ACL Injuries

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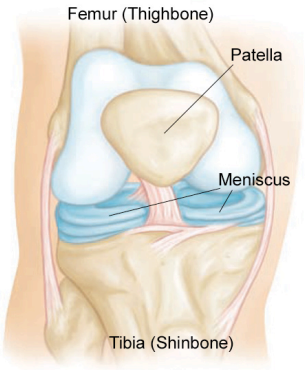
The anterior cruciate ligament (ACL) is one of the primary stabilizing ligaments in the knee. This ligament prevents the tibia from sliding forward relative to the femur and also provides rotational control of the knee during cutting and pivoting movements that are required in most sporting activities. It is commonly torn with either direct contact against the knee or simply during a landing or pivoting movement. A torn ACL will often leave the knee feeling weak and unstable and most people find it difficult to play sports or perform cutting and pivoting activities unless the ACL is reconstructed.

Unfortunately, when the ACL is torn, the meniscus is often damaged at the same time. The meniscus is an important type of cartilage in the knee that provides a cushion, protecting the joint surfaces. Because the meniscus has a relatively poor blood supply, it is often unable to heal on its own and may require repair with sutures at the time of an ACL reconstruction. The importance of a good meniscus repair cannot be understated as this has been shown to strongly correlate with the long term health and recovery of the knee.



ACL Reconstruction

The goal of ACL reconstruction is to restore stability to the knee in order to allow a full range of motion and eventual return to cutting and pivoting sports. In order to accomplish this, tissue that is similar in quality to the ACL is placed in the knee in a way that replicates the original anatomic position of the ACL. The details of this procedure are critically important for the long-term health and outcome of the knee. In order to restore full function to the ACL, the graft tissue must have sufficient initial strength, the tendon should heal to the bone, and the graft should undergo “ligamentization” over time. In other words, the graft tissue that is used to reconstruct the ACL will remodel and become more like the normal ACL over time. The initial strength of the graft allows for early, rapid rehabilitation focused on range of motion, strengthening and balance. Cutting and pivoting sports, however, are avoided until the graft has undergone appropriate remodeling and the muscles surrounding the knee have returned to full strength. This can occur anywhere between 4 months to greater than 1 year depending on a patient’s age, tissue quality, and rehabilitation efforts.

Graft Options

There are several different sources of tissue that can be used to reconstruct the ACL. For young, active athletes, it is best to use the patient’s own tissue. This most commonly involves using a portion of the quadriceps tendon, the patella tendon, or the hamstring tendons. Based on the superior size, strength and quality of the quadriceps tissue, this is often my graft of choice as I feel that it most closely mimics the native ACL. This also allows for a cosmetic “all inside” surgical technique that ideally allows for less early postoperative pain and a faster early rehabilitation. For less active and older patients, specially prepared cadaver tissue is often an excellent graft choice.

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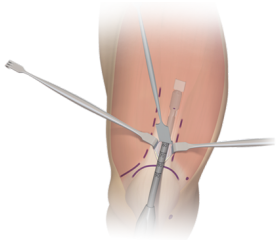
Minimally invasive quadriceps tendon harvest



Surgery

On the day of the procedure, we ask that you do NOT eat or drink any food or liquids before coming to the surgery location. Once you are registered at the surgery center, we will start an IV in your arm and prepare you for your surgery. You will meet with the anesthesiologist and have every opportunity to ask questions you may have. You will also see and speak with Dr. Holm on the day of your procedure. Before going to the operating room, the anesthesiologist will often inject a long-acting anesthetic solution next to two of the nerves that are responsible for sensation in the operative leg. These injections usually last 8-10 hours and control pain both during and after the surgery. When ready, you are taken to the operative suite and placed on a flat bed. We use a very light general anesthetic to put you to sleep, but light enough where you continue to breathe on your own. We then prep your knee and properly position it for the surgery. The surgical procedure itself takes approximately 1-2 hours. During the procedure, a camera is placed through small incisions at the front of the knee and the entire knee is evaluated for any other injuries that may have not been fully visualized on the MRI. The ACL graft is prepared and the site of the reconstruction is debrided of any excess tissue. Tunnels are drilled in the bone at the precise locations where your original ACL was positioned. The new graft is pulled into your knee and fixed in place so it heals in the proper position with the right amount of tension. The incisions are closed with absorbable sutures that do not need to be removed. After the surgery, a long-acting numbing medication is injected into your knee to help with pain control the day of surgery. There are dressings placed on your knee and a thick bandage wrapped around your leg. A brace is placed on your leg before you are taken to the post-operative area where you are allowed to recover until you are ready to go home.

After Surgery – Pain Control

Most of the pain after surgery is associated with swelling. To prevent the swelling and discomfort, I would encourage you to elevate you operative leg on 3-4 pillows while lying flat and try to keep ice packs on the operative knee constantly for the first 3 days after surgery. There have been enough dressings placed on your knee that you will not experience any frostbite to your skin from the ice.

We also provide you with different prescription medications to help control your pain. Narcotic pain medications are often necessary for the first several days after surgery to help control the pain. Some of the side effects of the narcotic pain medications are drowsiness, dry mouth and constipation. Drink plenty of water while taking these medications. It is recommended that you use a stool softener while using the narcotic pain medications in order to help prevent any bowel discomfort. We will also prescribe you a medication for nausea and/or vomiting that you can use if the other medications cause any discomfort in your stomach. I would encourage you to wean down off of the narcotic pain medications as soon as you are able but I would also like your pain to be controlled enough to the point where you are able to actively participate in physical therapy and perform your home exercises.

If there is an increase in pain after the first 3 days, rest the operative leg by staying off of your feet, elevating your leg above the heart and icing constantly for 12-16 hours. This should help calm the inflammation in your leg and your discomfort should abate.

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Activity

You are able to walk with full weight down on your leg at any time, but I recommend that you limit your activity for the first 72 hours after surgery to help reduce pain and swelling in your knee and to accelerate your recovery. After 72 hours, you may advance your activity as your body can tolerate. Progress your activity slowly and monitor for any increase in pain or swelling that this may cause.

Brace

You will use the brace when you are up and walking around. If you have had a meniscus repair as part of your surgery, the brace will be locked with the leg out straight for walking. Wear the brace at night if you find this to be comfortable. Once you have demonstrated to the therapists that your leg muscles are functioning appropriately to assist in stabilizing the knee, your brace can be discontinued around the house. You should continue to wear the brace for school and outdoor activities for the first 3 week.

Crutches

I would encourage you to use your crutches to help with balance and to help prevent any falls that may cause further injury to your surgically repaired knee. You are able to put as much weight as you want on your operative leg as long as the brace is securely in place. Crutches may only be necessary for the first few days depending on your progress with therapy.

Wound Care

Keep your dressings clean and dry. We will assist with changing your dressings on your first follow-up visit 2-3 days after surgery. After removal of the bandages, there will be Steri-strips over the incisions. Keep these Steri-strips on until they fall off on their own. After the first dressing change, you are able to shower, letting water and soap run over the knee and patting it dry. It is normal for your knee to be mildly warm after your surgery. This is due to the increase in blood flow to the area in response to the surgery. The knee and leg may swell up in response to the surgery as well. You may also experience a low-grade fever while recovering. This is a normal part of the inflammatory response your body mounts after an invasive procedure.

Diet

In general, the same principles apply, but you will likely need to eat and digest quickly between matches on After surgery you may return to your regular diet. We recommend that you start with something light, such as soup or crackers. If you are able to tolerate this without any issues, you can advance your diet as you would like.

Follow-up

You will follow up with my Physician's Assistant or your athletic trainer 2-3 days after surgery. This appointment is made for you at the time you schedule your surgery. At this appointment, your pain control, restrictions, incisions, work/school status and bracing will all be discussed. Your intra-operative photos of your surgery will be reviewed with you at this appointment as well.

You will have a follow up appointment with Dr. Holm at 1 month after surgery or sooner if there are any concerns expressed by the therapists/trainers/ or PA.

If any questions, concerns or issues arise, feel free to contact Kelly, our care coordinator at 952-808-3003 during regular business hours, or call our main number at 952-808-3000. You can also email Dr. Holm with any questions.

1000 W 140th St, #201, Burnsville, MN 55337 | Phone: 952-808-3000 | Fax: 952-808-3001

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Physical Therapy

We will provide you with a referral and we ask that you make your physical therapy appointments prior to your surgery date. You should start your therapy within one week of your reconstruction. The rehabilitation protocol follows. Feel free to bring it with you to your physical therapy appointments.

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