

## **Nonsurgical Treatment Options for Osteoarthritis of the Knee**

If you have osteoarthritis of the knee (OA Knee), you can take advantage of a wide range of treatment options. Only one in four people with OA Knee need surgery, but the effectiveness of different treatments varies from person to person. The choice of treatment should be a joint decision between you and your physician.

The purpose of treatment is to reduce pain, increase function and generally reduce your symptoms. Patient satisfaction is a fundamental goal in treating OA Knee. Treatment options can be nonsurgical or surgical. Nonsurgical treatments fall into four major groups:

- Health and behavior modifications, such as physical therapy and exercise, weight loss and education
- Drug therapy, such as pain relievers or COX-2 inhibitors (drugs that interrupt the cycle of inflammation)
- Intra-articular (within the joint) treatments, such as injections
- Alternative therapies such as herbal remedies, acupuncture or magnet therapy

Here is some information about various nonsurgical treatment options that you might want to discuss with your physician.

### **Health and behavior modifications**

Health and behavior modifications include:

- Patient education
- Physical therapy and exercise
- Weight loss
- Use of a knee brace

The more you understand about your condition, the better prepared you are to make decisions about your care. **Patient education** focuses on understanding the disease, learning about treatment options, and working with your physician to develop exercise and pain management programs suited to your life. It is based on the belief that your personal actions and behavior changes can reduce the impact of the disease.

Your visit to this Web site shows your interest in learning about your condition. Another Web resource is the Arthritis Foundation; you'll find a link to that site at the end of this article.

**Physical therapy and exercise** are often effective in reducing pain and improving function. Your physician or a physical therapist can help develop an individualized exercise program that meets your needs and lifestyle.

Many, but not all, people with OA Knee are overweight. Simple **weight loss** can reduce stress on weightbearing joints, such as the knee. Losing weight can result in reduced pain and increased function, particularly in walking.

Some research studies have focused on the use of **knee braces** for treatment of OA Knee. They may be especially helpful if the arthritis is centered on one side of the knee. A brace can assist with stability and function. There are two types of braces that are often used. An "unloader" brace shifts load away from the affected portion of the knee. A "support" brace helps support the entire knee load. In most studies, the knee symptoms improved, with a decrease in pain on weightbearing and a general ability to walk longer distances.

### **Drug treatments**

Several types of drugs are used to treat OA Knee. Among these are:

- Simple pain relievers
- Nonsteroidal anti-inflammatory drugs (NSAIDs)
- COX-2 inhibitors
- Opiates
- Glucosamine/chondroitin sulfate

**Simple pain relievers** such as Tylenol are available without a prescription and can be very effective in reducing pain. Pain relievers are usually the first choice of therapy for OA Knee. All drugs have potential side effects and simple analgesics are no exception. In addition, with time, your body can build up a tolerance, reducing the effects of the pain reliever. It is important to realize that these medications, although purchased over-the-counter, can also interact with other medications you are taking, such as blood-thinners. Be sure to discuss these issues with your orthopaedist or primary physician.

A more potent type of pain reliever is a nonsteroidal anti-inflammatory drug or **NSAID**. These drugs, which include brands such as Motrin, Advil and Aleve, are available in both over-the-counter and prescription forms. Like all pain relievers, NSAIDs can cause side effects including changes in kidney and liver function as well as a reduction in the ability of blood to clot. These effects are usually reversible when the medication is discontinued.

A **COX-2 inhibitor** is a special type of NSAID that is often prescribed if knee pain is moderate to severe. Common brand names of COX-2 inhibitors include Celebrex and Vioxx. It should be noted that Vioxx was recently withdrawn from the market by its manufacturer. COX-2 inhibitors reduce pain and inflammation so that you can function better. If you are taking a COX-2 inhibitor, you should not use a traditional NSAID (prescription or over-the-counter). Be sure to tell your doctor if you have had a heart attack, stroke, angina, blood clot or hypertension or if you are sensitive to aspirin, sulfa drugs or other NSAIDs.

COX-2 inhibitors can have side effects, including abdominal pain, nausea and indigestion. Antacids or a fatty meal can limit the body's ability to absorb and use COX-2 inhibitors, so do not take them together. These drugs are less irritating to the stomach than other NSAIDs, but abdominal bleeding can occur, sometimes without warning.

**Glucosamine and/or chondroitin sulfate** may be particularly helpful in the early stages of OA Knee, provided they are used as directed on package inserts and with caution. These are two large molecules that are found in the cartilage of our joints. Supplements sold over-the-counter are usually made from synthetic or animal products. Although glucosamine and chondroitin sulfate are natural substances, sometimes classified as food additives, they can cause side effects such as headaches, stomach upset, nausea, vomiting, and skin reactions. These supplements can interact with other medications, so keep your doctor informed about your use of them.

These substances can help reduce swelling and tenderness, as well as improve mobility and function. If you decide to take this therapy, it is important not to discontinue too soon. At least two months of continuous use is necessary before the full effect is realized.

### **Intra-articular treatments**

"Intra-articular" means within the joint itself. These treatments involve one or more injections into the knee joint. There are two types of intra-articular treatments:

- Corticosteroid injections
- Viscosupplementation with hyaluronic acid

**Corticosteroid injections** are given for moderate to severe pain. They can be very useful if there is significant swelling, but are not very helpful if the arthritis affects the joint mechanics. Corticosteroids or cortison are natural substances known as hormones. They are produced by the adrenal glands in the human body. They can provide pain relief and reduce inflammation with a subsequent increase in quadriceps (thigh muscle) strength. However, the effects are not long-lasting, and no more than four injections should be given per joint per year.

In addition, there is some concern about the use of these injections. For example, pain and swelling may "flare" immediately after the injection, and the potential exists for long-term joint damage or infection. With frequent repeated injections or over an extended period of time, joint damage can actually increase rather than decrease.

**Viscosupplementation** is a way of adding fluid to lubricate the joint and make it easier to move. This substance is a concentrate of hyaluronic acid, a molecule that is found in the joints of the body. There is less fluid in a knee with osteoarthritis than in a healthy knee. Three to five weekly shots are needed to reduce the pain, but the pain relief is not permanent. Many patients experience improvement for weeks to months, however, and find the process highly worthwhile.

Viscosupplementation can be helpful for people whose arthritis has not responded to behavior modification or basic drug treatments. It is most effective if the arthritis is in its early states (mild to moderate). Sometimes, patients feel pain at the injection site, and occasionally the injections result in an increase in pain and swelling.

### **Alternative therapies**

Alternative therapies include the use of acupuncture and magnetic pulse therapy. Many forms of therapy are unproven, but reasonable to try, provided you find a qualified practitioner and keep your physician informed of your decisions.

**Acupuncture** is adapted from a Chinese medical practice. It uses fine needles to stimulate specific body areas to relieve pain or temporarily numb an area. Although it is used in many parts of the world and evidence suggests that it can help ease the pain of arthritis, there are few scientific studies of its effectiveness. Studies that have been done seem to indicate that acupuncture is better at relieving pain than at improving function. The most common risk is the potential for infection and disease transmission from the use of nonsterile needles. Be sure your acupuncturist is certified, and do not hesitate to ask about his or her sterilization practices.

**Magnetic pulse therapy** is another alternative that may be helpful in reducing the pain of OA Knee. It's painless and works by applying a pulsed signal to the knee, which is placed in an electromagnetic field. Because the body produces electrical signals, scientists think that magnetic pulse therapy may stimulate the production of new cartilage. However, like many alternative therapies, magnetic pulse therapy has yet to be proven. Before attempting any therapy on your own, talk to your physician. Together, you can develop a program that will increase your understanding of arthritis, help ease your pain and improve the functioning of your joints.

*This information is based on the "Improving Musculoskeletal Care in America" Project of the Council on Research, Evidence-based Practice Committee, and Department of Research and Scientific Affairs, American Academy of Orthopaedic Surgeons. The material presented is for educational purposes only and is not intended to present the only, or necessarily best, method or procedure for the medical situations discussed.*

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