



## Knee Arthroscopy Anterior Cruciate Ligament (ACL) Reconstruction

### Advances in Knee Replacement Surgery

We combine the latest technological advancements and surgical techniques along with the timeless principles of anatomy and minimization of soft tissue trauma in order to achieve the best results possible. We do not routinely use tourniquets for ACL reconstruction surgery. We have found that not using tourniquets in the operating room has dramatically decreased postoperative pain and does not lead to increased blood loss with our modern surgical techniques. Increased pain associated with tourniquet use may be due to the development of significant hypoxia (no delivery of fresh blood and oxygen) to the tissues of your leg which happens with extended use of the tourniquet.

### ACL Graft Choices

- Graft choices include:
  - ✦ Hamstring autograft
  - ✦ Patellar tendon autograft
  - ✦ Quadriceps tendon autograft
  - ✦ Allograft (cadaver tissue)
- Each graft has its own set of advantages and disadvantages.
- **For primary ACL reconstruction, Hamstring Autograft** tends to have less anterior knee pain/pain with kneeling, although the graft may take longer to heal.
- **Patellar Tendon Autograft** may be associated with a higher incidence of anterior knee pain and requires a larger anterior knee incision for graft harvest, although the graft has bone plugs on each end which allows for bone-to bone healing (faster healing).
- For first-time ACL reconstruction, **Autograft (your own tissue) tends to have better results** and less laxity over the long term than allograft in many studies.
- **Quadriceps Tendon Autograft** is an excellent choice for autograft in revision settings and in multiple ligament reconstructions.
- **Allograft** may be a reasonable choice in certain settings such as revision ACL reconstruction.

### Postoperative exercises

- Begin knee/ankle range of motion exercises and straight leg raises/quadriceps sets on the day following your surgery.
- Avoid activities that increase knee pain/swelling such as prolonged periods of standing or walking during the first 7-10 days following surgery. Range of motion and strengthening exercises are important elements of your recovery and help to minimize complications such as excessive swelling and blood clots. However, don't overdo it. Listen to your body and use common sense.
- Knee straightening: Straighten your knee by gradually applying gentle pressure to your thigh just above your kneecap with your knee straightened as much as possible. Hold this straightened position for 5 seconds and then relax. Perform several times per day. However, do not hyperextend (straighten beyond 0°) your knee as this can place excessive stress on your reconstructed ACL graft.
- Knee bending: Bend your knee using your arms or a rolled towel to pull on your lower leg to increase knee bending. Hold in the bent position for 5 seconds and then straighten. Perform several times per day.

- Perform quadriceps sets several times per hour throughout the day. With your leg straight, contract your thigh (quadriceps) muscle (e.g. try to straighten your knee), and hold the contracted position for 5 seconds, then relax.

### Activity Progression

- Activity advancement is tailored to the unique condition and needs of each patient following surgery. While biologic healing requires time and there are some general guidelines listed below, individual activity advancement depends upon a number of individual factors including preoperative fitness, associated injuries identified on MRI and during arthroscopy, and meeting functional postoperative milestones.
- Crutches are often required until quadriceps strength is adequate for walking, often a couple of weeks after surgery depending upon individual circumstances.
- Low impact, closed-chain exercises including the stationary bicycle and elliptical trainer may be started at approximately 6-8 weeks after surgery.
- Sports involving cutting/jumping/twisting may be resumed at approximately 6 months following surgery assuming all functional milestones have been met.
- Activity progression is ultimately based upon the achievement of appropriate functional prerequisites for activity advancement rather than simply upon the passage of time.

### Physical Therapy/Home Exercises

- Preoperative: Consultation with a skilled and knowledgeable physical therapist prior to surgery is often helpful to optimize knee range of motion and lower extremity/core muscle strength in preparation for surgery. Preoperative optimization helps to achieve better results following surgery and ensures that you are properly educated regarding the home exercises that have been tailored to your specific situation and injury.
- Postoperative: Physical therapy following surgery is important to restore range of motion and strength, provide guidance regarding activity advancement, and to optimize knee and holistic body function via sports-specific activity progression tailored to your specific needs.

### Elevation

- Elevate your leg above heart level as much as possible during the first 3-4 days following surgery. This will help to minimize pain and swelling after surgery and will improve wound healing.
- Elevate your leg with folded blankets or pillows under your ankle. Do not place anything directly under your knee as this may increase risk of Deep Venous Thrombosis (DVT).
- Keep ACE wrap on leg wrapped from the foot to above the knee for at least 3 days. This will help to decrease pain and swelling.

### Bandage Care

- Some bleeding through the bandage is normal. Reinforce with more dressing if this occurs during the first 1-2 days following surgery.
- Keep the bandage placed in the operating room clean and dry, and leave in place for 3 days.
- It is OK to take off the bandages and shower 3 days after surgery. Keep the incisions out of the direct water stream and gently pat dry. Cover the incisions with band aids or other suitable dressing.

### Ice

- Ice helps to control pain and decrease swelling.
- Ice can be applied for 15-20 minutes up to 3-4 times per day as needed.
- Use a barrier between the skin and the ice pack to protect your skin.

## Medications/Pain Control

- Local pain medication is injected into the soft tissues around your knee during surgery and lasts for approximately 4-6 hours.
- Take prescription pain medicines as needed for significant pain. It is common to take narcotic pain medication for 1-2 days after surgery as this is typically when the pain is most severe. Some degree of pain after surgery is expected and has a protective function as it serves as a general guide to activity advancement. Take the pain medications as needed if you are experiencing moderate to severe pain. If your pain is manageable, stop taking the narcotics.
- It is OK to take nonsteroidal anti-inflammatory medications (e.g. ibuprofen, naproxen) following surgery unless specifically directed otherwise.
- Take the pain medication with food and liquids. Do not drink alcohol or drive while taking prescribed pain medication.

## Diet

- Beginning the after day of surgery, drink plenty of clear liquids and eat nutritious foods. Adequate hydration and optimal nutrition is an essential part of your healing and recovery.

## Blood Clot Prevention

- The best way to prevent blood clots is adequate hydration (drink plenty of water) and frequent movement of all 4 extremities.
- Unless otherwise instructed, take a baby aspirin (81 mg) daily for 10 days following surgery. This may lower the risk of a blood clot developing after surgery.
- Call the office if you notice excessive swelling or significant pain below your knee (Calf, ankle, or foot).

## Common Complaints after Surgery

- Nausea/Vomiting is usually related to the anesthetic drugs used during surgery and resolves during the first 24 hours. Begin with clear liquids and light foods following surgery.
- Drowsiness is associated with anesthetic drugs and IV pain medications used during your surgery. This usually resolves within 24 hours after surgery.
- Constipation is a common side effect of narcotics and strong pain medications. Adequate hydration, a diet high in fiber, and over-the-counter stool softeners can help to minimize constipation.
- Swelling within the knee joint (swelling in the front of the knee at and just above the kneecap) after surgery is common and may last for several weeks. Ice, elevation, and gentle, frequent movement/range of motion exercises will help to minimize knee swelling and stiffness as well as reduce the risk of blood clots.
- Clicking/popping with movement: Some patients may also experience **occasional clicking or popping** with movement. This is common following knee surgery and rarely represents a problem.
- Low grade fever (< 100.5° F) can occur during the first 24-48 hours following surgery. Taking deep breaths and periodically sitting upright will help this to resolve.

## When to Call

Call us at 858.703.6964 if any of the following develop:

- Temperature > 101.5° F
- An increase in redness or cloudy drainage from the incisions
- Increased foot or calf swelling
- Severe pain not adequately controlled with medications

- Excessive nausea or vomiting
- Chest pain or shortness of breath