DR RHYS CLARK
ORTHOPAEDIC SURGEON

PATIENT INFORMATION SHEET

KNEE OSTEOARTHRITIS

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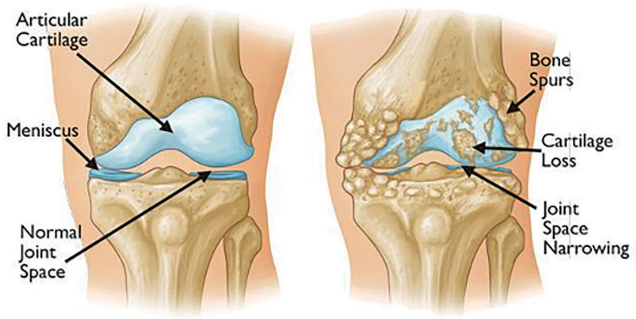
KNEE OSTEOARTHRITIS

What makes up the knee joint?

The knee joint is a hinge joint, which allows the knee to bend in only one direction much like the hinge of a door. There are three bones that make up the knee joint: femur (thighbone), tibia (shinbone) and patella (knee cap). Each of these bones have specialised cartilage which keeps the joint moving without friction. The knee is kept stable by ligaments and muscles around it. The patella, or knee-cap, sits at the front of the knee and helps the muscles of the leg and knee glide across the joint.



What is osteoarthritis?

Osteoarthritis is the gradual wearing away of joint cartilage. Cartilage acts like a cushion on the end of your bones. Every time you take a step, it absorbs some of the pressure and transfers the force of the step through to the bone.
Once this cartilage is gone there is no layer to act as the shock absorber or reduce friction. The two bones rub against each other and this causes pain.

What are the symptoms?

More than 50% of people over the age of 65 will have evidence of arthritis on an X-ray and about 1 in 7 of these patients will have symptoms.[2,3] Knee pain is usually felt after you have been using the joint for some time for e.g. after walking a lot you may need to sit down to rest. Depending on where your osteoarthritis is in the knee, your symptoms will vary. If you have osteoarthritis on the end of your bones you will find it hard to walk long distances. If you have arthritis under your knee cap you will likely find it painful to climb stairs or rise from a chair.

Other symptoms include:

- Swelling of the knee
- Knee stiffness which can be worse after a period of inactivity such as in the morning
- Muscle weakness and joint instability
- Your gait (walk) may have changed
- Episodes of the knee getting stuck in a certain position
- Crackly, grinding sound when moving the knee
- Increased activity causes increased symptoms

Osteoarthritis is a major cause of lost work time and a serious disability for many people.

How is it diagnosed?

During your consultation, the doctor will ask about your symptoms and then examine your knee including its range of movement. They may find that it does not extend all the way or you have limited ability to bend your knee.

To confirm the diagnosis, you will likely be sent for X-rays, including an X-ray while standing up. This allows the doctor to assess how much your knee has worn out. The X-ray can show

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joint space narrowing which occurs when the osteoarthritis is so severe from the cartilage loss that the bones on either side of the joint rub together. It can also show where the body is trying to compensate by growing new bone (osteophytes).

Occasionally, the doctor may send you for a specialised CT scan or an MRI to look more closely at the soft tissues and cartilage in your knee.

What are the non-surgical treatments?

Unfortunately, the cartilage you are born with is the only cartilage you have for your entire life. Once it is damaged/worn out it cannot grow back. Treatment is aimed at relieving symptoms to improve your quality of life.

Treatments include:

- physical therapy and exercise
- simple medications such as paracetamol
- minimising aggravating activities
- replacing high impact exercises (e.g. running) with low impact ones (e.g. swimming, cycling)

The amount of pain that a patient feels from their osteoarthritis is proportional to the amount of force which is passed through the joint. Three to four times your body weight is transferred through your knee joint with every step - so it's no wonder that your knee joint cartilage gets worn out! "Offloading the joint" means reducing the amount of force that is going through that joint. One of the most effective ways to "offload" the knee is to reduce your body weight through limiting your daily food intake. You may be eligible for subsidised dietitian visits through your GP.

Physical therapies

Exercise helps keep your joints moving well and maintains muscle. Appropriate exercises include:

- Land based low-impact exercises, such as cycling, yoga, tai chi
- Hydrotherapy (exercise therapy in heated pool) strengthens muscle with low impact on the joints

Physiotherapy is very helpful and there are clinically proven programs such as GLA:D that target osteoarthritis symptoms.

Medications and supplements

- Paracetamol taken regularly (i.e. every day) may help improve pain
- Non-steroidal anti-inflammatories (e.g. ibuprofen, celecoxib, meloxicam) may be helpful in early osteoarthritis
- Injections of corticosteroid into the joint may help with pain. The effect may last up to three months, or there may be no pain relief at all.
- Visco-supplementation is an injection of hyaluronic acid into the joint space. It has been shown to help pain in early arthritis, however, the effects are short lived and patients find an increase in pain 5 -13 weeks after the injection.

Certain medications may not be suitable for everyone so it is advised to discuss the risk of side effects with your doctor before starting any new medications.

Glucosamine and chondroitin sulfate are chemicals found in normal joint cartilage, and can be taken as oral supplements. While some patients report that these help with their pain, the evidence from large clinical trials show it **does not** reduce pain or reverse the process of cartilage breakdown.

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For patients who would like to try these supplements, it is advised to first discuss with your doctor. If after a 30-day trial there has been no pain relief, it's likely the supplements will not be of help and it's best to try other ways of managing your arthritis.[4]

What are the surgical treatments?

Surgery is reserved for patients who have severe arthritis or still experience severe pain after trialling physical therapy and medications. As with all surgeries, it comes with some risks and should be left as a last resort.

The most common surgery for knee osteoarthritis is a **knee replacement surgery**. This is where all or part of the joint is replaced. During this surgery the worn out ends of the bones are removed and replaced with metal with a high-density plastic layer, mimicking your old joint and cartilage. This is very effective in improving patients' pain.

Other type of surgery could include **knee realignment surgery (osteotomy)**, for younger active patients with arthritis in one part of the knee. This involves either the tibia (shinbone) or femur (thighbone) being cut and reshaped to help better align the knee joint and relieve pressure on it.[1]

Many people ask about putting telescopes into the knee **(knee arthroscopy)** for treatment of arthritis. However, this has a very limited role in osteoarthritis. A surgeon may consider this only if the knee is locked in a position.

References

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