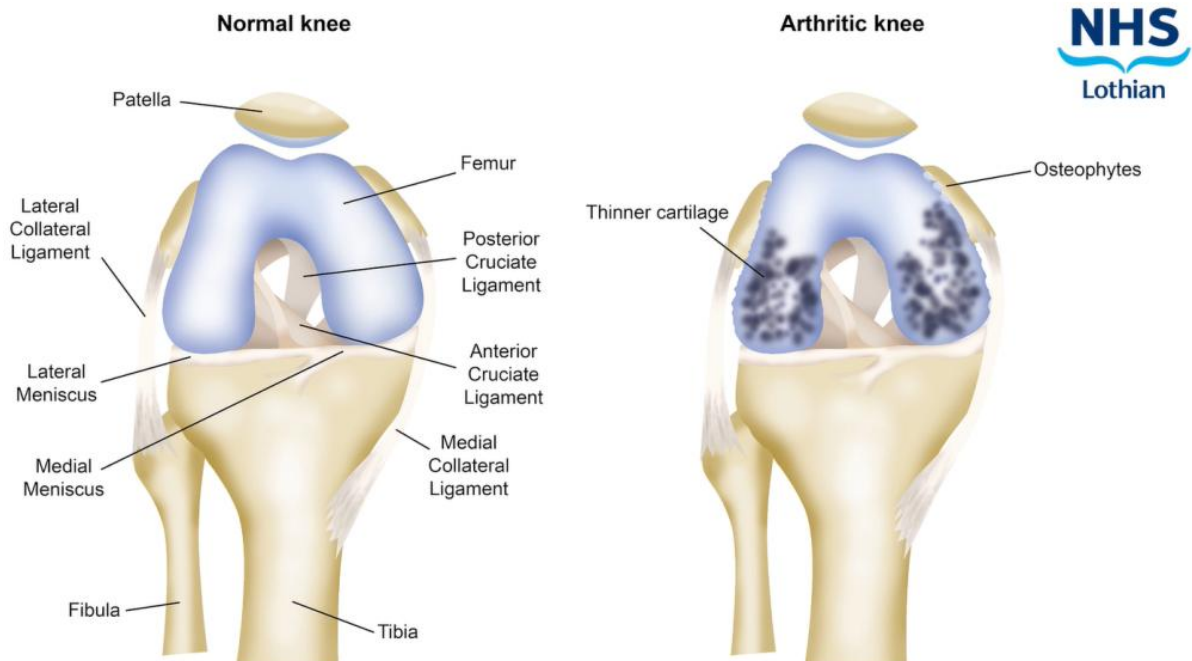


Knee osteoarthritis

Information for patients

A Guide to Self Management



What is osteoarthritis?

Osteoarthritis is a condition that causes joints to become painful and stiff. It's the most common type of arthritis in the UK and is not to be confused with inflammatory arthritis which is managed differently.

Osteoarthritis can affect all joints within the body and can affect more than one joint at a time.

Arthritis is very common and it is estimated that around 9 million people have arthritis within the UK.

The majority of people with arthritis have mild to moderate symptoms.

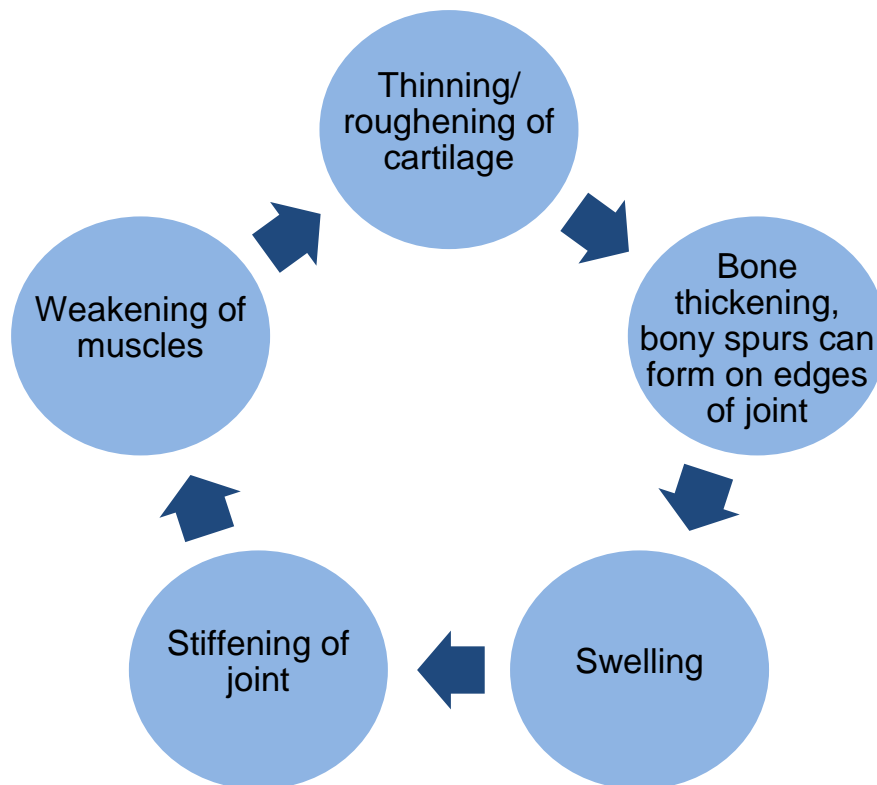
Other names for osteoarthritis

These include: wear and tear, OA (an abbreviation for osteoarthritis) and degenerative changes.

It can be confusing that different practitioners use different terminology but they all mean the same condition.

When you hear the terms wear and tear, or degenerative changes they can sound quite scary. However, you need to remember that our bodies are **not** like cars, which constantly wear through parts like tyres over time and need everything replaced. Although our bodies do naturally change with age, our bodies also maintain the ability to repair themselves and adapt to different activities, this especially applies to muscles. This is why exercises to strengthen your muscles around your knee can be really useful in protecting your knee joint.

Joint changes with osteoarthritis



The knee joint is where your thigh bone and shin bone meet. The end of each bone is covered with cartilage which has a smooth and slippery surface allowing the joint to move easily. The knee has 2 additional rings of cartilage (also known as menisci) – they act as shock absorbers. In a joint with arthritis, the cartilage can become thinner and rougher. This can happen over the main surface of your knee joint and in the cartilage underneath your knee cap. The joint is not as smooth and loses some shock absorption.

The fluid inside the joint may swell and produce extra fluid which causes the knee to swell.

The capsule and ligaments around the joint can become thicker and stiffer.

All of these changes can lead to pain and stiffness.

Over time, the muscles surrounding the joint become weaker. Muscles act like the scaffolding of the knee joint therefore, if they weaken, less support is provided to the joint.

Just as our skin and hair change as we age, so to do our joints.

As part of normal life, your joints are exposed to a constant low level of load. In most cases, your body can adapt to that level of load itself and you do not experience any symptoms. But in osteoarthritis, the protective cartilage on the ends of your bones gradually changes (as does our skin and hair) causing this cartilage to become thinner and this in turn can cause pain, swelling and stiffness when moving the joint.

What causes osteoarthritis?

There are several known factors that can make you more likely to develop osteoarthritis. These are age, weight, gender, genetics and previous injury/joint abnormality.

Age

Joint changes naturally occur as you become older. Osteoarthritis usually affects people over the age of 45, with more than one half of people at retirement age showing joint changes on x-ray due to osteoarthritis.

Weight

3-4 times your body weight goes through your knee joint, so 1 stone equates to 3-4 stone going through your knee joint. Extra load through a joint can contribute to the onset of joint pain and also speed up its progression.

Gender

More women are affected than men, particularly with arthritis of the knees and hands.

Genetics

There is thought to be a 50 % hereditary link of Osteoarthritis between families¹.

Previous injury/joint abnormality

Previous injuries or surgery to the cartilage or ligaments of your knee can lead to osteoarthritic changes. If you were born with, or developed a joint deformity due to disease, you are more likely to develop joint pain in later years, although this is not always the case.

How is osteoarthritis diagnosed?

- If you are 45 years or over **and**
- Have activity related joint pain **and**
- Either no morning joint related stiffness or morning stiffness that lasts no longer than 30 minutes.

You have been sent this information on osteoarthritis after you have contacted either physiotherapy, orthopaedics or your GP practice. You will have had an assessment, potentially over the phone, to ensure that there is no other reason/cause for your pain and that your symptoms are in keeping with a diagnosis of osteoarthritis. This is based on your age, what causes your pain and the pattern of your pain.

Osteoarthritis can affect some people under the age of 45, if this is the case you may have had an x-ray to aid your diagnosis.

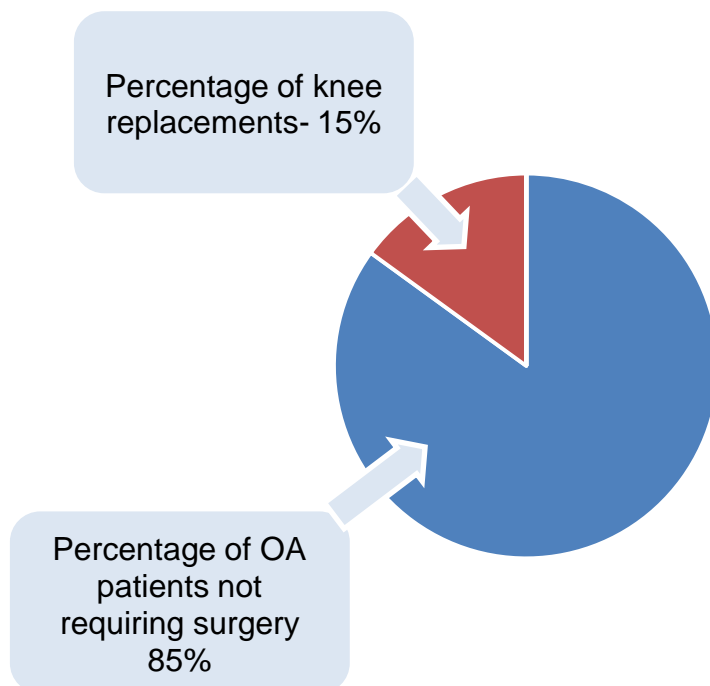
Will you need an X-ray or a scan?

X-ray is not required to make a diagnosis of osteoarthritis. In the vast majority of cases scans do **not** give any more information to assist in the management of osteoarthritis and with new research a scan is rarely required.

Interestingly, x-rays don't match symptoms. A person with significant changes on x-ray may only experience mild symptoms, whereas a person with minor changes may experience severe symptoms. People often worry that if they experience intense pain with mild changes- that this will get worse. With Osteoarthritis symptoms, it is **not** a definite progressive scale. If you have mild changes it doesn't necessarily mean you will progress to develop moderate changes.

¹ Zengini, E., Hatzikotoulas, K., Tachmazidou, I. et al. *Genome-wide analyses using UK Biobank data provide insights into the genetic architecture of osteoarthritis*

Will you need surgery?



The majority of people with Osteoarthritis are able to self manage symptoms. Only a small percentage of patients with Osteoarthritis require a knee replacement.

Symptoms of osteoarthritis

Pain is the most common reason to seek assistance. Pain can vary between an ache, throbbing and sharp pain. Pain and stiffness can get worse by doing too much or too little activity.

There is intermittent swelling of the knee which can vary from time to time. It may occur if you have been doing a lot more (for example, walking a lot more on holiday).

Some people experience a feeling of the joint giving way or grinding which can be due to pain or weakness of the surrounding muscles of the joint.

Flare-ups of osteoarthritis

A flare up of pain is when your joint pain is more painful than your normal pain level. It can occur from doing too much, too little or for no reason at all.

The nature or intensity of the pain can be different from your usual pain.

Flare ups are normal and the number of flare ups varies from person to person.

Flare ups do not mean that the joint changes are getting worse. It is normally due to an irritation of the fluid surrounding the knee- in particular it is a warning signal that you may need to modify your activity or exercise levels to help manage your pain.

Flare ups are temporary. However, the length of time can vary from a few days to months.

Contributing factors to pain



Joint changes only play a part in the pain that you experience. We know that other factors can influence the pain that you feel.

Pain messages from the joint, mix with signals from the brain such as anxiety, emotions and memory – all of these combine to determine the pain that you feel. These other influencing factors of pain will affect some people more than others.

Friends and family

The way friends and family act towards you can affect your perception of pain. If someone acts in a negative way towards you or constantly asks about your pain, you are more likely to feel more negatively about your pain. You may perceive the pain to a greater extent than if family members allow you to manage your symptoms independently. In addition if you are over-protected you are likely to be less active which in turn leads to more pain.

Health beliefs

Everybody has different health beliefs – these are created from your life experiences. A person who believes their joints are becoming damaged due to a particular activity is likely to feel greater pain during an activity than to somebody who does not.

Negative beliefs such as thinking your mobility will get so bad that you will be unable to walk will worsen feelings of pain and coping. Whereas positive beliefs such as, “if I pace my activities and carry on with an active lifestyle, I will be able to manage my symptoms more easily”, can improve your ability to cope.

Fear

Fear of movement can also increase pain. Avoiding movement can cause your joints to stiffen and the surrounding muscles to weaken – this can cause an increase in pain.

Anxiety and depression

Mood can influence your pain. If you are stressed, anxious, depressed or frustrated then you may notice that your pain increases. This increase in pain can then cause you to feel more stressed or anxious, therefore creating a vicious cycle. People who are feeling anxious or depressed are more likely to have negative thoughts; which means their coping mechanisms are not as effective to manage their pain.

Recognising these symptoms is the first step. Strategies such as relaxation and exercise can help you to manage this.

The importance of thoughts

Remaining positive about your symptoms, continuing to stay active and doing the things you enjoy will help you cope with your symptoms more effectively and feel less pain. Whereas negative thoughts or focusing on the pain tends to reduce activity levels and cause an increased feeling of pain, making it more difficult to cope and function with your symptoms.

Patients often report to physiotherapists that when their mood is low their pain is worse.

Exercise

Exercise is one of the best methods to treat the symptoms of osteoarthritis. Although the thought of it can be daunting, a regular exercise programme to suit your needs is sometimes all that is required in the management of osteoarthritis.

Strengthening exercise

Specific muscle strengthening exercises can help strengthen the muscles surrounding your knee providing more support which can help reduce pain. There are a variety of ways that you can do these exercises. Many of which can be done at home with no equipment, please see the home exercises form provided. If you are a member of a gym there are also muscle gym-based strengthening exercises too.

If you are not a gym member already but are interested in becoming one there is opportunity for you to be referred to xcite following completion of today's session. If referred, you will receive 3 months free membership. We can advise the gym instructor of what exercises are best for the treatment and management of your condition. You can also become a member of a private gym if this suits you better, where you can take along the exercises provided today and work at your own leisure.

Aerobic exercise

Aerobic exercises get your heart and lungs pumping. They include swimming, walking, cycling, aqua aerobics, gym based exercises such as bike or cross-trainer and many more. There may even be some exercise classes and groups in your local area which may be suitable for you.

How often should you exercise?

Any increase in aerobic activity is beneficial. The Department of Health recommends 2 ½ hours of exercise in a week. This can be accumulated in different ways (for example: exercising 30 minutes 5 times per week; or ten 15 minute brisk walks per week; or three 30 minute swims and one 60 minute cycle). These guidelines are recommendations only. Bear in mind that these guidelines are for people with no pain, therefore you may have to gradually increase or pace the amount of exercise that you do. Remember something is better than nothing.

You may find it easier to increase the amount of weekly exercise that you do gradually. If you have a flare up of your symptoms it is important to take rest days and pace your activities accordingly.

What type of exercise is best for osteoarthritis?

Research tells us that any form of regular exercise is helpful for reducing pain, improving function and quality of life in people with osteoarthritis of the knee. Therefore, find something that you enjoy and which suits your needs.

Lifestyle changes

Simple lifestyle changes can significantly help- for example: using stairs, walking to shops, going out for a walk at lunchtime can all add up.

Activity tracker apps or watches can be a great way to keep track of your exercise and can also help you to pace your daily activities by monitoring how much you have done each day which may help to manage your osteoarthritis symptoms.

Goals

If you are feeling motivated following the information today, it may be helpful to set goals. It is important to be realistic. For example, there is no point aiming to exercise 5 times per week if work or home life are too busy to allow this. Likewise, don't aim for swimming if you hate the thought of getting your hair wet. Similarly, the type and amount of exercise can change depending on time of year or weather.

Make your goals realistic, achievable and important to you. Have an action plan of the steps that you will take to achieve these goals.

Benefits of exercise

There are many benefits of exercise, including:

- Reducing the risk of stroke
- Giving you a greater sense of well-being
- Reducing your risk of, and helping to manage heart disease
- Reducing depression and anxiety
- Weight loss
- Reducing the risk of trips and falls
- Reducing the risk, stopping, slowing and helping to manage Diabetes
- And many more.

Weight loss

BMI or body mass index, is worked out from your body weight in relation to your height and tells you if you are overweight. Weight loss can be highly effective in the management of osteoarthritis. As previously advised, 3-4 times your body weight goes through your knees. So if you lost 1lb- which is equivalent to the weight of a tin of beans, then that equates to 3-4lb off of the knee, which is the weight of a 2 litre bottle of fizzy juice.

So remember, any weight loss can be helpful.

Pain relief medication

Paracetamol – is often the first medication offered. It can be over the counter or prescribed. It is a simple pain killer that normally can be used long-term.

Topical pain relief – creams/gels such as Ibuprofen gel that can be applied to skin. Again these can be prescribed or over the counter.

Anti-inflammatories – these can help pain by reducing inflammation around the joint. There are more side effects with anti-inflammatories and other considerations if you are taking other forms of medication. It is advised that you speak with your GP or pharmacist before taking this medication.

Prescription only pain-relief – these are strong painkillers (such as Tramadol or co-codamol) that are sometimes provided if greater pain relief is needed. These can only be prescribed.

Corticosteroid injections – This is an anti-inflammatory injection into the joint. They are most beneficial to manage moderate to severe pain at the time of a flare up. These may give some short term relief in some cases. There is a limit to the number of joint injections that can be performed per year.

Self-help for pain

- **Ice and heat**
- **TENS** (Transcutaneous electrical nerve stimulation): This is a small electronic device that sends impulses to the nerve endings via pads that are placed onto your skin. It produces a tingling sensation that helps to block pain messages that are sent to the brain. Some people find TENS beneficial – for other it does not help
- **Walking poles**– can help reduce load going through your knee. Many patients are able to increase walking/distance speed when using poles
- **Walking sticks**– can also help to reduce the load going through your knee, helping you to remain more active
- **Footwear**- footwear with hard soles provides less shock absorption and tends to increase the pain within your knee. We recommend that you wear cushioning footwear. Insoles provide shock absorption. Supportive slippers are also good at home and when on holiday, think about wearing supportive sandals rather than flip flops
- **Knee supports**- some people find knee supports and braces helpful. They work for some but not for others, they don't stop the muscles working so they won't cause any further harm.

Complimentary medicine

Glucosamine has been reported to benefit some people, however overall the evidence does not support routine use.

Acupuncture may provide short term relief for some people. This is not offered in the NHS but can be sought out privately.

Hyaluronic acid injections are not offered as part of routine care. They are not approved by the guidelines of the NHS general council as there is not enough evidence to recommend their use above other interventions.

People with knee osteoarthritis have told us these tips that might help you manage your pain

“At night sleep with a pillow between your knees”

“Losing a little weight makes a difference”

“When kneeling, use a cushion”

“Move your feet when turning corners”

“Bend and straighten your knee a few times before standing up”

What further options are available to you from here?

Physiotherapy options

If after reading through this information pack, you feel confident to manage your symptoms yourself and do not feel that you require anything further at this stage, you do not need to contact us. You will automatically be signed up to the Physiotherapy SOS service; whereby you will be kept on our patient list for the next 3 months.

If in this time you feel that you require anything further from us with regards to your knee please phone us on **0131 536 1060 (option 3)**, and ask for the physiotherapist that you initially spoke to. If you do not require further input during this time, you will be discharged from our physiotherapy service as a patient.

If immediately after reading through this information pack, you feel like you require a further one-to-one physiotherapy appointment as you feel you cannot manage your symptoms with the given advice, you can call **0131 536 1060 (option 3)** and ask to speak to your referring physiotherapist.

If you feel like you need to discuss the possibility of being considered for a steroid injection, you can contact your referring physiotherapist on **0131 536 1060 (option 3)** to discuss this option.

Xcite referral

If you are interested in being referred to Xcite for the membership, call your referring physiotherapist on **0131 536 1060 (option 3)**.

If you are interested in getting some help and advice regarding weight loss then please contact your GP for referral to weight management services. Alternatively, you can access the NHS weight management plan online via the NHS website search engine.

Thank you for taking the time read through this information pack- we hope that you have found it helpful.

References

Zengini, E., Hatzikotoulas, K., Tachmazidou, I. *et al.* Genome-wide analyses using UK Biobank data provide insight into the genetic architecture of osteoarthritis. *Nat Genet* 50, 549–558 (2018).
<https://www.nature.com/articles/s41588-018-0079-y>

<https://www.versusarthritis.org/media/14594/state-of-musculoskeletal-health-2019.pdf>

This leaflet was compiled by the St John's Hospital, West Lothian Physiotherapy Dept in association with the Patient Information Leaflet Group, NHS Lothian Physiotherapy Services, 2020

This leaflet should only be used by specific individuals following physiotherapy assessment. If you have any concerns please approach your physiotherapist.