

Knee Pain

Knee pain is best analyzed by assessing the inciting incident to the pain, the age of the person who has the pain, and the general location of the pain in the knee. The knee can be thought of as having three joints: where the *femur* or thigh bone attaches to the *tibia*, or *leg bone*; Where the two leg bones connect (*the tibia and fibula*); and also where the knee cap attaches. The bottom of the knee joint is padded with rubbery shock absorbers called *menisci*. These pads commonly wear down over time and can cause pain as we get older. In the center of the knee are two criss-crossed ropes that hold the knee together known as the *anterior and posterior cruciate ligaments*. These ligaments hold the knee in place during bending and twisting, and thus, are common places of injury from playing sports. There are also ligaments on the outsides of the knee known as the *medial* (inside, or big toe side of the knee) and *lateral* (outside or little toe side) *collateral ligaments*. These ligaments stabilize the knee. The knee is lubricated with a slippery liquid known as *synovial fluid*. It is contained in many small balloons stuffed around the ligaments. These are called *bursae*. When these become swollen or inflamed, it is called a *bursitis*. Lastly, the knee is surrounded by the ends of muscle, known as muscular attachments. Thus, muscle tears, strains or cramps can often be felt in the knee.

Here are just a few common causes of knee pain:

Generalized Pain in a Knee

If pain is 'all over', then possibilities include fractures, ligament tears, dislocation, arthritis including gout, or infection. As we age, the knee joint itself wears out, and the result is a grinding sensation when the knee moves, and pain when the knee is at its most straight or most bent positions, with inability to bend or straighten the leg as far as when the patient was young. Pain from *degenerative arthritis*, as it is called, tends to worsen as the day progresses.

Pain in Both Knees

If pain is in both knees, then common causes of pain include degenerative and rheumatoid arthritis, bursitis, meniscal tears, and calf muscle strain or cramps. With rheumatoid arthritis, pain tends to

be worse in the morning. There are many other rare or uncommon causes.

Pain in the Back of the Knee

Pain in the back of the knee can commonly be caused by muscle strains of the gastroc, hamstring or plantaris muscles. Rarely, injury to the posterior cruciate ligament is seen.

Pain in the Inner Knee

Pain in the inner or big toe side of the knee can be due to damage to the medial meniscus. The meniscus is a rubbery pad, which can be torn or worn away from wear or tear (degeneration) which is common in older men, or from trauma, as in a sports injury. Usually the damage occurs when the knee is twisted as it is bent. A common symptom giving a clue to this problem is that the knee will often “lock-up or give way”. Bursitis is also a common cause of inner knee pain, and can be improved with cortisone.

Pain in the Outer Knee

Pain in the outside of the knee is commonly due to a tear in the lateral meniscus, tendinitis of the bicipital femoris tendon, or iliotibial band syndrome. Iliotibial band syndrome is usually seen in runners.

Pain in the Front of the Knee

Pain in the front of the knee alone is uncommon, but the kneecap is usually the root of the pain either by inflammation of the fluid sacks around the kneecap or of the ligaments attaching to it. *Housemaid's knee* refers to pain in the front of the knee from kneeling on the knee such as with scrubbing the floor. This causes knee swelling and can be remedied with a local injection.

Your Exam

In general when you see a doctor a good history of the events leading to the injury should be given. The doctor then should thoroughly examine the knee and the hip. Special attention will be given to where the tenderness is, and what happens when the knee is pushed and pulled in a variety of directions. Expect the doctor to order plain x-rays of the knee, and schedule an MRI and/or arthroscopy if ligament or meniscus damage is suspected.

A Pain Expert

Typically, a pain expert, such as those at Newport Pain Management, become involved in treating and diagnosing knee pain when common problems have been ruled out or surgery has been unhelpful. *Nerve damage* to one of the nerves that surrounds the knee, known as the *medial infrapatellar branch of the saphenous nerve* from trauma or surgery is rare but often overlooked. Pain from nerve damage is felt as a shooting or electric type sensation. Treatment can involve injection of numbing medicine and cortisone into the damaged nerve area. *Reflex Sympathetic Dystrophy* is severe pain even to barely touching the skin, and is often worse when cold. It can be due to even minor tissue damage by trauma, infection or surgery.

Reference: "Painful Conditions of the knee: Evaluation and Treatment", Pain Digest (1997) 7:282-292