



Osteoarthritis of the knee

Your questions answered

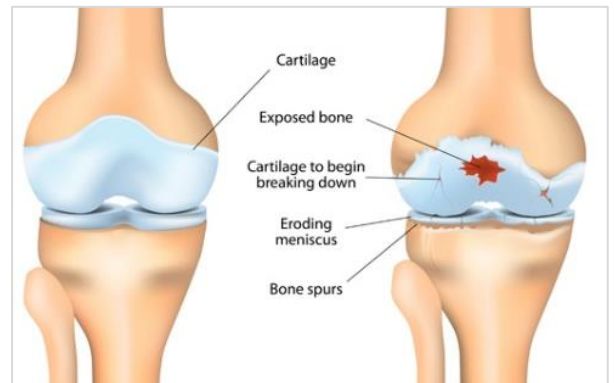
Q. What is osteoarthritis (OA)?

A. [Osteoarthritis \(OA\)](#) is the most common type of arthritis, affecting 1 in 11 Australians.ⁱ It can develop in any joint but commonly occurs in weight-bearing joints like your knees and hips.

Q. How does the knee joint work?

A. Your knee is a complex weight-bearing joint. It consists of three main parts – the end of your thighbone (femur), the top of your shinbone (tibia) and your kneecap (patella). The end of each of these bones is covered with a slippery tissue (called cartilage) which allows your knee to move smoothly.

In between your thighbone and shinbone, there's a thickened pad of cartilage called the meniscus. This acts as a 'shock absorber' to cushion the two bones and stabilise the joint.



The knee joint is wrapped inside a tough capsule filled with synovial fluid. This fluid lubricates and nourishes the cartilage and other structures in the joint.

Q. What causes knee OA?

A. Many factors can increase your risk of developing knee osteoarthritis, including:

- your age – OA occurs more often in people over 45
- being overweight or obese – extra weight on your knees can increase strain and may lead to premature or increased joint damage
- gender – 3 in 5 people who develop OA are femaleⁱⁱ
- joint damage – for example, from a sports injury, or car accident,
- frequent kneeling, climbing and squatting
- family history of knee OA
- other conditions – for example, [rheumatoid arthritis](#) and [gout](#) may increase your risk of knee OA .

Q. What are the symptoms of knee OA?

A. The symptoms of knee osteoarthritis usually happen gradually and vary from person to person. They may include:

- pain in the knee joint – often worse after vigorous activity and at the end of the day
- pain may radiate up (into the thigh) or down (into the shin) from the affected knee

- stiffness and/or swelling of the knee joint
- muscle weakness of the thigh or calf
- grinding, creaking or crunching sound when moving the knee
- the knee may feel like it 'locks', 'sticks' or gives way during periods of activity
- pain is usually eased when resting.

Q. How do I know if I have knee OA?

A. If you're experiencing pain or stiffness in or around your knee, it's important that you discuss your symptoms with your doctor. Getting a diagnosis as soon as possible means that treatment can start quickly. Early treatment will give you the best possible outcomes.

To diagnose your condition, your doctor will:

- take your medical history – this will include finding out about your symptoms, how long you've had them, what makes them better or worse
- examine your knee.

Imaging (e.g. x-rays, ultrasound or MRI) and blood tests aren't routinely used to diagnose knee OA. However, they may sometimes be needed if there's uncertainty around your diagnosis, or to assess joint damage. An x-ray can show possible narrowing of the joint space and any bony growths, dislodged bone fragments or calcium deposits.

However, x-rays aren't an accurate guide to how much pain you might be in. For some people, x-rays show severe joint damage, but they have little or no pain. Others may report high levels of pain with only minor x-ray changes.

Magnetic resonance imaging (MRI) is only required when there is a need to rule out an alternative diagnosis or assess the health or condition of your knee's soft tissues (cartilage, tendons, muscles). MRIs aren't recommended in the management of knee OA.

Q. How is knee OA treated?

A. There's no cure for knee OA, but it can be managed effectively using exercise, weight management, medicines, self-care and, in some cases, surgery.

Exercise

Exercise is key in the management of knee OA. A tailored exercise program developed by a physiotherapist or exercise physiologist can help reduce your knee pain and improve your knee function. Evidence suggests that while no one particular type of exercise is better than another, a combination of exercises is likely to be the most effective.

These exercises include:

- strength training specifically targeting your legs
- aerobic exercise – these are exercises that get you moving and increase your heart rate (e.g. swimming, cycling, brisk walking) and will help improve the health of your heart and lungs (cardiovascular system)
- balance training
- exercises that move your joint through its full range (range of motion exercises).

When choosing a type of exercise for yourself, think about what you enjoy and what you're likely to keep doing. The best results occur when you do some exercise at least three times per week.

If pain prevents you from exercising, you may find that warm water exercise is a good starting point. Hydrotherapy pools offer the comfort of warmth and the buoyancy of the water to ease the load on your joints.

[Cycling](#) outdoors or indoors on a stationary bike is also a good option for non-weight-bearing exercise.

Another option is My Knee Exercise, a free 6-month program to help people with knee pain and knee osteoarthritis manage their symptoms. Developed and designed by researchers within the Centre for Health, Exercise & Sports Medicine at The University of Melbourne, research studies have shown that it's safe and effective. You can try it for free in the comfort of your home today. [Visit their website](#) to access the resources and tools to get started.

Weight management

Being overweight or obese is directly related to the risk of developing knee OA. It's also highly likely to speed up how quickly your OA develops or progresses. Evidence shows a relationship between weight loss and relief of symptoms such as pain and stiffness; even a small amount of weight loss can help. If you'd like to lose weight to improve your symptoms, your doctor and/or dietitian can assist you in losing weight safely.

Weight loss can be a long process for many people. It's challenging, especially when pain affects your ability to be as active as you'd like. But it's good to know that any weight loss can reduce your pain and increase your ability to exercise. So making small, achievable changes to your eating and exercise habits can bring big results.

Medicines

No [medicine](#) can affect the underlying disease process of OA, but combined with self-care and lifestyle changes, medicines may provide temporary pain relief and help you stay active.

There are a variety of medications used in the management of knee OA, and each comes with varying degrees of evidence to support their use.

Non-steroidal anti-inflammatory medicines or NSAIDs (e.g. Nurofen, Celebrex, Voltaren). NSAIDs are available over-the-counter and with a prescription, depending on their dosage and other ingredients. They may be taken by mouth (orally) as a tablet or capsule or [applied directly to the skin \(topical\)](#) in the form of gels and rubs.

Oral NSAIDs are the preferred first-line drug treatment for OA and have been shown to reduce pain and symptoms in knee OA.

Although there's no solid evidence either for or against topical NSAIDs, it may be worth giving them a short trial to see if they help.

It's important to note that NSAIDs are designed to be taken at low doses for short periods. Always talk to your doctor before starting NSAIDs, as they can cause harmful side effects, especially in older people.

Paracetamol (e.g. Panadol, Panamax). Research has shown that paracetamol provides only low-level pain relief and, in some cases, no pain relief at all compared to a [placebo](#) in knee OA. However, some people report that it helps reduce or take the edge off their pain so they can be more active. If you can't take NSAIDs, they may also be an option. Before using paracetamol, talk with your GP to see if it's appropriate for you.

Corticosteroid injections. If you have persistent knee pain and haven't had relief from oral medicines or other treatments (e.g. exercise, weight loss), your doctor may suggest a corticosteroid (steroid) injection.



Corticosteroid injections into the knee joint can provide short-term pain relief for some people with knee OA. However, the duration of pain relief can vary from a few days to a few weeks, and the number of injections you can have is limited due to potential harm. Discuss the benefits and risks of steroid injections with your doctor to see if they're an option.

Hyaluronic acid injections. The benefits of hyaluronic acid joint injections (also known as viscosupplementation or hyaluronan injections) are uncertain. Research findings have been inconsistent, and although some people find the treatment helpful, it can be expensive and isn't generally recommended.

Opioids. Opioids are powerful pain-relieving medicines. They're effective at reducing acute pain (or the pain resulting from an injury or surgery), but evidence shows they have little effect on OA pain. Opioids also have many potentially serious side effects. That's why they're not recommended in the management of knee OA.

Capsaicin. Capsaicin is the active ingredient in chilli peppers – it makes them 'hot'. Capsaicin in creams and lotions has been used to help reduce OA pain, and some people report beneficial effects. However, the evidence for its effectiveness in knee OA is low, and it's generally not recommended. It also has side effects when applied, such as a burning sensation, which can take several uses to wear off.

Glucosamine and chondroitin. Studies have found no benefit from taking [glucosamine and/or chondroitin](#) for osteoarthritis.

Q. What other treatments are available?

A. You may have heard of other treatments for managing knee OA symptoms. They have varying degrees of effectiveness.

Transcutaneous electrical nerve stimulation (TENS). A [TENS machine](#) is a small battery-powered device with leads that connect to sticky pads on your body. It delivers tiny electrical currents to your skin that stimulate nerves to relieve pain. Some people find it helpful in relieving pain, while others do not. If you're considering using a TENS machine, speak with your doctor to see if it's a suitable option for you.

Electrotherapy. Electrotherapy treatments (e.g. shockwave, laser) are thought to minimise inflammation, promote cell growth and modify pain. While some trials have shown short-term benefits with electrotherapy, the evidence for its use in knee OA is low to very low. For this reason, it's not generally recommended.

Acupuncture. Current clinical evidence doesn't support the use of traditional (needle), laser and/or electro-[acupuncture](#) for knee OA. While some improvements in knee pain and function have been identified in low-quality studies, the benefits are considered so small that they're not clinically relevant. Also, to see any benefits from treatment, it's likely that you'll need multiple sessions of acupuncture which can become expensive.

Ultrasound. Therapeutic ultrasound involves applying high-frequency sound waves to the surface of the skin in order to reach the soft tissues below. This is done by a health professional. There's moderate quality evidence to suggest this treatment can reduce pain and improve function in knee OA. However, evidence also indicates that you'd need three to five treatments a week to see any benefits. For this financial reason, it's often not recommended.

Platelet-rich plasma (PRP) injections. The evidence for PRP is still uncertain. There are large variations in the design of PRP trials and no standard recommendations for their preparation or use. Until further robust research is undertaken, PRP isn't recommended for knee OA.



Stem cell injections. Currently, there's no evidence to support the use of stem cell injections in treating knee OA despite being commercially available. The International Society for Stem Cell Research and the [Australian Rheumatology Association](#) doesn't support using stem cell injections for osteoarthritis.

Q. What else can I do to control my symptoms?

A. You can do many other things to reduce the impact of your symptoms.

Learn about your condition. Understanding OA and how it affects you means you can make informed decisions about your healthcare and actively manage it.

Learn ways to manage your pain. Pain is the most common symptom of knee OA, so it's crucial to learn to manage it effectively. Read our [A-Z guide for managing pain](#) for more information.

Talk to an OT. An occupational therapist can give you information and advice about assistive devices and aids such as canes/walking sticks, crutches and walkers. They can help to relieve the load on your knees and assist with balance. However, some types of knee braces, taping, and wedge shoe insoles aren't recommended for knee OA. It's best to speak with your health professional to determine what's suitable for you.

Get some sleep. A [good night's sleep](#) is essential for your physical and mental health. If you often wake with pain or discomfort during the night, consider taking pain-relieving medicine before bed. A warm bath before bed can also help you fall asleep. If you have difficulty getting in and out of a bath, have a warm shower instead. A pillow between your knee (if you sleep on your side), hot water bottle or electric blanket can also be helpful when trying to get to sleep. Remember to turn the electric blanket off before getting into bed.

Take care kneeling. If you need to kneel for gardening, cleaning or other tasks, a kneeling pad can help ease any knee pain or discomfort. You can make your own with an old pillow wrapped in a plastic bag. You can also find kneepads that have handles that help you get down and up.

Wear suitable footwear. Your choice of footwear can affect the load or stress put on your knee joint. For example, high-heeled shoes place more force on different parts of the knee than flat shoes. The best choice of footwear if you have knee OA is well-fitted, flat shoes with a cushioned, flexible sole and arch support.

Sit in supportive chairs. Try to use an armchair that isn't too low; you shouldn't struggle to get out of it and it shouldn't cause you aches and pains when you're sitting in it. It's also helpful if your chair has sturdy arms to push up from and provides sufficient support when seated. If you're considering buying a particular armchair, see if you can hire it so you can try it before buying.

Q. What about surgery?

A. [Surgery](#) may be an option for some people with knee OA when all non-surgical treatment options have failed, and knee pain and reduced function impact their quality of life. In this case, your doctor may refer you to an orthopaedic surgeon to discuss your options.

A total joint replacement of the knee is the most common type of surgery for knee OA. However, having an artificial knee means that there will still be some limitations. An artificial knee won't have the same sideways movement as a natural knee, and it won't bend fully, so it's more likely to be challenging to get down and up from a kneeling position.

Arthroscopy is a surgical technique that involves the insertion of small surgical instruments, including a camera, into the knee. This allows the surgeon to examine the inside of the joint and cut, shave and



remove material from the inside of the knee joint. “[The Australian Government and most orthopaedic surgeons recommend against using arthroscopy for osteoarthritis of the knee](#). Research shows that doing an arthroscopy for this condition isn’t effective. Arthroscopy should only be used for knee OA if other treatments fail, such as losing weight, exercising and taking pain relievers.”ⁱⁱⁱ

Q. Where can I get more help?

A. Many people and support organisations can help you manage your musculoskeletal condition. They include:

- your doctor
- [dietitian](#)
- [physiotherapist](#)
- [exercise physiologist](#)
- [occupational therapist](#)
- Musculoskeletal Australia | [msk.org.au](#) | MSK Help Line: 1800 263 265

Q. How can Musculoskeletal Australia help?

A. Our nurses are available for you to speak with about osteoarthritis, pain or any other musculoskeletal issues you have. You can contact them on weekdays between 9am-5pm. Phone 1800 263 265 or email helpline@msk.org.au. We also have a range of services – including free webinars – you can access on our [website](#).

More to explore

- [Knee health](#)
TREK (Translating Research Evidence and Knowledge)
- [My knee exercise](#)
The University of Melbourne
- [Osteoarthritis](#)
PainHEALTH
- [Osteoarthritis](#)
American College of Rheumatology
- [Osteoarthritis of the knee](#)
Arthritis Foundation
- [Osteoarthritis](#)
healthdirect
- [Osteoarthritis](#)
Stem Cells Australia
- [Osteoarthritis of the knee](#)
Versus Arthritis UK

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Updated March 2023

References

ⁱ⁻ⁱⁱ [Osteoarthritis](#), Australian Institute of Health and Welfare, 2020.

ⁱⁱⁱ [Arthroscopy](#), Healthdirect, 2021.

