

## Leadership

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The Children's Healthcare of Atlanta Sports Medicine program offers medical, orthopaedic and rehabilitation services for student athletes at the middle school, high school and elite levels.

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## Sinding-Larsen and Johansson Disease

Sinding-Larsen and Johansson (SLJ) disease is an overuse condition in the knee, commonly seen in growing, active athletes. As an adolescent runs and jumps, the muscles propel the skeleton by pulling on the bones. Sometimes the repetitive stresses of these activities produce pain, tenderness and swelling (inflammation) around the knee.

SLJ occurs at the lower end of the knee cap where the patellar tendon originates (see circled area in Figure 1). The same forces occur at both ends. The tendon takes off directly from the layer covering the bone, known as the periosteum. If the repetitive pulling overworks this site, the periosteum becomes inflamed and begins to lay down more bone to reinforce the site. In adults and occasionally in young people, only tendon inflammation (tendonitis) occurs. This often is referred to as ‘jumper’s knee’—a common problem, particularly in basketball players.

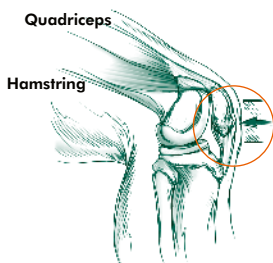
### Are X-rays Necessary?

X-rays may be done to confirm the diagnosis or to exclude other problems. Often, the diagnosis is made based on clinical information and the doctor’s experience. X-rays are more likely to be ordered if the condition affects only one side, or if there are other factors raising your doctor’s concern to other possible diagnoses.

### What Can Be Done?

Treatment for SLJ includes applying ice to the knee, taking anti-inflammatory medicines as directed by the doctor and modifying activities. There are rarely any complications of SLJ and symptoms generally resolve. Patellar tendonitis (jumper’s knee) can occur at any age and is not due to a failure to treat this during youth. Regardless of age, knee braces often are helpful and may be available through doctors, physical therapists, pharmacists and sporting good stores. Generally, the brace’s fit and comfort are the most important considerations.

FIGURE 1



## Relief Treatments

**Physical Therapy:** Physical therapy may be ordered by your doctor to instruct the athlete in proper jumping and landing techniques, quadriceps and hamstring stretching, and strengthening exercises.

**Ice:** Icing can be a very effective anti-inflammatory treatment. The best time to apply ice is immediately after a workout, such as the car ride home from the game or practice. One effective way to ice is to apply an ice cup massage. Fill several plastic foam cups with water and freeze them. When frozen, tear off 1 inch around the cup's rim to create a frozen snow cone. The ice should be applied directly to the sore area in a circular massaging motion until the area becomes numb, usually about 10 to 15 minutes. This type of massage can be repeated every 60 to 90 minutes, several times a day.

**Medicine:** Nonsteroidal anti-inflammatory drugs (NSAIDs) can be another effective treatment. Your doctor may suggest an over-the-counter medicine, such as ibuprofen (Motrin<sup>®</sup> or Advil<sup>®</sup>) or naproxen (Aleve<sup>®</sup>), or prescribe medicine. For young athletes who can swallow pills, naproxen works well, because it needs to be taken only twice a day (morning and night). It does not need to be taken during school or right before workouts. Ibuprofen should be taken three times a day. Anti-inflammatory medicine should be taken for 10 to 14 days to allow the medicine to build up to therapeutic levels in the body. Taking medicine infrequently allows the medicine levels to drop, which decreases its effectiveness.

**Activity Modification:** As with many other orthopaedic aches and pains related to overuse, SLJ can be relieved with a combination of the above relief treatments and resting from the athletic activities that are increasing the pain.