



# Comprehensive Guide to Knee Pain and Repair

To make an appointment with a Cleveland Clinic orthopaedic specialist, call 216.444.BONE.

For a [free DVD](#) about managing knee pain, call 800.890.2467.

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## About Cleveland Clinic's Department of Orthopaedic Surgery

Cleveland Clinic's Department of Orthopaedic Surgery has a long history of excellence and innovation in medical and surgical care for those with musculoskeletal impairments, injuries and diseases.

*U.S. News & World Report* has consistently ranked the Department of Orthopaedic Surgery among the nation's top five orthopaedic programs and the number one program in Ohio.

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**Chronic knee pain can put a stop to your mobility. From preventing you from playing sports to hampering your ability to climb stairs, knee pain is difficult to ignore. Approximately 18 million patients visit a doctor or a hospital seeking treatment for knee pain each year. Fortunately, it is a problem with a variety of solutions, from physical therapy to complete knee replacement.**

### What causes knee pain?

The knee is a complex mechanism made of bone, cartilage and ligaments. Cartilage acts as a cushion — preventing the bones from rubbing together — and maintains the spacing between the bones. Injuries, aging, and degenerative conditions can cause this cartilage to break down. When the spacing in the knee breaks down, the bones begin to rub together, causing joint pain.

### A variety of solutions

Knee problems can range in severity, depending on the extent of cartilage erosion. Your treatment should take into account your lifestyle, the cause of your knee pain and your age.

Among the solutions available, the most common are:

- Physical Therapy
- Viscosupplementation
- Support Systems (Braces)
- Arthroscopic Knee Surgery
- Partial Knee Replacement
- Full Knee Replacement

Your orthopaedic surgeon or orthopaedist can review your options and answer your questions. He or she can develop a customized solution that offers you the best chance at regaining pain-free mobility.

### Physical Therapy

Strengthening the muscles and ligaments around the knee can help support the knee and reduce pressure on the joint. Low-impact exercises like straight leg raises and leg extensions can strengthen these muscles, leading to improved stability. Physical therapy is often the starting point to reducing knee pain. However, it is also incorporated into post-operative restoration of mobility.

### Viscosupplementation

Viscosupplementation is a lubricant that is injected into the knee in the office setting. This filler lubricates the joint and acts to supplement the joint fluid. This enables the bones to move and reduces the friction, which in turn reduces the knee pain.



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The most common filler currently used is called hyaluronic acid. Hyaluronic acid is fairly new, and the exact causes of its benefits are unknown. The acid injection usually stays in the system for only a matter of days, yet the relief patients have reported feeling can often last for months. Some feel that the hyaluronic acid causes the joint itself to start producing more of the acid, thus helping with the lubrication of the joint. Others believe that the acid has an anti-inflammatory effect that eases the pain on a longer-term basis.

The benefit to these injections is that they are non-surgical, so recovery time is rapid. It can be a viable solution for mild to moderate osteoarthritic knee pain.

However, the downside is that they are not a long-term solution, and their effects will eventually wear off. At that point, you will have to consider another injection, or a different solution altogether. Also, some patients have reported increased knee pain with injections due to inflammation of the knee.

## Support Systems (Braces)

In some cases, a knee brace can be used to treat knee pain. Knee braces vary in their function and design, but in general they wrap around the knee and leg, and help to limit unwanted movement while supporting the knee. They are commonly used in cases where the knee ligaments are too weak to reinforce the ligaments and prevent the knee from “buckling.”

Knee braces are made from a combination of metal, foam, plastic and cloth or elastic strapping. The most effective forms of knee braces fall into one of three categories: functional, rehabilitative and unloading/offloading braces.

Functional knee braces generally serve to support injured knees, often from a sports or other impact-related injury. Rehabilitative braces offer support while one is recovering from a surgery or injury, and are designed for a limited-time use. The unloading and offloading braces are for people who have arthritis of the knees and are particularly helpful when standing up or sitting down to stabilize the knee and reduce knee pain.

Braces can be useful in some situations, and are another non-surgical option for knee pain. However, they are an aide to managing pain, rather than a solution to the physical problem.



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## Arthroscopic Knee Surgery

Arthroscopic knee surgery is performed using an arthroscope. An arthroscope is a camera that allows surgeons to view the knee from the inside. Using the arthroscope, an orthopaedic surgeon can explore the knee and diagnose problems, confirm previous diagnoses and treat various conditions of the knee.

Advances in arthroscopy, including improved scopes and tools, have enabled this process to be more accurate and effective than ever before. During arthroscopic knee surgery, the surgeon can repair tissue and cartilage tears, or scrape and cut away bone and cartilage fragments to ease knee pain.

The benefits of arthroscopic knee surgery include the fact that the arthroscope and tools are used via several very small incisions. This allows for a quicker return to an athletic or active lifestyle following surgery.

## Knee Replacement Surgery

If damage to the knee is extensive, knee replacement is a viable and effective option in many cases. Total knee replacement is necessary in cases where all parts of the knee need repair. This process involves removing the degenerated cartilage and bone from the tibia and femur, and replacing the damaged area with a knee prosthesis, constructed of plastic and metal, that provides fluid and pain-free movement.

The knee contains three compartments and certain injuries or conditions can cause only one or two of these to be involved in the disease process. Frequently only the damaged portion needs to be replaced; therefore a partial knee replacement is an option.

A partial knee replacement is done by shaving away the cartilage and bone of the femur and tibia or the femur and patella (kneecap) and implanting a prosthesis in only one or two of the three knee compartments. This typically requires a smaller incision and a shorter recovery time than a traditional total knee replacement.

Total knee replacement — replacing all three of the knee compartments — requires a slightly larger incision and longer recovery time than a partial knee replacement. While recovery time is dependent on the patient, it is not uncommon for a recovery and rehabilitation time of six months in the case of a total knee replacement. However, minimally invasive approaches combined with a rapid recovery program allow most patients to spend only two or three days in the hospital.

For more info about treatment for knee pain, visit [www.clevelandclinic.org/ortho](http://www.clevelandclinic.org/ortho)