

FREQUENTLY ASKED QUESTIONS ABOUT ACL INJURIES/TEARS

You have injured the anterior cruciate ligament in your knee. The following is a list of common questions and answers. I know it's sometimes difficult to ask questions of doctors or to remember to ask all the questions you had planned. I hope this will help you. If there is anything else you're wondering about, please feel free to ask and I will be glad to answer, and probably add your question to this handout.

What is the ACL?

There are two large ligaments inside your knee each about the size of your little finger that cross deep inside the joint. They are called the ACL (anterior cruciate ligament) and PCL (posterior cruciate ligament) and go from the femur (thigh bone) to the tibia (shin bone). They serve to stabilize the knee and allow it to glide through a smooth range of motion as you bend and straighten the leg. The ACL is the ligament in the front and the one most commonly injured.

Why is it important?

Without the ACL the knee is less stable. Without its stabilizing influence, the knee can buckle suddenly as it is used and this leads to cartilage damage and eventually to arthritis. This is usually not a problem for "straight-ahead" activities such as walking or jogging. However, it can be a big problem for athletic, daily, recreational and work-related activities involving twisting, pivoting, jumping, or suddenly changing direction. Examples of these activities include most sports (especially basketball, football, volleyball, soccer, skiing, etc.) and many jobs (such as carpentry, warehouse, refinery, etc.).

Is anything else damaged inside my knee?

About half the time when the ACL is torn there is also damage to the meniscus cartilage inside the knee. Additionally, there can be damage to the articular cartilage – the cartilage stuck on the ends of the bone from a shear force. If present, these injuries are something that can be taken care of at the same time ACL surgery is performed. You can usually tell whether there is a torn cartilage on examination but sometimes this is difficult. An MRI study can assist in the diagnosis of associated injuries when performed in conjunction with a thorough history and physical exam.

What would happen if I did nothing about this injury?

Usually within weeks of tearing the ligament, the pain and swelling go away and the knee starts to move well. The knee usually starts to feel nearly normal. The problem comes when you try to cut, pivot, or twist on the knee. Without the stabilizing influence of the ACL it will likely buckle and give way. Patients usually end up with a "trick knee" that gives way unexpectedly. The problem with this (beyond the embarrassment) is that with each episode of buckling, the joint gets scuffed and cartilage often tears, leading to arthritis. Former President Gerald Ford is a good example. He used to trip and fall frequently because of this same injury which he sustained playing football at Michigan. He was fine walking but whenever he tried to twist or turn suddenly his knee would buckle. He never had it fixed (the current surgery didn't exist) and ended up with bad arthritis and a knee replacement. Some people who elect to live less active lives (no jumping, cutting, pivoting, running sports) can get by without this ligament. Currently, the *conservative* way to treat the injury is with reconstructive surgery, if you plan to remain active in agility sports or have episodes of your knee "giving out" or "buckling" during any activities for that matter (basketball, football, volleyball, skiing, etc).

FAQ's ACL INJURIES/TEARS (page two)

How is the ligament fixed?

Older techniques consisted of sewing the torn ends of the ligament back together. This relatively simple operation didn't work and the ligament almost always tore again. The standard operation is now reconstruction of the ligament where another tendon is used as a replacement for the anterior cruciate ligament. More recently there is increasing evidence that an anatomic reconstructed ACL restores normal knee function. There are three main choices for this substitute tendon. These are the central third of the patellar tendon (the tendon which runs from the knee cap to the shin bone), two of the hamstring tendons (the tendons behind the thigh), or a tendon from an organ donor. There are pros and cons to each. It should be noted that the most recent research shows no difference in the success of the surgery at 6 months or later, regardless of which type of replacement is used to build your new ACL. In fact there are many current professional and collegiate athletes who have continued to be competitive after ACL surgery with any of the above. I will leave the final decision to you to decide which type of graft you prefer. I will also list in order of preference what I think would be best for your specific situation (activity, age, goals immediately after surgery, etc.).

The patellar tendon has been used for years, provides a strong replacement for the ACL and can be securely fixed in place in the knee. However, use of this graft has a higher chance of side effects consisting primarily of pain/inflammation/tendinitis in the region of the patella and the patellar tendon. This is particularly a problem in those that need to kneel or crawl such as wrestlers, carpenters, etc. The hamstring tendons provide a graft that is just as strong, and the newer fixation methods are at least as strong as those for the patellar tendon. The two hamstring tendons sometimes re-grow; however, when they do not, the remaining three hamstrings get stronger to compensate for their loss. Most people do not notice any significant strength weakness after removal of these two hamstrings, but athletes in sports such as gymnastics, sprinting, or ballet dancing may notice some weakness of knee flexion.

A third choice that is very popular is use of the donor tendons (allograft). The main advantage of using the donor tendons is that there is less trauma to the patient's leg because we do not have to remove any tendons to place them in the knee. Thus, there is less pain after the surgery, and the early phases of the rehabilitation progress more quickly. Also, we can obtain as large a tendon as we need. When we take tendons from one area of the body to use in another, I am limited by how much the body has to spare. Essentially, we are "robbing Peter to pay Paul". In small individuals with small tendons, there may not be enough to spare. Note that using the allograft does not accelerate your return to sports, as the maturation process that every graft must undergo is actually slightly slower with the donor graft. There are some risks with the donor graft that the other grafts do not have. Specifically, it is theoretically possible that infection could be transmitted by the graft. The grafts are thoroughly tested, but it is theoretically possibly that HIV or hepatitis could be transmitted through the graft. A few cases of HIV transmission occurred in approximately 1990 and none have been reported since. At about that time, the testing methods improved significantly. The risks are less than those with blood transfusion and the most recent figures that I have seen indicate that the risk of HIV is less than 1 out of 2.5 million. Thus, while it is theoretically possible that HIV could be transmitted by the graft, it is extremely unlikely.

The rehabilitation postoperatively is identical regardless of the graft chosen. There is less pain with the allograft compared to the hamstrings and less pain with the hamstrings compared to the patellar tendon. However, usually after a few weeks, this all equalizes. Each graft has an excellent track record and in truth the differences between them is quite small. Regardless of the graft that we choose, you have a 90% or better chance of getting back to all of your desired activities.



Bruce A. Stewart, MD, MBA
Orthopaedic Surgeon/Sports Medicine Specialist
370 N. 120th Avenue
Holland MI 49424
P 616.396.5855

FAQ's ACL INJURIES/TEARS (page three)

Will I have to stay in the hospital?

Most patients go home on the day of surgery; however, if you desire, we can make arrangements for you to stay overnight. Everything is done arthroscopically (through small poke holes). I recommend to almost every patient that when they arrive to the surgical holding area they receive a Femoral Nerve Block performed by the anesthesiologists. This nerve block helps reduce pain in the first 24 hours.

Do the screws ever come out?

Almost never. They are actually inside the bone and rarely cause any discomfort.

Doesn't this weaken the hamstrings/patellar tendon?

There are five hamstring tendons. I use two. The remaining three compensate by getting stronger and there is a chance that the two tendons re-grow so you won't miss them. If I use the patellar tendon, the remaining portion is strong enough while scar tissue fills in the defect.

Will I need a brace?

This reconstruction is strong enough that you rarely need a brace for more than a few weeks to a month. There are a couple of exceptions. The most common is when the MCL (along the inner aspect of the leg) is torn at the same time. Patients need a brace for four to six weeks when the MCL and ACL are torn together. I often recommend a "sport brace" for the later stages of physical therapy and for sporting activities for the first year after surgery, much like many football players wear on the field.

When can I walk on my leg after surgery?

If there was no meniscus repair, then you walk the same day as the surgery as long as your leg is in the brace and straight. You are given crutches but should put your weight on the leg right away. People frequently end up carrying the crutches by the end of the first week but I want my patients to use them until they can walk without a limp. If the meniscus was repaired, then weight bearing on the operative leg may be delayed.

Will I need rehab or physical therapy?

Yes, this is very important. Your chance of achieving normal knee function after the surgery is greatly increased by the proper rehab. In fact, it takes a great commitment from the patient to get to the therapist and do the exercises with the appropriate diligence. It is also important to do only the correct exercises, as doing the wrong exercises can be more damaging than doing none at all. Unless otherwise instructed, you should start supervised physical therapy a few days after your surgery. We want to minimize swelling first, then PT emphasizes obtaining your full range of motion and some strengthening exercises. As your motion improves, more emphasis is placed on strengthening. Usually within a week you are on a stationary bike and gradually progressed to a stair climber. You will also be doing some weight lifting exercises such as mini-squats and leg press. I usually recommend therapy 3-5 times a week for the first 1-2 weeks and 3 times a week for 2-4 weeks and gradual transition to a home or gym-based program. Jogging is usually allowed at approximately 2-3 months if your motion and strength allow. There is a gradual return to sports with shooting baskets at 2-3 months, golf 4-5 months, and so on. Full-speed sports are usually allowed at 6 months assuming your strength and agility have returned to near normal.



Bruce A. Stewart, MD, MBA
Orthopaedic Surgeon/Sports Medicine Specialist
370 N. 120th Avenue
Holland MI 49424
P 616.396.5855

FAQ's ACL INJURIES/TEARS (page four)

What do I have to do to get my knee ready for surgery?

The amount of swelling and stiffness you experience after surgery is related to the amount of swelling and stiffness you had before surgery. In other words, it is important to get rid of as much swelling and stiffness as you can before the operation. If the injury is old, your knee may bend well and have no swelling in which case you're ready for surgery already. Usually when the injury is a new one, there is a lot of swelling and stiffness and you need "prehab" to prepare your knee for surgery. This consists of exercises and icing which enables your knee to be in the best possible shape (full motion and no swelling) for surgery. "Prehab" is also beneficial as it gives you a chance to familiarize yourself with some of the exercises you'll be doing in the early postoperative period.

After surgery, is there anything special I need?

I recommend a continuous passive motion machine (CPM) be used for the first 3 weeks after surgery to help regain early range of motion. This machine moves the knee for you while you have your knee resting in it. The brace is usually removed and the knee is placed in the machine. This is not essential, but it is helpful for many people to help attain early motion. Typically, it is used for 6-8 hours a day, frequently at night. It can be adjusted to gradually increase the range of motion of the knee.

When can I go back to work?

This depends on what type of work you do. Usually deskwork can resume after three to five days. Jobs requiring significant amounts of walking can usually be resumed after two or four weeks when you feel comfortable off crutches. It's usually a couple of weeks before you can drive safely. You can't really climb or push/pull heavy loads for up to three months. Those jobs need to be avoided for awhile. Again, all of this is variable as everyone is different.

Risks of Surgery (possible, but still uncommon)

The most frequent problem is stiffness. That is why I want your knee to be flexible beforehand, and why you need to use the CPM (Continuous Passive Motion) machine and attend physical therapy. I fully expect you to have your normal motion when your rehabilitation is complete.

Blood clots are also possible, but rare (less than 1%). Keeping your leg mobile also decreases this risk. Based on your age and history if we find that you have additional risk factors (smoking, birth control pills, previous clots or phlebitis, etc.) then we will prescribe a blood thinner.

Infection also is rare, but possible (less than 1%). We sterilize your leg and use antibiotics to prevent this.

It is possible to stretch or re-tear the graft. For the first six months the graft is weak, so you will need to avoid twisting/cutting activities. Even after the graft is mature, you can still tear it. You tore the ligament you were born with so you can tear the one I rebuild for you as well.

While any surgery should be taken seriously, please rest assured that complications are relatively rare. I specialize in arthroscopic knee and shoulder surgery. I am confident that together we can create a knee that allows you to return to your desired activities.