



**NATIONWIDE CHILDREN'S**  
*When your child needs a hospital, everything matters.™*

## **Helping Hand™**

*Health Education for Patients and Families*

# **Anterior Cruciate Ligament Tear (ACL Tear)**

The anterior cruciate (an-TEER-ier KROO-she-et) ligament (ACL) is one of four main ligaments in the knee. Ligaments are tissues that hold different bones together. The ACL is in the middle of the knee between the shinbone (tibia) and the thighbone (femur). The ACL supports the knee when a person is pivoting, jumping and making quick turns.

There is another area of tissue in the knee called the meniscus (men-IS-cus). The meniscus is the rubbery cartilage disc between the shin (tibia) and thighbone (femur). It acts as a “shock absorber” in the joint. When the ACL tears, there may often be an injury to the meniscus.

## **Common causes of injury**

The most common cause of an ACL tear is a non-contact pivoting injury. Most often, these injuries occur in sports, such as basketball, soccer and football.

## **Symptoms**

- knee pain
- swelling
- a pop you can hear or feel at time of injury
- feeling like the knee will give out (will still be able to walk)

## **Diagnosis**

After an injury, your knee may be very swollen. If the doctor thinks there may be an injury to the ACL, they may suggest you wait a few days before scheduling an appointment. This lets the swelling go down. It will make the exam easier and less painful.

If the doctor examines the knee and feels unsteadiness or abnormal movement, there may be damage to the ACL. In some cases, your doctor may need x-rays to check for injury to the bone.

The ACL and meniscus are made of soft tissue. A tear in soft tissue will not show up on an x-ray, so the doctor may order an MRI (magnetic resonance imaging) test. This test lets the doctor see if there is a tear in the ACL or injury to the meniscus.

## Initial treatment

- **RICE:** Rest, Ice, Compression, Elevation
- Knee brace
- Crutches
- Pain relievers, such as Motrin<sup>®</sup> or Tylenol<sup>®</sup>. Motrin helps reduce pain and swelling. Tylenol may also help with discomfort. Motrin can often be taken every six hours and Tylenol can be taken every four hours. These medicines can be alternated every three hours as needed for pain control.

## Surgery

When the ACL tears, the ends cannot be sewn back together. The ligament needs to be rebuilt to allow you to function in sports or activities that are more physical. Surgery to rebuild the ACL is called arthroscopic (ar-thro-SKAH-pic) ACL reconstruction. The doctor rebuilds the torn ligament using part of your hamstring or other tissue. It is usually an outpatient surgery. Younger children who have the surgery may stay overnight to help manage their pain and swelling after surgery. An older child can go home after surgery if pain is well controlled and if they can use crutches or a walker safely.

## After surgery

- **Brace and crutches**

After surgery, the health care provider or nurse will teach you how to use crutches and wear a hinged knee brace. It is very important that you use the brace and crutches as instructed.

- **Ice**

You will also be taught how to use the Polar Ice device. Use the machine regularly for the first 24 to 48 hours after surgery to help decrease swelling. After 48 hours, you may begin using it for 30 minutes at a time, 3 to 4 times every day until the swelling lessens.

- **Pain medicine**

You will get a prescription for pain medicine. The doctor may recommend Motrin for pain relief as well. Motrin will help with swelling and will help you stop using the prescription pain medicine faster.

- **Exercises**

You will have exercises to do. The muscles at the site of surgery will be weak, but it is important for you to do these exercises. They help build up the strength of the leg muscles. This helps with healing. ACL exercises are on Page 4.

- **Physical therapy**

At the first appointment after surgery, you will get a prescription for physical therapy. You should start physical therapy as soon as possible after the first follow-up appointment (usually one week after surgery). The exercises at home and in physical therapy will help you recover quicker. They will help reduce swelling and improve the range of motion.

## **Follow-up**

Your first follow-up appointment will be about one week after surgery. At this time, the incisions will be checked and any dressings will be removed. You can talk to your care team about your pain level. You will get a prescription for physical therapy.

## **When to call the doctor**

Call the Orthopedic clinic at 614-722-5175 any time with questions or if you have:

- pain that gets worse
- fever higher than 101 degrees F by mouth
- nausea or vomiting
- more redness and warmth at the incision
- a new rash
- chills
- drainage of any kind from the incision

## **Expectations for recovery**

In most cases, it will take 6 to 9 months of recovery until you can return to normal sports or activities. Your doctor and physical therapist will work with you to increase the strength and motion of the knee.

Your doctor has a specific set of rules for activities following an ACL reconstruction surgery, and the physical therapist will follow this timeline. It is important for you to not do activities until the doctor or physical therapist says it is okay. This will allow the ACL to fully heal.

**Please see ACL Protocol Exercises on the following pages.**

## ACL protocol exercises

You have had surgery to repair one or more ligaments, ACL (anterior cruciate ligament) or meniscus in the knee. Do these exercises until you follow up with your health care provider's office or physical therapist.

If any of these exercises are hard to do, call your physical therapist

\_\_\_\_\_ at (phone) \_\_\_\_\_.

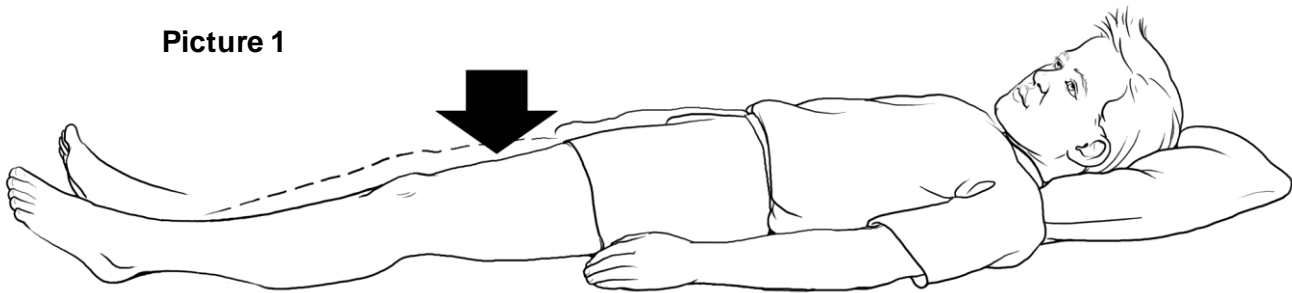
### ☑ 1. Quadricep set:

**Lie on your back with your knee brace unlocked.** With your leg straight, push the back of your surgical knee into the mat. Tighten the front muscle of your thigh. Repeat with your other leg (Picture 1).

Do these motions **10** times. Hold each for **5 to 10** seconds.

This exercise should be done at least **3** times per day, up to 1 time each hour.

Picture 1

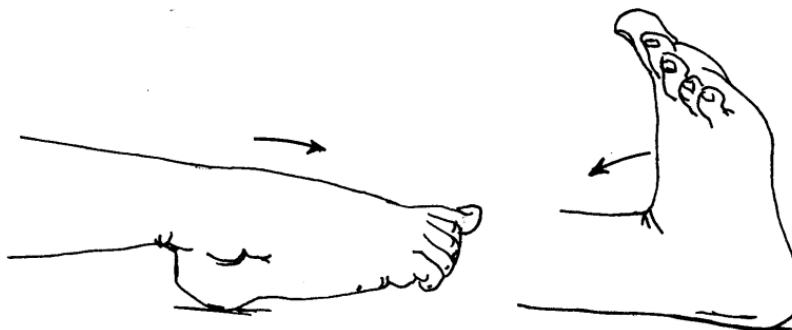


### ☑ 2. Ankle pump:

Keep your knee straight and bend your toes upward until you feel a stretch behind the knee. Then point your toes downward. Repeat with the other foot (Picture 2).

Do these motions **10** times. Hold each for **5** seconds. This exercise should be done **3** times per day.

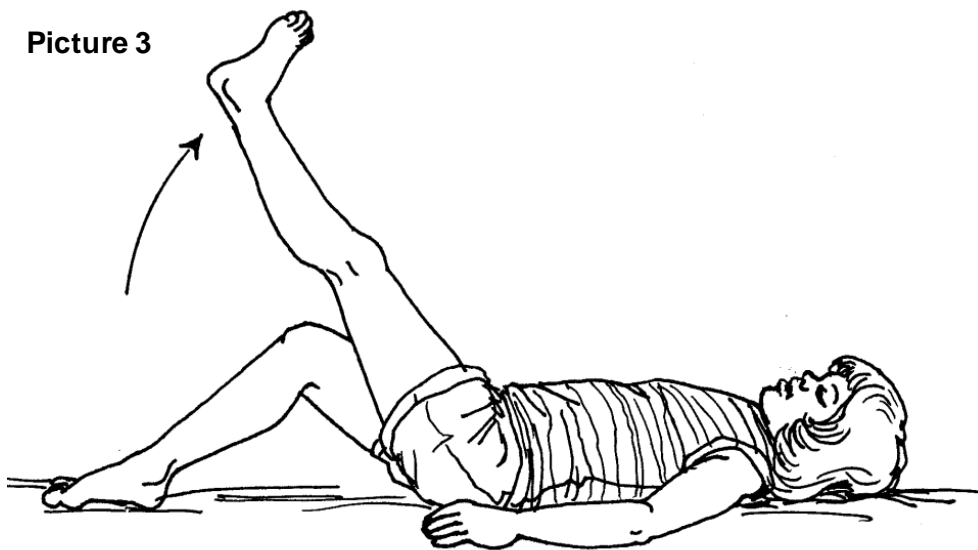
Picture 2



- ☑ **3. Straight leg raises:** Lie on your back and bend your non-surgical knee. **With your knee brace locked,** lift your surgical leg up as high as your bent knee. Then lower it slowly, keeping the knee straight. Always keep your other foot flat on the floor (Picture 3).

Do this motion 10 times. Do 3 sets. This exercise should be done 3 times per day.

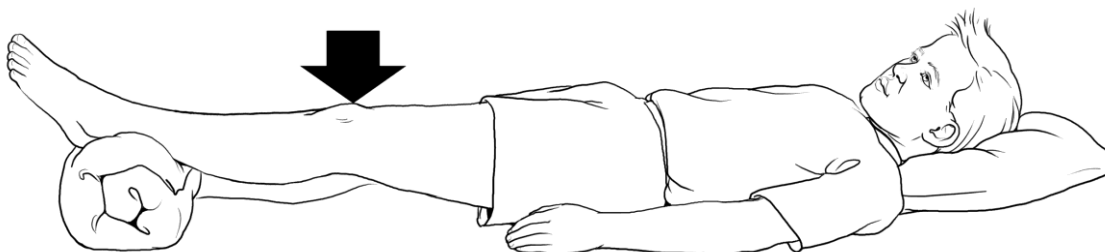
**Picture 3**



- ☑ **4. Extension hangs:** Lie on your back **with the brace unlocked.** Place a towel roll under your surgical ankle. Let gravity pull your knee straight (Picture 4).

Start with 5 minutes and work up to 10 to 15 minutes. Do this at least 3 times each day.

**Picture 4**

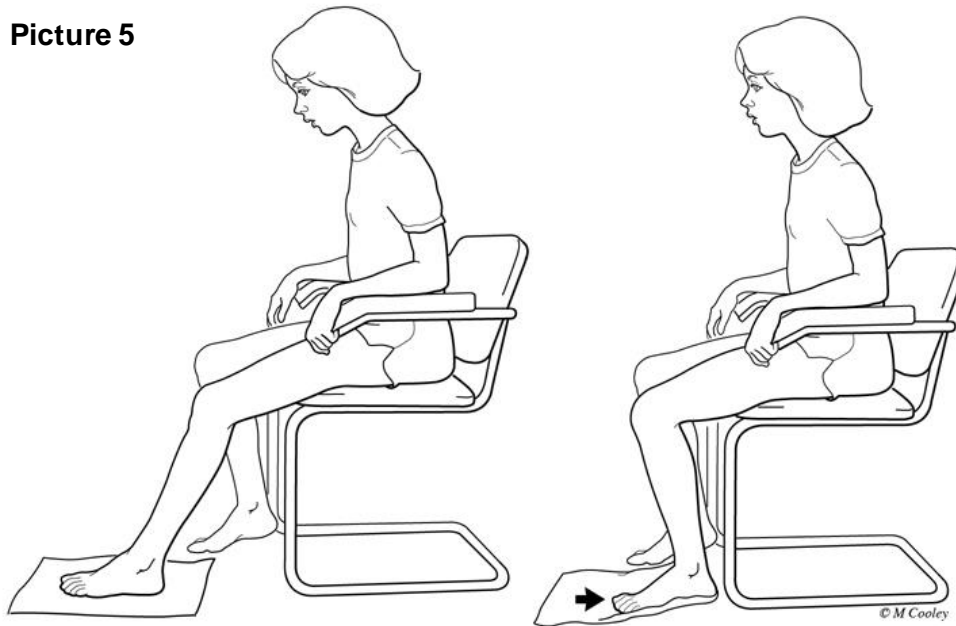


☑ 5. Heel slides:

If brace is set 0 to 90 degrees, sit in dining chair as shown below. The brace should be on and unlocked. Bend the surgical knee. Slide your foot on a cloth or paper towel backward to about 90 degrees (Picture 5).

Do this motion 30 times. Hold for 10 seconds. Do these 3 times a day.

Picture 5



If brace is set 0 to 30 degrees, lie down as pictured below. Lie down with non-surgical knee bent and brace on and unlocked. Gently bend surgical knee to about 30 degrees. Slide your heel on the surface toward your body (Picture 6).

Do this motion 30 times. Hold for 10 seconds. Do these 3 times a day.

Picture 6

