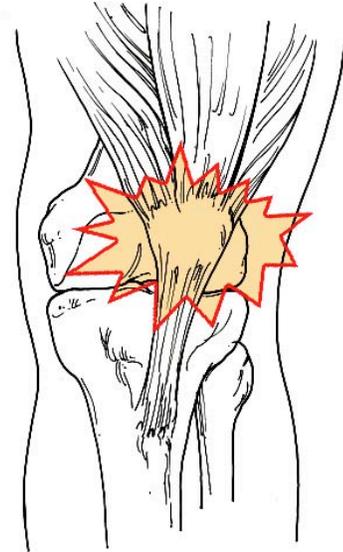


# Anterior Knee Pain

Anterior knee pain, also called “patellar pain syndrome” and “patella-femoral pain”, is very common in adolescents. It is more common in teenagers who are very active but can occur in those who are relatively sedentary.

There are two theories for the pain. First, it is considered an “overuse syndrome” and is the result of abnormal pressure between the kneecap (patella) and the end of the thigh bone (femur). This abnormal pressure is caused by an imbalance between the thigh muscles that attach to either side of the kneecap. The quadriceps muscle, which is the main muscle of the front of the thigh, has four parts. One part of the muscle attaches to the outer edge of the kneecap and another part attaches to the inner edge. If one of these is stronger than the other it pulls the kneecap sideways as the leg



straightens instead of straight up. Usually the outer quadriceps muscle, the vastus lateralis, is stronger than the inner muscle, the vastus medialis (VMO) and the kneecap is pulled out and up when the knee straightens. As a result of this abnormal pull, the pressure between the kneecap and the thigh bone is increased and can cause pain. Second theory is that the patient does not perceive the intense fatigue in the muscle but where the tendon attaches to the bone. This type of fatigue or extreme tenderness in the tendons around the patella is called enthesitis.

Teenagers who have anterior knee pain often describe this pain as being “around” or “under” the kneecap. They often have a hard time putting their finger on the exact spot where they hurt. Going up or down stairs and sitting for long periods, such as in a movie theater or during a long car ride, are the most frequently reported activities associated with this type of pain.

Treatment of anterior knee pain focuses on restoring balance between the muscles that pull on the kneecap. The VMO is almost always relatively weak, allowing the kneecap to

be pulled outward. Simple exercises are used to strengthen the VMO so the kneecap remains centered as the knee straightens. It may take several months of regular workouts to balance the muscles and relieve the pain. Occasionally, a soft knee brace is used to help stabilize the kneecap while the adolescent is working to build up the VMO. Over the counter anti-inflammatory medication can also help with symptoms during this period. For a few patients, the symptoms may last until the growth plates have closed and the muscles have hypertrophied from hormones.



2660 10<sup>th</sup> Avenue South • POB 1 • Birmingham, AL 35205 • 205-933-8588

All of the content and images on this Brochure are protected by United States and International copyright law and may not be copied, scanned, reproduced, published or altered in any way without written permission.

© John T. Killian, MD 2009