OA knees - TK

Wyre Forest Health Partnership

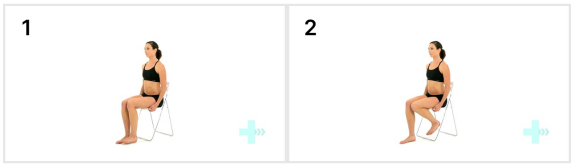
Please see the exercise and information sheets
gradually build up the sets/repetitions as able over the next few weeks

1 Set / 3 Reps / 60 s hold

1. Passive knee extension stretch supine

Lie on your back with the foot of your affected leg resting on some pillows.
Make sure there is a gap between your leg and the bed as you rest here, trying to straighten the knee as much as you can.

1 Set / 3 Reps / 30 s hold



2. Active knee flexion in sitting

Sitting up straight in a chair, bend your symptomatic knee, pulling your heel back under the chair.

2 Sets / 12 Reps / 5 s hold

3. Isometric hamstring in sitting

Sit in a chair with your legs bent.
Place your good leg behind the calf of your affected leg.
Try to bend your affected leg, whilst resisting the movement with your other leg.

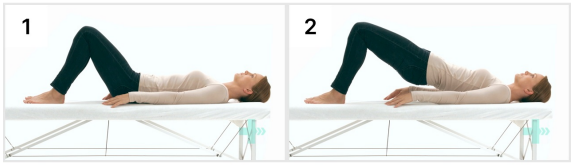
1 Set / 5 Reps / 10 s hold

4. Isometric quads in sitting

Sit in a chair with your legs bent.
Place your good leg over the shin of your affected leg.
Try to straighten your affected leg, whilst resisting the movement with your other leg.

3 x day build up to max contraction without pain, whne this is achieved move onto the band

1 Set / 3 Reps / 30 s hold

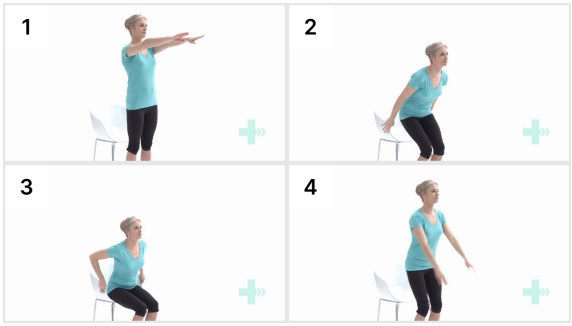


5. Bridge on bed

Lie on your back.
Bend both knees and place your feet flat on the bed.
Lift your buttocks from the bed.
Place your buttocks back on the bed.
Repeat this exercise and remember to continue to breathe properly.

Gradually build upto 30 seconds

3 Sets / 8 Reps



6. Stand-to-sit, sit-to-stand training using hands

Stand with the chair behind you and your arms stretched out in front of you.
Slowly sit down in the chair, lightly using your hands to assist.
Try to sit in a controlled manner by placing yourself gently on the chair using your hands as support as required.
Lean slightly forward and stand up from the chair.
Try not to favour one side and use your hands to help you as required.
Keep repeating this sequence for as long as directed.
Remember as you stand up, to lean forward whilst bending at the waist so that your head is positioned over your toes.
This will make it easier for you to stand up from the chair.
You should do this activity as fast as you can without feeling like you will lose your balance, and all the while using a controlled movement.

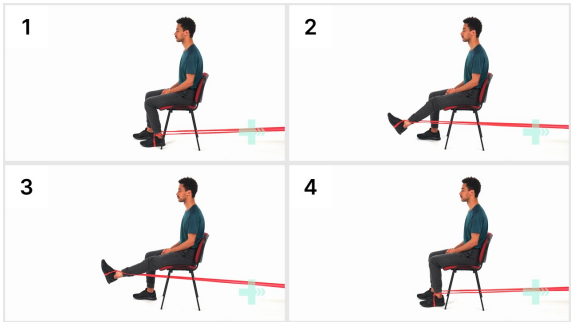
Adjust the height of the chair depending on your pain and strength.
Keep safe and steady with the exercise.

2 Sets / 12 Reps

7. Gentle squat

Stand behind a chair.
Reach your hands forward onto the back rest.
Bend both knees into a squatting position, allowing your hand to slide over the back rest.
Push through your legs and return to standing.
Repeat.
Return to the starting position.

3 Sets / 8 Reps



8. Resisted seated knee extension - open chain

If available, you can use a cable machine for this exercise.
Alternatively, fix a resistance band to a solid object at the floor height behind you.
Sit in a chair with your feet flat on the floor and loop the resistance band around your midfoot.
When ready, keep the back of your thigh against the chair and straighten your knee against the resistance of the band.
In a controlled manner, allow your knee to bend back to the starting position.

build upto 5 sets ove rthe next 3-4 weeks. then increase resistance as able

KNEE OSTEOARTHRITIS

What is it and tips for self-management

What is knee osteoarthritis and what to expect?

Osteoarthritis (OA) is a long-term condition that can impact any joint in the body, with the knee being among the most commonly affected joints, along with the hip and hand. Knee OA can occur at any age, but it is more likely to develop as we get older.

Those who have a history of knee joint injury have a higher chance of developing knee OA at younger age. Even though it is not an inevitable part of aging it is so common that it is sometimes considered as part of the normal aging process.

OA affects the entire joint, including ligaments, joint capsules, muscles and nerves, as well as the bones and the joint cartilage. OA is not a result of one single thing, but a combination of a wide range of systemic, genetic, biomechanical and environmental factors that can contribute to the development of OA. We do not know enough about the risk factors yet, but the following factors can predispose us to OA:

- Obesity (not only due to the increased loading to the joint but also due to the metabolic factors associated with obesity).
- Previous injury to the joint.
- Increased age.
- Female sex.
- Family history of the condition (genetics).
- Abnormal loading or alignment.
- High levels of (repetitive) physical loading (e.g. participation in sport/physically demanding work).

Symptoms

The extent of changes in the joint does not correlate very well with the severity of the symptoms experienced with OA. In fact, it should be noted that not everyone with OA will experience symptoms, and for those who do, these symptoms may fluctuate and change over time.

Individuals with knee OA may experience:

- Pain
  - often related to activity and eases with rest, but may become more persistent and occur at rest and at night.
  - might be experienced along the joint line between your thigh and shin bones, in front of your knee around your kneecap or, in some cases, the pain can be more widespread elsewhere in the body.

- Stiffness
  - especially after periods of not moving, e.g. in the morning or after sitting for long periods of time.
- Functional limitations
  - e.g. difficulties with walking, going up and down stairs, squatting down.
- Muscle weakness
  - especially in your thigh muscles.
- Reduced joint range of motion, and crepitation (noise) from the joint during movement.
- Fatigue
  - i.e. feeling of tiredness, exhaustion or lack of energy.

Knee OA and pain

Pain is the primary reason individuals seek care for OA. Previously, it was believed that pain was directly linked to changes in the joint structures. For instance, it was assumed that the 'thinner' your cartilage, the more severe your symptoms. However, now we know that this is not the case and in fact there are multiple factors, many of which we can modify, that in combination influence your symptoms.

Pain is an uncomfortable sensory and emotional experience. It acts as an alarm response created by your nervous system. Your brain receives various signals originating from your body, but also other information e.g., your past experiences, beliefs and emotions, etc. and if needed it raises an alarm, i.e. pain.

In people with OA, pain can be related to:

- an injury to the knee joint.
- an injury to the neural structures.
- an inflammation in the joint which is sometimes seen in OA.
- other factors affecting your pain experience such as emotional state (e.g. anxiety or depression), tiredness, pain beliefs and previous experiences.

The “alarm system” that is your pain can be sensitised so that, for example normal touch can be misinterpreted as potentially harmful and therefore felt as pain. This is more common with persistent pain.

However, not all individuals with knee OA have symptoms. 15% - 81% of people with OA changes in their knees have symptoms, which means 19% - 85% of individuals experience no symptoms at all.

How is knee OA diagnosed?

Imaging is not needed to diagnose knee OA. A health care professional can diagnose knee OA using clinical criteria such as a presence of pain, stiffness, crepitus (i.e. popping, clicking and/or cracking sound) and the age of the individual.

How do I manage my knee OA?

The goal of managing knee OA is to manage your pain and other symptoms, improve your level of functioning, and enhance your quality of life. In other words, we can not reverse the changes in your knee joint, but we can manage and reduce the symptoms so that you can enjoy your life to the fullest with as few limitations as possible.

Knee OA symptoms can often be greatly reduced with conservative (i.e. non-surgical) management, and therefore many individuals do not need joint replacement surgery (i.e. arthroplasty). The first line of management comprises physical activity and exercise, education, and when needed, weight management and pain medication. The severity of your OA does not influence the possible benefits you may achieve from these first line managements.

Your health care practitioner can provide you with important information, knowledge and tips, but YOU hold the key to managing your knee health in the long term.

Physical activity and exercising

Engaging in regular physical activity and exercise is highly recommended, as it not only helps in managing your pain and maintaining or improving your functional abilities but may also positively impact your mental health and overall wellbeing. Since pain and functional limitations can adversely affect your mood, as well as your physical and social activities, participating in physical activity and exercise can help to boost your self-confidence, reduce stress, enhance social function and overall mental wellbeing, proving that you're capable of doing more than you might believe.

It is not uncommon to feel that using and loading your knee will further harm the joint structures. However, you can feel safe to move as physical activity and exercise does not do harm to your joints and joint structures. Actually, it can improve the joint cartilage at early stages of OA.

Physical activity includes specific exercises such as strengthening, but also any other activity where the primary aim is not necessarily to exercise e.g. walking to the store, gardening, cleaning, taking the stairs instead of the lift/elevator, etc. Incorporating active elements into your daily routine, such as walking instead of driving, is a great way to build up your weekly activity. Keep in mind that spending too much time sitting can actually worsen your symptoms and increase your risk of developing other age-related issues such as Type 2 diabetes and heart problems.

In addition to being active in your daily routines, it is recommended to engage in regular exercise such as progressive strengthening exercises and aerobic exercises such as walking.

Does it matter how and how much I move?

Essentially, it's up to you to choose the activities that are easily accessible and enjoyable as this will help you to stay consistent with the routine. Some people prefer group settings, while others enjoy home-based workouts. The key is to engage in regular, long-term exercise (ideally something every day).

The optimal dosage and progression of physical activity and exercise is not yet fully understood. We know that not being active is not the best fit for joint health, nor is extreme loading. Moderation will be beneficial for your knjoint health (and your health overall). Ideally you should have an exercise program individually tailored to your needs together with your health-care practitioner that you follow on a regular basis and where the intensity and/or duration should be gradually increased over time.

Digital tools, like mobile apps, can be helpful for getting used to a routine and learning specific exercises recommended by your healthcare practitioner. Even doing just a few exercises consistently, preferably every day, can make a difference.

In general, it is advised to follow recommendations from the World Health Organization (WHO) as abilities and conditions allow. Individuals with knee OA may have other longstanding conditions that would also benefit from a healthy and active lifestyle. However, it is good to acknowledge with your health care practitioner how these conditions need to be considered when planning your physical activity and exercise programs.

The current guidelines from the World Health Organization (WHO) recommends adults the following weekly levels of physical activity:

- Aerobic physical activity:
  - 150 to 300 minutes of moderate-intensity, or;
  - 75–150 minutes of vigorous intensity, or;
  - a combination of vigorous and moderate.

- Strengthening exercises:
  - for all major muscle groups;
  - at moderate or greater intensity;
  - on 2 or more days a week.

WHO also recommends:

- reduced time spent inactive;
- increased time spent active at any intensity (e.g. take the stairs instead of the elevator);
- to do aerobic and/or strengthening exercises more than recommended for additional health benefits.

Load management/activity modification

Flare-ups are quite common in knee OA. During flare-ups, when symptoms are more intense, you may need to take it easier and pace yourself. Try to remain active, but perhaps in shorter bouts, with more breaks and /or gentler activities e.g. water-based training. Also take advantage of mobility aids such as a stick or a walker to reduce the strain when needed. Using walking aids can help you to stay active and do things that matter to you, which is crucial in OA management.

Exercise and physical activity can also occasionally result in an increase in symptoms. However, this does not mean the exercise or activity is harmful or dangerous to your joint health. As you continue with your exercise regimen for a month or so, it's likely that these flare-ups will occur less frequently.

Take care of your overall well being

It is recommended to take care of yourself overall. As mentioned earlier, pain is not strictly a result of structural changes in the joint. Other things affect your pain experience and prognosis.

For example, if you are experiencing sleep problems, low mood or excess stress it is important to address these issues so seek further support and advice, if needed.

Weight management

It is recommended to maintain or aim for a healthy weight. In the case of obesity or being overweight, weight] management should include adjustments to your physical activity and diet. Healthy weight has benefits that are wider than just the management of the knee OA, but even a small reduction in weight (if obese/overweight) can have a positive impact on your pain. Seek more advice and support from your health care practitioner if needed.

It is never too late to start caring for yourself, but it is good to acknowledge that:

- maintaining weight can be easier than getting rid of weight (especially as you age).
- maintaining muscle strength takes less effort than getting stronger.
- maintaining activity levels can be easier than increasing them.

If you wait until your symptoms get worse before you start caring for yourself, it will require more effort to achieve.

Pain medication

In general, the use of pain medication in OA is ideally a short-term treatment to manage pain and allow you to stay active. Topical Non-Steroidal Anti-Inflammatory Drugs (topical NSAIDs) may be beneficial. If topical NSAIDs are not effective or are not suitable then oral NSAIDs can be considered. However, it is good to check with your healthcare practitioner first as oral NSAIDs are not risk free and suitable for all, especially if you have other health conditions and/or medications.

It is recommended to use medication for the shortest possible time and the lowest effective dose.

Current recommendations do not support the use of strong opioids, Glucosamine or intra-articular hyaluronan injections. Nor is Paracetamol recommended as first line treatment due to lack of evidence supporting its effectiveness. Corticosteroid injections may be considered for short-term pain relief if e.g. other suitable pain medications are not an option or are ineffective.

Other considerations

Cold/heat and manual therapy, such as passive joint range of movement exercises, can be used as adjunct therapies for short-term pain management, if needed. However, it is good to acknowledge that the effectiveness is not certain.

Before investing a lot of money into electrotherapies (e.g. TENS), acupuncture or dry needling, it is good to acknowledge that these are likely not effective and therefore not recommended as part of your first line treatment.

Generally, the use of supports and braces are not recommended. However, under certain conditions, such as joint instability, they may be considered. It's advisable to consult with your healthcare provider to determine if this is an appropriate option for your unique situation.

What about knee replacement surgery?

In cases where sufficient improvements in pain and functioning are not achieved after actively following this conservative management approach for the recommended time, and when symptoms significantly affect your quality of life, joint replacement surgery may be a viable option to consider. However, one should acknowledge that surgery is not an effective pain management treatment for all.

If the management approach selected for you is not helping within the discussed time, or if you're having trouble with or are uncertain about any aspect of the approach (exercises, what to do during flare-ups, etc.), please reach out to your healthcare professional for a follow-up or advice on what to do next.

Have patience! It's important to dedicate yourself to rehabilitation, including regular activity and exercises for a minimum of six weeks before trying to determine the effectiveness of the conservative management.

Key take home messages

- Pain is not a good indicator of the severity of any structural changes and vice versa.
- Increased pain does not mean you are doing something harmful that will damage your joint.
- Physical activity and exercise, education and activity modification are the first line treatment of knee OA.
- First line treatment does not depend on the severity of OA.
- Regular physical activity and exercise are safe and can improve your symptoms.

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