

## **Adolescent Anterior Knee Pain**

### **Description**

A teenager who is active in sports and starts to feel a dull, aching pain behind the kneecap (patella) on either or both legs may need to adjust his or her training routine. Chronic pain in the front and center of the knee (anterior knee pain) is common among active, healthy young athletes-especially girls. It does not mean that you will damage your knee by continuing to do activities. You will just hurt more. If you get treatment for pain behind the kneecap, it usually gets better without surgery. Pain below the kneecap (on the upper shin) is a different problem not discussed here.

To help your physician with making the diagnosis, tell him or her when your knee pain started and provide details about your sports participation and training. Were there any recent changes to the duration, frequency or intensity of your activities? Any alterations in your equipment or the surfaces you play upon? Tell the doctor exactly which activities aggravate your knee pain. A standard knee exam will help your doctor determine the cause of pain behind your kneecap and rule out other problems. He or she may ask you to stand, walk, jump, squat, sit and lie down. It's important to relax! Your doctor may check:

Alignment of the lower leg, kneecap and quadriceps.

Knee stability, hip rotation and range of motion of knees and hips.

Under the kneecap for signs of tenderness.

The attachment of thigh muscles to the kneecap.

Strength, flexibility, firmness, tone and circumference of thigh and hamstring muscles.

Tightness of the heel cord and flexibility of the feet.

Both of your legs may be X-rayed.

### **Risk Factors / Prevention**

The complex anatomy of the knee joint that allows it to bend while supporting heavy loads is extremely sensitive to small problems in alignment, training and overuse. Pressure may pull the kneecap sideways out of its groove, causing pain behind the kneecap. In teenagers, a number of factors may be involved:

Inflexibility of thigh muscles that support the knee joint.

Knock-knees or abnormal hip rotation.

Using improper sports training techniques or equipment.

Overdoing sports activities.

A direct blow can also cause pain behind the kneecap. See your doctor to diagnose the cause of pain behind your kneecap and get treatment.

You may be able to prevent recurrences of pain behind the kneecap. Recommendations include:

Wear shoes appropriate to your activities.

Warm up with stretching exercises before physical activity.

Stop doing any activity that hurts your knees.

Limit the total number of miles you run in training and competition.

## **Symptoms**

The pain usually begins gradually. You might hear popping or crackling sounds in the knee when you climb stairs or stand up and walk after prolonged sitting. Pain might flare up when you do activities that repeatedly bend the knee (i.e., jumping, squatting, running and other exercise) and at night. Without treatment, you may also develop thigh muscle (quadriceps) weakness. Your knees could begin to buckle or give way from pain.

## **Treatment Options**

Ice, rest and rehabilitation are the usual treatments for teenagers with pain behind the kneecap. Non-steroidal anti-inflammatory medicines (NSAIDs) like ibuprofen may also help particularly painful episodes.

**Ice:** To relieve swelling and inflammation, apply ice wrapped in a towel to your sore knee a few times a day.

**Rest:** Until the tissues heal, stop doing the activities that make your knee hurt. This probably means changing your training routine. You might need to learn proper exercise techniques. If you are obese, your doctor may recommend that you lose weight to reduce pressure on the knee. You may also benefit from using a simple knee sleeve with the kneecap cut out. Strap or support devices (i.e., braces, shoe orthoses) may also help.

**Rehabilitation:** After the pain and swelling go down, you will probably need to rehabilitate your knee to regain range of motion, strength, power, endurance, speed, agility and coordination. Your doctor may prescribe an exercise program to normalize your thigh muscle and hamstring flexibility and strength, or recommend cross-training activities that emphasize stretching of the lower extremities (i.e., water aerobics, bike riding). Resume running and other sports activities gradually.

**NSAIDs:** Use as needed for pain. Occasionally, three times a day dosing for several days can also help if pain doesn't go away.