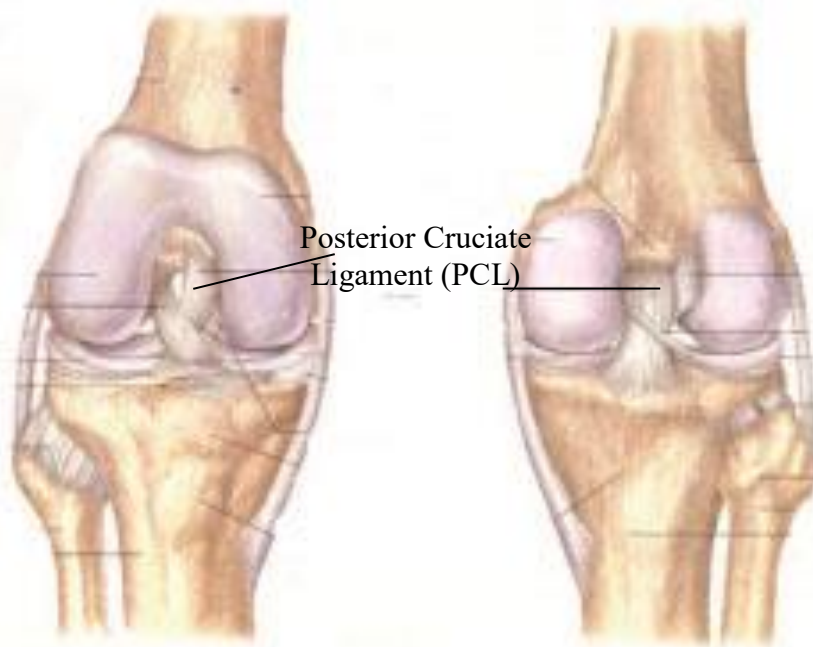


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Posterior Cruciate Ligament Tear

Posterior cruciate ligament tear is a sprain (tear) of one of the four major ligaments of the knee. The posterior cruciate ligament (PCL) is a ropelike structure that helps keep the normal relationship of the femur (thigh bone) and the tibia (leg bone), so that the leg bone does not slip back over the femur. This ligament is the largest and strongest within the knee. When torn, this ligament may heal in a lengthened (stretched out) position or it may attach to other structures of the knee via scar tissue.



Left: Anterior (front) view; Right: Posterior (back) view

Frequent Signs and Symptoms

- A pop heard or felt at the time of injury, an inability to continue activity after the injury, and significant knee swelling noticed within six to eight hours after the injury
- Inability to straighten knee



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- Walking with a limp and knee giving way or buckling, particularly the first several months after injury
- Occasionally, locking when there is concurrent injury to the meniscus cartilage
- Diffuse knee pain, usually in the front half of the knee, behind the kneecap, or in the very back of the knee; pain above or below the kneecap
- Pain that is worse with sitting for long periods, when rising from a sitting position, when going up or down stairs or hills, when kneeling or squatting, and when wearing shoes with heels; often, pain with jumping
- Usually, achy pain, but may be sharp
- Difficulty running backward or backpedaling

Etiology (Causes)

PCL tears are caused by a force that exceeds the strength of the ligament. This injury may be a result of a noncontact injury (excessively straightening the knee) or may result from contact, such as getting tackled at the knee (especially forced bending of the knee) or landing on the knee.

Risk Factors

- Contact sports that may result in forced knee bending or excessive straightening of the knee (football, volleyball, basketball, soccer, rugby)
- Poor physical conditioning (strength and flexibility)

Prevention

Prevention of this condition is not well understood, but the following measures can be helpful:

- Maintain appropriate conditioning:
 - Thigh, knee, and leg flexibility
 - Muscle strength and endurance
 - Cardiovascular fitness
- Use proper technique.



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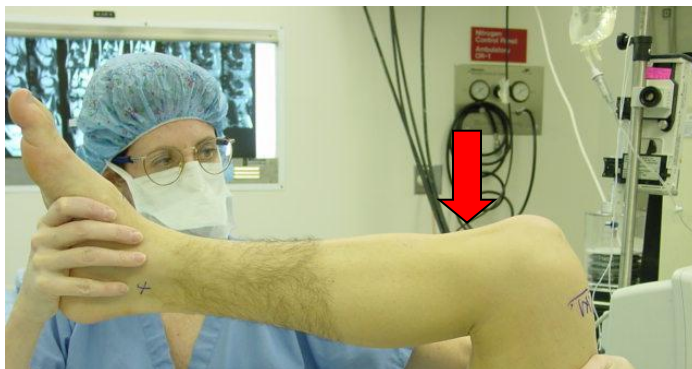
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Outcomes

The expected outcome is not completely known at this time. Usually it takes three to eight months of conservative treatment and an appropriate rehabilitation program before functional adaptation occurs and resumption of sports is possible. However, arthritis may develop 20 years after injury. It is not known if surgery alters this outcome.

Potential Complications

- Frequent recurrence of symptoms, such as diffuse achy knee pain that is worse with sitting, when rising from sitting, when going up or down stairs or hills, when kneeling or squatting, and when wearing shoes with heels, and with jumping
- Giving way, instability, and swelling
- Injury to meniscal cartilage, resulting in locking and swelling of the knee
- Arthritis of the knee
- Injury to other ligaments of the knee
- Knee stiffness (loss of knee motion)



PCL tear (tibia sags posteriorly)

Treatment Considerations

Initial treatment consists of medications and ice to relieve pain and reduce the swelling of the knee. Walking with crutches until you walk without a limp is often recommended (you may put full weight on the injured leg). Range-of-motion, stretching, and strengthening exercises may be carried out at home, although usually referral to a physical therapist or athletic trainer is recommended. Occasionally your physician may recommend a knee brace, especially if other ligaments are injured along with the PCL.



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The PCL has a complex structure and as yet cannot be replicated with surgery. Thus for most isolated PCL injuries, surgery is not recommended. Rehabilitation is the treatment of choice. Rehabilitation of PCL tears usually concentrates on reducing knee swelling, regaining knee range of motion, regaining quadriceps muscle control and strength, functional training, bracing (rarely), and education. For severe PCL injuries, particularly those associated with other injuries to the knee, surgical reconstruction (replacement with a graft) may be recommended. Surgery may also be recommended for patients with chronic PCL tears who continue to have symptoms six to twelve months after injury. Surgical reconstruction rarely restores complete knee ligament tightness. If the ligament pulls a piece of bone off with it, it is not where it belongs, and the bone is large enough, surgery to replace the bone where it belongs and attach it with a screw, staples, stitches, or pins is often performed.

Possible Medications

- Nonsteroidal anti-inflammatory medications, such as aspirin and ibuprofen (do not take within seven days before surgery), or other minor pain relievers, such as acetaminophen, are often recommended. Take these as directed by your physician. Contact your physician immediately if any bleeding, stomach upset, or signs of an allergic reaction occur.
- Stronger pain relievers may be prescribed as necessary by your physician. Use only as directed and only as much as you need

Modalities (Heat and Cold)

- Cold is used to relieve pain and reduce inflammation. Cold should be applied for 10 to 15 minutes every two to three hours for inflammation and pain and immediately after any activity that aggravates your symptoms. Use ice packs or an ice massage with a cloth between the ice and your skin to prevent burning /freezing your skin.
- Heat may be used before performing stretching and strengthening activities prescribed by your physician, physical therapist, or athletic trainer. Use a heat pack or a warm soak.

Notify My Office if Symptoms Worsen



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