

# Arthritis (osteoarthritis) and exercise

## What is osteoarthritis?

Osteoarthritis (OA) is a common chronic disorder of the joints that predominantly affects older people but can also affect younger individuals following joint injury. In normal joints, cartilage covers the surfaces of the joints and helps to absorb shock and allows smooth movements. In OA, the cartilage of the affected joint wears down until little or none remains, and the opposing bones rub together. Extra new bone may also form around the joint surfaces. These effects cause pain and restrict joint movement. The most common joints affected by OA are those of the hips, knees, big toe, spine and hands.

## How is osteoarthritis diagnosed?

A health professional can generally diagnose OA on the basis of reported symptoms and physical examination of the joint. Six key features allow a confident diagnosis including persistent knee pain, knee stiffness for less than 30 minutes, reduced function, joint crepitus, restricted motion and bony enlargement. Several tests can aid in diagnosis if necessary.

- X-rays may show narrowing of the joint space (from cartilage loss), bony outgrowths, thickening of the bone under the cartilage, joint misalignment or cyst formation.
- An MRI (magnetic resonance imaging) scan can demonstrate early changes in the cartilage that cannot be seen on X-ray, and changes in other joint structures such as bones and ligaments.
- A full blood count and the erythrocyte sedimentation rate (the rate at which the red blood cells settle to the bottom in a blood sample) are usually normal, but these measures can be important to rule out other inflammatory conditions.

Importantly, changes seen on X-ray or MRI do not correspond well with the pain that a person may experience. For example, a person can have mild changes on X-ray, but experience severe pain, and vice versa.

## How does exercise help?

All clinical guidelines recommend exercise to manage OA. Considerable research shows that exercise benefits people with a wide range of disease severities, including people with severe pain or changes seen on X-ray. Overall, exercise is as effective in relieving symptoms as are pain medications and anti-inflammatory drugs. However, exercise is safer and has fewer side effects.

Exercise can help to:

- reduce pain
- increase muscle strength
- improve the range of joint motion
- improve balance
- prevent de-conditioning (loss of fitness and muscle wasting)
- improve physical function
- improve wellbeing.

## What types of exercise is best?

Many types of exercise are beneficial for people with OA. The choice of exercise should take into account your age, functional ability, other health conditions and personal preference. Choose a type of exercise that you enjoy and can easily incorporate into your daily life. Strength (resistance) training and/or aerobic exercise are recommended forms of exercise.

**Strength training** can be performed at home or at the gym. The thigh, hip and calf muscles, which are



important for daily function, are often weak in people with OA. Resistance can be applied with weights, elastic tubing or body weight

- **Aerobic exercise** can be performed by yourself, with a friend or as part of a group. Activities may include walking, cycling, or using a rowing machine or a seated stepper. High-impact exercises, such as jogging, place high loads on joints and therefore should be avoided.
- **Aquatic (water) exercise** can be done individually or in a class or group. People who are overweight or those with severe disease may find aquatic exercise particularly useful. The water buoyancy minimises the load on the joints and reduces pain on weight-bearing. Water exercise can be useful before progressing to land-based exercise.
- **Other types of beneficial exercise** include tai chi, balance exercises, and stretching to improve the range of joint motion and flexibility.

Before starting a physical exercise program, it is recommended that you receive a comprehensive assessment by an appropriately qualified health care provider. This assessment should include clinical evaluation of your OA, and should identify any other health conditions that may be worsened by exercise.

## Points to remember

- Aim to exercise 4–5 times per week for at least 30 minutes.
- You may experience some discomfort in the affected joint during exercise — this is normal and does not indicate a worsening of the OA. However, a substantial increase in pain or swelling during, or following, exercise (that lasts more than several hours) can suggest that modifications to your exercise program are needed. An exercise physiologist or physiotherapist can assist you here.
- Begin the program slowly and progress gradually.
- You will gain the greatest benefits if you perform the exercises regularly.
- Because benefits are lost if you stop exercising, use strategies to help you continue: keep a log book; set achievable goals; ask for support from a partner, family or friends; and vary your exercise program.
- A health practitioner overseeing your exercise program can improve results.
- You may choose to do your exercise program at home, in a gym or in a group setting.

If you are overweight, losing weight by modifying your diet will improve the outcomes of your exercise program.

## References and further information

Exercise is Medicine Australia [www.exerciseismedicine.org.au](http://www.exerciseismedicine.org.au)

Find an Accredited Exercise Physiologist [www.essa.org.au](http://www.essa.org.au)

Exercise Right [www.exerciseright.com.au](http://www.exerciseright.com.au)

Arthritis Australia [www.arthritisaustralia.com.au](http://www.arthritisaustralia.com.au)

1. Bennell KL, Hinman RS. A review of the clinical evidence for exercise in osteoarthritis of the hip and knee. *J Sci Med Sport* 2011; 14(1): 4–9.
2. Uthman, O. A., et al. (2013). "Exercise for lower limb osteoarthritis: systematic review incorporating trial sequential analysis and network meta-analysis." *BMJ* 347: f5555.
3. Juhl C, Christensen R, Roos EM et al. Impact of exercise type and dose on pain and disability in knee osteoarthritis: A systematic review and meta-regression analysis of randomized controlled trials. *Arthritis Rheum* 2013 epubl
4. Lange AK, Vanwanseele B, Singh MAF. Strength training for treatment of osteoarthritis of the knee: A systematic review. *Arthritis Rheum* 2008; 59(10):1488–94.
5. Messier SP, Mihalko SL, Legault C, et al. Effects of intensive diet and exercise on knee joint loads, inflammation, and clinical outcomes among overweight and obese adults with knee osteoarthritis: the IDEA randomized clinical trial. *JAMA* 2013; 310:1263–1273
6. The Royal Australian College of General Practitioners (RACGP). (2009). *Guideline for the non-surgical management of hip and knee osteoarthritis July 2009*. South Melbourne: RACGP.

