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## Patient education: Osteoarthritis treatment (Beyond the Basics)

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### INTRODUCTION

Osteoarthritis (OA) is a painful condition that can affect one or more joints. It involves loss of cartilage, often along with mild inflammation and changes to the bone closest to the joint, as well as weakness of muscles surrounding the joint ( [figure 1](#)). This results in pain, stiffness, and trouble easily moving the joint.

Different factors can contribute to the development of OA, including genetic factors, obesity, and joint injury. Although it is more common in older people, OA is not an inevitable part of aging. Any joint can be affected by OA, but it occurs most frequently in the hands, knees, hips, and spine.

OA is a chronic condition that has a variable outcome over time. Over time, symptoms can improve, stay the same, or gradually worsen, especially if contributing factors are not properly modified (particularly increased body weight and misalignment of the joint). There are no known therapies that can slow the progression of changes to the joint. However, treatment can help relieve symptoms, improve your ability to move, and allow you to stay active. The

treatment of OA includes a combination of non-drug ("nonpharmacologic") therapies, drug therapy, and, in some cases, surgery.

OA treatment is tailored to you and based upon how severe your pain and stiffness are, which joints are affected, how much difficulty you are having with daily activities, and your preferences. It is important to work with your health care providers to create an effective long-term plan for living with OA that you are comfortable with.

This topic review discusses arthritis treatments. A separate article discusses arthritis symptoms and diagnosis. (See "[Patient education: Osteoarthritis symptoms and diagnosis \(Beyond the Basics\)](#)".)

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## OSTEOARTHRITIS TREATMENT WITHOUT MEDICATIONS

Nonpharmacologic (non-drug) therapies are a key part of osteoarthritis (OA) treatment and are recommended for everyone with OA. These can improve your arthritis symptoms and have minimal side effects, and they are usually the first treatments clinicians recommend. People who try these approaches often have varying degrees of improvement in their OA pain and ability to do their normal activities.

**Weight loss** — Obesity and being overweight are strongly linked to the development of OA of the knee and with worsening of the disease over time. Weight loss, even a small amount, appears to lower this risk; higher amounts (around 10 percent of your body weight) may decrease your pain by up to 50 percent when achieved through a combination of diet and exercise. An example of 10 percent of body weight is a person who weighs 200 pounds losing 20 pounds.

It is not well established if weight loss slows the worsening of arthritis in joints that are already affected. However, weight loss may significantly reduce joint pain in "weightbearing" joints, such as the hips and knees. Weight loss is recommended for all overweight and obese people with OA and is usually combined with strengthening exercises to minimize loss of muscle mass and further improve your condition. Losing weight also helps improve other health problems that many people with OA have, such as diabetes and high blood pressure. (See "[Patient education: Losing weight \(Beyond the Basics\)](#)".)

**Physical therapy and exercise programs** — Physical therapy and exercise improve flexibility and strengthen the muscles surrounding the joints. People who exercise regularly despite their arthritis will typically have less pain and better function than those who are inactive. A separate

article discusses exercise and arthritis. (See "[Patient education: Arthritis and exercise \(Beyond the Basics\)](#)".)

**Orthoses** — Orthoses are devices that help to keep the joints aligned and functioning correctly. There are different types of orthoses that can reduce symptoms and that can help maintain function in people with OA.

Splints that immobilize the joints (keep them from bending) can reduce pain and inflammation. Many splints can be worn throughout the day and night. Splints are commonly used for OA affecting the base of the thumb. Braces can help some people with knee OA by shifting some of the forces from the affected part of the knee.

**Assistive devices** — Canes, walkers, electric-powered seat lifts, raised toilet seats, and tub and shower bars can reduce the stress on joints and can make it easier to perform daily tasks. A physical therapist may suggest these and other assistive devices, depending upon the severity and location of your arthritis.

**Arthritis education and support** — OA symptoms may cause you to feel frustrated, dependent upon others for help, and even depressed. These factors may reduce your motivation to stick with OA treatment and may make the pain feel worse.

By learning more about OA, you can better participate in your own care and learn how you can manage your own condition. It is important to talk with your health care providers about the options for treating your OA, the effects your OA has on your daily activities, and strategies for coping with the limitations imposed by OA.

Some studies suggest that psychosocial support may be as effective as drug therapy for reducing the symptoms of OA. Support can be achieved by building an informal support network or by participating in a formal OA support group. Information about these groups is available below. (See '[Where to get more information](#)' below.)

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## OSTEOARTHRITIS TREATMENT WITH MEDICATIONS

Drug therapy can be started in combination with or after a trial of nonpharmacologic interventions (see '[Osteoarthritis treatment without medications](#)' above). The major medical therapies for osteoarthritis (OA) are described below. Note that opioids (drugs derived from [morphine](#)) are **not** recommended for chronic or long-term relief of OA pain. They have not been found to be more effective than other pain medications for this indication; additionally, they have a relatively high risk of side effects and the potential to cause harm with long-term use.

**Topical therapies** — Topical nonsteroidal antiinflammatory drugs (NSAIDs) applied to the skin over the joint can help relieve pain for OA involving the hands and knees. There are no major concerns about side effects from topical NSAIDs, although some people may experience local skin rashes that usually resolve by stopping the medication. They are usually tried before oral NSAIDs (pills or tablets). Topical [capsaicin](#) is an over-the-counter cream that can help some people with hand and knee OA as well. The active substance in capsaicin is hot chili pepper, and it is thought to work by depleting a pain-causing substance in nerve endings, which ultimately lessens the OA pain. Some people experience side effects when using capsaicin cream; these include burning, stinging, and redness of the skin (especially if you get it on the skin near your eye).

**Nonsteroidal antiinflammatory drugs** — Oral NSAIDs help relieve pain and reduce inflammation. They include [ibuprofen](#) (sample brand names: Advil, Motrin), [naproxen](#) (sample brand name: Aleve), and [celecoxib](#) (brand name: Celebrex). Oral NSAIDs are usually used when other therapies (nonpharmacologic and topical therapies) do not adequately relieve symptoms. They should be used at the lowest effective dose for the shortest duration possible because of potential side effects, which include gastrointestinal ulcers, cardiovascular disease, and renal disease. Some patients cannot take NSAIDs because of other diseases they already have that may contraindicate these medications. NSAIDs are discussed in detail separately. (See "[Patient education: Nonsteroidal antiinflammatory drugs \(NSAIDs\) \(Beyond the Basics\)](#)".)

**Acetaminophen** — [Acetaminophen](#) (sample brand name: Tylenol) may have some very small benefits but is usually not significantly effective to relieve OA pain. For this reason, and because it can cause side effects, especially in older adults, many doctors prefer not to recommend this medication for OA anymore. To avoid the possible side effects from acetaminophen, particularly liver damage, it is important to follow dosing instructions and avoid drinking excessive amounts of alcohol.

**Joint injections** — Glucocorticoid (steroid) injections are occasionally recommended for some people who still have significant pain that has not responded to weight loss, exercise, and other medications or for people who cannot use other medications. Glucocorticoid injections have few side effects, but there is a small risk of joint infection. (See "[Patient education: Joint infection \(Beyond the Basics\)](#)".)

Glucocorticoids may damage certain joints when injected repeatedly. Therefore, clinicians recommend no more than three to four injections per year for each weightbearing joint, such as a knee, but even this frequency may be harmful to the cartilage if injections are performed routinely.

Injections of a substance called "hyaluronate" are generally not recommended because there is not a lot of good evidence to show that they are helpful, and they are expensive.

**Other** — Several other therapies have been evaluated to determine if they have any effect on OA. Glucosamine and chondroitin are dietary supplements that have received a lot of attention for their potential benefit in reducing pain without causing any significant side effects. However, there are conflicting results from clinical studies evaluating how well they work for pain from hip and knee OA, with some good-quality studies showing no benefit. As a result, many clinicians do not recommend them because they are costly and haven't been shown to be consistently beneficial in clinical trials. However, clinicians generally do not discourage patients from taking them if they want to try, as there are so few side effects and some people may find relief from them.

Several other OA therapies that are known to be ineffective or are of uncertain benefit are listed below. (See ['Osteoarthritis therapies of no \(or uncertain\) benefit'](#) below.)

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## OSTEOARTHRITIS SURGERY

Surgery is usually reserved for severe osteoarthritis (OA) that significantly limits your activities and that did not respond to other treatments. (See ["Patient education: Total knee replacement \(Beyond the Basics\)"](#).)

People who do get surgery should be in the best possible physical condition and should be prepared to commit to rehabilitation after surgery. Exercise and physical therapy are recommended before and after the surgery to accelerate recovery and increase the chances of having good results. There are a few different types of surgery for OA.

**Realignment** — Surgery may be used to realign bones and other joint structures that have become misaligned because of longstanding OA. For the knee, realignment may shift weightbearing to healthier cartilage to relieve arthritis pain. This type of alignment may be recommended for younger and more active patients instead of replacing the joint entirely.

**Fusion** — Surgery may be used to permanently fuse two or more bones together at a joint. This may be recommended for badly damaged joints for which joint replacement surgery is not appropriate. Fusion may be recommended for joints of the wrist and ankle and for the small joints of fingers and toes.

**Joint replacement** — Surgery may be used to replace a damaged joint with an artificial (prosthetic) joint. The most common reason for having joint replacement surgery is pain that is

preventing you from doing your usual activities and having an active lifestyle and is not controlled by a combination of nonpharmacologic and drug treatments.

Joint replacement surgery dramatically relieves pain in most people with severe symptoms of hip or knee OA. However, it is associated with possible complications that may be serious and risks and benefits should be carefully discussed with your clinician.

Joint replacement surgery is discussed in more detail separately. (See "[Patient education: Total knee replacement \(Beyond the Basics\)](#)" and "[Patient education: Total hip replacement \(Beyond the Basics\)](#)".)

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## OSTEOARTHRITIS THERAPIES OF NO (OR UNCERTAIN) BENEFIT

There are several approaches that have been used to treat patients with osteoarthritis (OA) that are generally not recommended due to lack of evidence showing benefit. In addition, there are other therapies in which the benefit remains uncertain. Some of these interventions include:

- Shoe insoles
- Platelet-rich plasma injections
- Transcutaneous electrical nerve stimulation
- Acupuncture
- Fish oil, curcumin (active ingredient of turmeric), *Boswellia serrata*, and other nutritional supplements
- Arthroscopy (minimally invasive or "keyhole" surgery)

While some of these approaches may not be harmful, and people sometimes feel that they help, doctors do not routinely recommend them for the treatment of OA.

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## WHERE TO GET MORE INFORMATION

Your health care provider is the best source of information for questions and concerns related to your medical problem.

This article will be updated as needed on our web site ([www.uptodate.com/patients](http://www.uptodate.com/patients)). Related topics for patients, as well as selected articles written for health care professionals, are also available. Some of the most relevant are listed below.

**Patient level information** — UpToDate offers two types of patient education materials.

**The Basics** — The Basics patient education pieces answer the four or five key questions a patient might have about a given condition. These articles are best for patients who want a general overview and who prefer short, easy-to-read materials.

[Patient education: Osteoarthritis \(The Basics\)](#)

[Patient education: Hip replacement \(The Basics\)](#)

[Patient education: Physical activity for people with arthritis \(The Basics\)](#)

[Patient education: Calcium pyrophosphate deposition disease \(The Basics\)](#)

[Patient education: Diffuse idiopathic skeletal hyperostosis \(The Basics\)](#)

[Patient education: Paget disease of bone \(The Basics\)](#)

**Beyond the Basics** — Beyond the Basics patient education pieces are longer, more sophisticated, and more detailed. These articles are best for patients who want in-depth information and are comfortable with some medical jargon.

[Patient education: Osteoarthritis symptoms and diagnosis \(Beyond the Basics\)](#)

[Patient education: Losing weight \(Beyond the Basics\)](#)

[Patient education: Arthritis and exercise \(Beyond the Basics\)](#)

[Patient education: Calcium and vitamin D for bone health \(Beyond the Basics\)](#)

[Patient education: Nonsteroidal antiinflammatory drugs \(NSAIDs\) \(Beyond the Basics\)](#)

[Patient education: Joint infection \(Beyond the Basics\)](#)

[Patient education: Total knee replacement \(Beyond the Basics\)](#)

[Patient education: Total hip replacement \(Beyond the Basics\)](#)

**Professional level information** — Professional level articles are designed to keep doctors and other health professionals up-to-date on the latest medical findings. These articles are thorough, long, and complex, and they contain multiple references to the research on which they are based. Professional level articles are best for people who are comfortable with a lot of medical terminology and who want to read the same materials their doctors are reading.

[Approach to the adult with unspecified knee pain](#)

[Approach to the adult with unspecified hip pain](#)

[History and examination of the adult with hand pain](#)

[Evaluation of the adult patient with neck pain](#)

[Investigational approaches to the management of osteoarthritis](#)

[Lumbar spinal stenosis: Pathophysiology, clinical features, and diagnosis](#)

[Overview of the musculoskeletal complications of diabetes mellitus](#)

[Pathogenesis of osteoarthritis](#)

[Patient guidelines for weight-resistance training in osteoarthritis](#)

[Epidemiology and risk factors for osteoarthritis](#)

[Overview of surgical therapy of knee and hip osteoarthritis](#)

[Clinical manifestations and diagnosis of osteoarthritis](#)

[Clinical manifestations and diagnosis of osteoarthritis, section on 'Shoulder'](#)

The following organizations also provide reliable health information.

- National Library of Medicine  
([www.nlm.nih.gov/medlineplus/arthritis.html](http://www.nlm.nih.gov/medlineplus/arthritis.html), available in Spanish)
- National Institute of Arthritis and Musculoskeletal and Skin Diseases  
(301) 496-8188  
([www.niams.nih.gov/Health\\_Info/Arthritis/default.asp](http://www.niams.nih.gov/Health_Info/Arthritis/default.asp))
- National Institute on Aging  
([www.nia.nih.gov/health/topics/osteoarthritis](http://www.nia.nih.gov/health/topics/osteoarthritis), available in Spanish)
- American College of Rheumatology  
(404) 633-3777  
([www.rheumatology.org/practice/clinical/patients/index.asp](http://www.rheumatology.org/practice/clinical/patients/index.asp))
- The Arthritis Foundation  
(800) 283-7800  
([www.arthritis.org](http://www.arthritis.org))
- Arthritis Australia  
([www.myjointpain.org.au](http://www.myjointpain.org.au))

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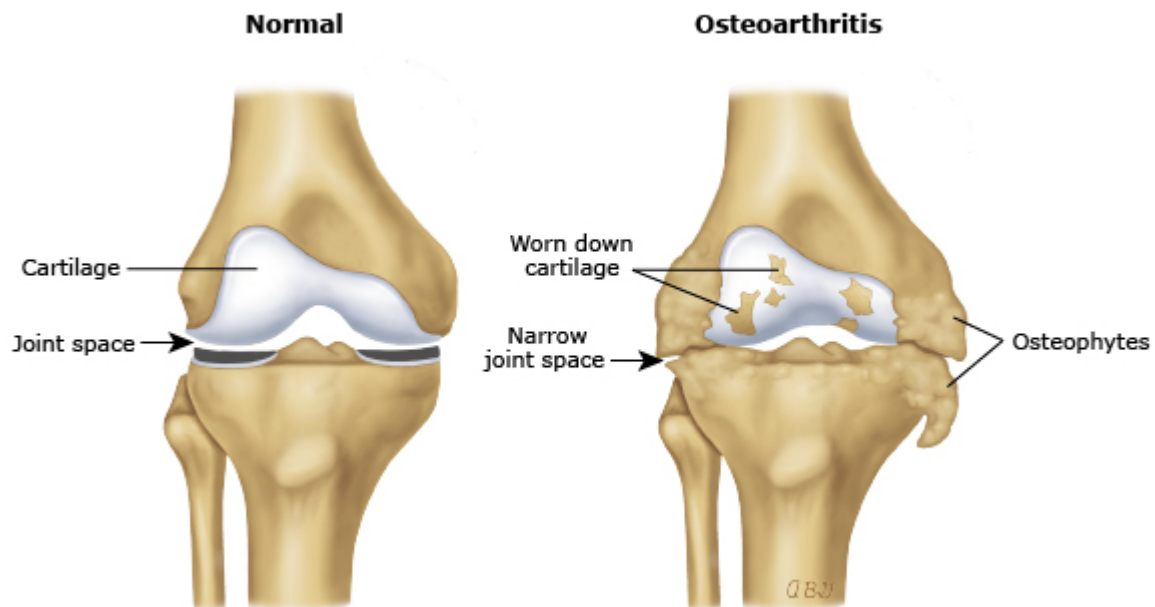
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Topic 516 Version 24.0

## GRAPHICS

### Knee osteoarthritis

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This drawing shows a normal knee joint next to a knee joint with osteoarthritis (OA). In the OA joint, the cartilage covering the ends of the bones roughens and becomes thin, while the bone underneath the cartilage grows thicker. Bony growths called "osteophytes" can form. The space between the bones also becomes narrower.

Graphic 115065 Version 2.0

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