

## **Osteoarthritis**

This booklet provides information and answers to your questions about this condition.



# What is osteoarthritis?



Osteoarthritis is the most common form of joint disease. It causes pain and stiffness in the joints and affects approximately 8 million people in the UK. In this booklet we'll explain how osteoarthritis develops, what causes it, and how it can be treated. We'll also give some hints and tips to help you manage your arthritis and suggest where you can find out more.

At the back of this booklet you'll find a brief glossary of medical words – we've underlined these when they're first used in the booklet.

# What's inside?

## **2 Osteoarthritis at a glance**

## **4 How does a normal joint work?**

## **4 What is osteoarthritis?**

## **7 What are the symptoms of osteoarthritis?**

## **8 What causes osteoarthritis?**

## **10 Which joints are affected?**

- The knee
- The hip
- The hand
- The back and neck
- The foot

## **12 What is the outlook?**

## **13 What are the possible complications?**

## **13 How is osteoarthritis diagnosed?**

- What tests are there?

## **14 What treatments are there for osteoarthritis?**

- Weight management
- Exercise
- Tablets and creams
  - Painkillers (analgesics)
  - Anti-inflammatory creams and gels
  - Non-steroidal anti-inflammatory drugs (NSAIDs)
  - Capsaicin cream
  - Stronger painkillers

## **– Other treatments**

- Steroid injections
- Transcutaneous electrical nerve stimulation (TENS)
- Surgery

## **20 What else might help?**

- Reducing the strain on your joints
- Complementary medicine
  - Glucosamine and chondroitin
  - Homeopathy
  - Acupuncture
  - Chiropractic and osteopathy

## **22 What else should I know about osteoarthritis?**

## **23 Research and new developments**

## **23 Patient stories**

## **26 Glossary**

## **28 Where can I find out more?**

## **32 We're here to help**



# At a glance

## Osteoarthritis

### What is osteoarthritis?

Osteoarthritis is a condition that affects the joints, causing pain and stiffness. It's by far the most common form of joint disease, affecting people all over the world and approximately 8 million people in the UK.

### Who gets it?

Almost anyone can get osteoarthritis but it's most likely if:

- you're in your late 40s or older
- you're overweight
- you're a woman
- your parents have had osteoarthritis
- you've had a previous joint injury
- you have a physically demanding job where you make repetitive movements
- your joints have been damaged by another disease – e.g. gout or rheumatoid arthritis.

### Which joints are affected?

Osteoarthritis most commonly affects these joints:

- the knees
- the hips
- the neck and back

**Osteoarthritis is a condition that affects the joints, causing pain and stiffness.**

- the base of the big toe
- the joints in the thumb and fingers.

### What are the symptoms?

The symptoms of osteoarthritis can include:

- pain
- stiffness
- a grating or grinding sensation (crepitus) when the joint moves
- swelling – either soft or hard.

### What treatments are there?

There's no instant cure for osteoarthritis but there's good evidence that the following treatments and other measures can help:

- losing weight if overweight
- regular daily exercises (both muscle-strengthening exercise and general aerobic exercise)

- reducing stress on the affected joint (e.g. by pacing activities, using a walking stick or wearing appropriate footwear)
- painkillers – e.g. paracetamol, codeine
- anti-inflammatory creams and gels
- non-steroidal anti-inflammatory drugs (NSAIDs)
- capsaicin cream
- stronger painkillers e.g. tramadol
- steroid injections into the painful joint
- transcutaneous electrical nerve stimulation (TENS)
- surgery, including joint replacement.
- using gadgets and home adaptations
- pain management and relaxation techniques.

### How can I help myself?

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People sometimes find the following helpful:

- warmth e.g. from a hot water bottle or cold e.g. from an ice pack
- complementary medicines



## How does a normal joint work?

A joint is where two or more bones meet. The joint allows the bones to move freely but within limits (see Figure 1).

The knees have additional rings of cartilage between the bones. These are called menisci – they act a bit like shock absorbers to spread the load more evenly across the joint.

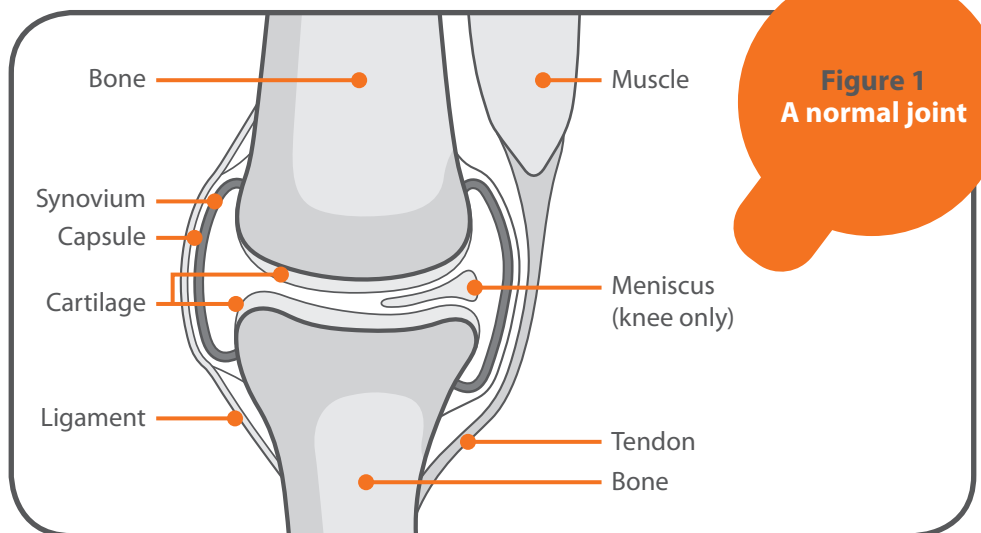
## What is osteoarthritis?

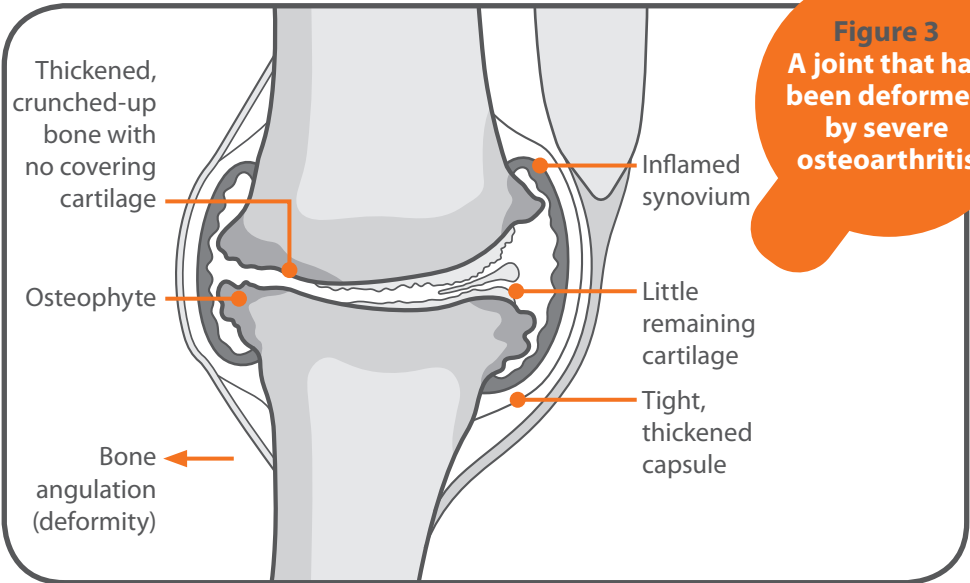
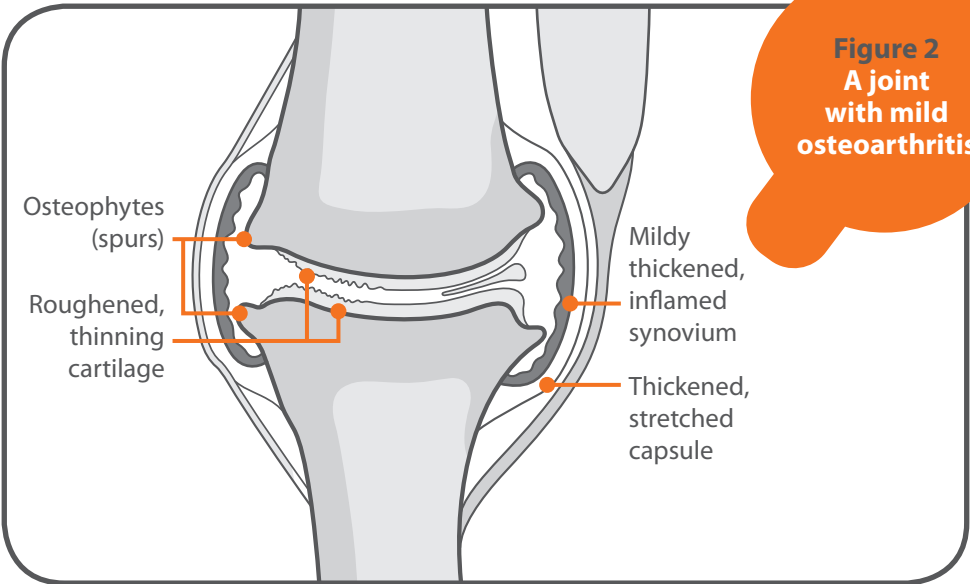
Osteoarthritis is a disease that affects the body's joints. The surfaces within the joint are damaged so the joint doesn't move as smoothly as it should (see Figures 2 and 3). The main symptoms are pain and sometimes stiffness.

The condition is sometimes called arthrosis, osteoarthritis or degenerative joint disease.

When a joint develops osteoarthritis, some of the cartilage covering the ends of the bones gradually roughens and becomes thin, and the bone underneath thickens. All the tissues within the joint become more active than normal – as if the body is trying to repair the damage:

- The bone at the edge of the joint grows outwards forming bony spurs called osteophytes.
- The synovium may swell and produce extra fluid, which then causes the joint to swell.
- The capsule and ligaments slowly thicken and contract – as if they were trying to stabilise the joint.









Sometimes the body's repairs are quite successful and the changes inside the joint won't cause much pain.

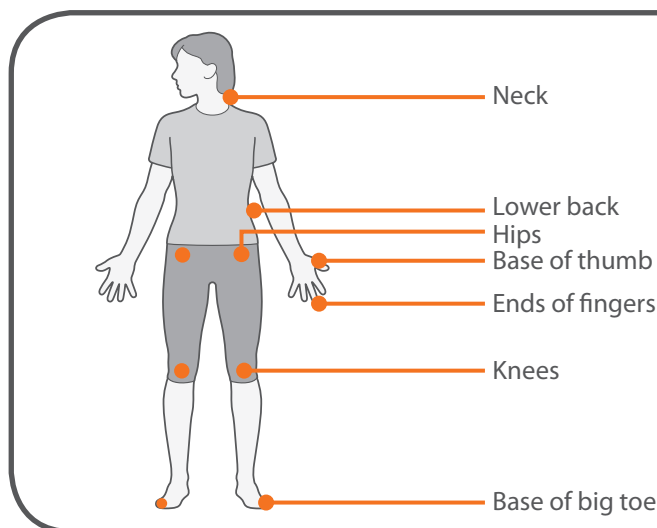
In severe osteoarthritis, the cartilage can become so thin that it no longer covers the ends of the bones. The bones start to rub against each other, and eventually start to wear away. The loss of cartilage, the wearing of bone and the bony spurs can alter the shape of the joint, forcing the bones out of their normal alignment.

## What are the symptoms of osteoarthritis?

The main symptoms of osteoarthritis are pain and sometimes stiffness in the affected joints. Almost any joint can develop osteoarthritis but the knees, hips, hands, spine and big toes are most often affected (see Figure 4).

The pain tends to be worse when you're moving the joint or at the end of the day. Your joints may feel stiff after rest, but this usually works off in a minute or two as you get moving. If you have severe osteoarthritis the pain may be more persistent. The joint may not move as freely or as far as normal, and it may creak or crunch as you move. Sometimes the joint gives way because the muscles have become weak or the joint structure has become less stable, although exercises to strengthen the muscles can help to prevent this.

Often the joint will look swollen. The swelling may be hard (caused by bony spurs) or soft (caused by extra fluid in the joint), and the muscles around the joint may look thin or wasted.



**Figure 4**  
**The joints**  
**most often**  
**affected by**  
**osteoarthritis**

The symptoms often vary for no obvious reason. You'll probably have good spells and bad spells. Some people find that changes in the weather make the pain worse – especially damp weather associated with falling atmospheric pressure. Others find the pain varies depending on how active they've been.

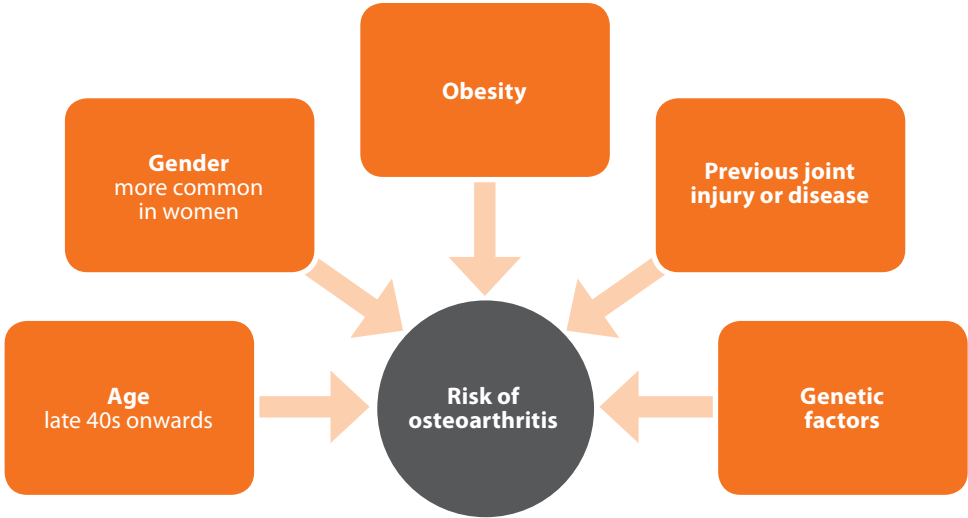
In more severe cases the pain may be constant. It may prevent you from sleeping and cause difficulties in your daily activities. For example, osteoarthritis in the knee or hip can make it difficult to climb stairs or get up from a chair.

### What causes osteoarthritis?

There are many factors that can increase the risk of osteoarthritis, and it's often a combination of these factors that leads to it (see Figure 5):

- **Age** – Osteoarthritis usually starts from the late 40s onwards. We don't fully understand why it's more common in older people, but it might be due to factors like weakening of the muscles and the body being less able to heal itself or gradual wearing out of the joint with time.
- **Gender** – For most joints, especially the knees and hands, osteoarthritis is more common and more severe in women.

**Figure 5** Risk factors for osteoarthritis



- **Obesity** – Being overweight is an important factor in causing osteoarthritis, especially in the knee. It also increases the chances of osteoarthritis becoming progressively worse.
- **Joint injury** – A major injury or operation on a joint may lead to osteoarthritis in that joint later in life. Normal activity and exercise don't cause osteoarthritis, but very hard, repetitive activity or physically demanding jobs can increase the risk.
- **Joint abnormalities** – Abnormalities which you may be born with or which develop in childhood can lead to osteoarthritis which is more severe and at an earlier age than usual. Perthes' disease of the hips is an example.
- **Genetic factors** – Nodal osteoarthritis, which particularly affects the hands of middle-aged women, runs strongly in families, although it's not yet clear which genes are involved. And some rare forms of osteoarthritis which start at an earlier age are linked with genes that affect collagen – an essential component of cartilage. Genetic factors play a smaller, but still significant, part in osteoarthritis of the hip and knee.
- **Other types of joint disease** – Sometimes osteoarthritis is a result of damage from a different kind of joint disease, such as rheumatoid arthritis or gout, that occurred over the preceding years.



## Which joints are affected?

Almost any joint can develop osteoarthritis, especially if it's been badly injured, but these are the most commonly affected:

### The knee

Osteoarthritis of the knee is very common. This is probably because the knee has to withstand extreme stresses, twists and turns. Osteoarthritis can affect the main surfaces of the knee joint and also the cartilage underneath the kneecap (patella).

You're most likely to feel pain at the front and sides of the knee. If the osteoarthritis is severe the knees may become bent and bowed. The knee joint may also become unstable so that your knee gives way when you put weight on it. This is usually because of muscle weakness or damage to the ligaments.

Osteoarthritis of the knee is twice as common in women as in men and it usually affects both knees. It causes most problems from the late 50s onwards.

**Any joint can  
be affected by  
osteoarthritis.**

A number of factors can increase the risk of osteoarthritis of the knee, for example:

- being overweight
- having nodal osteoarthritis (particularly in women)
- a previous sporting injury (such as a torn meniscus or ligaments)
- an operation to remove torn cartilage (meniscectomy).

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**i See Arthritis Research UK booklet**  
*Osteoarthritis of the knee.*

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### The hip

Osteoarthritis of the hip is also very common and can affect either one hip or both. The pain is most likely to be deep at the front of the groin, but you may also feel pain at the side and front of the thigh, in the buttock or down to the knee (this is called radiated pain).

If you have severe osteoarthritis of the hip you may find the affected leg seems a little shorter than the other because of the bone on either side of the joint being crunched up.

Men and women are equally likely to develop osteoarthritis of the hip, and it usually starts from the late 40s onwards. The risk may be greater if you've had hip problems at birth (congenital dislocation) or abnormal hip development in childhood – such as Perthes' disease. Physical work such as farming may also increase the risk. However, there's often no obvious cause.

### The hand

Osteoarthritis of the hands usually occurs as part of nodal osteoarthritis (see Figure 6). This mainly affects women, and often starts in the 40s or 50s, around the time of the menopause. It usually affects the base of the thumb and the joints at the ends of the fingers, although other finger joints can also be affected. At times these joints become swollen and tender, especially when the condition first appears.

Over several years firm knobbly swellings form on the finger joints. These are caused by osteophytes and are known as Heberden's nodes when they're at the end joints of the fingers (see Figure 6), or Bouchard's nodes when they're at the mid-finger joints. Once the nodes are fully formed the pain and tenderness

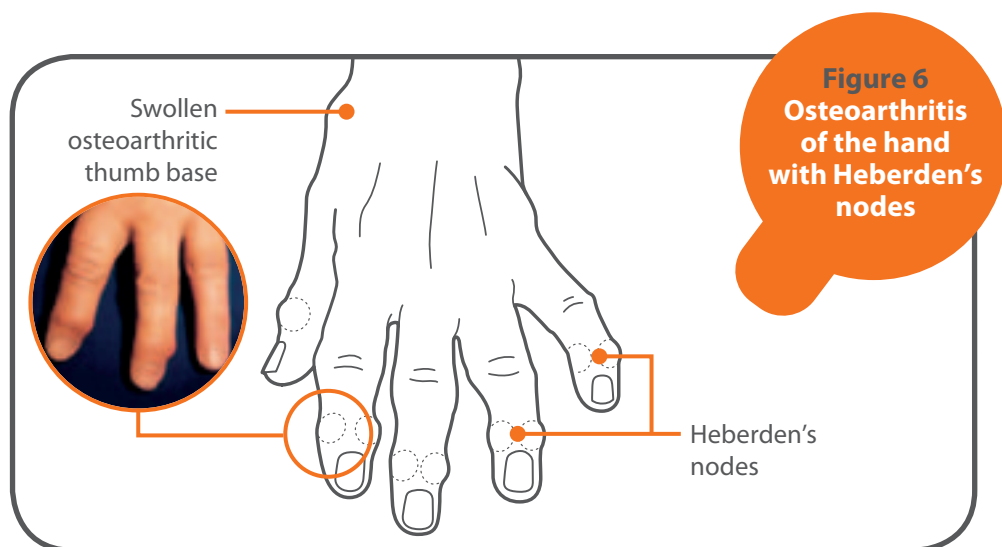
often improve. Although the fingers are knobbly and sometimes slightly bent, they usually still work well.

Arthritis at the base of the thumb may cause more persistent problems.

Having nodal osteoarthritis in middle age means you're more likely to develop osteoarthritis of the knee, and possibly other joints, as you get older. Nodal osteoarthritis tends to run in families much more than other forms of osteoarthritis and it's especially likely to be passed from mother to daughter. It's not yet known which genes are involved so it's not possible to test for this inherited tendency.

### The back and neck

Changes that affect the bones of the spine and the discs between the bones



are often called spondylosis, but they are very similar to the changes caused by osteoarthritis in other joints. X-rays show that spondylosis is extremely common. However, it's not the most frequent cause of back or neck pain and often doesn't cause any problems at all.

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**i See Arthritis Research UK booklets**  
*Back pain; Neck pain; What is arthritis?*

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## The foot

Osteoarthritis of the foot generally affects the joint at the base of the big toe. Eventually the toe may become stiff (hallux rigidus), which can make it difficult and painful to walk, or bent (hallux valgus), which can lead to painful bunions (see Figure 7).

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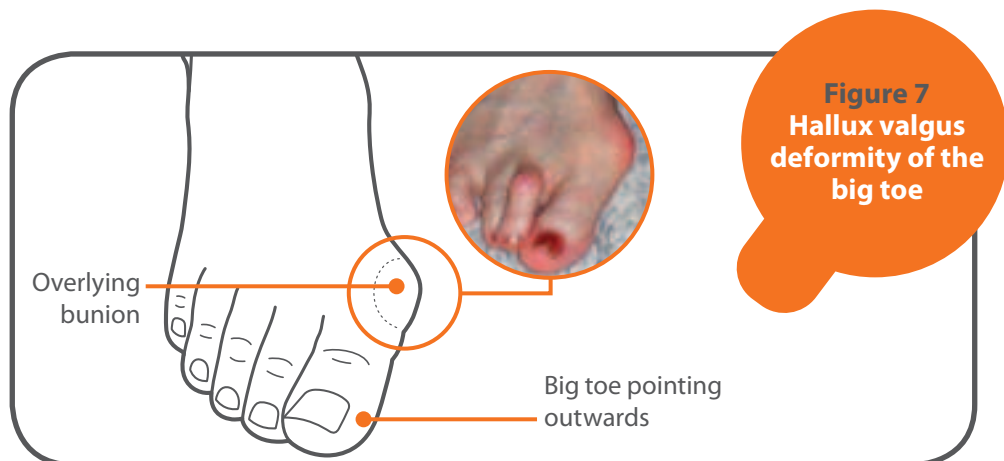
**i See Arthritis Research UK booklet**  
*Feet, footwear and arthritis.*

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## What is the outlook?

It's impossible to predict how osteoarthritis will develop for any one person. Osteoarthritis can sometimes develop over just a year or two and cause a lot of damage to a joint, which may cause some deformity or disability. But more often osteoarthritis is a slow process that develops over many years and results in fairly small changes in just part of the joint. This doesn't mean it won't be painful, but it's less likely to cause severe deformity or disability. Sometimes the disease reaches a peak a few years after the symptoms start and then remains the same or may even improve.

Osteoarthritis doesn't lead to rheumatoid arthritis or other types of joint disease and won't spread through the body. Nor is osteoarthritis linked with cancer or other serious illnesses, although some people with osteoarthritis will develop other illnesses purely by chance.



## What are the possible complications?

Osteoarthritis with crystals occurs when chalky deposits of calcium crystals form in the cartilage. This is called calcification or chondrocalcinosis. It can happen in any joint, with or without osteoarthritis, but it's most likely to occur in a knee that's already affected by osteoarthritis, especially in older people. The crystals will show up in x-rays and they can also be seen under a microscope in samples of fluid taken from the joint.

Osteoarthritis tends to become more severe more quickly when there are crystals present. And sometimes the crystals can shake loose from the cartilage, causing a sudden attack of very painful swelling called acute calcium pyrophosphate crystal arthritis (pseudogout).

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**i** See Arthritis Research UK booklet *Calcium crystal diseases (pseudogout)*.

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## How is osteoarthritis diagnosed?

It's very important to get an accurate diagnosis if you think you might have arthritis. There are many different types of arthritis and some need very different treatments.

Osteoarthritis is usually diagnosed based on your symptoms (pain and perhaps stiffness) and the physical signs that your doctor finds when examining your joints.

**Osteoarthritis doesn't lead to rheumatoid arthritis or other types of joint disease.**

The signs your doctor will be checking for are:

- tenderness over the joint
- creaking or grating of the joint (crepitus)
- bony swelling
- excess fluid
- restricted movement
- instability in the joint
- thinning of the muscles that support the joint.

## What tests are there?

There's no blood test for osteoarthritis, although your doctor may suggest blood tests to help rule out other types of arthritis.

X-rays are the most useful test to confirm osteoarthritis, although often they won't be needed. An x-ray may show changes such as bony spurs or narrowing of the space between the bones. They will also show whether there are any calcium deposits within the joint. However, x-rays are not a good indicator of how much pain or disability you're likely to have. Some people have a lot of pain from fairly minor joint damage, while others have little pain from more severe damage.

## What treatments are there for osteoarthritis?

There's no cure for osteoarthritis as yet, but there's a lot that can be done to improve the symptoms. Your doctor and other healthcare professionals will be able to suggest medicines and therapies (see Figure 8). However, self-help measures play a very important part in relieving the pain and stiffness and reducing the chances of your arthritis becoming worse.

**Figure 8 Treatments for osteoarthritis**

Self-help
Exercise
Weight loss (if overweight)
TENS machine for pain relief
Applying warmth or ice to painful joints
Shock-absorbing footwear or insoles
Aids and devices for home and work
Tablets and creams
Painkillers (e.g. paracetamol)
Anti-inflammatory creams and gels
Anti-inflammatory tablets (e.g. ibuprofen)
Stronger painkillers (e.g. opioids) / anti-inflammatories (on prescription only)
Capsaicin cream (on prescription only)
Other treatments
Steroid injection into joint
Surgery (including joint replacement)

## Weight management

There's a great deal of evidence that being overweight increases the strain on your joints – especially the knees. Research shows that being overweight or obese not only increases your risk of developing osteoarthritis but also makes it more likely that your arthritis will get worse over time.

Because of the way the joints work, the force put through your knee joints when you walk can be 5–6 times your actual body weight. So losing even a small amount of weight can make a big difference to the strain on weight-bearing joints.

There's no special diet that's been shown to help specifically with osteoarthritis, but if you need to lose some weight we would recommend a balanced, reduced-calorie diet combined with regular exercise.

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**i See Arthritis Research UK booklet**  
*Diet and arthritis.*

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## Exercise

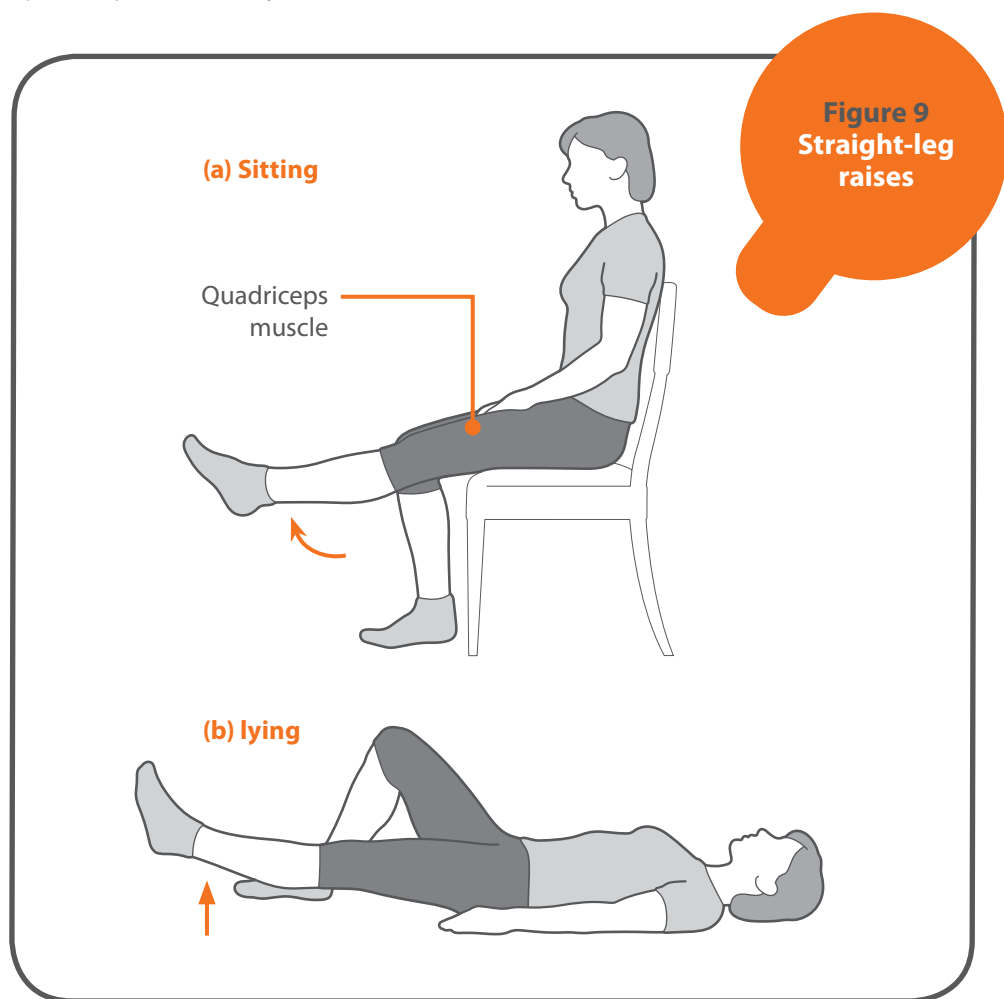
Even if you don't need to lose weight it's very important to keep your joints moving if you have osteoarthritis. You'll need to find the right balance between rest and exercise. Most people with osteoarthritis find that too much activity increases their pain while too little makes their joint(s) stiffen up. Little and often is usually the best approach to exercise if you have osteoarthritis.



There are two types of exercise that you'll need to do:

**Strengthening exercises** will improve the strength and tone of the muscles that control the affected joint. Osteoarthritis can weaken these muscles. This is particularly important for the thigh (quadriceps) muscles if you have

osteoarthritis of the knee. Regular daily exercising of the muscles, such as straight-leg raises (see Figure 9) helps to stabilise and protect the joint, and has also been shown to reduce the pain. It's also particularly helpful in preventing the knee giving way, and reducing the tendency to stumble or fall.





**Aerobic exercise** is any exercise that increases your pulse rate and makes you a bit short of breath. Regular aerobic exercise should help you sleep better, is good for your general health and well-being, and can also reduce pain by stimulating the release of pain-relieving hormones called endorphins.

A physiotherapist can advise you on the best exercises for the type of osteoarthritis you have, but you'll need to build them into your daily routine to get the most benefit from them. You can also talk to your GP about the Exercise on Prescription scheme that is available in some areas.

Swimming can be very good for osteoarthritis. Because the water supports the weight of your body, you won't be putting a lot of strain on your joints as you exercise. Your physiotherapist may also recommend special exercises in a hydrotherapy pool. This can help get muscles and joints working better and, because the water is warmer than in a typical swimming pool, it can be very soothing and relaxing for the joints and muscles.

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**i See Arthritis Research UK booklets**  
*Hydrotherapy and arthritis; Keep moving; Physiotherapy and arthritis.*

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### **Tablets and creams**

There are a number of tablets and creams that can help. And because they work in different ways you can combine different treatments if you need to.

Your chemist can advise you and supply paracetamol, and some low-dose tablets and creams without a prescription. However, you'll need a doctor's prescription for stronger medications.

### **Painkillers (analgesics)**

Painkillers often help with the pain and stiffness although they don't affect the arthritis itself and won't repair the damage to the joint. They are best used occasionally when the pain is very bad, or when you're likely to be exercising. Paracetamol is usually the best and safest painkiller to try first – but make sure you take the right dose as most people take too little. You should try taking 1 gram (usually two tablets) three or four times a day.

Combined painkillers (e.g. co-codamol, co-dydramol) contain paracetamol and a second codeine-like drug and may be helpful for more severe pain. They're stronger than paracetamol and are therefore more likely to cause side-effects such as constipation or dizziness.

**!** If you know you're going to be more active than usual, try taking a painkiller before you start to avoid increased pain later.

### **Anti-inflammatory creams and gels**

You can apply anti-inflammatory creams and gels directly onto painful joints three times a day. There's no need to rub them in – they absorb through the skin on their own. They're especially helpful for osteoarthritis of the knee or hand, but not for deep joints such as the hip.

**Anti-inflammatory creams and gels are especially helpful for osteoarthritis of the knee or hand.**

They're extremely well tolerated as very little is absorbed into the bloodstream. If you have trouble taking tablets then anti-inflammatory creams are a particularly good option to try. You can decide if they help your pain within the first few days of trying them.

### **Non-steroidal anti-inflammatory drugs (NSAIDs)**

Your doctor may suggest a short course of NSAID tablets (e.g. ibuprofen, naproxen), especially if inflammation in the joint is contributing to your pain and stiffness.

Like all drugs, NSAIDs can sometimes have side-effects, but your doctor will take precautions to reduce the risk of these – for example, by prescribing the lowest effective dose for the shortest possible period of time.

NSAIDs can cause digestive problems (stomach upsets, indigestion, or damage to the lining of the stomach) so in most cases they will be prescribed along with a drug called a proton pump inhibitor (PPI), which will help to protect the stomach.



NSAIDs also carry an increased risk of heart attack or stroke. Although the increased risk is small, your doctor will be cautious about prescribing them if there are other factors that may increase your overall risk – for example, smoking, circulation problems, high blood pressure, high cholesterol or diabetes.

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**i See Arthritis Research UK drug leaflet** *Non-steroidal anti-inflammatory drugs.*

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### **Capsaicin cream**

Capsaicin cream is made from the pepper plant (capsicum) and is an effective and very well tolerated painkiller. It's only available on prescription. It needs to be applied regularly three times each day to be effective and, like NSAID creams and gels, it's particularly useful for knee and hand osteoarthritis.

Most people feel a warming or burning sensation when they first use capsaicin, but this generally wears off after several days. The pain-relieving effect starts after several days of regular use and you should try it for at least 2 weeks before deciding if it has helped.

### **Stronger painkillers**

You may need stronger painkillers (or opioids) such as tramadol, nefopam or meptazinol if you have severe pain and other medications aren't providing adequate relief.

Stronger painkillers are more likely to have side-effects – especially nausea, dizziness and confusion – so you'll need to see your doctor regularly and report any problems you have with these drugs.

Some opioids can be given as a plaster patch which you wear on the skin – these can give pain relief for a number of days.

**!** If you have trouble opening child-proof containers, your pharmacist will put them in a more suitable container for you. Contact us for our special request card which you can hand to your pharmacist with your prescription.

## **Other treatments**

### **Steroid injections**

Steroid injections are sometimes given directly into a particularly painful joint. The injection can start to work within a day or so, and may improve pain for several weeks or even months, especially in a knee or a thumb. This is mainly used for very painful osteoarthritis, for sudden painful attacks caused by the shedding of calcium crystals, or to help people through an important event (such as a holiday or family wedding).

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**i** See Arthritis Research UK drug leaflet *Local steroid injections*.

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### **Transcutaneous electrical nerve stimulation (TENS)**

Some people find that transcutaneous electrical nerve stimulation (TENS) can help to relieve pain, although research evidence on the effectiveness of TENS is mixed. A TENS machine is a small electronic device that sends pulses to the nerve endings via pads placed on the skin. The device produces a tingling sensation and is thought to modify pain messages transmitted to the brain. TENS machines are available from pharmacies and other major stores but a physiotherapist may be able to loan you one to try before you decide whether to buy one.

### **Surgery**

Surgery may be recommended if pain is very severe and/or you have mobility problems. Many thousands of hip and knee replacements are performed each year for osteoarthritis, and other joint replacements are becoming increasingly common. These can give substantial pain relief in cases where other treatments haven't helped sufficiently.

Sometimes, if your knee locks, keyhole surgery techniques may be used to wash out loose fragments of bone and other tissue from the joint – this is called arthroscopic lavage and isn't recommended unless the knee locks.

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**i** See Arthritis Research UK booklets *Hip replacement; Knee replacement; Shoulder and elbow joint replacement*.

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## Reducing strain on your joints can help with osteoarthritis.

### What else might help?

#### Reducing the strain on your joints

Apart from keeping an eye on your weight, there are a number of other ways you can reduce the strain on your joints:

- Pace your activities through the day – don't tackle all the physical jobs at once. Break the harder jobs up into chunks and do something gentler in between.
- Wear low-heeled shoes with thick soft soles (trainers are ideal). Thicker soles will act as shock absorbers for your feet, knees, hips and back. High heels will alter the angle of the hip, knee and big toe joints and put additional strain on them.
- Use a walking stick to reduce the weight and stress on a painful hip or knee. A therapist or doctor can advise on the correct length.
- Use the hand-rail for support when climbing stairs – this is particularly important if you have osteoarthritis of the knee.

- Keep your joints moving. In particular, don't keep an osteoarthritic knee still in a bent position for too long as this will eventually affect the muscles.
- Think about modifying your home, car or workplace to minimise unnecessary strain on your joints. An occupational therapist can advise you on how to protect your joints and on special equipment or gadgets that will make your daily tasks easier.
- Learn to relax your muscles and get the tension out of your body. A physiotherapist or occupational therapist can advise you on relaxation techniques.
- Sex can sometimes be painful, particularly for women with osteoarthritis of the hips. Trying a different position can often help.

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**i See Arthritis Research UK booklet *Sex and arthritis*.**

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- ! Applying warmth to a painful joint often relieves the pain and stiffness of osteoarthritis. Heat lamps are popular, but a hot-water bottle or reheatable pad are just as effective. This can be helpful if you have a flare-up of pain when you've done a bit too much. An ice pack can also help, but don't apply it directly to the skin.

#### Complementary medicine

There are many different complementary and herbal remedies that claim to help with arthritis, and some people

do feel better when they use some complementary treatments. However, on the whole these treatments are not recommended for use on the NHS because there is no conclusive evidence that they are effective. There's no scientific evidence, for example, that copper bracelets can help relieve osteoarthritis pain.

### **Glucosamine and chondroitin**

Many people try glucosamine and chondroitin tablets. These are compounds that are normally present in joint cartilage, and some studies suggest that taking supplements may improve the health of damaged cartilage. Glucosamine and chondroitin, which are similar to each other, are available from your chemist or health food store. You'll need to take

a dose of 1.5 g of glucosamine sulphate a day, and you may need to take them for several weeks before you can tell whether they are making a difference. Glucosamine hydrochloride does not appear to be effective, so always check that you are taking the sulphate.

Most brands of glucosamine are produced from shellfish. If you're allergic to shellfish make sure you take a vegetarian or shellfish-free variety. Glucosamine can affect the level of sugar in the blood, so if you have diabetes you should keep an eye on your blood sugar levels and see your doctor if they increase. You should also see your doctor for regular blood checks if you are taking the blood-thinning drug warfarin.





## Homeopathy

Many people are interested in homeopathic remedies, and a number of different homeopathic remedies are used for osteoarthritis. However, there is no conclusive scientific evidence that the remedies are effective for osteoarthritis.

## Acupuncture

There is some research showing that acupuncture can sometimes provide relief from arthritis pain, although the effect may be short-lived. For longer-lasting benefits, you may need to have regular sessions of acupuncture.

## Chiropractic and osteopathy

Manipulation by a chiropractor or osteopath can often help neck and back pain, although the use of manipulation for osteoarthritis in other joints is limited. If you do want to try it, make sure you choose a practitioner who is registered with the appropriate regulatory body.

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**i See Arthritis Research UK special report** *Alternative medicines for the treatment of rheumatoid arthritis, osteoarthritis and fibromyalgia.*

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## What else should I know about osteoarthritis?

Living with a long-term condition like osteoarthritis can lower your morale and may affect your sleep. It's important to tackle problems like these as they could lead to depression and will certainly make the osteoarthritis itself more difficult to cope with. Keeping active should help, but it's worth speaking to your doctor if you do find your arthritis is getting you down.

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**i See Arthritis Research UK booklets** *Fatigue and arthritis; Pain and arthritis; Sleep and arthritis.*

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## **Research and new developments**

Research has already shown the importance of exercise and weight management in reducing the pain of osteoarthritis – particularly of the knee. There are many studies going on around the world to find and test new treatments for osteoarthritis. These include studies funded by Arthritis Research UK looking into the benefits of vitamin D (the VIDEO study) and a large national study to find the genes responsible for causing osteoarthritis (the arcOGEN study) which could lead to new therapies. Arthritis Research UK are also funding early trials of stem cell research which aims to regenerate cartilage using the body's own cells.

## **Patient stories**

### **Mary is a 64-year-old housewife.**

I remember my mother, who died a few years ago, had knobbly fingers and sometimes complained of her rheumatism. I was 52 when I first noticed some discomfort and swelling in the joints at the ends of my fingers. For a few years they were quite painful and often tender. My thumbs also became troublesome, and my knees were creaky and uncomfortable.

My hands are much less of a problem now. They only cause a little discomfort, although I do have trouble with things like buttons and needlework.

**Learn to relax  
your muscles and  
get the tension  
out of your body.**

They're sometimes difficult and take longer to do than they used to. My knees stiffen up in the evenings, and they get uncomfortable if I've been walking too long. They're worse on some days than on others.

I occasionally take paracetamol for my knees, but I'm not on any other treatment. I do my knee exercises regularly – the practice nurse taught me. And I like to go swimming with my neighbour twice a week. The arthritis is a bit of a nuisance, but it hasn't affected my way of life in any major way. I feel well and I have an active family and social life.

### **John is a 68-year-old retired salesman.**

When I was 25 I injured my knee playing football. It locked and it was very painful for several weeks. My doctor sent me to see an orthopaedic surgeon, and he removed some damaged cartilage (meniscus) from my knee. I was still in quite a lot of pain and had to have another operation on the same knee a few years later (when I was 30). After that, I didn't really have any problems for some years.

My knee used to ache occasionally and it was sometimes stiff, but it didn't stop me doing the things I wanted to.

Then, about 10 years ago, the discomfort and stiffness started getting worse. As time went by the knee got quite painful when I was exercising and it also started to swell a little. By the time I was 64, and coming up to retirement, it was getting difficult to get up and down stairs, and if I walked more than about half a mile I'd be in a lot of pain afterwards.

My doctor examined my knee and sent me for an x-ray. She told me I'd got osteoarthritis, and I'd also got some calcium crystals in the joint. She said it was probably because of my old injury and the operations I'd had. She gave me

some paracetamol for the pain and some (NSAID) cream to rub in, which helped. I've also had some physiotherapy to help strengthen my thigh muscles. The physio said these muscles often get weak when you've got arthritis in your knee.

The exercises certainly made walking and climbing stairs a lot easier.

Now I'm retired I don't have to rush around so much, and I'm finding things easier. I like gardening and do some home decorating, which is fine as long I take it gently. I use the tablets and cream most days, and I've kept on with the exercises I was shown. I get more pain some days than others. It usually seems worse when the weather's damp. And my knee does tend to stiffen up if I sit still for too long.

### **Barbara is a sprightly 71-year-old.**

My arthritis started about 20 years ago. I had an ache at the front of my right hip and thigh. The thigh pain slowly got worse and my leg became stiff. I was limping and had some very bad days with the pain.

My doctor told me I'd got osteoarthritis and he gave me some tablets, but they didn't make much difference. He sent me to see a physiotherapist – she said that, because of the arthritis, my right leg was shorter than the left. They gave me a walking stick and raised the heel of my right shoe slightly to make up for that leg being shorter. I also had some hydrotherapy – special exercises in a warm-water pool.

**Research has already shown the importance of exercise and weight management in reducing the pain of osteoarthritis – particularly of the knee.**

These things all helped and I managed quite well for several years. Then, about 2 years ago, the pain got worse again and started to keep me awake at night. I was also having pain in my knee.

The doctor gave me more tablets and I had some physiotherapy, but I still couldn't get to sleep at night with the pain. The doctor referred me to a surgeon who took some x-rays. She said I had very bad hip arthritis, and put me on the waiting list for a hip replacement operation. I asked her about the knee pain, but she explained that this was coming from my hip and that my knee joint was fine.

I went into hospital several months later. I was back on my feet a few days after the operation and came out of hospital a week later. It was about 6 months before I was fully recovered – that was when I began to realise how much better I was going to be. The pain has gone. I still feel a little bit stiff in the hip and I have to be a bit careful what I do, but I feel like a new woman. I don't need my walking stick any more and I've stopped taking tablets.



## Glossary

**Acupuncture** – a method of obtaining pain relief which originated in China. Very fine needles are inserted, virtually painlessly, at a number of sites (called meridians) but not necessarily at the painful area. Pain relief is obtained by interfering with pain signals to the brain and by causing the release of natural painkillers (called endorphins).

**Bunion** – a bony lump at the base of the big toe, often with a fluid-filled pouch (bursa) over the top. When the big toe becomes bent over towards the smaller toes the condition is known as hallux valgus.

**Cartilage** – a layer of tough, slippery tissue that covers the ends of the bones in a joint. It acts as a shock-absorber and allows smooth movement between bones.

**Chiropractor** – a specialist who treats mechanical disorders of the musculoskeletal system, often through spine manipulation or adjustment. The General Chiropractic Council regulates the practice of chiropractic in the UK.

**Collagen** – the main substance in the white, fibrous connective tissue that is found in tendons, ligaments and cartilage. This very important protein is also found in skin and bone.

**Gout** – an inflammatory arthritis caused by a reaction to the formation of urate crystals in the joint. Gout comes and goes in severe flare-ups at first, but if not treated it can eventually lead to joint damage. It often affects the big toe.

**Hallux rigidus** – osteoarthritis of the big toe joint with a stiff, often painful, big toe.

**Hallux valgus** – a condition in which the big toe pushes across towards the other toes, often associated with osteoarthritis of the big toe joint. It's often referred to as a bunion, although in fact a bunion can exist without hallux valgus.

**Hydrotherapy** – exercises that take place in water (usually a warm, shallow swimming pool or a special hydrotherapy bath) which can improve mobility, help relieve discomfort and promote recovery from injury.

**Inflammation** – a normal reaction to injury or infection of living tissues. The flow of blood increases, resulting in heat and redness in the affected tissues, and fluid and cells leak into the tissue, causing swelling.

**Ligaments** – tough, fibrous bands anchoring the bones on either side of a joint and holding the joint together. In the spine they are attached to the vertebrae and restrict spinal movements, therefore giving stability to the back.

**Manipulation** – a type of manual therapy used to adjust parts of the body, joints and muscles to treat stiffness and deformity. It's commonly used in physiotherapy, chiropractic, osteopathy and orthopaedics.

**Menisci** (singular meniscus) – rings of cartilage, like washers, lying between the cartilage-covered bones in the knee. They act as shock absorbers and help the movement of the joint. Each knee has an

inside (medial) and an outside (lateral) meniscus.

**Nodal osteoarthritis** – a form of osteoarthritis that often runs in families, characterised by knobbly finger swellings (Heberden's nodes) and a tendency to get osteoarthritis in several joints (especially knees, big toes).

**Non-steroidal anti-inflammatory drugs (NSAIDs)** – a large family of drugs prescribed for different kinds of arthritis that reduce inflammation and control pain, swelling and stiffness. Common examples include ibuprofen, naproxen and diclofenac.

**Osteopath** – a specialist who treats spinal and other joint problems by manipulating the muscles and joints in order to reduce tension and stiffness, and so help the spine to move more freely. The General Osteopathic Council regulates the practice of osteopathy in the UK.

**Osteophytes** – an overgrowth of new bone around the edges of osteoarthritic joints. Spurs of new bone can alter the shape of the joint and may press on nearby nerves.

**Perthes' disease** – inflammation at the head of the thigh bone (femur) that causes pain and limping, usually in boys aged 5–10 years. It can restrict blood supply to the bone leading to poor growth and deformity and can cause osteoarthritis to develop in later life.

**Proton pump inhibitor (PPI)** – a drug that acts on an enzyme in the cells of the stomach to reduce the secretion of gastric

acid. They're often prescribed along with non-steroidal anti-inflammatory drugs (NSAIDs) to reduce side-effects from the NSAIDs.

**Radiated pain** – pain that occurs in a different part of the body from that affected by injury or disease (for example, pain in the thigh or knee resulting from osteoarthritis of the hip). This is sometimes called referred pain.

**Rheumatoid arthritis** – a common inflammatory disease affecting the joints, particularly the lining of the joint. It most commonly starts in the smaller joints in a symmetrical pattern – that is, for example, in both hands or both wrists at once.

**Spondylosis** – the term used to describe mechanical or degenerative changes in the small joints in the neck and back. Most of us will have some degeneration in these joints, which can be seen on x-rays, although often these changes don't cause any problems or symptoms.

**Synovium** – the inner membrane of the joint capsule that produces synovial fluid.

**Transcutaneous electrical nerve stimulation (TENS)** – a small battery-driven machine which can help to relieve pain. Small pads are applied over the painful area and low-voltage electrical stimulation produces a pleasant tingling sensation, which relieves pain by interfering with pain signals to the brain.

## Where can I find out more?

If you've found this information useful you might be interested in these other titles from our range:

### Conditions

- *Back pain*
- *Calcium crystal diseases (pseudogout)*
- *Neck pain*
- *Osteoarthritis of the knee*

### Therapies

- *Complementary and alternative medicine for arthritis*
- *Complementary and alternative medicines for the treatment of rheumatoid arthritis, osteoarthritis and fibromyalgia* (80-page special report)
- *Hydrotherapy and arthritis*
- *Occupational therapy and arthritis*
- *Physiotherapy and arthritis*

### Self-help and daily living

- *Diet and arthritis*
- *Fatigue and arthritis*
- *Gardening and arthritis*
- *Keep moving*
- *Looking after your joints when you have arthritis*
- *Pain and arthritis*
- *Sex and arthritis*
- *Sleep and arthritis*
- *What is arthritis?*
- *Work and arthritis*

### Surgery

- *Hand and wrist surgery*
- *Hip replacement*
- *Knee replacement*
- *Shoulder and elbow joint replacement*

### Drug leaflets

- *Local steroid injections*
- *Non-steroidal anti-inflammatory drugs*

You can download all of our booklets and leaflets from our website or order them by contacting:

### Arthritis Research UK

PO Box 177  
Chesterfield  
Derbyshire S41 7TQ  
Phone: 0300 790 0400  
[www.arthritisresearchuk.org](http://www.arthritisresearchuk.org)

### Osteoarthritis guidelines

The National Institute for Health and Clinical Excellence (NICE) issued guidelines to GPs in 2008 on how to best treat osteoarthritis based on available evidence.

The NICE guidance on osteoarthritis is available at [www.nice.org.uk/CG59](http://www.nice.org.uk/CG59). Printed copies of the NICE osteoarthritis patient guide can be ordered from 0845 003 7783 or at [emailpublications@nice.org.uk](mailto:emailpublications@nice.org.uk) quoting reference N1460.

**Related organisations**

The following organisations may be able to provide additional advice and information:

**Arthritis Care**

18 Stephenson Way  
London NW1 2HD  
Phone: 020 7380 6500  
Helpline: 0808 800 4050  
[www.arthritiscare.org.uk](http://www.arthritiscare.org.uk)

**Disability Information  
& Advice Line (DIAL UK)**

St Catherine's  
Tickhill Road, Doncaster  
South Yorkshire DN4 8QN  
Phone: 01302 310 123  
[www.dialuk.info](http://www.dialuk.info)

**Disabled Living Foundation**

380-384 Harrow Road  
London W9 2HU  
Phone: 020 7289 6111  
Helpline: 0845 130 9177  
[www.dlf.org.uk](http://www.dlf.org.uk)

**General Chiropractic Council**

44 Wicklow Street  
London WC1X 9HL  
Phone: 020 7713 5155  
[www.gcc-uk.org](http://www.gcc-uk.org)

**General Osteopathic Council**

176 Tower Bridge Road  
London SE1 3LU  
Phone: 020 7357 6655  
[www.osteopathy.org.uk](http://www.osteopathy.org.uk)

## Notes



## Notes



## We're here to help

Arthritis Research UK is the charity leading the fight against arthritis.

We're the UK's fourth largest medical research charity and fund scientific and medical research into all types of arthritis and musculoskeletal conditions.

We're working to take the pain away for sufferers with all forms of arthritis and helping people to remain active. We'll do this by funding high-quality research, providing information and campaigning.

Everything we do is underpinned by research.

We publish over 60 information booklets which help people affected by arthritis to understand more about the condition, its treatment, therapies and how to help themselves.

We also produce a range of separate leaflets on many of the drugs used for arthritis and related conditions. We recommend that you read the relevant leaflet for more detailed information about your medication.

Please also let us know if you'd like to receive our quarterly magazine, Arthritis Today, which keeps you up to date with current research and

education news, highlighting key projects that we're funding and giving insight into the latest treatment and self-help available.

We often feature case studies and have regular columns for questions and answers, as well as readers' hints and tips for managing arthritis.

### Tell us what you think of our booklet

Please send your views to:  
**[feedback@arthritisresearchuk.org](mailto:feedback@arthritisresearchuk.org)**  
or write to us at:  
Arthritis Research UK, PO Box 177,  
Chesterfield, Derbyshire S41 7TQ.

A team of people contributed to this booklet. The original text was written by Prof. Mike Doherty, who has expertise in the subject. It was assessed at draft stage by consultant and honorary clinical senior lecturer in rheumatology Dr Fraser Birrell. An **Arthritis Research UK** editor revised the text to make it easy to read, and a non-medical panel, including interested societies, checked it for understanding. An **Arthritis Research UK** medical advisor, Prof. Anisur Rahman, is responsible for the content overall.

## Get involved

**You can help to take the pain away  
from millions of people in the UK by:**

- Volunteering
- Supporting our campaigns
- Taking part in a fundraising event
- Making a donation
- Asking your company to support us
- Buying gifts from our catalogue

To get more **actively involved**, please  
call us **0300 790 0400** or e-mail us at  
[enquiries@arthritisresearchuk.org](mailto:enquiries@arthritisresearchuk.org)

**Or go to:**  
[www.arthritisresearchuk.org](http://www.arthritisresearchuk.org)

Providing answers today and tomorrow



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calls charged at standard rate

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