

## Injuries to the Knee – Part 2

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### Patellar Problems: Patellar (Kneecap) Dislocation/Subluxation

The patella can be dislocated (knocked completely out of joint) or subluxed (partially dislocated) by a direct blow to the side of the patella or by an athlete planting and cutting in the opposite direction from the weight-bearing foot.

This movement causes the thigh to rotate in and the lower leg to rotate out. As the quadriceps muscle tries to pull things back in alignment, the patella is pulled laterally (toward the outside) and pops out, dislocating.

### Signs and Symptoms

- Pain and swelling
- Patella may be obviously out of position with dislocation
- Loss of knee function

### Treatment

- If patella is still out of place, a physician should relocate it
- Immobilization and crutches
- RICE and pain medications
- Exercises
  - Initially, only exercises that can be done in extension (knee straight) are performed
  - After immobilization period has ended, exercises will include strengthening muscles in the thigh, hip and knee.
- Bracing to prevent recurrence
- Surgery, if needed

### What is Patellar Tendonitis?

Patellar tendonitis is inflammation and/or microtearing of the patellar tendon (which can also be referred to as the patellar ligament), which connects the patella to the tibia in the lower leg.

### What Causes Patellar Tendonitis?

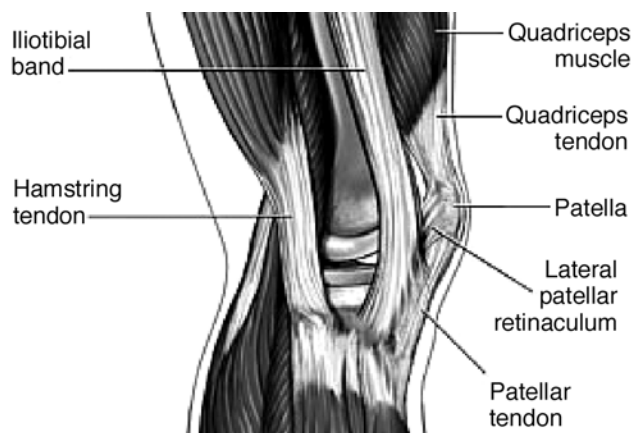
Overuse, or an increase in volume of training, can stress the tendon and cause pain. The pain usually begins gradually during activity and progresses to hurting during normal daily activities (walking).

It is most common in sports that require jumping, but can be caused by running and cutting.

### How Do You Treat Patellar Tendonitis?

It is essential to catch this injury in its early stages, or it is much more difficult to treat. It is treated using ice, anti-inflammatory medications, sufficient warm-ups, and possibly a patellar strap, which decreases the stress on the tendon.

If pain continues, a decrease or change in activities may be needed. Exercise programs will also be used.

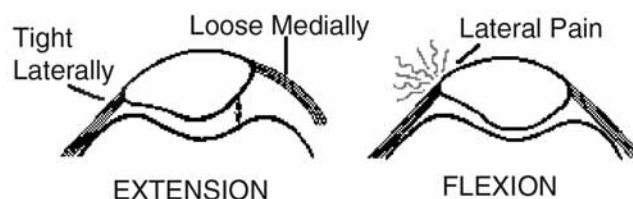


### What is Osgood-Schlatter Disease?

Osgood-Schlatter is similar to patellar tendonitis in that it affects the same tendon, but occurs exclusively in growing young people. This is when the strength of the quadriceps muscle (where the tendon originates) actually pulls the tendon away from the tibia, which causes pain and usually an enlarged bump there. The treatment is similar to patellar tendonitis.

### Patellofemoral stress syndrome (PFSS)

PFSS is identified by an irregular patellar movement that causes lateral pulling on the patella. This causes pain on the lateral side of the patella, an ache in the middle of the knee and possibly swelling. There may also be a feeling/sound of creaking or “crunchiness” when the knee is moved.



### What causes PFSS?

- Tightness in the hamstring and calf muscle
- Tightness in the lateral retinaculum and iliotibial band (see diagram above)
- Medial thigh muscle weakness and strong lateral muscles
- High-riding patellas
- Foot pronation

### Treatment

Treatment depends on the underlying cause of PFSS, but usually includes stretching of tight muscles, strengthening of weak muscles, and use of orthotics to correct malalignments. Specific taping techniques also may help. Athletes may also use anti-inflammatory medications and ice. If rehabilitation does not work, the athlete may need surgery to release the tight structures in the knee.

Arnheim, Daniel D. and William E. Prentice. Principles of Athletic Training. 10th ed. Boston, MA: McGraw-Hill Companies, Inc., 2000.

University of Wisconsin Hospital & Clinics Sports Medicine Center. Patellar Tendonitis (Jumper's Knee). Madison, WI.

American Academy of Family Physicians. Osgood-Schlatter Disease: A Cause of Knee Pain in Children. Updated December 2005. 10 April 2006. <http://familydoctor.org/135.xml>



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## Knee Injuries – Part 2

- Athletes with a patellar dislocation should be seen by a physician
- Athletes with patellar tendonitis or Osgood Schlatter disease can manage their symptoms with activity modifications and RICE
- To treat PFSS successfully, the underlying causes must be identified and corrected

# Sidelines

*A newsletter to promote sports health, injury prevention and recovery of student athletes*



It's not whether you get knocked down, it's whether you get up.

■ VINCE LOMBARDI

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