



Practice
Plus
Group

Osteoarthritis of the knee joint



Information for guided patient management

Provided by

Practice Plus Group MSK, Buckinghamshire

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Anatomy of the knee

The knee joint is formed where the femur (thigh) bone meets with the tibial (shin) bone and the patella (kneecap) meets with the femur (thigh) bone. It is the largest and most complex joint in the body. The joint is supported by ligaments. The knee is a common joint in which to develop osteoarthritis with the condition affecting approximately 8 million people in the UK.

It is estimated that a total of 39,523 people aged 45 or over in Buckinghamshire live with knee osteoarthritis. This means that of the total Buckinghamshire population aged 45 years or over, 17.4% are estimated to have knee osteoarthritis (overall prevalence). This is similar to the overall England prevalence of 18.2%. (The MSK Calculator 2015, Arthritis Research UK)

What is osteoarthritis?

Osteoarthritis (OA) is the most common form of arthritis and can affect any joint in the body.

The main problem is wear to the cartilage which covers the ends of the bones. Normally the smooth, slippery cartilage helps the joint to move smoothly. In OA the cartilage becomes thinner and rougher. The bone underneath then tries to repair this wearing but sometimes overgrows, altering the shape of the joint.

It is more common in older people and particularly affects the joints that get heavy use. Other commonly affected joints are the hips and often the bases of the thumb and the big toe joint.

Osteoarthritis can also result from previous damage to the joint, for example, a fracture or previous inflammation in the joint.

Osteoarthritis is a long-term condition. This leaflet will discuss the symptoms of knee osteoarthritis and some of things that you can do to help best manage it.

Common symptoms of knee osteoarthritis

Pain - Usually sharp pain on movement particularly when performing weightbearing activity such as walking and climbing stairs. Pain is usually better with rest but may present lying in bed if one knee rests on the other.

Stiffness - You may notice some restricted knee movement on bending and straightening your knee. This may seem worse after periods of rest, generally first thing in the morning and on rising from sustained sitting.

Swelling - Soft or hard swelling may occur around the knee joint. A benign, palpable lump (known as a Bakers cyst) may sometimes develop at the back of the knee joint.

Crepitus - A grating sound or sensation may occur on movement of the knee caused by friction between bone and cartilage. This is known as Crepitus.

Deformity - In the later stages of the condition, the knee joint shape can alter, often appearing enlarged, especially on the inner aspect. The leg alignment may alter to either a varus or valgus positioning.

Giving Way / Locking - Sometimes the affected knee might give way when putting weight onto it, in part due to weakness and wasting of your thigh muscle. This can make the knee feel momentarily unstable. Knees can sometimes lock as a result of joint changes. This can be an isolated incident or happen intermittently. A fully locked knee requires orthopaedic review.

Common risk factors for osteoarthritis

Nearly anyone can develop osteoarthritis. Factors that make it most likely are:-

Age - Being in your late 40s or older

Weight - You are overweight

Gender - You are Female

Familial link / genetic factors - Your parents or siblings have had osteoarthritis

Previous injury - Previous severe knee injuries or fractures may predispose the joint to osteoarthritis in later life.

Other inflammatory conditions - If your knee has been subject to damage from other diseases such as gout or Rheumatoid arthritis.

Important things I can do to help myself

Osteoarthritis symptoms can vary over time. The condition often follows patterns of flare ups and remissions. This does not necessarily mean that the condition will get any worse but does mean that a person may find themselves having good and bad symptom days. Management is about managing the condition not curing it. If you have been diagnosed with osteoarthritis it is important that you do as much as you can to help yourself to best manage the condition. Things which may help your management are:-

Weight Loss - Losing weight if you are overweight will help to take the pressure off your knee joint(s) and will help to reduce the risk of your osteoarthritis getting worse over time. It will also prevent onward referral delay should a surgical solution be needed.

Exercise - Regular exercise to keep your knee joint moving and the supporting muscles strong is very important. General aerobic exercise can help with weight loss and stimulate endorphin production to help with your pain and general feeling of wellbeing. Pacing your activities is key to overall management.

Reducing joint stress - You can reduce the stress on your knee joint by wearing appropriate cushioned and supportive footwear, by using a walking stick and by pacing your activities.

Pain relief - Painkillers (analgesics) or anti-inflammatory tablets. Topical anti-inflammatory creams and gels as recommended by your GP. Take a painkiller before getting active to avoid pain later and before bed to help get a better night's sleep. You can also try using a pillow between your knees in side-lying.

Swelling - If your knee is particularly swollen it may help to elevate the leg and use a covered ice pack (frozen peas) for 10-20 mins at a time to help contain the swelling.

Joint aching - If the joint is not swollen but just achy, you may benefit from applying a heat pack or wheat bag to keep the joint warm on colder, damper days and to help sleep.

Available Treatments if Self-Management is not helping

Topical cream - Your GP may recommend capsaicin cream

Stronger pain relief - Your GP may recommend stronger pain relief such as Cocodamol or Tramadol

Injection therapy - A steroid injection into the painful joint may be considered. There is substantial evidence for steroid injection therapy providing short-term pain relief and limited evidence for more durable benefit up to 12 months. (Bellamy et al, 2006) and (Cheng et al, 2012). The duration of relief will vary from person to person ranging from a few weeks to a few months. If repeat steroid injection is required after having received two or three, you may need to consider surgery as the injections cannot be given indefinitely.

Surgery - Knee Replacement Surgery (at a location of your choice) may be considered if osteoarthritic change is moderate to severe or very severe, if self management options are no longer effective and you have mobility issues. Surgery can be an effective treatment for a small percentage of patients but not all osteoarthritic knees require surgery. Knee replacement surgery lasts on average approximately 15 years.

If you are considering knee replacement surgery, please access the below-listed weblink.

<http://www.buckinghamshire-music.nhs.uk/patient-information-0>

Select the option 'Do I need a Knee Replacement?' then read the given information and complete the multiple-choice questions listed.

This is a Shared Patient Decision Making Tool to help you with your decision as to whether you feel ready to proceed to a surgical solution for your osteoarthritic knee. It is also a required step before your therapist/GP makes a funding request application for any knee replacement surgery.

Alternative therapy

Acupuncture - Some studies have provided evidence that acupuncture can provide effective relief for pain and physical dysfunction associated with knee osteoarthritis.

Transcutaneous electrical nerve stimulation (TENS) - Though the research results for this type of therapy are mixed, some people find this treatment effective for pain relief by modifying pain messages sent to the brain. TENS machines can be purchased in some pharmacists.

Hyaluronic acid injections - In private practice Hyaluronic Acid injections are sometimes considered singly or as a course.

Stem cell therapy - This is not mainstream treatment yet, but early trials of stem cell research are being funded in some areas, aiming to regenerate cartilage using the body's own cells. Selection for trials will depend on location and eligibility criteria set by the researchers

Self-help and daily living

Work & money - Many people with osteoarthritis are able to continue with their work. However, if your osteoarthritis is severe, your ability to continue with your job may be compromised. Work Assessments may be arranged via your employer's Occupational Health Department or your local Jobcentre Plus to best advise you on ways you may be able to change your work or to implement useful equipment to help make your job easier. Retraining may also be an option in some cases.

You may be eligible for financial support. -

Statutory Sick Pay: Payable by your employer if you have a job but are unable to continue with your work because of illness.

Employment & Support Allowance: For people who are not in work and cannot find work as a result of their illness.

Personal Independence Payment: If you are aged 64 years or under and need help with personal care or are having walking difficulties.

Attendance Allowance: If you are aged 65 or over.

Carer's Allowance: If you are caring for someone with Rheumatoid Arthritis.

Other: Other benefits may be obtainable if you are on a low income or have children living at home. Check with your local Citizens Advice Bureau.

Sleep - electric blankets, warm baths or heat packs before bed may help to ease pain to help you sleep. If need take a painkiller to help ease night-time symptoms. Try a pillow between your knees.

Stress - People with higher pain levels can be more prone to stress, anxiety and depression.

Talking to Others: Discuss any concerns with your healthcare team.

Meditation/Relaxation: Find alternative ways to unwind and de-stress. Meditation and relaxation can help patients to stay calmer, to remain positive and to control pain better.

Support Groups: Seek out local support groups – check with your GP or local library.

Socialising: Try to maintain your social contacts. They can be an invaluable source of support.

Key points to remember

- Looking after your joints can help to ease stiffness and pain and prevent further damage. Exercise and weight loss are key factors in reducing the pain from osteoarthritis.
- Try to build exercise into your daily routine for the most benefit. Start slowly and build up gradually. Try to continue regularly especially if your symptoms improve. Ask your GP about Exercise on Prescription. This is a Scheme available in some areas.
- Take pain relief before being active to avoid onset increased pain during or after the activity.
- Drugs often used to help alleviate osteoarthritis work in different ways. You may be able to take a combination to help manage your symptoms. Check with your GP their recommendations for you.
- Keeping your knee joint moving and your supporting muscles strong will help to reduce any giving way episodes your knee may experience and may help to enable you to keep working if you still are. It will also stand you in better stead for recovery should you opt for a surgical solution at some point.
- Finding the right balance between rest and exercise can be difficult but will be easier if you pace your activities over the day. Try to do a similar amount of activity each day as tolerated. Break up larger tasks to smaller manageable chunks.
- Lower heeled shoes with good cushioned soles (trainers) will give more shock absorption. Conversely, high heels will put added strain on your knee and big toe joints by causing your pelvis to rotate forwards and may increase your knee pain.
- If you take any supplements or other over the counter medicines always check with your healthcare team in case they interfere with other medicines you are taking. Always discuss any medication side effects with your GP.
- Staying positive can help improve your mood and pain levels. Developing good coping strategies early on can help you to feel more in control and reduce fear and negative emotions that can lead to depression.

Further resources

Comprehensive Guide to Living with Osteoarthritis (Keele University)

Guidebook:

www.jigsaw-e.com/pat-focus/guidebook/

<https://jigsaw-e-com/wp-content/uploads/2018/10/osteoarthritis-guide.pdf>

Online Information:

<https://keele-oaguidebook.azurewebsites.net>

Keele University Pain Recorder App

<https://jigsaw-e.com/delivery-toolkit/pain-app/>

Verus Arthritis Website

www.versusarthritis.org

Helpline Tel: 0800 5200 520

Knee Pain Exercise Leaflet:

<https://www.versuarthritis.org/media/3091/knee-pain-exercise-sheet.pdf>

Knee Pain Exercise Sheet:

<https://www.versusarthritis.org/media/21787/kneepain-exercise-sheet.pdf>

OA Knee Booklet:

<https://www.versusarthritis.org/media/1259/osteoarthritis-of-the-knee-information-booklet.pdf>

Keep Moving Exercise Booklet:

<https://www.versusarthritis.org/media/3097/keep-moving-poster.pdf>

Arthritis Action

www.arthritisaction.org.uk/living-with-arthritis/resource-centre/exercises/

Chartered Society of Physiotherapy

<https://www.csp.org.uk/public-patient/rehabilitation-exercises/knee-pain#html>

Arthritis Research UK

Copeman House, St Mary's Court, St Mary's Gate, Chesterfield, Derbyshire, S41 7TD

www.arthritisresearchuk.org

Helpline Tel: 0300 790 0400

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Cheng OT, SouzdaInitski D, Vrooman B et al. Evidence-based knee injections for the management of arthritis. *Pain Med* 2012;13:740–53. 10.1111/j.1526-4637.2012.01394

Versus Arthritis, 2019 - <https://www.arthritisresearchuk.org/>

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Appendix 1: knee exercises for mobility and strengthening (Page 1 of 2)

- **Sitting Leg Extension:** Sit well back on a chair with knees flexed at 90 degrees and feet flat. Straighten one leg and hold for 10 secs. Keep your knees level. Repeat 10 times and change legs. As you improve, flex your ankle and bring your toes towards you in the air. You can add light ankle weights as tolerated
- **Sitting Leg Flexion:** Sit on a chair with knees flexed at 90 degrees and feet flat. Bend one leg and hold for 10 secs. Keep your knees level. Repeat 10 times and change legs. As you improve, you can add light ankle weights as tolerated
- **Sit to Stand:** Sit on a chair. Stand up and then sit back down again without using your hands to push. This will help you to engage your leg muscles more. Perform the movement slowly with control. Repeat for 1 min. If the chair is too low, try using a cushion. Remove again when not needed. For progression, increase the number completed within one minute as able.
- **Leg Slide:** Sit supported on the floor, your bed or sofa with your legs stretched out in front. Slowly bend one knee bringing your heel towards your bottom until you feel a comfortable knee stretch. Hold x 5 secs. Slide your leg back to the straight position and hold for a further 5 seconds. Repeat 10 times each leg. You can use a plastic bag over the foot or tea tray under the foot to help the foot slide better.
- **Step Ups:** Step up on to the bottom step of stairs with your left foot. Bring up your right foot. Then step down with your left foot and take down your right foot. Repeat with each leg, stopping when you start to get short of breath. Hold a bannister rail if needed. Progress by trying to increase the number of steps ups you can manage in 1 minute.
- **Knee Extension Stretch:** Lay on your back on the floor or your bed. Place a towel roll under your ankle. Gently but firmly push the back of your knee towards the floor or bed. Feel your thigh muscles contract and the tissues at the back of the knee and calf stretch out. Hold for 5 secs. Repeat 5 times each leg.
- **Knee Extension over a Towel Roll:** Lay on your back on the floor or your bed. Place a towel roll under your knee in the knee crease. With your knee maintaining contact with the towel lift your lower leg off the surface. Bend your ankle bringing your toes towards you. Repeat 10 times and then change legs.
- **Straight Leg Raise Lying:** Lay on your back on the floor or your bed. Bend your left knee up with your foot flat. Hold the other leg straight and lift your foot just off the floor/bed. Hold for 5 seconds and lower. Repeat 5 times.

Appendix 1: knee exercises for mobility and strengthening (Page 2 of 2)

- **Seated Inner Knee Squeezes:** Sitting on a chair. Place a towel roll between your knees. Squeeze your knees together, simultaneously contracting your buttocks by clenching them and contracting your lower abdominals. Breathe normally throughout. Do not hold your breath. Repeat 10 times.
- **Wallslides with Towel Roll:** Stand with your back against a wall. Place a towel roll between your knees. Holding the towel between your knees, contract your lower abdominals as you slowly slide you back down. Bend your knees to approximately 30 degrees. Breathe normally throughout. Do not hold your breath. Repeat 10 times.
- **Leg Cross:** Sit on a chair, edge of table/bed. Cross your ankles. Push the uppermost leg downwards and the downmost left upwards against each other. Feel your thigh muscles tense up. Hold for 10 seconds then relax. Complete 4 reps then change over legs and repeat
- **Mini Supported Knee Bends:** Sit on a chair, edge of table/bed. Cross your ankles. Push the uppermost leg downwards and the downmost left upwards against each other. Feel your thigh muscles tense up. Hold for 10 seconds then relax. Complete 4 reps then change over legs and repeat.