

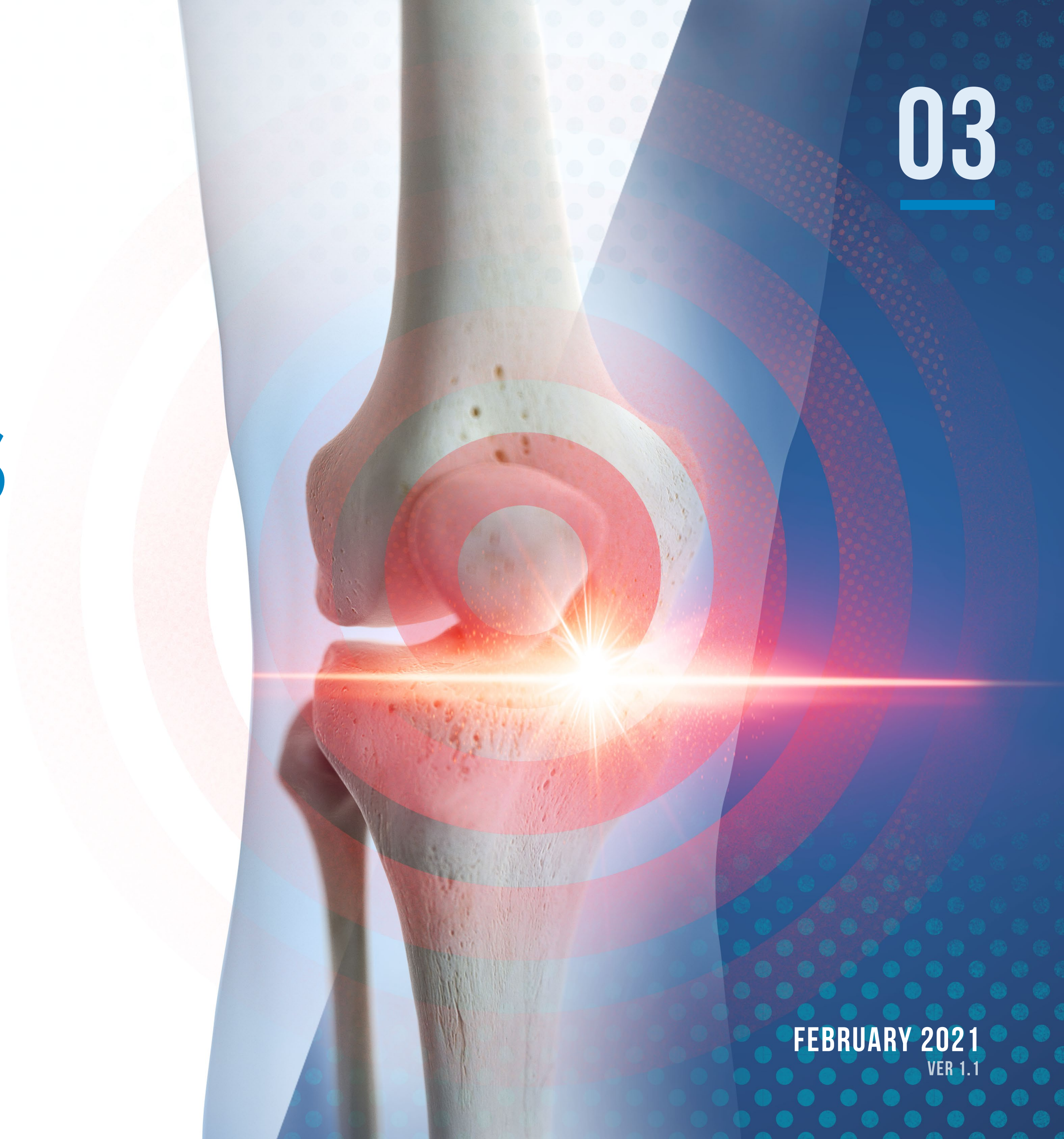


**bpacnz**  
PRIMARY CARE  
UPDATE SERIES

# OSTEOARTHRITIS

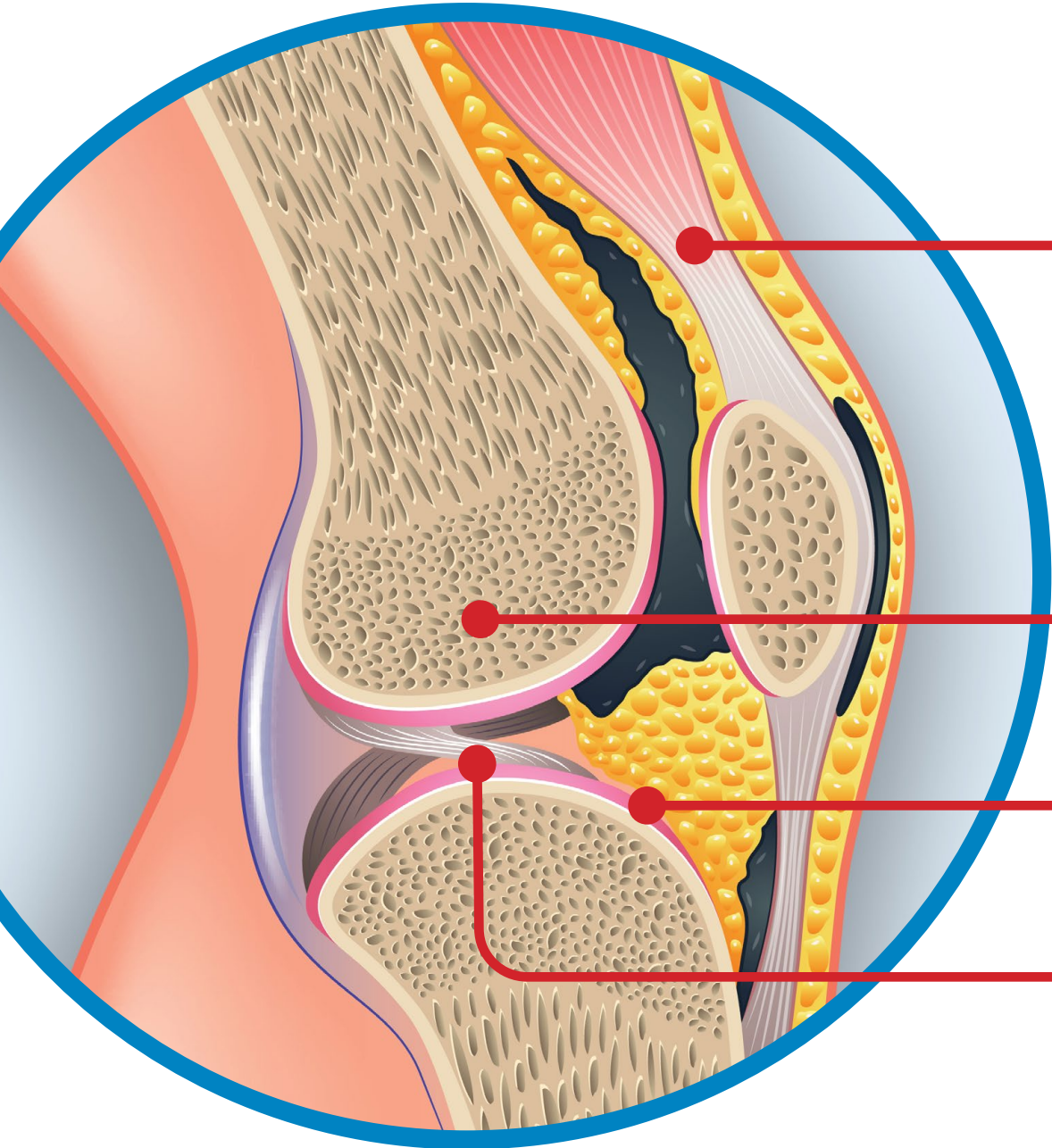
## EPISODE 3: A FOCUS ON EXERCISE

03



FEBRUARY 2021  
VER 1.1

# Exercise is a first-line treatment for people with osteoarthritis (OA)



## Local benefits:

**Strengthens muscles** and benefits **cartilage health**; improving:

- Stability/falls risk
- Physical function/capacity

**Decreases loading** through joint with improved muscle control

**Decreased** pain and stiffness

In the longer-term can **reduce** local joint (and systemic) **inflammation**

Exercise type	Features	Examples
<b>Aerobic</b>	Generally improves cardiovascular fitness, reduces fatigue, promotes weight loss (alongside healthy diet)	Walking, jogging, exercise bike, swimming and other water-based activities
<b>Strengthening</b>	Exercises to improve and maintain muscle strength; often focuses on single muscle groups for non-weight bearing joints, or combinations of muscles for weight bearing joints	Bicep curls, tricep extensions, side lateral raises, wall push-up, squats, calf raises
<b>Neuromuscular</b>	Exercises that focus on limb alignment, balance, motor control; often involves weight bearing functional activities	Gentle stretching and movements that take joints through their full range of motion, tai chi

## The wider benefits of exercise:



As effective/better than NSAIDs and intra-articular corticosteroids at reducing pain, without the adverse effects, and **has additional benefits such as reducing CVD risk**



**Reduced dependence on opioids** and analgesics in general



**Delay need for surgery**



**Improved mental health** and social engagement

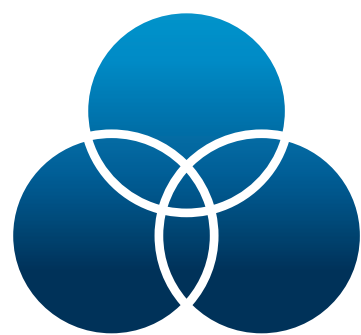


Improved **sleep**

CVD, cardiovascular disease; NSAIDs, non-steroidal anti-inflammatory drugs.

1. Davis AM, Davis KD, et al. Curr Treat Options in Rheum. 2020;6:146–59.

# The specifics of exercise



**There is insufficient evidence to recommend one type of exercise or combination;** a good exercise regimen incorporates a range of activities based on patient preferences, functional capacity and goals

- **Remember:** many exercise benefits are non-specific, e.g. patients with hand OA will still benefit from an aerobic programme



For examples of exercise for patients with osteoarthritis, see: <https://www.versusarthritis.org/about-arthritis/exercising-with-arthritis/>



**Land-based exercises are the gold-standard activity;** however, water-based activities, e.g. aqua jogging, may be a good stepping stone for some patients



**As a general target, each week patients should aim for:\***

<b>1 Daily “range of motion” exercises</b>	<b>2 150 minutes (or more) of cardiovascular exercise</b>	<b>3 Two sessions of resistance/strengthening training</b>
<ul style="list-style-type: none"><li>● Help warm-up for exercise and improves functional capacity, e.g. side bends, arm circles, torso rotations, shoulder shrugs</li></ul>	<ul style="list-style-type: none"><li>● Moderate-to-vigorous</li><li>● Increase duration as endurance builds</li><li>● Complete over multiple sessions, e.g. 5× 30 minute bike ride or walk</li></ul>	<ul style="list-style-type: none"><li>● 6–10 repetitions at moderate intensity or 10–15 repetitions at low intensity</li><li>● 2–3 sets of repetitions per exercise</li><li>● Resistance levels is dependent on the patient’s pre-existing level of strength; can be increased using dumbbells or exercise bands</li><li>● Examples include bicep curls, squats, hip extensions, knee extensions, step ups</li></ul>
<b>Spread activity out over the day/week as needed; dedicated rest days are not usually required</b>		

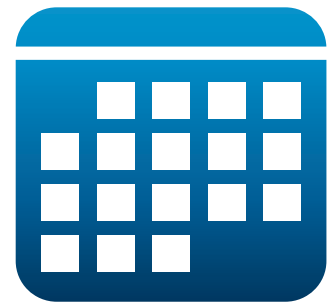
\* Depending on disease severity and functional capacity. OA, osteoarthritis

1. Davis AM, Davis KD, *et al.* Curr Treat Options in Rheum. 2020;6:146–59; 2. Physical activity for arthritis. Centers for Disease Control and Prevention. Available at: <https://www.cdc.gov/arthritis/basics/physical-activity-overview.html> (Accessed Feb, 2021); 3. Rausch Osthoff A-K, Niedermann K, *et al.* Ann Rheum Dis 2018;77:1251–60.

## Physiotherapy input is often beneficial



Guided exercise and strengthening yields significantly better outcomes than unsupervised programmes



Studies suggest that **6–12 supervised exercise sessions** benefit patients the most



Physiotherapists can **help tailor programmes** for patients with severe disease or impairment, as well as **providing advice on appropriate footwear and orthotic devices**, such as shoe wedges, and the **use of walking aids, joint supports or bracing**



If physiotherapy cost or access is an issue, local mobility action programmes or other group-based activities (after a tailored discussion around exercise and OA) are alternatives

OA, osteoarthritis

1. Davis AM, Davis KD, *et al.* *Curr Treat Options in Rheum.* 2020;6:146–59; 2. Skou ST, Roos EM. *BMC Musculoskelet Disord.* 2017;18:72

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# Addressing patient concerns regarding exercise engagement

## Can a patient do too much exercise?



**Therapeutic levels of exercise does not wear down cartilage;** exercise will usually reduce pain long-term



**Discomfort during exercise is okay,** but if it interferes with sleep or lasts into the next day then the intensity and/or duration of exercise should be reduced accordingly

## What advice is there for patients reluctant to engage in exercise?



**Identify barriers and re-emphasise the long-term benefits** of exercise; these often outweigh short-term concerns



**Small steps may be required to achieve bigger goals;** improvements along the way may progressively increase positivity and encourage engagement over time

## Is it okay to take NSAIDs and other analgesics before exercise?

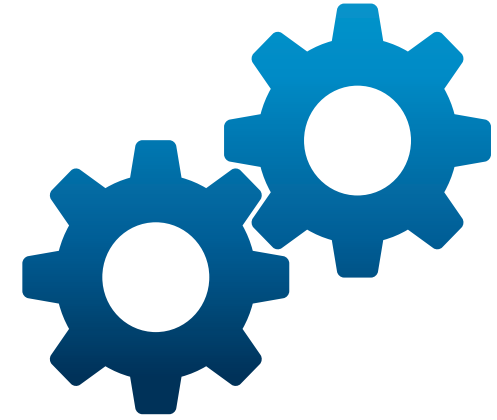


While there is no evidence that NSAID use before exercise provides any physiological benefit, **if it encourages a patient with OA to more effectively engage in exercise then it is generally unlikely to be damaging**



**The dose of an analgesic required for a patient to inadvertently damage joints** through over-exertion is much higher than what is typically prescribed for OA

# Patients already engaging in high level exercise that develop OA

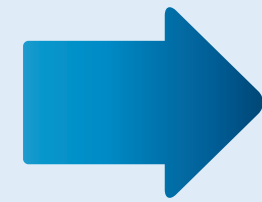


**The pathophysiology of OA is more than “wear and tear”** – OA onset does not necessarily mean that physical activity was the cause

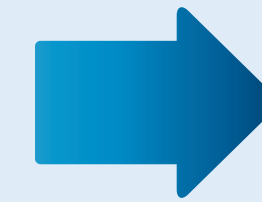
- For marathon runners, a decreased overall risk of OA has been reported (*see below*)

## Ponzio *et al*, 2018:

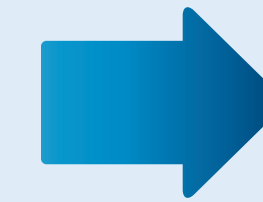
Investigated **675 marathon runners**  
(mean age 48 years)



These runners **ran a mean distance of 58 km weekly**  
(over a mean time of 19 years)



**8.8% had OA**  
compared with  
**17.9% in a matched population**



**Prior joint surgery** was the strongest predictor of pain and OA in marathoners



Evidence suggests that for **long distance runners who develop OA**, stopping running does not influence disease progression



Ultimately, **this type of exercise engagement should be guided by pain experienced;** if pain doesn't limit engagement, don't quit