

Alta View Sports Medicine



Dr. James R. Meadows, MD  
Orthopedic Surgery & Sports Medicine  
74 Kimballs Ln Ste 230, Draper, UT 84020  
9844 S. 1300 E. Ste 100, Sandy, UT 84094  
(801) 571-9433  
www.MeadowsMD.com

# ACL Reconstruction

## "I've torn my ACL, now what?"

The anterior cruciate ligament (ACL) and posterior cruciate ligament (PCL) are two ligaments that run diagonally in the knee across each other in an "X" pattern and connect the femur to the tibia. The ACL prevents the tibia from shifting out in front of the femur and provides rotational stability to the knee. The ACL can be torn during sudden stops or change in direction to the knee, landing incorrectly from a jump, or from direct contact to the knee. Surgery is indicated to help restore stability to the knee. Although patients who do not participate in activity involving cutting and jumping motions may recover well with nonoperative treatment and physical therapy, reconstructive surgery facilitates a return to full activity if you are young, participate in sporting activities, have torn multiple ligaments in your knee, or have a persistent sensation of instability of the knee.

As your torn ACL cannot be stitched back together, it is replaced with tendon graft from either your patella tendon, hamstring tendons, or allograft (cadaver) tendon. The best graft choice is determined between you and your surgeon.

For more information, you may refer to:

<http://orthoinfo.aaos.org/topic.cfm?topic=A00549>



# What to Expect

- Prior to surgery it is important that you have regained good knee range of motion in order enable you to start therapy right away and prevent stiffness after surgery.
- Stop taking aspirin, multivitamins, fish oil 7 days prior to surgery. If you take any blood thinning medication, please discuss this with your surgeon.
- Do not eat or drink anything after midnight the night before your surgery as the procedure is done using general anesthesia. An anesthesiologist will discuss this with you the day of surgery.
- Surgery is done outpatient. You will need a ride to and from the hospital.
- During surgery, a full evaluation of the entire knee, including the articular cartilage and menisci is performed and the remnant torn ACL is removed. Specialized instruments are used to drill tunnels in the femur and tibia to accurately place the new graft which is held in place with screws or other fixation devices.
- After surgery you will be placed in a hinged knee brace to protect your knee.
- Make arrangements with your employment for after surgery.
  - Return to work:
    - Desk-type job: when your pain medication needs are minimal and you can walk safely with crutches (~ 7-14 days)
    - Light-Duty with crutches permitted: as above (~ 7-14 days)
    - Light-Duty with crutches not-permitted: when you can ambulate with normal gait in knee brace (~ 2-4 weeks)
    - No light-duty allowed: after 4 weeks. Keep in mind you will not be able to jog until after 3 months
- You will be given a prescription for physical therapy prior to surgery. Arrange your first visit with the therapist within 1 week of surgery.
- Arrange with your family to have help at home and rides to physical therapy after surgery

Your rehabilitation starts immediately after surgery in order to ensure the best possible return to full activity.

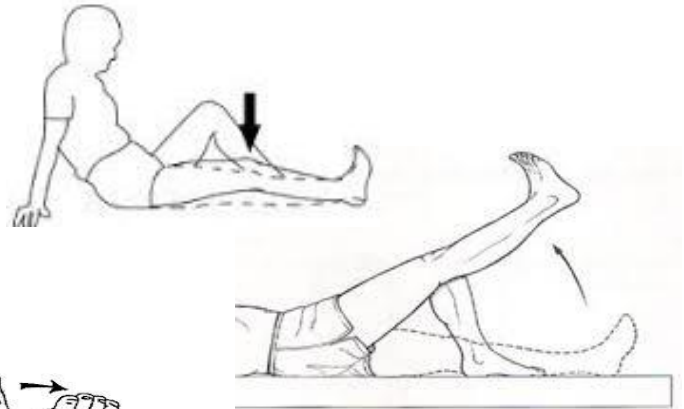
## Phase 1 (0 – 2 weeks postop)

Goals: Control pain, diminish swelling, begin regaining knee motion with focus on full extension, patella mobility, restore normal gait pattern, protect the graft

- Pain: You will be prescribed pain medication to use after surgery. Use as directed and wean use to as needed. You may begin taking an anti-inflammatory medication (i.e. ibuprofen, naproxen) unless medically contraindicated. Do not drive or use alcohol while taking narcotic pain medication.
- Weight bearing: You may put full weight on your leg as tolerated using crutches
  - You will use crutches for 2 weeks at minimum. You will transition off crutches during therapy when you have minimal pain and demonstrate a proper gait pattern.
- Brace: Keep knee brace locked in extension while ambulating, you may unlock brace when doing exercises. The brace is to be worn locked in extension while sleeping as well.
- Elevate your leg while resting and sleeping to decrease swelling.
- Ice: Place a bag of ice or cryocuff on the knee for 1-2 hours a few times each day and after therapy or home exercises.
- Dressing: Remove the ace wrap and discard all white dressings about your knee on the 3<sup>rd</sup> day after surgery. The dressings will have absorbed blood/water draining from the knee—don't be alarmed! Drainage from the knee is normal and helps keep the knee swelling down.
  - You may shower, but keep your knee dry until sutures are removed
  - Do not submerge knee until suture removal (no baths, pools, hot tubs)
  - Keep incisions covered by wrapping the knee with an ace wrap to protect incision during the day. Change to a new wrap or reinforce as needed from drainage.
- Schedule your postoperative visit for 10-14 days after surgery. At this visit:
  - Suture removal
  - Review of your surgery (bring your surgical photos) and rehab plan
- Begin physical therapy within 1 week after surgery.

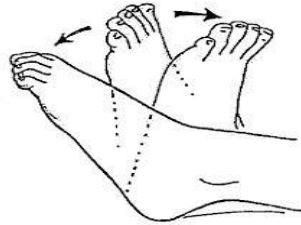
# Exercises

- Quad Isometric Contractions

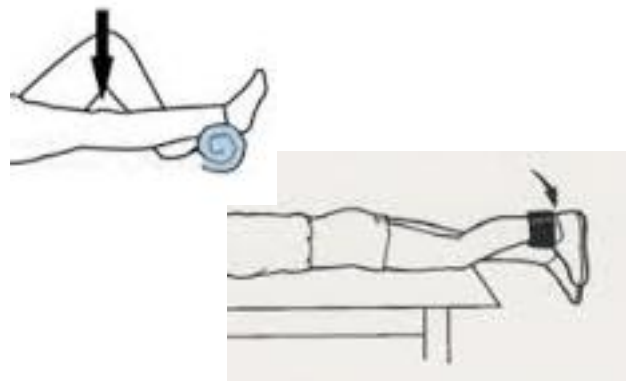


- Straight Leg Raises to 45° with knee brace locked in extension

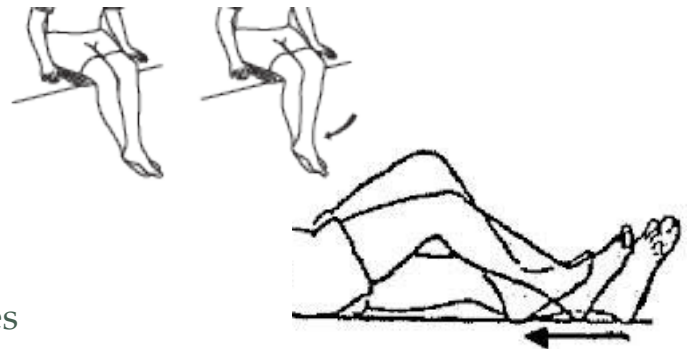
- Ankle Pumps



- Knee Extension: Heel Prop, Prone Leg Hang
  - Goal: full extension by 2 weeks



- Knee Flexion: Assisted knee flexion using nonoperative leg to push back operative leg, heel slides
  - Goal: flexion to 90° by 2 weeks



- Cycling without resistance (15 min 2-3 times daily as tolerated)
  - Raise the seat initially so the knee doesn't bend much, lower seat as your motion and pain improves

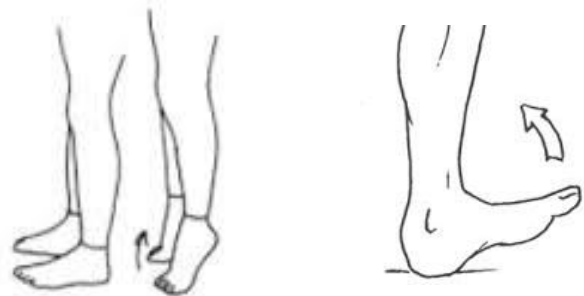
## Phase 2 (2 - 6 weeks postop)

Goals: Maintain full knee extension, Achieve 120° of knee flexion, Minimize swelling, Develop muscular control, Achieve normal gait

- Weight Bearing: transition off crutches by week 4
  - Brace: continue to wear during ambulation and exercises in unlocked position. May remove when resting at home, showering, or in supervised therapy only. You may remove it during sleep once you have regained full knee extension.
  - Incisions: keep dry until week 3. At 3 weeks you may get knee wet, but avoid community pools, hot tubs, lakes until 4 weeks. You may massage incisions with vitamin E lotion to decrease scar formation. Use sunscreen (at least SPF 30) on scars for up to 1 year after surgery to improve scar appearance.
  - Physical therapy: continue as needed through 6 weeks after surgery.
    - Continue Phase 1 exercises at home
  - Driving: it is illegal to drive while taking narcotic pain medication
    - Surgery on left knee: if you had surgery on your left knee you may drive an automatic transmission when you are comfortable getting in and out of a car. For standard transmission, when you ambulate with a normal gait and have achieved good muscular control (~ 4 weeks)
    - Surgery on the right knee: when you ambulate with a normal gait and have achieved good muscular control (~ 4-6 weeks)
-

## Exercises for weeks 2-4

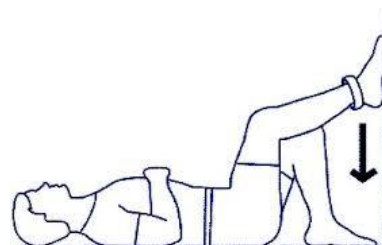
- Continue exercises from Phase 1
- Heel/Toe Raises (hold 5 sec, 5 min 5x/day)



- Mini squats (hold 5 sec, 5 min 5x/day)
  - Avoid knee flexion > 45°
  - Support holding onto a chair, counter

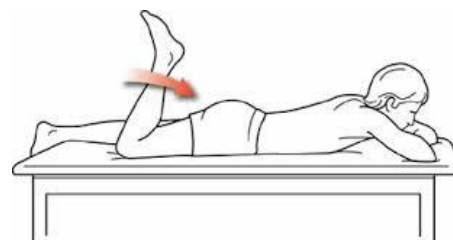


- Wall slides (hold 5 sec, 5 min 5x/day)
  - Lie on back with foot on wall, allow gravity and nonoperative leg to assist pushing back operative leg



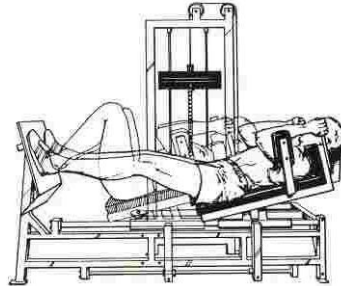
- Stationary Bike
  - Increase duration without resistance to goal of 20 minutes, then slowly increase resistance.
  - Set the seat so there is a slight knee bend with the pedal at the lowest position

- Prone leg curls
  - Delay until 8 weeks if your hamstrings were used as your graft



## Exercises for weeks 5-6

- Goal of full flexion and strength building
- Continue exercises from Phase 1 & 2
- Avoid knee extension/curl machine
- Front and side lunges (keep brace on)
  - Avoid knee flexion  $> 90^\circ$
- Leg press machine (with brace on)
  - Avoid knee flexion  $> 90^\circ$
- Elliptical machine
- Front and lateral step-ups
- Balance/Proprioception Training
  - Single leg stork balance
  - Balance board/BOSU balance trainer
- Swim exercises
  - Pool walking, straight-leg flutter kicks, water bicycle
- Cardiovascular conditioning: elliptical, bike, swimming, treadmill as tolerated



## Phase 3 (6-12 weeks postop)

Goals: Maintain full range of motion, enhance leg muscular strength and endurance, improve proprioception and neuromuscular control

- You may begin to feel that you can return to full activity at this point, but you are still early in the healing and incorporation of your graft. Be cautious!
- Brace: continue to use your brace during the day. You may remove it during supervised therapy or when performing exercises at home in a controlled manner.
- Schedule a clinic visit for about 6 weeks after surgery for an evaluation of your progress.

### Exercises

- Continue exercises from Phases 1 & 2
- Avoid knee extension/curl machine
- Continue pool program
- Continue cardiovascular conditioning
- Continue lower extremity strengthening of both legs
  - Leg curls (advance at 8 weeks for hamstring grafts)
  - Leg press machine
  - Step-ups
  - Introduce stair climber
- Continue proprioception/neuromuscular control training
  - Balance board, wobble board, BOSU trainer



## Phase 4 (3-6 months postop)

Goals: Maintain full range of motion, continued leg strengthening, return to full activity, prepare to return to sport by 6 months

- Brace: you may use it during activity if you feel it adds stability, otherwise you may discontinue it. Consider using a neoprene sleeve during activity to supply compression to the knee to aid in keeping any swelling to a minimum.
- Schedule a clinic visit for about 3 months from your date of surgery

### Exercises

- Continue exercises from Phases 2 & 3
- At 3 months:
  - Begin light jogging on treadmill and level ground only (no trail running)
- At 4 months:
  - May begin running in forward direction on level ground (no trail running)
  - Begin agility drills: figure of eight drills, stair running, shuttle running, ladder drills
- At 5 months:
  - Begin plyometric drills/jumping
  - Begin sport-specific training avoiding cutting/pivoting maneuvers
- At 6 months:
  - Criteria to return to full sport:
    - Full range of motion
    - Quad/hamstring strength > 80% of the nonoperative leg
    - Normal running gait
    - Satisfactory clinical exam, schedule a 6 month clinic visit
  - If you compete in sports involving running, cutting, pivoting we may discuss fitting for a custom functional brace