

Osteoarthritis of the knee

arthritis-uk.org



 **Arthritis**UK

We are Arthritis UK

We're the 10 million adults, young people and children living with arthritis. We're the carers, researchers and healthcare professionals. The families and the friends. All united by one powerful vision: a future free from arthritis. So that one day, no one will have to live with the physical, emotional and practical challenges that arthritis brings.

There are many different types of arthritis. And we understand that every day is different. What's more, what works for one person may not help another. That's why our trusted information blends the latest research and expert advice with a range of lived experiences. In this way, we aim to give you everything you need to know about your condition, the treatments available and the many options you can try, so that you can make better-informed choices to suit your needs.

We're always happy to hear from you whether it's with feedback on our information, to share your story, or just to find out more about the work of Arthritis UK. **Contact us at healthinfo@arthritis-uk.org**

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What is osteoarthritis of the knee?

Osteoarthritis is the most common form of arthritis, and the knee is the most commonly affected joint. Osteoarthritis can affect anyone at any age, but it's more common in women over 50.

Osteoarthritis develops when the joint's ability to repair itself becomes less effective. This can lead to changes that make the joint sensitive and painful. This doesn't necessarily mean that your condition will keep getting worse. Keeping active will help keep your joints healthy.

A joint is a part of the body where 2 or more bones meet. In your knee, it's the thigh and shin bones. There is also a small bone at the front of the knee called the patella or kneecap.

The ends of the thigh and shin bones are covered with a smooth and slippery substance, known as cartilage. This allows the bones to move smoothly against each other. There is also cartilage at the back of the patella.

Your knee also has 2 rings of a different type of cartilage known as menisci, which help to spread weight evenly across your knee joint.

In osteoarthritis, the cartilage thins and the surfaces of your joint may become less smooth. Changes to the cartilage can also alter the shape of the bones within your joint. This can mean that your joint doesn't move as smoothly as it should, which may cause pain and stiffness.

We don't always know why someone develops osteoarthritis, but we do know that it's not simply 'wear and tear'.

The following factors can all play a part:

- the genes we inherit from our parents
- previous injuries, especially severe or repeated injuries to the joint
- having a job that puts heavy strain on your knees
- being overweight, which can increase inflammation as well as putting an extra load on the knee
- having other conditions that affect the joints, such as rheumatoid arthritis or gout.



Figure 1. A healthy joint

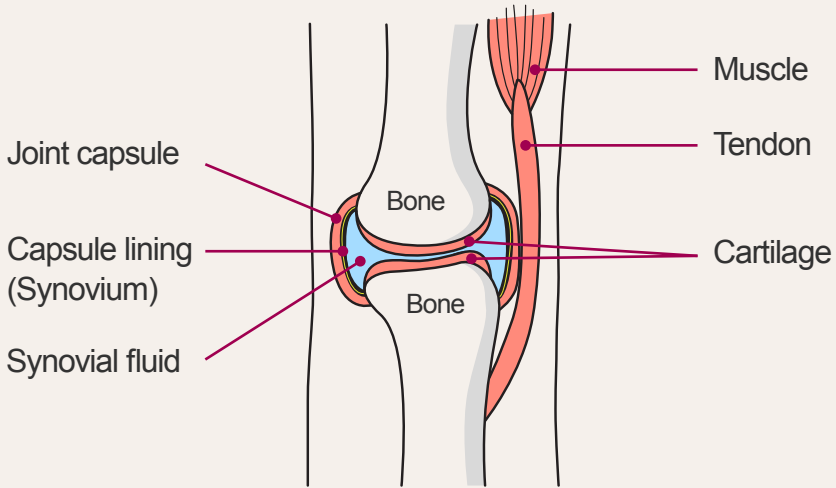
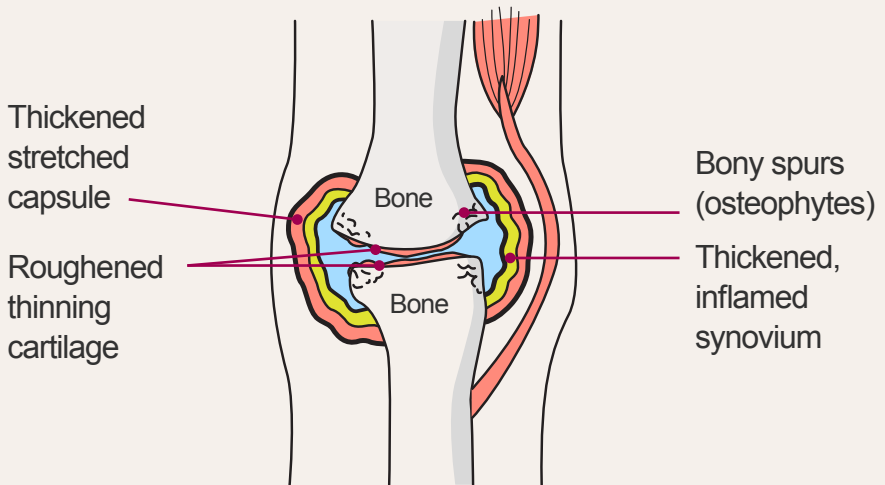


Figure 2. A joint affected by osteoarthritis



How will it affect me?

Knee osteoarthritis affects people in different ways, and symptoms can vary over time. But there's a lot you can do to help manage them.

You may have times when your symptoms are worse for a few weeks or months, followed by times when they improve. The symptoms can sometimes develop quite rapidly, but more often they develop slowly over many years.

Changes to the joint don't always continue and your symptoms can improve over time, especially with the right treatment and self-management plan.

If you have osteoarthritis of the knee, you will probably feel your knee is painful and stiff at times. It may only affect 1 knee, especially if you've injured it in the past, or you could have it in both.

The pain may be all around your knee, or just in a certain place. It might feel worse when you move your knee in a certain way, such as going up or down stairs or getting up from a chair.

The pain may be worse at the end of the day. And you might have some stiffness in the morning, but this won't usually last more than half an hour. Sometimes, people have pain that wakes them up in the night.

You might find you can't move your knee as easily or as far as usual, or it might crack or crunch as you move it. These sounds are called crepitus and they can also occur in healthy joints.

Sometimes your knee might look swollen. This can be caused by two things:

- **Hard swelling:** caused by bony spurs or osteophytes
- **Soft swelling:** when the joint becomes inflamed and produces extra fluid, sometimes called an effusion or water on the knee.

Sometimes osteoarthritis of the knee can cause the muscles in the thighs to weaken, so your leg may look thinner. This weakness can make the joint feel unstable and could cause the knee to give way when you put weight on it.

The level of change within the joint doesn't always match the level of pain that people have. Some people have a lot of pain from quite small changes within the joint, while others have little or no pain even though X-rays may show much greater changes.

Possible complications

The loss of cartilage, changes to the bones, and the bony spurs can change the shape of the joint. This forces the bones out of their normal positions, and can make your knee feel unstable and painful.

Some people with osteoarthritis find a lump appears at the back of their knee. This is called a Baker's cyst or popliteal cyst. This happens when part of the joint lining bulges through a small tear in the joint capsule. This can then cause joint fluid to be trapped in the bulge.

This can happen on its own but is more likely in a knee that's affected by arthritis. A Baker's cyst doesn't always cause pain, but sometimes they can burst so the fluid leaks down into your calf, causing sharp pain, swelling and redness in the calf.

Osteoarthritis in the knee might change the way you walk, or your posture, and this could cause you to develop symptoms in other joints, such as your hips or in your back.

Managing osteoarthritis of the knee

There's no cure for osteoarthritis, but there are treatments and things you can do for yourself that can make a big difference to your symptoms and how the condition affects you.

Exercise

Joints need to be moved regularly to keep them healthy. Whatever your fitness level, exercise can help your knee cope better with everyday activities.

Exercise can strengthen the muscles around your knee, improve your posture and help you to lose weight, all of which can reduce the symptoms and pain of osteoarthritis.

You'll need to find the right balance between rest and exercise. Too much activity can sometimes increase pain, while too little can make the joints stiffen up.

Keeping up your exercises is important, even when your symptoms improve, to prevent them coming back again. A physiotherapist can advise you on the best exercises to do, but you'll need to build them into your daily routine to get the most benefit from them.

Swimming and water-based exercise can be helpful if your joints are painful, as the water takes the weight of your body and reduces strain on your knees, and also provides some resistance to help strengthen your muscles.

Weight-bearing exercise, such as walking, will help to keep your bones strong.

There are also specific types of exercise that have been shown to help with osteoarthritis of the knee. We've included some examples at the back of this booklet.

Range of movement exercises

These are good for helping to keep your joints flexible. These exercises can be something as simple as stretching, making sure your joint moves through a range of positions. To improve flexibility, try to stretch a little further each time.

Strengthening exercises

This type of exercise is important to improve the strength of the muscles that control your knee, and to help stabilise and support the joint. It's also been shown to reduce pain and can prevent your knee giving way, reducing the risk of falls.

You should try to do strengthening exercises on at least 2 days a week if you can. Gradually making the exercises harder over time will give the most benefit.

Aerobic exercise

Aerobic exercise is any exercise that increases your pulse rate and makes you a bit short of breath. It could include walking, cycling or swimming.



Whatever level you are starting from, any increase is good for your general health and well-being. It can also reduce pain by releasing pain-relieving hormones called endorphins and can help you sleep better.

You should work hard enough to get a bit out of breath but still be able to have a conversation. Try to do 2 and a half hours (150 minutes) of aerobic exercise each week. You can spread this out over the week.



Weight management

Being overweight increases the risk of developing osteoarthritis and of it progressing. It's also likely to increase inflammation and therefore pain. Losing even a fairly small amount of weight can make a big difference to your pain and other symptoms.

There's no special diet that will help with osteoarthritis, but if you need to lose some weight you should follow a balanced, reduced-calorie diet combined with regular exercise. Include plenty of fresh fruit and vegetables in your meals and try to cut down on fatty and sugary foods.

Combining a healthy diet with a more active lifestyle will give you the best chance of maintaining a healthy weight. Your doctor or health professional should be able to give you advice on diets and exercise that will help.

Reducing the strain on your knees

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

- Pace your activities – don't tackle all your physical jobs at once. Break the harder jobs up into chunks and do something gentler in between. Keep using your knee even if it's slightly uncomfortable, but rest it before it becomes too painful.
- Wear shoes with thick, cushioned soles and enough room for your toes. Wearing the right shoes can reduce the shock through your knees as you walk and prevent any changes to your feet.
- Use a walking stick to help reduce pain. Use it on the opposite side to your painful knee. It's important that a walking stick is adjusted for your height – a good supplier should do this for you. If you also have arthritis in your hands, check that the handle feels comfortable.
- Use a handrail for support when going up or down stairs. Go up stairs one at a time, leading with your stronger leg.
- Think about making changes to your home, car or workplace to reduce unnecessary strain. An occupational therapist can help you find any special equipment that will make things you do every day easier.
- If you need extra support for your feet or knees when you walk, speak to your physiotherapist, occupational therapist or doctor about getting insoles made for your shoes.

Some people find that knee braces help. You can buy knee braces from sports shops and chemists. If you're not sure what type of brace would be best for you, your doctor or physiotherapist should be able to advise you.



Coping with low mood and sleep problems

You might find that osteoarthritis makes you feel low or anxious, especially if pain is disturbing your sleep. Speak to your doctor if you're feeling low, as they may be able to recommend psychological therapies to help you, such as cognitive behavioural therapy (CBT) and stress-relieving techniques.

If your sleep is disturbed, there are things you can do for yourself that might help, such as:

- Keeping a sleep diary to work out if there are any patterns to your sleep problems.
- Sleeping at regular times to get your body into a routine.
- Avoiding phones and other screens in the bedroom to help you wind down before bed.

If you're still having problems, speak to your doctor or a healthcare professional who can give you other tips and techniques to try.



For more information on treatments, visit our website:
[arthritis-uk.org](https://www.arthritis-uk.org)

Pain medications

Medicines can help ease pain and stiffness, but they won't treat the underlying osteoarthritis. They are best used alongside self-help measures to help ease pain and stiffness so that you can keep active.

Some of the medicines and treatments you can try include:

- **Non-steroidal anti-inflammatory drugs (NSAIDs):** NSAID creams and gels are available to apply to the skin and you might want to try these first, especially if you have trouble taking tablets. Some, such as ibuprofen and diclofenac, are available to buy over the counter. Others, such as ketoprofen, are only available on prescription.

A short course of NSAID tablets can help reduce any pain, inflammation and swelling in your knee. Ibuprofen is widely available over the counter.

If over-the-counter NSAIDs help but you need to keep taking them after a couple of weeks, check with your doctor as you may need other tablets to protect your stomach from side effects.

Your doctor may also be able to prescribe stronger NSAIDs if needed.

- **Painkillers:** Simple pain relief medications such as paracetamol may help. These aren't usually prescribed on the NHS for osteoarthritis but are widely available to buy over the counter. They can be helpful to 'take the edge off' pain if taken just before exercise.

Your doctor may prescribe you stronger pain relief medications if needed, but these are normally only prescribed for short-term use because of a higher risk of side effects.

- **Capsaicin cream:** This is a pain-relieving cream made from the pepper plant, which some people find helpful. It may be available on prescription, but there have sometimes been shortages.
- **Steroid injections:** An injection directly into the knee joint can help reduce swelling and pain for several weeks. These cannot be repeated routinely as there's evidence that the benefit may last for a shorter time after each injection.

If you're taking any of the over-the-counter medications mentioned above, make sure you're taking them as directed by a pharmacist or according to the instructions in the leaflet included with the medicine. Make sure anyone who is treating you knows all the medications you're taking.

Other pain relief

If the methods of pain relief above don't help you, you might want to try some of the following:

- **Transcutaneous electrical nerve stimulation (TENS):** A TENS machine works by sending electrical pulses to the nerves through pads placed on your skin. This produces a tingling sensation and alters pain signals to the brain.

TENS is not available on the NHS as the research evidence is mixed, but some people do find it helpful. A physiotherapist will be able to advise on the types of TENS machine available and how to use them.

- **Hyaluronic acid injections:** Hyaluronic acid occurs naturally in the body and helps to lubricate joints. These injections aren't generally available on the NHS but you may be able to get them privately or, occasionally, as part of a clinical research project.

- **Complementary treatments and supplements:** Some people with osteoarthritis find supplements such as glucosamine, turmeric and chondroitin helpful. If you're interested in trying these or other supplements, bear in mind that what works for one person may not work for another. It's also best to check that they won't interact with any of your prescribed medicines.
- **Heat or cold packs:** Using a heat pack often helps to relieve the pain and stiffness of osteoarthritis. An ice pack may help to reduce any swelling. Be careful not to put ice or heat packs or hot water bottles directly on your skin – wrap them with a tea towel or cover. You can use them for 20 to 30 minutes at a time every few hours.

Surgery

Most people with osteoarthritis of the knee find that exercise, medication and keeping to a healthy weight will improve their symptoms and allow them to get on with their daily activities.

Only about 1 in 10 people with knee osteoarthritis go on to have a knee replacement. But if other treatments haven't worked for you, you may benefit from surgery. This will usually only be suggested if:

- your symptoms are having a big impact on your life, and
- X-rays or other scans indicate that surgery could help you.

If you're considering surgery, talk to your healthcare team about what you can expect from it. They'll help you weigh up the benefits and risks based on your general health and lifestyle.

The most common type of surgery for osteoarthritis of the knee is knee replacement. Many knee replacements are performed each year, and the operation can give a lot of pain relief and improve movement in your knee.

Research has shown that many knee replacements last as long as 25 years. But, as with all surgery, there are some risks and your surgeon will want to make sure you're in the best health possible before the operation.

Sometimes keyhole surgery techniques can be used to wash out loose fragments of bone and other tissue from your knee. This is called arthroscopic lavage or debridement. It's not usually available for knee osteoarthritis unless there are clear mechanical problems such as the knee 'locking'.



Exercises for osteoarthritis of the knee

This section contains some simple exercises that are designed to stretch, strengthen and stabilise your knee.

It's important to keep active. You should try to do some of these exercises every day. Try to repeat each exercise between 5 and 10 times and perform the exercises between two and three times each day.

- Stretching exercises should be done daily.
- Strengthening exercises should be done 2 or 3 times a week.
- Aerobic exercises should be done between 2 to 5 times a week.

Gradually build up your exercise over time. Carry on exercising even if your symptoms ease, as this can stop them coming back.

If you have any questions about exercising or if you're unsure how to do a certain exercise, ask your doctor or physiotherapist for advice.

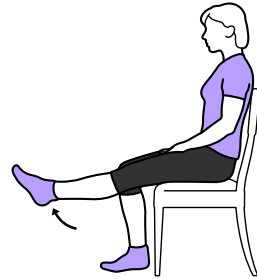
Stretching exercises

Try to do these exercises every day.

Straight-leg raise (sitting)

Sit with good posture in a chair. Straighten one of your legs, hold for a slow count to 10 and then slowly lower your leg. Repeat 10 times with each leg.

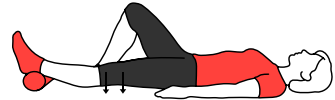
Try to get into the habit of doing this exercise every time you sit down.



Muscle stretch

Lie down with a rolled-up towel under the ankle of one leg. Bend the other leg at the knee. Use the muscles of your straight leg to push the back of your knee firmly towards the bed or the floor. Hold for a slow count of 5.

Repeat at least 5 times with each leg. This exercise helps to prevent your knee from becoming permanently bent. Try to do this at least once a day when lying down.



Leg stretch

Sit on the floor with your legs stretched out straight in front of you. Slowly bend one knee up towards your chest, sliding your foot along the floor, until you feel a gentle stretch. Hold for five seconds. Straighten your leg as far as you can and hold in this position for 5 seconds.

Repeat 10 times with each leg. If you can't get down onto the floor, sit on a sofa or bed and use a board or tea tray as a surface to slide your foot along.



Strengthening exercises

The following exercises might be quite hard to do, so try to do them 2 to 3 times a week.

Straight-leg raise (lying)

Lie down and bend one of your legs at the knee. Hold your other leg straight and lift your foot just off your bed or floor. Hold for a slow count of five, then lower. Do this until you cannot do any more, rest for a minute, then do this a further 3 times.



Step ups

Step onto the bottom step of stairs with your right foot. Bring up your left foot, then step down with your right foot, followed by your left foot. Hold on to the banister if necessary.

Repeat with each leg until you can't do any more. Rest for one minute and then repeat this another 2 times. As you improve, use a higher step.



Knee squats

Hold onto a chair or work surface for support. Squat down until your kneecap is directly over your big toe. Return to normal standing.

Repeat until you can't do any more, rest for 1 minute, then repeat another 2 times. As you improve, try to squat a little further, but don't bend your knees beyond a right angle.



Leg cross

Sit on the edge of a table, seat or bed and cross your ankles. Push your front leg backwards and back leg forwards against each other until your thigh muscles become tense.

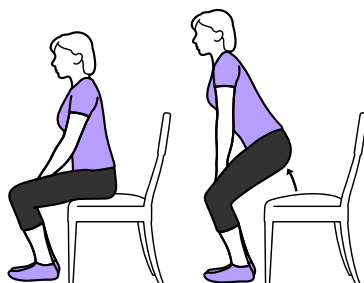
Hold this for as long as you can, then relax. Rest for 1 minute and then repeat another 2 times. Switch legs and repeat.



Sit/stands

Sit on a chair. Without using your hands for support, stand up and then sit back down. Make sure each movement is slow and controlled. Repeat until you can't do any more.

Rest for 1 minute then repeat another 2 times. If the chair is too low, start with rising from a cushion on the seat and remove when you don't need it anymore.



Notes

Notes

Discover our support services

You don't need to face arthritis alone. Get the information, advice and support that you need.



Call our free helpline:
0800 5200 520



Connect with our online community, go to:
community.arthritis-uk.org



Chat with AVA, our online assistant, go to:
arthritis-uk.org/ask-AVA-our-virtual-assistant



Track your symptoms with our easy app, go to:
arthritis-uk.org/track-my-arthritis-symptoms-app

Thank you!

A team of people helped us create this booklet. We would like to thank:

**Hazel Rudder
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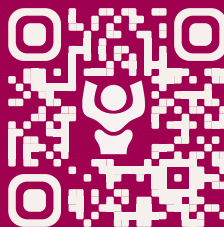
We would also like to give a special thank you to the people who shared their opinions and thoughts on the booklet. Your contributions make sure the information we provide is relevant and suitable for everyone.



Support our work

At Arthritis UK we rely on donations to fund our work. Help support people with arthritis and fund life-changing research by making a donation today. Every contribution makes a difference.

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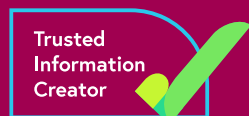


Join our community

Sign up today and we'll be in touch by email a few times a month with the latest arthritis news, including research and campaign updates, as well as tips and advice about how to live well with arthritis, and ways you can get involved.

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