



Knee arthritis and joint replacement



What is knee arthritis?

Arthritis is the name for a group of conditions that cause damage to your joints. Osteoarthritis (OA) is the most common type, with the knee most often affected.

Knee arthritis typically occurs in people aged over 50. Symptoms include joint pain, swelling and stiffness. When symptoms are more severe, they may adversely affect your mobility, sleep and ability to participate in everyday activities. This can impact your independence and quality of life.

What causes knee arthritis?

There is no single cause of knee arthritis, but OA is more common in females, people who are overweight, and in people who've had an injury or altered knee alignment.

Healthy joints have a protective cartilage covering over their bony ends. They are also surrounded by a protective membrane (called the synovial membrane) and bathed in lubricating fluid (called synovial fluid). This allows joint surfaces to glide over each other, giving you smooth, pain-free movement.

Arthritis leads to wear of the cartilage covering, a reduction in synovial fluid, and joint inflammation. Some people develop bony spurs and breakdown of the ligaments and tendons around the joint.

In its earlier stages, your body can usually repair the changes associated with arthritis. As the condition progresses, however, your repair systems can't keep up – leading to tissue damage.

How is knee arthritis diagnosed?

Your health professional will take a thorough medical history and ask about how symptoms are impacting your daily life. They will examine your knee joint, looking at things like range of movement, leg alignment and how you walk.

You will probably have an X-ray, which may show degenerative changes in your knee joint. Significantly, though, X-ray changes don't necessarily correspond well to symptoms. Some people have severe structural changes on X-ray but experience little pain, and vice-versa. Your doctor may also recommend other tests, such as an MRI.

Treatment

Treatment for knee arthritis aims to help you successfully manage pain and get you back to your usual activities. Most people with knee arthritis won't need surgery. Non-operative treatments can help with symptom management and support improved function. These include:

Pain management – your doctor might recommend medications such as paracetamol and/or non-steroidal anti-inflammatory drugs to reduce the pain and inflammation in your knee/s. Cold packs and elevation can help with swelling. Some people find heat helps relieve stiffness. Your doctor may recommend an injection of steroids and local anaesthetic to settle a pain flare up, although these often resolve naturally after a few days.

Physiotherapy – physios can help with tailored education, advice and knee exercises. Evidence suggests understanding your OA helps with pain control, coping and continued symptom management. The right exercise program strengthens muscles around your knee and improves your ability to control its position, without aggravating pain. A physio can teach you how to modify activities so you can continue participating in everyday tasks. They may also use manual therapies to improve flexibility, or hydrotherapy for pain relief, movement and exercise.

Weight management – increased weight increases the load on your knee joints and is directly linked with OA risk. Even a small weight loss can improve your symptoms and slow disease progression. A dietitian can support you with eating choices that promote weight loss. A physio or exercise physiologist can prescribe an appropriate physical activity program.

Knee bracing – in some people, a brace that takes load off the knee joint can help. Appropriate footwear and taping may also benefit in some cases.

When is surgery recommended?

Surgery may be recommended if you have significant pain that has not responded to conservative treatment, and you are healthy enough and willing to have an operation.

Your surgeon will discuss the benefits and risks of surgery, and provide advice based on your symptoms and circumstances.



Types of surgery

Joint replacement surgery

This type of surgery replaces the affected knee joint with an artificial one. Two types of joint replacement are possible, depending on the extent of arthritis within the knee.

- 1. Partial knee replacement** – in some people, arthritis only affects one of the three sections (or ‘compartments’) within the knee. Partial knee replacement involves replacing only the damaged section. It usually involves a smaller incision, shorter inpatient stay, and quicker recovery.
- 2. Total knee replacement** – this involves replacing the whole knee joint and is likely to be advised if more than one section of your knee is affected. Total knee replacement is major surgery, but has excellent results when performed appropriately and for the right reasons.

Realignment Osteotomy

A realignment osteotomy, also known as a high tibial osteotomy, may be recommended if your arthritis is related to knee joint misalignment (such as being knock-kneed or bow-legged). It is usually only performed when arthritis affects one side of the knee joint. It involves making a cut in the bone below the knee to change the leg’s alignment. This allows load to be transferred to the side that is not affected. An osteotomy can provide symptomatic relief for 5-10 years, after which a knee replacement may be performed.

Recovery

Your recovery will depend on the type of surgery you have. Typically, it will involve:

- Pain relief – it’s important to keep pain well-controlled, so be sure to ask for pain medication before your knee becomes too uncomfortable.
- Other medications – antibiotics to reduce the risk of infection and anticoagulants (and possibly special stockings) to reduce the risk of developing a blood clot.
- Ice packs to relieve postoperative swelling.
- A knee X-ray and a blood test.
- Help with self-care tasks such as showering, dressing and using the toilet, with assistance gradually reducing as you become more independent.
- Physiotherapy to help get you mobile and start your postoperative exercise program.
- Review with your surgeon.

Once your healthcare team feel confident you are well and independent enough, you will be discharged.

Rehabilitation

Rehabilitation is vital for getting the best results after surgery. How it looks will depend on your operation and needs, but will usually involve:

- Exercises to improve your range of movement, strength, knee control and cardiovascular fitness.
- Progression of your mobility, including weaning off gait aids (such as walking frames and crutches).
- Management of pain and swelling.
- Training in functional tasks, such as climbing stairs, getting in and out of a car, and activities of daily living (such as preparing meals and self-care tasks).
- Support and advice for returning to your usual activities, such as work and driving.

Your rehabilitation may be supported by allied health professionals including physiotherapists and occupational therapists.

References

- Osteoarthritis Research Society International. Patients: Understanding Your Osteoarthritis. <https://oarsi.org/patients> Accessed 22.7.2021.
- Australian Orthopaedic Association. The management of knee osteoarthritis. <https://www.aoa.org.au/for-patients/patient-information/knee-osteoarthritis> Accessed 22.7.2021.
- Arthritis Australia. Information Sheets: Understanding Arthritis. <https://arthritisaustralia.com.au/get-support/resources/information-sheets/?language=English> Accessed 22.7.2021.
- Osteoarthritis Research Society International. OARSI guidelines for the non-surgical management of knee, hip, and polyarticular osteoarthritis. <https://doi.org/10.1016/j.joca.2019.06.011> Accessed 22.7.2021.
- Australian Physiotherapy Association. Choose physio for Knee osteoarthritis (OA). <https://choose.physio/your-body/knee/knee-osteoarthritis-oa> Accessed 22.7.2021.
- Mr Vishal Pai, Orthopaedic Knee Surgeon. Knee Replacement Surgery, Realignment Osteotomy. <https://vishalpai.com.au/> Accessed 22.7.2021.
- Mr Chris Jones, Orthopaedic Surgeon. Total knee replacement information. Please enquire for details.