



## ROTHMAN INSTITUTE

# PATIENT GUIDE TO OSTEOARTHRITIS

### What is osteoarthritis?

Osteoarthritis (**Figure 1**), also known as degenerative joint disease, or DJD, is the most common cause of knee pain in middle aged and older adults. Osteoarthritis is a disease, which causes loss of the articular cartilage, the cartilage that lines the surface of the joints. The loss of cartilage can eventually result in changes in the bone and deformity.

### How does osteoarthritis occur?

Most commonly, osteoarthritis occurs from no known cause. However, it can be a result of joint injuries or trauma, infections, or hereditary or developmental problems.

### How do I know I have osteoarthritis?

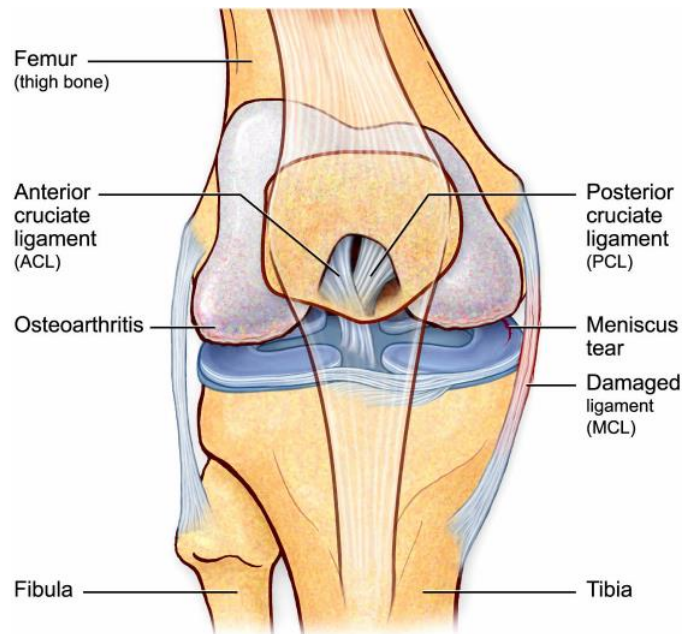
Osteoarthritis most commonly leads to pain in the joint. The most common areas affected are the knees, hips, hands, shoulders and foot and ankle. When affecting the knee it can cause joint pain, stiffness, crepitation or cracking with motion, joint swelling or fluid, and deformity (bow-legged or knock-kneed).

### Do I need x-rays, a MRI or any other tests?

A set of x-rays is most commonly ordered to evaluate the knee for osteoarthritis. The lack of cartilage can be seen on the x-rays because there is decreased space between the bones. In addition, other changes to the bone, which occur with osteoarthritis, can be seen on a standard x-ray. Other causes of arthritis can be evaluated as well on a standard x-ray. A MRI is only occasionally necessary to rule out other suspected injuries to the knee.

### Is there usually any other damage to the knee with Osteoarthritis?

In addition to affecting the joint surface (articular cartilage), the meniscus cartilage (the cartilage ring on the inside and the outside of the knee) can be torn as well. This usually occurs as part the disease process. Damage to the ligaments can occur as well, although this is usually not a significant problem.



**FIGURE 1: Osteoarthritis and other knee damage.**

### What treatment options do I have?

The treatment options for osteoarthritis will depend on several factors, including your age, level of symptoms, and level of activity. There are a number of both non-surgical and surgical options, depending on the type and location of the arthritis. Each of the common non-surgical and surgical options for treatment will be described below.

### NON-SURGICAL TREATMENTS FOR OSTEOARTHRITIS:

#### Will decreasing my activity help my osteoarthritis?

Weight bearing activities such as running or jogging can aggravate knees with significant arthritis. However, it is important to maintain a good range of motion and muscle strength in an arthritic joint. Non-impact activities such as biking and swimming can be especially beneficial.

### Will losing weight help my arthritis?

Without question, weight loss decreases the level of stress in the weight bearing joints and can significantly reduce your pain. Therefore, weight loss to a healthy level is recommended in nearly all patients with osteoarthritis.

### Are there medications I can take for my arthritis?

The most common medication used for osteoarthritis are nonsteroidal anti-inflammatory drugs (NSAIDs). This medication helps by both decreasing pain and inflammation in an arthritic joint. A variety of these medications is available and any one of them may be effective for your pain. For patients who get severe GI upset with medication, some newer agents called COX-2 inhibitors (Celebrex, Bextra) may decrease the likelihood of GI or ulcers when using these medications. You should always take these medications with food and discuss any other medications or drug allergies with your primary care physician.

### What about taking Glucosamine and Chondroitin Sulfate?

The use of oral glucosamine and chondroitin sulfate have been shown in many studies to cause mild to moderate improvement in patient's symptoms with osteoarthritis. For this reason, they can be beneficial for your pain. Some studies also show that there may be some prevention of progression of osteoarthritis from their regular use, but it does not "reverse" the disease. There are many different formulations available over-the-counter at nutritional supply stores. The recommended dose of oral glucosamine and chondroitin sulfate is 1,500 mg of glucosamine and 1,200 mg of chondroitin sulfate daily.

### What about a steroid injection?

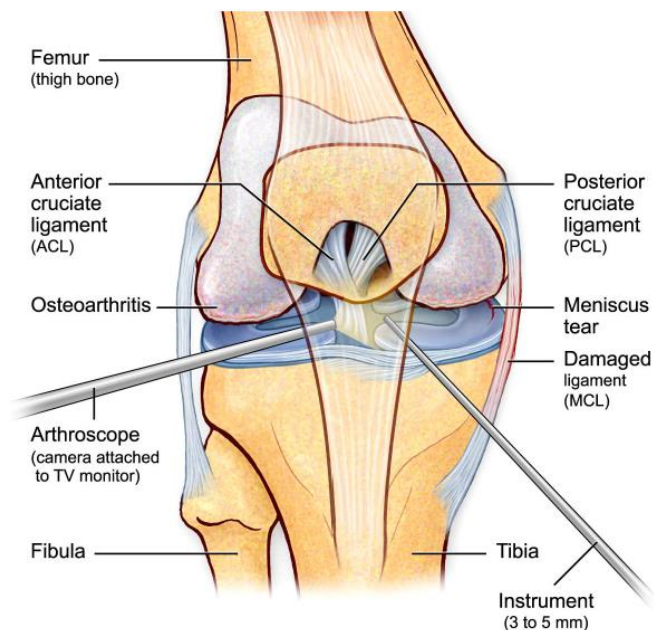
Intraarticular steroids (cortisone) can provide significant short-term pain relief in patients with advanced arthritis. The injections commonly only last for a few weeks to three months. Occasionally, they can provide a longer benefit if the pain is due an acute episode of inflammation. Injections are generally limited to three or four a year, although there are no absolute guidelines.

### What are viscosupplementation injections?

There has been recent interest in intraarticular injections of hyaluronic acid in the knee (Synvisc, Orthovisc, Euflexxa). These injections are an attempt to improve joint lubrication by providing some components found in normal joint fluid. These injections are given weekly, either typically three weeks in a row. They have been shown to improve symptoms of osteoarthritis for up to six months. Overall, as with steroid injections, the improvements are short term.

### What are PRP (Platelet-Rich Plasma) Injections?

Platelet rich plasma (PRP) is a form of isolated materials from the patient's own blood. It utilizes platelets found within the blood to help heal and reduce inflammation.



**FIGURE 2: Arthroscopic repair.**

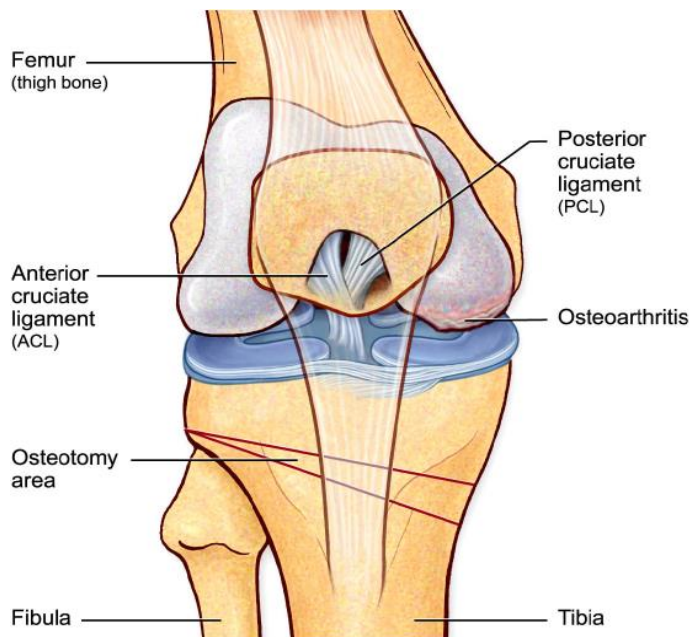
It has been found to be effective for different conditions, including osteoarthritis. It works by taking a sample of the patient's own blood and isolating the platelets out of the blood using a centrifuge machine. Once the platelets are isolated, they can be injected back into the patients effected tissue or joint to allow for healing and pain reduction. One to three injections can be given. (See separate handout on **PRP Injections**).

### What about "Stem-Cell Injections"?

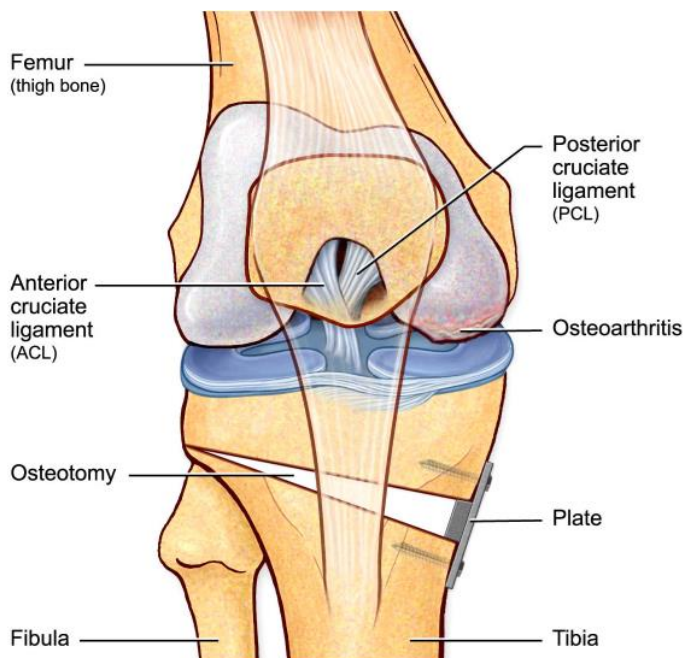
Stem cells are cells that can be found within the body to help promote healing or decrease inflammation by recruiting other healthy cells to the area. There is currently very little data on the use of stem cells for osteoarthritis. There is some preliminary data indicating there may be some benefit. Most "stem-cell" injections in the United States are from bone marrow aspirate. It is most indicated for patients with early osteoarthritis, not "bone-on-bone". We are currently developing a stem cell program at Rothman Orthopaedics to carefully monitor the effectiveness and safety of these injections. (See separate handout on **Bone marrow aspirate concentrate**).

### Are there braces I can use?

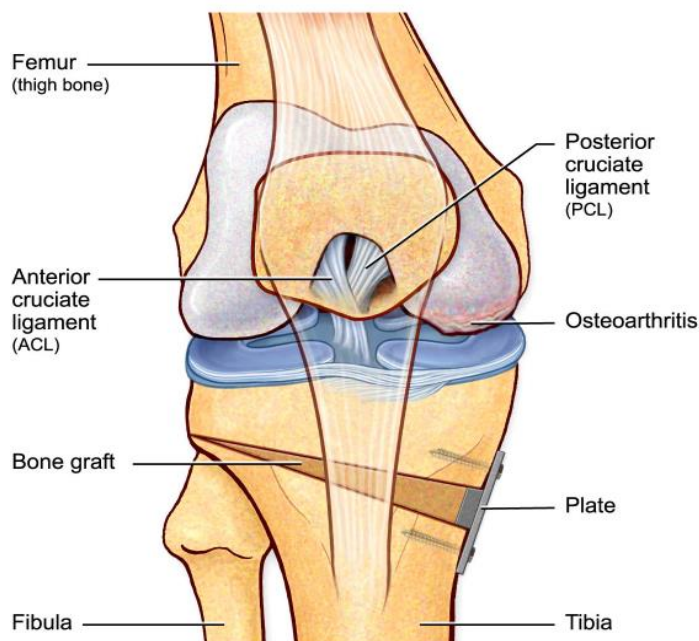
For some patients with arthritis, a simple elastic sleeve does provide some relief and a feeling of stability to the knee. In addition, there are some braces designed to alter the joint mechanics when the arthritis is only in one particular area (unloader brace). These braces can be effective for particular types of arthritis.



**FIGURE 3A: Shape of high tibial osteotomy.**



**FIGURE 3B: Wedge of bone removed and fixation plate**



**FIGURE 3C: Bone graft in osteotomy area**

## **SURGICAL TREATMENTS FOR OSTEOARTHRITIS**

### **Is arthroscopy helpful for arthritis?**

Arthroscopy (**Figure 2**) for arthritis is helpful for certain symptoms, such as mechanical locking or catching. These can occur from a meniscus tear or loose body in the knee, which can be removed arthroscopically. However, when arthroscopy is used to simply to “clean out” the joint and smooth articular cartilage, the results are unpredictable and short-lived. Only approximately 60% of patients report improvement after arthroscopy for arthritis, and a recent study showed no benefit of arthroscopy for arthritis over “sham” surgery.

### **What is an osteotomy (HTO, high tibial osteotomy)?**

In patients who have arthritis on only the inside or the outside of the knee and the rest of the knee are normal, an osteotomy (**Figure 3A**) is occasionally performed. This is generally performed in patients who are too young for total knee replacement. This procedure is performed to take the pressure off the area of the knee with arthritis. A wedge of bone is generally added to the shinbone in order to realign the knee. Depending on the type of osteotomy, a bone graft (**Figure 3C**) from the hip may also be required to help the osteotomy heal. Sometimes, a wedge of bone is removed from the outside of the knee to perform the osteotomy. This procedure provides good pain relief for approximately 80% of patients up to 10 years.

### **What about cartilage replacement surgery?**

There are new procedures available to replace small areas of missing cartilage. However, these procedures are currently only performed for patients with small areas of missing cartilage, and not more global arthritis. If only a small area of cartilage is affected, you may be a candidate for one of the procedures (See **Patient Guide to Articular Cartilage Injuries**).

**What about joint arthroplasty (joint replacement)?**

When arthritis is severe and the pain intolerable, the best procedure for a knee can be joint arthroplasty. Joint replacement is one of the best procedures available in orthopaedics for relieving pain and restoring function. Joint replacement involves “resurfacing” the arthritic joint so that the “bone-on-bone” surface is replaced. Typically, the replacement surface is metal on one side and plastic (polyethylene) on the other. The surfaces are bonded to the bone using bone cement.

**What is unicompartmental knee replacement?**

Unicompartmental arthroplasty, or partial knee replacement, is used to replace only a portion of the knee. This is performed when the arthritis only affects one particular area of the knee, and the rest of the knee is normal. This is most commonly performed for arthritis on the inside of the knee. In partial knee replacement, the diseased portion is replaced with metal and plastic, but everything that’s normal is left alone. This can typically be performed through a small incision, and the recovery is shorter than a total knee replacement. This can be performed for isolated arthritis on either the inner side (medial) or outside (lateral). Partial knee replacements of the patella can also be performed.

**What is a total knee replacement?**

Total joint arthroplasty is when the entire knee is replaced. This involves placing a metal cap to the end of the thighbone and a plastic replacement to the tibia or shinbone. In addition, the kneecap may or may not be replaced with plastic. The results of total joint arthroplasty are excellent in most patients.