

**STEVEN CHUDIK MD**  
**SHOULDER, KNEE & SPORTS MEDICINE**

## Pediatric Anterior Cruciate Ligament Reconstruction Surgery

### Indications for Surgery

The anterior cruciate ligament (ACL) is one of the four major ligaments of the knee, particularly a ropelike structure in the center of the knee that helps maintain the normal stability. Unfortunately, a torn ACL does not heal and the knee will typically continue to be unstable (shifts or gives way) during sports that require pivoting, changing direction (cutting), jumping, or landing. Even with restriction of risky activities, living everyday life without reconstructing the ACL places abnormal stresses on the meniscus of the knee resulting in tears and accelerated degeneration of the cartilage and arthritis. The diagnosis of an ACL tear usually is made on physical examination, though an MRI can be helpful to demonstrate the tear, as well as other injuries to the meniscus and cartilage. ACL tears are becoming increasingly more prevalent in young athletes.



Normal ACL on MRI



ACL tear on MRI

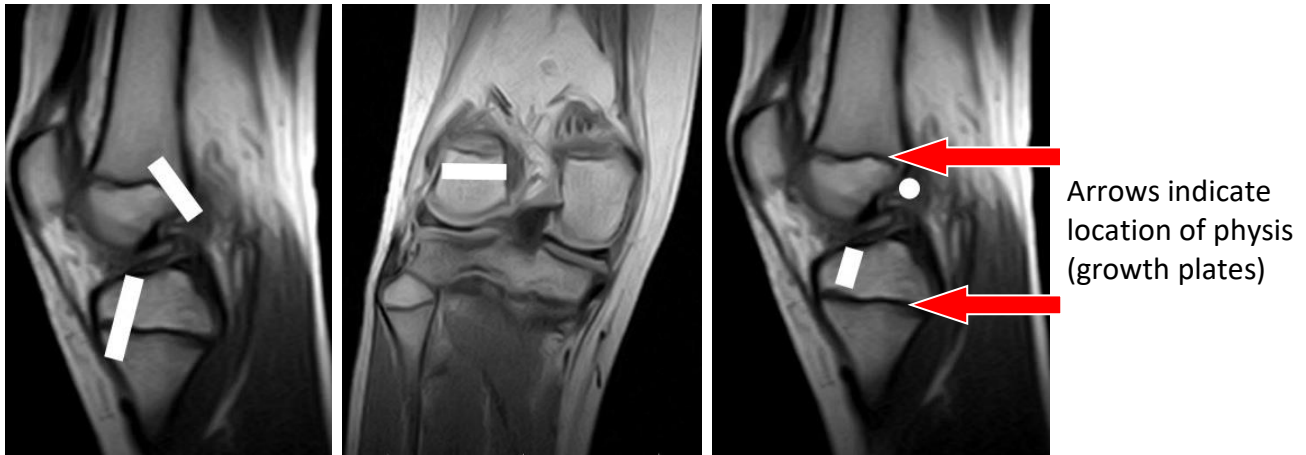
During ACL surgery, the torn ligament is replaced (reconstructed) with a graft, because simple repair usually is not possible. Common grafts used to replace the torn ligament include the hamstring tendons, bone-patellar tendon-bone, quadriceps tendon, or allografts (from cadavers). Dr. Chudik prefers to use the patient's own hamstring graft as this has shown better long-term results with a lesser risk for arthritis. The goals of the surgery are to reconstruct the torn ligament, repair any other damaged structures including the meniscus or cartilage, and restore function and stability to the knee. Normal ACL surgery requires the graft and hardware to cross over the growth plates in both the femur (thigh bone) and the tibia (shin bone).



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Normal ACL tunnels  
across the growth plate

Epiphyseal tunnels avoiding the growth plates

In young patients with significant growth yet to occur, this can potentially cause growth abnormalities. Dr. Chudik developed a special procedure to reconstruct the ACL without injuring physis (growth plate). This procedure does not cross the growth plates and therefore, minimizes the risk for affecting growth.

### Contraindications to Surgery

- Persons who demonstrate an inability or unwillingness to complete the necessary postoperative rehabilitation program should not have surgery.
- Infection of the knee, current or previous, is a concern, but not an absolute contraindication.

### Potential Surgical Risks and Complications

- Infection
- Nerve injury (numbness) in the skin around the knee. It is not uncommon to have some small area of numbness, temporary or permanent, around the incisions.
- A post-operative infection can require the graft to be removed to eradicate the infection.
- Re-rupture or stretching of the reconstructed ligament, causing recurrent instability (more common with allografts)
- Knee stiffness (loss of knee motion) requiring prolonged rehabilitation or repeat surgery
- Pain from the fixation device used to hold the graft (rare)
- Clot in the veins of the calf or thigh (deep venous thrombosis, phlebitis) that may break off in the bloodstream and go to the lungs (pulmonary embolus) (rare)



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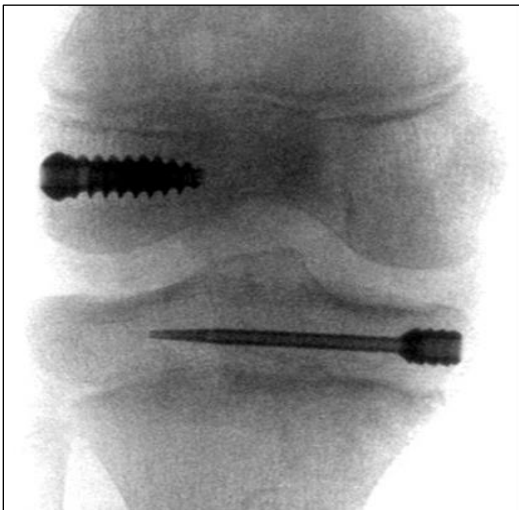
## SHOULDER, KNEE & SPORTS MEDICINE

### Hospitalization and Anesthesia

- Outpatient surgery (you go home the same day)
- General anesthetic, femoral block (see *Your Surgical Experience* booklet)

### General Surgical Technique

Dr. Chudik performs ACL surgery with the assistance of an arthroscope (small camera that lets him look inside the knee through small incisions). The torn ACL is replaced by a graft. During the surgery, the other ligaments, meniscus and cartilage of the knee are evaluated and treated appropriately. Arthroscopically, the torn remnants of the ACL are preserved, bone tunnels are created in the tibia (shinbone) and femur (thighbone), without crossing the growth plate, and the graft is placed **anatomically** where the injured ACL used to be. The graft is held in position with special fixation devices that usually do not need to be removed.



Pediatric anterior cruciate ligament (ACL) hardware fixing the graft and avoiding the growth plates. Hardware can be removed entirely after graft has incorporated.

### Preoperative instructions

- Discontinue birth control pills
- Stop blood thinners such as aspirin, Coumadin<sup>®</sup>, Lovenox<sup>®</sup>, Xarelto<sup>®</sup> according to the prescribing doctor's directions
- Stop anti-inflammatory medicines such as ibuprofen, Advil<sup>®</sup>, Motrin<sup>®</sup>, Naprosyn<sup>®</sup>, Alleve<sup>®</sup>, etc.)
- Stop nutritional supplements and drinks like Vitamin C, ginseng, ginkgo biloba, etc.
- Stop smoking for surgery and during the first six weeks postoperatively to allow proper tissue healing

**Do not eat or drink anything from midnight, the evening before surgery**



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### Post-Operative Course

- Post-operative plaster splint keeping the knee in terminal extension is applied and worn for one week
- Crutches and partial weight bearing for approximately four weeks for an isolated ACL reconstruction
- A post-op knee brace for only 24 hours if a regional block was used, or six weeks if your meniscus is repaired, or if another ligament also had to be repaired/reconstructed
- Keep the wound clean and dry for the first 10 to 14 days after surgery. Showering lightly is allowed after two weeks but wounds cannot be submerged under water for three weeks
- Return to school in less than one week as long as the extremity can be elevated
- Physical therapy to restore motion, strength, and proprioception (balance) for up to four to six months.
- After the knee is fully rehabilitated, **Dr. Chudik's ACL Functional Capacity Evaluation** is performed to determine that the knee is fully rehabilitated and more important, any errors in movement patterns (known to put patients at risk for injuring their ACL reconstruction or their other knee) are corrected and the patient can return to activities safely.

### Return to Activity

- Return to walking and regular daily activities once off crutches (usually about four to six weeks after surgery)
- Return to running at about three months post-op
- Return to sports at four to six months post-op

### Scheduling Surgery

Call Dr. Chudik's surgery scheduler at **630-324-0402**, or email [contactus@chudikmd.com](mailto:contactus@chudikmd.com)/ to:

- Schedule the date and location of surgery
- Schedule an appointment with Dr. Chudik's physician assistant to complete pre-operative surgical education and other requirements
- Schedule a post-operative appointment with Dr. Chudik's team to remove sutures and review post-op instructions

### Notify My Office if Symptoms Worsen



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