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Knee Arthritis

Knee pain can be caused by multiple conditions, from acute and overuse injuries to various forms of arthritis. If you are experiencing knee pain or mobility issues, It is important to see us to determine whether your pain is, for example, caused by a condition such as runner's knee or whether you are experiencing early onset osteoarthritis.



What is knee arthritis?

Knee arthritis literally means "inflammation of the knee joint," most often as a result of cartilage in the joint wearing down to a degree where it no longer cushions the surfaces of bone which make up the joint. Damaged cartilage causes a roughened joint surface and may lead to bones rubbing directly together. This causes persistent pain, clicking, a catching sensation, and limited range of motion.

There are two common types of arthritis:

- Osteoarthritis or degenerative joint disease is the most common type of arthritis. This is a slow, progressive disease in which cartilage wears down over time. The normally smooth surface of the joint becomes roughened and may cause increased pain, stiffness, and limited motion. Post-traumatic arthritis is a form of early onset osteoarthritis that results from an injury to the ligaments, cartilage and/or bone in or around a joint, which causes instability that increases the wearing down of cartilage surfaces.



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- Inflammatory arthritis, such as rheumatoid arthritis or gout, is a systemic process that may involve multiple joints at the same time. Rheumatoid arthritis may affect people at any age and often is treated with very specific medications. The symptoms vary somewhat as pain usually worsens after periods of rest and inactivity as joints stiffen. Some may experience pain, swelling, redness and warmth, especially in the morning.

Anatomy of the knee

The knee joint is a structure composed of three bones: the femur (thigh bone), the tibia (shin bone) and the patella (knee cap). The bones are covered with smooth cartilage surfaces that act as a cushion during weight-bearing activity.

The bones of the knee are connected by strong ligaments and powerful muscles that are attached to the thigh and calf by tendons and provide side-to-side stability. In a healthy knee, all of these structures work together to allow the knee to flex (bend) and extend (straighten) the lower leg smoothly.

What are the symptoms of knee arthritis?

Symptoms include knee joint aching, soreness and pain, and swelling and stiffness. Sometimes this leads to reduced activity and muscle weakness. Weakened muscles can lead to instability and decreased ability to control the knee, further limiting the ability to participate in enjoyable activities.

The knee joint may develop cysts, bone spurs, or loss of cartilage. The absence of cartilage will cause friction and narrowing of the joint space.

What are the risk factors for knee arthritis?

The likelihood of arthritis increases with a family history and advancing age. Patients who are overweight and those who have undergone trauma to the knee joint may also experience early wearing of cartilage.

How is knee arthritis diagnosed?

An accurate diagnosis for knee arthritis relies on three elements:

- an evaluation and physical exam by a doctor
- X-rays and/or other radiological imaging
- laboratory tests

The physical exam

We will ask about your medical history and symptoms, and then conduct physical exam to assess:



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- your knee pain levels
- range of motion in the knee joint and/or patellofemoral joint
- leg muscle strength
- the presence of any joint swelling or tenderness
- gait (the manner in which you walk)

Radiological examinations

If the physical exam suggests you may have knee osteoarthritis, various types of radiological imaging exams may be used to confirm the diagnosis and determine the level of joint degeneration.

Imaging for diagnosing advanced knee osteoarthritis

X-rays are very helpful in diagnosing advanced knee osteoarthritis because the joint will have specific characteristics, including:

- Bones that are closer to each other than they should be: As cartilage wears away, the joint space between them often narrows.
- Cysts: As the body responds to cartilage destruction and attempts to stabilize the joint, cysts or fluid-filled cavities can form in the bone.
- Increased bone density or uneven joints: When bones are no longer cushioned by cartilage, they can rub against one another, creating friction. The body responds by producing more bone tissue, which increases bone density. Increased bone creates uneven joint surfaces and bone spurs at the joint.

Is walking good for knee arthritis?

Although it may seem counterintuitive, walking can help decrease the pain and stiffness associated with osteoarthritis. In addition, any form of exercise that helps you maintain a healthy weight can reduce the stress on your joints, and this may slow the progression of your arthritis. You should, however, consult a doctor to confirm that your knee pain is caused by osteoarthritis rather than by an injury for which resting would be appropriate. A physical therapist can help determine appropriate levels of exercise for patients with osteoarthritis of the knee.

What is the treatment for knee arthritis?

Nonsurgical methods to relieve pain and stiffness should be usually tried first. These may include physical therapy, and/or oral pain medications or injections of corticosteroid or other agents. Advanced knee osteoarthritis may require surgery such as a partial or total knee replacement or patellofemoral joint replacement. Inflammatory arthritis in the knee is usually managed medically rather than surgically.

In cases of synovitis – inflammation of the synovium (joint lining) – or effusion (fluid build-up inside the knee joint capsule, sometimes called “water on the knee”), a synovectomy and/or knee arthroscopy to aspirate the joint may be appropriate.



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Nonsurgical treatments

- Rest and limited activity may be indicated to reduce the symptoms of an inflamed knee joint. You may be advised to refrain from high impact sports, including running, jumping, and any activities in which the impact is repeatedly on the knee joint.
- Weight loss can also reduce stress on the knee joint.
- You may be instructed to participate in low impact activities which will maintain function without overstressing the joint.
- Physical therapy may be recommended to include gentle knee motion exercises such as swimming, water aerobics, walking on a level surface, and using a bicycle to improve range of motion and strengthen the muscles.
- The use of supportive devices (cane, brace orthotics) may also be indicated.
- Nonsteroidal anti-inflammatory medication like aspirin, naproxen, or ibuprofen for pain. Another class of medications called Cox-2 inhibitors such as celecoxib (Celebrex) can reduce inflammation.
- Injections directly into the knee joint may be recommended. These may provide temporary, symptomatic relief, but are not generally recommended or prescribed for prolonged use.

Surgery

It is difficult to predict the timing and progression of the arthritic condition. Sometimes pain increases and the ability to participate in daily activities decreases despite nonsurgical treatment plans. In those cases, surgery may be recommended.

- Total or partial knee replacement surgery. The artificial joint or prosthesis replaces the damaged and worn-out surfaces on the ends of the femur (thighbone) and tibia (shin bone) and the underside of the patella (knee cap) with a new smooth joint surface that will be fixed to the bones. Patellofemoral joint replacement is one form of partial knee replacement.
- Knee arthroscopy to aspirate the joint or remove spurs or loose bodies.
- Synovectomy (removal of part of the synovium, the inner lining of the joint capsule).

