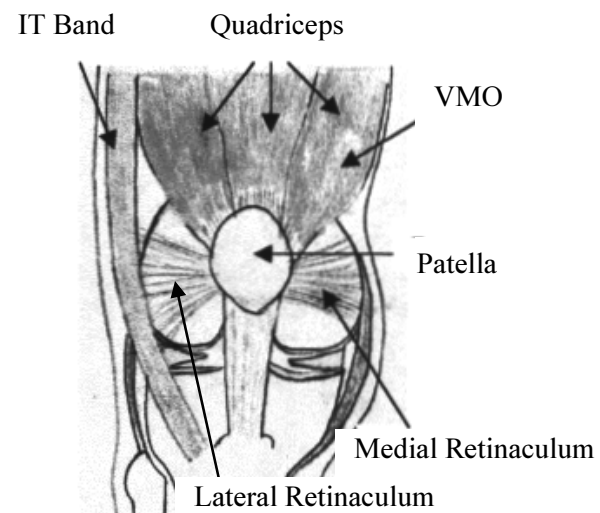


UNIVERSITY SPORTS MEDICINE Patello-femoral Pain

Suddenly, you have pain in the front of your knee while running, taking step class, or lifting weights for your legs. You begin to feel pain going up and especially down stairs, sitting for a long period of time, or squatting. Your doctor tells you that your pain is coming from your patello-femoral joint. What does this mean?

The **patella** (kneecap) is a small triangular bone located in front of your knee. Cartilage lines the back of your patella. This helps it glide in a groove at the end of your femur (thighbone) when you bend and straighten your knee. The name for this is the patello-femoral joint. Your quadriceps muscles, as well as other soft tissues, attach directly to the patella. This helps to keep it in its groove. An imbalance in these structures (weakness, tightness, looseness) can cause pain in this joint.

Imbalances in your hip and foot also can affect your knee (patello-femoral joint) by altering the alignment of the knee and changing the forces acting on the patella. Remember “your hip bone’s connected to your thighbone; your thighbone’s connected to your shin bone...”



Front View of Right Knee

How Can I Get Better?

Your doctor may prescribe physical therapy or a home exercise program to help you improve the strength and flexibility of critical muscles and structures around the knee.

- **Modify your Activity**

It is extremely important to **avoid** activities that cause the pain in your knee, so as not to prolong your recovery time. **IF IT HURTS, DON'T DO IT!**

- **Improve your Strength**

Your **quadriceps** muscles (front of your thigh) help to hold your kneecap in place. Weakness of the quadriceps and other leg muscles can cause you to develop patello-femoral pain. Pain and inflammation in your knee can cause your inside quadriceps muscle, called the vastus medialis obliquus (VMO) to shut down. A balanced program of strengthening exercises for your hip, knee, and calf can be designed for you by a physical therapist. This will help you progressively strengthen your leg while protecting your knee joint.

When performing weight training or endurance exercise, it is critical to avoid pain in your knee.

Pain ... NO Gain! If you try to tough it out by doing exercises that give you knee pain, you will only prolong your injury. Why? Knee pain and inflammation can actually cause your quadriceps muscles to weaken, and further irritate your kneecap. Then you get caught in a cycle of lost strength and pain that limits your activity.

For example, if the leg extension machine at your gym causes your knee to hurt, you should definitely NOT use it. There are other ways to strengthen your quadriceps without causing further pain and injury. A physical therapist can help you develop a functional strengthening program which will provide you with the necessary foundation of strength for your activities.

- **Increase your Flexibility**

Inflexible or tight muscles can increase the pressure at your patello-femoral joint, resulting in pain in the front of your knee. *For example*, tightness of your **hamstring** muscles (back of your thigh) can cause your quadriceps to work harder to overcome the resistance of your hamstrings. This then puts more stress on your kneecap. Quadriceps muscle tightness can increase pressure behind your kneecap. Tightness of the soft tissues on the outside of your leg, from the **iliotibial band (ITB)** and **lateral retinaculum**, can increase the pressure on the outside of your kneecap resulting in inflammation and pain. A physical therapist can instruct you in an individualized stretching program to help you improve your flexibility and reduce your pain.



Hamstring Stretch

Prop your leg on a stair or step. Bend forward at your hip. Keep your knee and back straight so that you feel a stretch behind your thigh.



Quadriceps Stretch

Grasp your ankle and bend your knee upward, so you feel a stretch in the front of your thigh. Do not let your leg wing out to the side. Keep your tummy and buttocks tight.