

ACL TEAR

Prehab Before Surgery



SCAN FOR THE
ONLINE VERSION



Stanford
MEDICINE

Key Principles

What you do before ACL surgery can help your recovery after it. The main goals are getting the knee to **straighten fully**, getting it to **bend well** and **walking comfortably**. A knee that is calm and moving well before surgery tends to recover more smoothly afterward.

Let swelling guide you. Some discomfort during the exercises is normal. If the knee is more swollen or sore the next day, ease back for a day or two and let our office know if it does not settle.

Protect the knee until it is reconstructed. It is best to avoid cutting, pivoting and jumping sports for now. If the knee gives way, let our office know.

GOALS BEFORE SURGERY

These are the goals we work toward before surgery:

- **Straightening:** the knee straightens about as fully as the other side.
- **Bending** to about 120 degrees.
- **Swelling** that has settled down.
- **Walking** comfortably without crutches.
- **Straight leg raises** with the knee staying straight, working up to 20 in a row.

How long this takes varies from person to person, and every bit of progress helps.

THE FIRST DAYS

- **Crutches:** use two crutches and put as much weight on the leg as is comfortable. Stop the crutches once you can walk without a limp.
- **Ice and elevation:** ice for about 20 minutes at a time with a thin cloth against the skin. Rest with the leg raised above the level of your heart, supporting the whole leg with the pillow under the calf and heel rather than under the knee.

YOUR HOME PROGRAM

Getting the knee to straighten and bend is the most helpful goal before surgery, so start each session with the motion exercises. Then work on waking up the quadriceps. The thigh muscle often weakens after an ACL tear, and building it back before surgery tends to make the recovery easier.

Use a counter or sturdy chair for balance with the standing exercises.

For Your Therapist

This is a preoperative (phase 0) program. The goal is a quiet knee with full motion and good quadriceps control before reconstruction.

Goals before surgery (recommended, not required): full extension symmetric with the other knee, flexion of at least 120°; minimal or no effusion, normal gait and 20 straight leg raises without an extension lag.

Priorities: extension and flexion range of motion, effusion control, quadriceps activation and formal gait training.

Education: teach crutch use and the first postoperative exercises so they are familiar before surgery.

Monitor the knee: if effusion or pain increases, reduce the load. Please let our office know about persistent swelling or mechanical symptoms.

Combined MCL injury: keep exercises in the sagittal plane and avoid hip adduction until cleared.

Activity: avoid pivoting sport and plyometrics before surgery.

Adapted from the MOON ACL Rehabilitation Guidelines (acltear.info) and Adams et al., J Orthop Sports Phys Ther 2012. Contact our office with any questions.



Scan for the MOON
Knee Group prehab
program and
exercise videos
(acltear.info).

What you need: ☐ Towel roll ☐ Pillow ☐ Sturdy chair or counter ☐ Crutches until you walk without a limp

1 STRAIGHTENING AND BENDING THE KNEE

3 to 4 times a day



1 Heel prop

20 to 30 minutes · 3 to 4 times a day

Lie on your back with a rolled towel under the heel, not the knee, so the knee hangs free. Relax the thigh and let gravity gently straighten the knee.

Alternative - Lie face down on a bed with a small towel roll under the thigh just above the knee and the foot hanging off the edge.



2 Heel slides

10 to 20 repetitions · 3 to 4 times a day

Lying on your back, slide the heel toward the buttock to bend the knee, then slide it back out until the knee is straight. Do a heel prop before and after. Slight discomfort is OK, but stop if it is painful.



3 Ankle pumps

15 repetitions · every hour while resting

With the leg straight and a towel roll under the ankle, move the foot up and down. This helps circulation and swelling.

2 WAKING UP THE QUADRICEPS

3 times a day



4 Quad set

12 repetitions · hold 5 seconds · 3 times a day

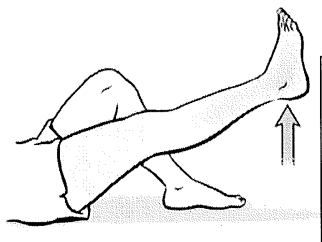
Sit or lie with the leg straight. Tighten the thigh so the back of the knee presses down and the kneecap pulls up toward the hip. Keep the buttock and hamstring relaxed.



5 Hamstring set

12 repetitions · hold 6 seconds · 1 to 3 times a day

Lie on your back with the knee bent to about 45 degrees and the heel resting on the bed. Press the heel down into the bed with mild to moderate pressure.



6 Straight leg raise

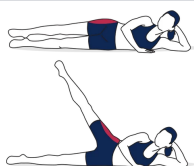
12 repetitions · 3 times a day

Bend the other knee with the foot flat. Tighten the thigh first, then slowly lift the straight leg until it is level with the other knee and lower it slowly. Start once you can do a strong quad set. If the knee bends as you lift, go back to quad sets.

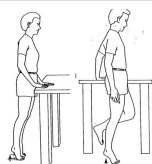
Goal - work up to 20 in a row with the knee straight.

3 STRENGTH AND WALKING**1 to 3 times a day****7 Prone leg raise****12 repetitions · 3 times a day**

Lie face down. Tighten the core and buttock, lift the straight leg, hold 2 seconds and lower slowly. Keep the hips flat and do not arch the back. A pillow under the stomach helps if the low back is sore.

**8 Side-lying leg raise****12 repetitions · 1 to 3 times a day**

Lie on the other side. Lift the straight leg from the hip, keeping it slightly behind you with the toes turned slightly in.

**9 Heel raises****12 repetitions · 1 to 3 times a day**

Holding a counter, rise onto the toes over 2 seconds and lower over 4 seconds.

**10 Quarter squat (mini squat)****12 repetitions · 1 to 3 times a day**

With the feet shoulder-width apart, holding a counter if needed, bend the knees about 6 inches as if starting to sit. Keep the weight even on both legs and the knees over the second and third toes.

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Dr. Sailesh Tummala is an orthopaedic surgeon at Stanford Health Care and a clinical assistant professor at Stanford University School of Medicine with fellowship training in sports medicine and shoulder surgery. A former collegiate basketball player, he cares for athletes and active patients of all ages and emphasizes nonoperative care while also offering minimally invasive and complex reconstructive surgery. He has authored more than 100 peer-reviewed papers and has received grant funding for his research. He assists with teams at all levels across the Bay Area, including the Stanford men's basketball and football teams.

**Website**

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**Stanford profile**

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Heel prop, heel slide, hamstring set, prone leg raise and quarter squat photos: MOON Knee Group, actear.info.