Patient

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Osteoarthritis

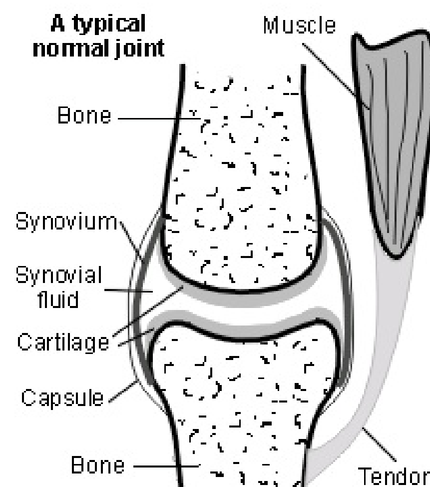
Osteoarthritis (OA) causes pain and stiffness in joints. Symptoms may be helped by exercises, some physical devices and treatments, and losing weight if you are overweight. Paracetamol will often ease symptoms. Other medicines are sometimes advised. Joint replacement surgery is an option for severe cases.

What is osteoarthritis?

Arthritis means inflammation of the joints. Osteoarthritis (OA) is the most common form of arthritis in the UK. OA mainly affects the joint cartilage and the bone tissue next to the cartilage.

Understanding joints

A joint is the term for where two bones meet. Joints allow movement and flexibility of various parts of the body. The movement of the bones is caused by muscles which pull on tendons that are attached to bone.



Cartilage is a hard, smooth tissue that covers the end of bones. Between the cartilage of two bones which form a joint, there is a small amount of thick fluid called synovial fluid. This fluid lubricates the joint, which allows smooth movement between the bones.

The synovial fluid is made by the synovium. This is the tissue that surrounds the joint. The outer part of the synovium is called the capsule. This is tough and helps to give the joint stability. Surrounding ligaments and muscles also help to give support and stability to joints.

What causes osteoarthritis?

All normal joints and joint tissues are constantly undergoing some form of repair. This is because of the wear and tear that is placed on them through our daily activities. However, in some people, it seems that this repair process becomes faulty in some way. This occurs perhaps because of severe wear and tear to the joints or a problem with the repair process, and osteoarthritis (OA) develops.

In joints with OA, the joint cartilage becomes damaged and worn. The bone tissue next to the cartilage can also be affected and bony growths can develop around the joint edges. These growths are called osteophytes and may be seen on X-rays. The joints and the tissues around the joints can also become inflamed. This inflammation is called synovitis.

Factors that may play a role in the development of OA include:

- **Age**. OA becomes more common with increasing age. It may be that the state of the blood supply to the joint and the state of the natural repair mechanisms become less efficient in some people as they age.
- **Genetics**. There may be some inherited tendency for OA to develop in some people.
- **Obesity**. Knee and hip OA are more likely to develop, or be more severe, in obese people. This is because there is an increased load on the joints and a potential for more joint damage.
- **Your sex**. Women are more likely to develop OA than men.

- **Previous joint injury, damage or deformity**. For example, this may include previous joint infection, a previous break (fracture) in the bone around a joint, or a previous ligament injury that caused a joint instability.
- **Occupational overuse of a joint**. For example, OA of the knee may be more common in elite athletes and elbow OA may be more common in people working with pneumatic drills.

Who gets osteoarthritis?

Osteoarthritis (OA) causes joint pain in around 8.5 million people in the UK.

- **Primary OA** develops in previously healthy joints. Most cases develop in people aged over 50. By the age of 65, at least half of people have some OA in some joint(s). It is mild in many cases, but about 1 in 10 people over 65 have a major disability due to OA. This is mainly due to OA of one or both hips or knees.
- **Secondary OA** develops in joints already affected by previous injury, damage or deformity. This can occur in younger people.

Which joints are affected?

Any joint can be affected by osteoarthritis (OA) but the hips, knees, finger joints, thumb joints and lower spine are most commonly affected. The shoulders, elbows, wrists, ankles, and toe joints are less commonly affected. In many cases, just a few joints develop symptoms with one or two becoming the most troublesome. In some people, OA develops in many joints.

What are the symptoms?

- Pain, stiffness, and limitation in full movement of the joint are typical. The stiffness tends to be worse first thing in the morning. It then tends to loosen up after half an hour or so.
- Swelling and inflammation of an affected joint can sometimes occur. (But note, affected joints are not usually very swollen, red or warm. Tell your doctor if a joint suddenly swells up or becomes red or hot. This is a symptom that more commonly occurs with other types of arthritis.)
- An affected joint tends to look a little larger than normal. This is due to overgrowth of the bone next to damaged cartilage.
- Deformities of joints due to OA are uncommon, but can sometimes develop.
- You may have poor mobility and problems walking if a knee or hip is badly affected. This may make you more likely to have a fall.
- If you have bad OA that affects your hip, you may have difficulty in putting on shoes and socks and getting in and out of a car. In women, restricted movement of the hip can make having sex difficult and painful.
- No symptoms may occur. Quite a number of people have X-ray changes that indicate some degree of OA but have no, or only very mild, symptoms. The opposite can also be true. That is, you may have quite severe symptoms but with only minor changes seen on the X-ray.

Some people with OA may develop other problems because of their symptoms. For example, pain can affect sleep for some people. Mobility problems may affect your ability to work and carry out family duties. Some people may get down or even depressed because of their pain and other symptoms.

Do I need any tests?

Your doctor can often diagnose osteoarthritis (OA) based on your age, your typical symptoms and examination of your affected joints. Tests such as X-rays or blood tests are usually not needed. However, sometimes your doctor may suggest X-rays or other tests if they are uncertain about the diagnosis and want to exclude other problems.

What is the outlook (prognosis)?

A common wrong belief is that osteoarthritis (OA) is always a progressive and serious disease. The severity of symptoms varies. In many people, OA is mild. It does not become worse, and does not make you any more disabled than expected for your age. However, in some people, the severity of OA and the disability it causes are out of proportion with their age. One or more joints may become particularly badly affected.

Symptoms often wax and wane. Sometimes this is related to things such as the weather. Symptoms often improve in warmer months. A bad spell of symptoms may be followed by a relatively good period.

What are the aims of treatment?

There is no cure for osteoarthritis (OA) but there are a number of things that can be done to ease symptoms. For anyone with OA, the aims of treatment should be:

- To help you to understand the condition and how to manage it.
- To reduce any pain and stiffness.
- To maintain or improve the mobility of your affected joint or joints.
- To limit any joint damage.
- To minimise any disability that may result from your OA.
- To minimise any side-effects from medicines used as treatment.

Remember, something can usually be done to help. OA is more common as you get older but it isn't just part of getting older. You don't have to live with pain or disability. Various treatments may help and are discussed below.

General measures to help treat osteoarthritis

Exercise

If possible, exercise regularly. This helps to strengthen the muscles around affected joints, to keep you fit, and to maintain a good range of joint movement. Swimming is ideal for most joints, but any exercise is better than none. Many people can manage a regular walk.

Weight control

If you are overweight, try to lose some weight, as the extra burden placed on back, hips, and knees can make symptoms worse. Even a modest weight loss can make quite a difference.

Shoe insoles and other devices

Some research trials have shown that the following may help to ease symptoms from OA of the knee in some cases:

- Wearing a knee brace.
- Using shoe insoles.
- The use of a special sticky tape which pulls the kneecap inwards.

These measures slightly alter the distribution of weight and pressure on the knee joint This is why they are thought to ease symptoms in some cases. A person qualified to diagnose and treat foot disorders (a podiatrist) or a physiotherapist can advise exactly how to use them.

Braces or supports may also be helpful for other joints affected by OA. For example, a support around the thumb for painful thumb OA.

Walking aids

If you have OA of your hip or knee, when walking try using a walking stick. Hold it in the hand on the opposite side of the body to the affected joint. This takes some pressure off the affected joint and helps to ease symptoms in some cases.

Physiotherapy

Sometimes advice or treatment from a physiotherapist is helpful. For example:

- For advice on which exercises to do to strengthen the muscles above the knee (quadriceps) if you have OA of the knee. Strengthening the quadriceps has been shown to improve symptoms caused by OA of the knee.

- For advice on how to keep active and fit.
- For advice on shoes, insoles, knee braces, taping to the knee, and how to use walking aids properly (to make sure you have one of the correct height).

Occupational therapy

An occupational therapist may be able to help if you need aids or modifications to your home to cope with any disability caused by OA. Special devices, such as tap turners to help with turning on a tap, may mean you can carry out tasks around the house more easily.

Other therapies

- Some people have found that transcutaneous electrical nerve stimulator (TENS) machines help to ease pain from OA. A TENS machine delivers small electrical pulses to the body via electrodes placed on the skin.
- Some people get some pain relief from using hot or cold packs on the affected joint(s). This is also called thermotherapy. You can use a hot water bottle filled with either hot or cold water and apply it to the affected area. Or, special hot and cold packs that can either be cooled in the freezer, or heated in a microwave, are also available.

Medicines used to treat osteoarthritis

Paracetamol

Paracetamol is the common medicine used to treat OA. It often works well to ease pain. It is best to take it regularly to keep pain away, rather than now and again when pain flares up. A normal adult dose is two 500 mg tablets, four times a day. It usually has little in the way of side-effects, and you can take paracetamol long-term without it losing its effect.

Anti-inflammatory painkillers

You may find that a topical preparation of an anti-inflammatory painkiller that you rub on to the skin over affected joints is helpful. This can be instead of, or in addition to, paracetamol tablets. This may be particularly helpful if you have knee or hand OA. Examples include ibuprofen gel and diclofenac (topical). Compared to anti-inflammatory tablets, the amount of the medicine that gets into the bloodstream is much less with topical preparations. There is also less risk of side-effects (see below).

Anti-inflammatory painkillers that are taken by mouth are not used as often as paracetamol. This is because there is a risk of serious side-effects, particularly in older people who take them regularly. However, one of these medicines is an option if paracetamol or topical anti-inflammatories do not help. Some people take an anti-inflammatory painkiller for short spells, perhaps for a week or two when symptoms flare up. They then return to paracetamol or topical anti-inflammatories when symptoms are not too bad. There are many different brands of anti-inflammatory painkillers. If one does not suit, another may be fine. A commonly used anti-inflammatory medicine is ibuprofen.

Side-effects may occur in some people who take anti-inflammatory painkillers:

- Bleeding from the stomach is the most serious possible side-effect.
    - This is more of a risk if you are aged over 65, or have had a duodenal or stomach ulcer, or if you are also taking low-dose aspirin.
    - Stop the medicine and see a doctor urgently if you develop indigestion, upper tummy (abdominal) pain, or if you are sick (vomit) or pass blood.
    - Anti-inflammatory painkillers are often taken together with another medicine that protects the lining of the stomach.

- Some people with asthma, high blood pressure, kidney failure, and heart failure may not be able to take anti-inflammatory painkillers.
- Read the leaflet that comes with the medicine for a list of other possible side-effects.

Codeine

Codeine is sometimes used for added pain relief. Constipation is a common side-effect from codeine. To help prevent constipation, have lots to drink and eat a high-fibre diet.

An injection of steroid medicine

An injection directly into a joint may be an option if a joint becomes badly swollen (inflamed).

Herbal creams and gels

There is not a great deal of evidence from studies to show that herbal remedies are effective:

- Arnica gel probably improves symptoms as effectively as a gel containing a non-steroidal anti-inflammatory drug.
- Comfrey extract gel probably improves pain.
- There has been no strong evidence for capsicum extract gel.

However capsaicin gels and creams have been recommended as being effective for reducing osteoarthritis (OA) pain, especially for knee or hand OA. Capsaicin is a herbal medicine extracted from chilli peppers.

Food supplements as a treatment

Various food supplements that you can buy from health food shops and pharmacies have been recommended (advocated) to help in the treatment of osteoarthritis (OA). In particular, glucosamine and chondroitin supplements have become popular in recent years. Glucosamine and chondroitin are chemicals that are part of the make-up of normal cartilage. The theory is that taking one or both of these supplements may help to improve and repair damaged cartilage.

However, the usefulness of glucosamine and chondroitin is controversial. For example, a large study published in 2007 concluded that chondroitin has little, or minimal, effect on reducing symptoms in people with OA. Also, the National Institute for Health and Care Excellence (NICE) does not recommend the use of chondroitin for the treatment of OA. This is because they could find no clear evidence from studies to show that it is an effective treatment. Another large study was published in the British Medical Journal (BMJ) in 2010. This analysed 10 research trials of glucosamine and chondroitin supplements, involving over 3,800 patients with knee and hip OA. The conclusion of the study was that the supplements appeared to be no better than a dummy (placebo) tablet at relieving pain.

But, there was considerable correspondence that followed the BMJ study. Some writers were critical of the study's design and conclusions. Some cited other studies and individual cases that seemed to show some benefit from glucosamine and chondroitin.

So, it is difficult to give firm advice. What seems clear is that glucosamine and chondroitin are no wonder cures. One or both may possibly help in some cases. It may be worth discussing these supplements with your doctor. If you do try a food supplement you should assess your level of pain before you start taking it, and then again after three months. If there is no improvement, it would seem reasonable to conclude that it is unlikely to be effective and there is no point in carrying on with it.

Note: you should not take glucosamine if you are allergic to shellfish. Glucosamine may also interact with warfarin. You should talk to your doctor or pharmacist before you take glucosamine if you are on warfarin treatment.

Surgery for osteoarthritis

Most people with osteoarthritis (OA) do not have it badly enough to need surgery. However, OA of a joint may become severe in some cases. Some joints can be replaced with artificial joints. Hip and knee replacement surgery has become a standard treatment for severe OA of these joints. Some other joints can also be replaced.

Joint replacement surgery has a high success rate. However, like any operation, joint replacement surgery is not without risk.

Treatments that are not normally recommended

Some treatments have become fashionable or popular but are not normally recommended by mainstream doctors. For example:

Hyaluronic acid

Regular injections of hyaluronic acid directly into a joint is a relatively new treatment that has been tried for osteoarthritis (OA). The theory is that it may help with lubrication and shock absorption in a damaged joint. It may produce a small beneficial effect in some people. However, NICE has looked at hyaluronic acid as a possible treatment for OA and does not recommend its use. This is because there is little evidence that it is effective and there may be a risk of problems after the treatment.

Heat rubs (topical rubefacients)

Although widely used, NICE does not recommend their use. This is because there is little scientific evidence to say that they work.

Arthroscopic lavage and debridement

This is an operation to wash out a joint and trim cartilage from a joint. NICE recommends that this should not be offered as part of treatment for OA unless you have a clear history of your knee locking up.

Further help & information

Arthritis Research UK

Copeman House, St Mary's Court, St Mary's Gate, Chesterfield, Derbyshire, S41 7TD

Tel: 0300 790 0400

Web: www.arthritisresearchuk.org

Arthritis Care

Floor 4, Linen Court, 10 East Road, London, N1 6AD

Tel: (Helpline) 0808 800 4050, (Admin) 020 7380 6500

Web: www.arthritiscare.org.uk

Further reading & references

- Osteoarthritis: Care and management in adults; NICE Clinical Guideline (February 2014)
- EULAR recommendations for the non-pharmacological core management of hip and knee osteoarthritis; Annals of Rheumatic Disease (April 2013)
- Osteoarthritis; NICE CKS, April 2013
- Hochberg MC, Altman RD, April KT, et al ; American College of Rheumatology 2012 recommendations for the use of nonpharmacologic and pharmacologic therapies in osteoarthritis of the hand, hip, and knee. Arthritis Care Res (Hoboken). 2012 Apr;64(4):465-74.
- Wandel S, Juni P, Tendal B, et al; Effects of glucosamine, chondroitin, or placebo in patients with osteoarthritis BMJ. 2010 Sep 16;341:c4675. doi: 10.1136/bmj.c4675.
- Cameron M, Chrubasik S; Topical herbal therapies for treating osteoarthritis. Cochrane Database Syst Rev. 2013 May 31;5:CD010538. doi: 10.1002/14651858.CD010538.

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