

# Anterior Cruciate Ligament (ACL) Reconstruction

## What is the anterior cruciate ligament (ACL)?

Ligaments are strong bands of tissue that connect one bone to another. The anterior cruciate ligament (ACL) is one of four major ligaments in the knee. It is in the center of the knee joint, connecting the thigh bone (femur) to the shin bone (tibia). The ACL helps keep the knee stable by limiting twisting and forward sliding motions of the knee.

The ACL is commonly injured in sports when there is a forced twisting motion of the knee or when the knee is hit while the foot is planted. It may also be injured during a sudden stop when the femur moves forcefully over the tibia.

## What is an ACL reconstruction?

A torn ACL will not heal by itself. In the past, doctors tried to repair the ACL by sewing the torn ends of the ligament together, but this did not work. The ACL must be reconstructed by using ligaments or tendons from another part of the body to replace the torn ACL. Tendons are connective tissue bands that attach muscles to bones. The replacement tissue is called a graft.

The grafts can come from several places. Most often the

graft is taken from the patellar tendon, which attaches your kneecap (patella) to your shin bone (tibia). The graft is made up of the middle third of the patellar tendon and small pieces of bone from the kneecap and the shin bone. A graft may also come from your

hamstring tendon. The hamstring muscles are in the back of your thigh.

If the graft comes from your own body, it is called an autograft. If the graft comes from someone who has died, it is called an allograft. Doctors have tried using some types of



Holes are drilled in the femur and tibia, and the torn ACL is removed.



The graft is passed through the drill holes to replace the torn anterior cruciate ligament.



The graft is anchored in place using screws or staples.

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synthetic grafts but so far these have not worked well. Research is being done to see if there are better types of grafts that can be used.

Your doctor will discuss the options with you and will help you decide which procedure is best for you.

You may consider having reconstructive ACL surgery if:

- Your knee is unstable and gives out during routine or athletic activity.
- You are a high-level athlete and your knee could be unstable and give out during your sport (for example, basketball, football, or soccer).
- You are a younger person who is not willing to give up an athletic lifestyle.
- You want to prevent further injury to your knee. An unstable knee may lead to injuries of the meniscus and arthritis.

You may consider not having the surgery if:

- Your knee is not unstable and is not painful and you are able to do your chosen activities without symptoms.
- You are willing to give up sports that put extra stress on your knee.
- You are not involved in sports.

If a growing child tears an ACL, the doctor may recom-

mend that surgery be postponed until the child has stopped growing.

### ***How do I prepare for an ACL reconstruction?***

Plan for your care and recovery after surgery. Allow time to rest, and try to find people to help you for a few days.

Follow your doctor's instructions. You may be asked not to take aspirin for a week or so before your surgery. Do not eat or drink anything after midnight or the morning before surgery. You may have physical therapy before surgery to begin your rehabilitation.

### ***What happens during surgery?***

You will have either general or spinal anesthesia. A general anesthetic will relax your muscles and make you feel as if you are in a deep sleep. A spinal anesthetic leaves you awake but unable to feel anything from the waist down.

Your doctor will prepare the graft. If your patellar tendon is to be used, the doctor will make an incision 1 to 3 inches below your kneecap. Then he or she will remove your torn ACL using an arthroscope. An arthroscope is a thin tube through which your doctor can view the inside of your knee joint. Various thin, small instruments are used to per-

form surgery in the knee. Your doctor will drill holes in your femur and tibia where the graft will be attached. The graft will be passed through the holes and anchored in place by screws or staples. The incisions from the graft site and the arthroscopy will be closed with stitches, tape, or staples.

During your surgery, your doctor may also treat any other knee injuries such as torn cartilage.

### ***What happens after the surgery?***

You may be allowed to go home a few hours after surgery or you may have to spend the night in the hospital. Treatment after surgery may include:

- elevating your knee on a pillow several times a day as long as it is swollen and painful
- putting ice packs on your knee for 20 to 30 minutes 3 to 4 times a day for a few weeks
- taking medication prescribed by your doctor for pain and swelling
- having physical therapy to rehabilitate your knee.

You may be on crutches for a week or two after surgery. You may not be able to drive for at least a few weeks.

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### ***What are the complications?***

Complications may include:

- loss of range of motion in your knee, joint stiffness
- persistent pain
- a blood clot in the leg
- bleeding
- infection.

### ***When should I call the doctor?***

Call the doctor immediately if:

- You have a lot of bleeding or a discolored drainage from the puncture sites.
- You have a lot of pain in your knee.

- You get a fever.
- You have swelling in your calf or thigh that does not improve when you elevate your leg.

Call your doctor during office hours if:

- You have questions about the surgery or its result.

### ***When can I return to my sport or activity?***

The goal of rehabilitation is to return you to full participation in your sport or activity as soon as is safely possible. If you return too soon you may worsen your injury, which could lead to permanent dam-

age. Everyone recovers from injury at a different rate. Return to your activity will be determined by how soon your knee recovers, not how many days or weeks it has been since your surgery.

Rehabilitation from ACL surgery is very complex. Your doctor and therapist will watch your progress very carefully and gradually allow you to be more active. It may take 4 to 9 months of rehabilitation to get back to some activities. It may take 12 months or more for your knee to feel the way it did before your injury.