



## **OSTEOARTHRITIS OF THE KNEE**

**Definition and description:** Osteoarthritis is the degeneration or loss of the cartilage cushion that lines the inside of joints, covering the ends of the bones that make up the joint (articular cartilage). This condition is also called OA, degenerative arthritis, traumatic arthritis, degenerative joint disease and osteoarthrosis.

**Symptoms:** The loss of cartilage causes the surfaces to become irregular, which ultimately can cause mechanical symptoms of grinding, catching and popping. Other symptoms frequently associated with osteoarthritis are pain, stiffness, loss of motion, swelling due to irritation of the joint lining or accumulation of joint fluid (effusion), weakness and atrophy of the leg muscles, and laxity of the ligaments.

**Causes:** Osteoarthritis may be related to previous trauma, age, obesity, and metabolic or hereditary factors. In many cases there are multiple contributory factors including lifestyle decisions.

### **Treatment Options:**

#### **1. Non-invasive**

• **Over the counter medication** such as Tylenol is a reasonable medication with which to start treatment. If this is non successful, then over the counter non-steroidal anti-inflammatories (NSAIDs) such as Ibuprofen (Advil, Motrin) or Naproxen (Aleve) are usually utilized. When taking these medications, patients must be careful regarding side effects such as stomach upset or bleeding, and should be tested regularly for kidney and liver function if taking high doses for prolonged periods.

• **Application of ice** to the joint is frequently helpful in controlling pain and swelling, especially after activities. Frozen popcorn kernels or peas can be utilized as they can be molded to the joint. Ice should not be applied directly to the skin as it can cause “ice burns”. We suggest that you cover the skin with a moistened washcloth before placing the ice pack on the joint.

• **Lifestyle changes** that can be helpful include weight loss, activity modification, dietary modifications such as a modified Mediterranean diet and limited gluten intake, and increasing sleep to 8 hours per night.

• **Physical therapy** can help control swelling, increase joint range of motion and increase strength of the quadriceps, hamstrings, glutes (hip rotators) and core. Strengthening and restoring motion can help “unload” the stresses on the knee joint.

• **Bracing** is frequently effective in controlling symptoms of osteoarthritis. At times an elastic or neoprene (wetsuit material) sleeve can be effective in controlling swelling and pain. In some cases a neoprene sleeve with hinges can provide better symptom relief by providing more support. In cases where the arthritis affects only one side of the joint (inner or outer, i.e. medial or lateral), a custom fitted unloading brace can be very effective in relieving symptoms when weight bearing activities such as walking or hiking cause pain. This works by transferring the load to the opposite side of the joint. This brace is most effective when worn directly on the skin or over a thin sleeve and should not be

worn over clothing. Although the brace is lightweight, sometimes patients find it uncomfortable in warm weather or difficult to wear if they are of short stature. Increased leg girth can make it difficult to get a proper fit.

## 2. Injection therapy

- **Cortisone** (steroids) can be very helpful for the relief of acute pain. The medication is biologically effective for 1-14 days; however, the positive effects of the injection can last much longer.

- **Viscosupplementation** is the injection of artificial joint lubricant. These are purified forms of hyaluronic acid which is a natural substance found in the body that helps cushion, lubricate and protect joints. The theory behind viscosupplementation is that the joint lining of patients with arthritis produce joint fluid that is thinner than necessary to provide adequate lubrication, and the injections provide thicker fluid which lubricates better. There are a number of products used for this purpose including Euflexxa, Synvisc, Orthovisc, and Hyalgan. This treatment involves a series of 3 injections into the knee one week apart. Occasionally cortisone is given with the first injection. Patients occasionally report relief after the first or second injection, but most people report lessening of symptoms after the third injection, thus it is best to have all 3 injections for maximum benefit. We usually ask patients to return for reevaluation 6 weeks after the third injection so we can determine the result of the injections. Clinical studies have shown improvement of symptoms of up to 6 months (or more in some cases). Most insurance carriers, including Medicare, will approve repeat injections after 6 months; however, it is important for us to document the improvement following the series.

- **Platelet rich plasma (PRP)** is the injection of the patient's own blood back into the joint after it is processed in special way. This involves drawing blood from an arm vein, spinning it down in a centrifuge to separate the platelets from the cells and the serum, and then injecting the platelets into the joint. The theory behind this treatment is that the platelets contain several important growth factors that may help the joint "heal" by stimulating the cartilage and soft tissues, and other factors that inhibit the inflammatory response. Although PRP injections have generated significant attention in the media, there is relatively little if any proof of its efficacy in the treatment of osteoarthritis. Research on this injection is inconclusive and the injections are usually not covered by insurance.

- **Regenokine treatment** has been reported in the media as a treatment that has been pursued by a number of professional athletes. With this treatment the patient's blood is taken from an arm vein and a serum is made, and then injected in a series of 6 injections within a 6-week period. Although this technique has been very successful in Europe and more recently in the U.S., it is not covered by insurance and the cost is \$9000 for a single joint and \$12,000 for two joints when done in Los Angeles. At the present time there are no facilities in Orange County that can provide this treatment; however, information for the facility in L.A. can be provided upon request.

## 3. Surgical intervention

- **Arthroscopy** is a minimally invasive outpatient procedure that is done to "clean up" the joint. MRI will usually demonstrate a torn meniscus (or menisci) in addition to wear of the joint surfaces. It is often difficult to determine whether the symptoms are coming from the torn meniscus or from the

arthritic changes involving the joint surfaces; however, when there are mechanical symptoms of catching, popping or locking which localize to the part of the knee where the meniscus is torn, the results of surgery are more predictable. The recovery is usually 8-12 weeks depending on the degree of arthritis. It is possible that the surgery may not be beneficial if it is determined that the symptoms were primarily arthritic in nature. In rare cases the surgery may worsen the symptoms.

•**Joint replacement** (arthroplasty) surgery is performed when the amount of joint wear is excessive and the patient's symptoms prevent him/her from performing activities of daily living without significant pain, or they cannot pursue reasonable desired activities without significant pain. Replacement can be partial (unicondylar replacement) or complete (total joint replacement). Our joint replacement specialists, Dr. Gorab, Dr. Barnett and Dr. Patel, perform these procedures