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Patellofemoral  
Problems

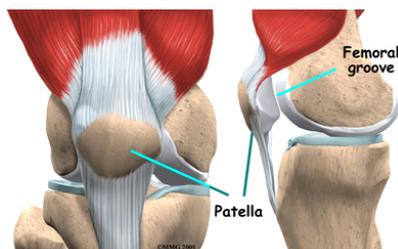
## Anterior knee pain

The patella, or kneecap, can be a source of knee pain when it fails to function properly. Alignment or overuse problems of the patella can lead to wear and tear of the cartilage behind the patella. This produces pain, weakness, and swelling of the knee joint.



## What is the patella, and what does it do?

The patella (kneecap) is the moveable bone on the front of the knee. This unique bone is wrapped inside a tendon that connects the large muscles on the front of the thigh, the quadriceps muscles, to the lower leg bone. The large quadriceps tendon together with the patella is called the quadriceps mechanism. Though we think of it as a single device, the quadriceps mechanism has two separate tendons, the **quadriceps tendon** on top of the patella and the **patellar tendon** below the patella. The patella acts like a fulcrum to increase the force of the quadriceps muscles.



## How do these problems develop?

Abnormal patellar tracking within the femoral groove as the knee moves. The quadriceps muscle helps control the patella so it stays within this groove. If part of the quadriceps is weak for any reason, a muscle imbalance can occur. When this happens, the pull of the quadriceps muscle may cause the patella to pull more to one side than the other.

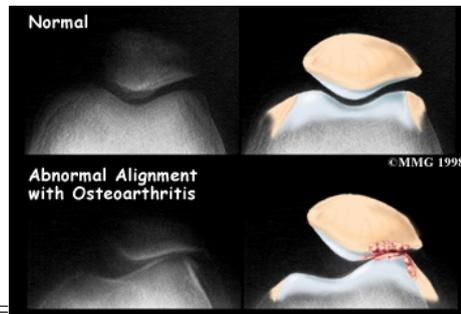
Another type of imbalance may exist due to differences in how the bones of the knee are shaped. These differences, or anatomic variations, are something people are born with.

## What do patellar problems feel like?

When people have patellofemoral problems, they sometimes report a sensation like the patella is slipping. This is thought to be a reflex response to pain and not because there is any instability in the knee.

Others report having pain around the front part of the knee or along the edges of the kneecap. These symptoms may be due to problems with the way the patella lines up in the femoral groove. But symptoms of patellar pain can happen even when the patella appears to be lined up properly.

Typically, people who have patellofemoral problems experience pain when walking down stairs or hills. Keeping the knee bent for long periods, as in sitting in a car or movie theatre, may cause pain.



## The initial treatment

1. Rest and anti-inflammatory medications, such as aspirin or ibuprofen
2. Physical therapy can help in the early stages by decreasing pain and inflammation. Your physical therapist may use ice massage and ultrasound to limit pain and swelling.
3. Bracing or taping the patella

## Surgery

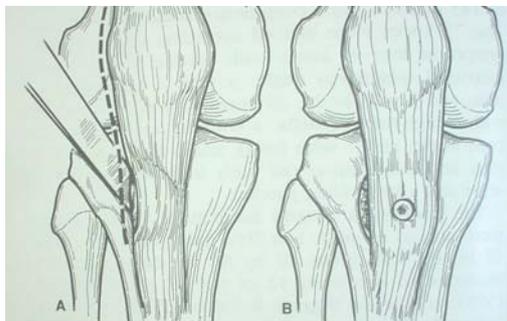
### 1. Lateral Release

If a misalignment problem, a procedure called a lateral release may be suggested. This helps to balance the quadriceps mechanism and equalize the pressure on the articular cartilage behind the patella. However, this alone is not very effective.

### 2. Bony Realignment

By moving a section of bone where the patellar tendon attaches to the tibia, surgeons can change the way the tendon pulls the patella through the femoral groove. This is done surgically by removing a section of bone where the patellar tendon attaches on the tibia. This section of bone is then reattached on the tibia closer to the other knee.

Usually, the bone is reattached onto the tibia using screws. This procedure shifts the patella to the medial side. Once the surgery heals, the patella should track better within the center of the groove, spreading the pressure equally on the articular cartilage behind the patella.



## Rehabilitation

Patients with patellofemoral problems may benefit from four to six weeks of physical therapy. Treatments such as ultrasound, electrical stimulation, and ice may be used to help control pain and swelling.

After Surgery, many surgeons will have their patients take part in formal physical therapy after knee surgery for patellofemoral problems. More involved surgeries for patellar realignment or restorative procedures for the articular cartilage require a delay before going to therapy.