

1 **NATIONAL INSTITUTE FOR HEALTH AND CARE**
2 **EXCELLENCE**

3 **Guideline**

4 **Osteoarthritis: assessment and management**

5 **Draft for consultation, April 2022**

This guideline covers the diagnosis, assessment and non-surgical management of osteoarthritis. It aims to improve management of osteoarthritis and the quality of life for people with osteoarthritis.

This guideline will update NICE guideline CG177 (published February 2014).

Who is it for?

- Healthcare professionals
- Commissioners of health and social care services
- People with osteoarthritis, their families and carers

What does it include?

- the recommendations
- recommendations for research
- rationale and impact sections that explain why the committee made the recommendations and how they might affect practice
- the guideline context.

Information about how the guideline was developed is on the [guideline's webpage](#). This includes the evidence reviews, the scope, details of the committee and any declarations of interest.

6

7

1	Contents	
2	Recommendations	3
3	1.1 Assessment and diagnosis	3
4	1.2 Information and support	3
5	1.3 Non-pharmacological management	5
6	1.4 Pharmacological management.....	8
7	1.5 Follow-up and review	10
8	1.6 Referral for joint replacement.....	11
9	1.7 Arthroscopic procedures	12
10	Terms used in this guideline	12
11	Recommendations for research	13
12	Key recommendations for research	13
13	Other recommendations for research	14
14	Rationale and impact.....	18
15	Context.....	33
16	Finding more information and committee details	34
17	Update information	34
18		

1 Recommendations

People have the right to be involved in discussions and make informed decisions about their care, as described in [NICE's information on making decisions about your care](#).

[Making decisions using NICE guidelines](#) explains how we use words to show the strength (or certainty) of our recommendations, and has information about prescribing medicines (including off-label use), professional guidelines, standards and laws (including on consent and mental capacity), and safeguarding.

2 1.1 Assessment and diagnosis

3 1.1.1 Diagnose osteoarthritis clinically without investigations in people who:

- 4 • are 45 or over **and**
- 5 • have activity-related joint pain **and**
- 6 • have either no morning joint-related stiffness or morning stiffness that
- 7 lasts no longer than 30 minutes.

8 1.1.2 Do not routinely use imaging to diagnose osteoarthritis unless there are

9 [atypical features](#) or features that suggest an alternative or additional

10 diagnosis.

For a short explanation of why the committee made these recommendations and how they might affect practice, see the [rationale and impact section on assessment and diagnosis](#).

Full details of the evidence and the committee's discussion are in [evidence review A: additional benefit of imaging for diagnosis](#).

11 1.2 Information and support

12 1.2.1 When giving information to people with osteoarthritis, their families and

13 carers, tailor it to their individual needs (such as language and culture),

14 ensure it is in an accessible format and follow the recommendations on:

- 1 • enabling patients to actively participate in their care in [NICE's guideline](#)
2 [on patient experience in adult NHS services](#)
3 • putting shared decision making into practice in [NICE's guideline on](#)
4 [shared decision making](#)
5 • delivering an approach to care that takes account of multimorbidity in
6 [NICE's guideline on multimorbidity](#).
- 7 1.2.2 Explain to people with osteoarthritis that:
- 8 • it is diagnosed clinically and does not need imaging **and**
9 • the core treatments for the condition are therapeutic exercise and
10 weight loss (if appropriate), along with information and support.
- 11 1.2.3 Advise them where they can find written and verbal information on:
- 12 • osteoarthritis and how it develops (including flares and progression
13 over time), and information that challenges common misconceptions
14 about the condition
15 • specific types of exercise
16 • managing day-to-day pain and changes in pain
17 • how to access additional sources of information and support after
18 consultations, such as peer-to-peer support and support groups
19 • benefits of treatment.

For a short explanation of why the committee made these recommendations and how they might affect practice, see the [rationale and impact section on information and support](#).

Full details of the evidence and the committee's discussion are in [evidence review B: post-diagnostic information on osteoarthritis for people with osteoarthritis, their family and carers](#).

1 **1.3 Non-pharmacological management**

2 **Therapeutic exercise**

3 1.3.1 Offer tailored therapeutic exercise to all people with osteoarthritis (for
4 example, local muscle strengthening, general aerobic fitness).

5 1.3.2 Consider supervised therapeutic exercise for people with osteoarthritis.

6 1.3.3 Advise people with osteoarthritis that joint pain may increase when they
7 start therapeutic exercise. Explain that:

- 8 • doing regular and consistent exercise, even though this may initially
9 cause discomfort, will be beneficial for their joints
- 10 • long-term adherence to exercise increases its benefits.

11 1.3.4 Consider combining therapeutic exercise with an education programme or
12 behaviour change approaches in a structured [treatment package](#).

For a short explanation of why the committee made these recommendations and how they might affect practice, see the [rationale and impact section on therapeutic exercise](#).

Full details of the evidence and the committee's discussion are in [evidence reviews C: clinical and cost effectiveness of exercise for the management of osteoarthritis and K: clinical and cost effectiveness of treatment packages for the management of osteoarthritis](#).

13 **Weight loss**

14 1.3.5 For people with osteoarthritis who have excess weight or obesity:

- 15 • advise them that weight loss will improve their quality of life and
16 physical function, and reduce pain
- 17 • support them to choose a weight loss goal
- 18 • explain that any amount of weight loss is likely to be beneficial, but
19 losing 10% of their body weight is likely to be better than 5%.

20

1 For guidance and information on weight management, including
2 recommended interventions to support weight loss, see [NICE's](#)
3 [webpage on obesity](#).

For a short explanation of why the committee made this recommendation and how it might affect practice, see the [rationale and impact section on weight loss](#).

Full details of the evidence and the committee's discussion are in [evidence review D: benefit of weight loss for the management of osteoarthritis for people who are overweight or obese](#).

4 **Manual therapy**

5 1.3.6 Only consider manual therapy (such as manipulation, mobilisation or soft
6 tissue techniques):

- 7 • for people with hip or knee osteoarthritis **and**
- 8 • alongside therapeutic exercise.

9 1.3.7 If discussing manual therapy, explain to people with osteoarthritis that
10 there is not enough evidence to support its use alone for managing
11 osteoarthritis.

For a short explanation of why the committee made these recommendations and how they might affect practice, see the [rationale and impact section on manual therapy](#).

Full details of the evidence and the committee's discussion are in [evidence review E: clinical and cost effectiveness of manual therapy for the management of osteoarthritis](#).

12 **Acupuncture**

13 1.3.8 Do not routinely offer acupuncture or electroacupuncture to manage
14 osteoarthritis.

For a short explanation of why the committee made this recommendation and how it might affect practice, see the [rationale and impact section on acupuncture](#).

Full details of the evidence and the committee's discussion are in [evidence review F: clinical and cost effectiveness of acupuncture for people with osteoarthritis](#).

1 Electrotherapy

- 2 1.3.9 Do not routinely offer electrotherapy (such as transcutaneous electrical
3 nerve stimulation [TENS]) to people with osteoarthritis.

For a short explanation of why the committee made this recommendation and how it might affect practice, see the [rationale and impact section on electrotherapy](#).

Full details of the evidence and the committee's discussion are in [evidence review G: clinical and cost effectiveness of electrotherapy for the management of osteoarthritis](#).

4 Devices

- 5 1.3.10 Consider [walking aids](#) (such as walking sticks) for people with lower limb
6 osteoarthritis.
- 7 1.3.11 Do not routinely offer insoles, braces, tape, splints or supports to people
8 with osteoarthritis.

For a short explanation of why the committee made these recommendations and how they might affect practice, see the [rationale and impact section on devices](#).

Full details of the evidence and the committee's discussion are in [evidence review H: clinical and cost effectiveness of devices for the management of osteoarthritis](#).

1 **1.4 Pharmacological management**

2 **Topical, oral and transdermal medicines**

3 1.4.1 If pharmacological treatments are needed to manage osteoarthritis, use
4 them:

- 5 • alongside non-pharmacological treatments and to support therapeutic
6 exercise
- 7 • at the lowest effective dose for the shortest possible period of time.

8 1.4.2 Offer a topical non-steroidal anti-inflammatory drug (NSAID) to people
9 with knee osteoarthritis.

10 1.4.3 Consider a topical NSAID for people with osteoarthritis that affects other
11 joints.

12 1.4.4 If topical medicines are ineffective or unsuitable, consider an oral NSAID
13 for people with osteoarthritis and take account of:

- 14 • potential gastrointestinal, renal, liver and cardiovascular toxicity
- 15 • any risk factors the person may have, including age, pregnancy, current
16 medication and comorbidities.

17
18 Consider adding a gastroprotective treatment (such as a proton pump
19 inhibitor) for people with osteoarthritis while they are taking an NSAID.

20 1.4.5 Do not routinely offer weak opioids unless:

- 21 • for short-term pain relief
- 22 • all other pharmacological treatments are contraindicated, not tolerated
23 or ineffective.

24
25 For more information about opioids, see [NICE's guideline on medicines](#)
26 [associated with dependence or withdrawal symptoms](#).

27 1.4.6 Do not routinely offer the following to people with osteoarthritis:

- 1 • paracetamol
- 2 • glucosamine.
- 3 1.4.7 Do not offer strong opioids to people with osteoarthritis.
- 4 1.4.8 If discussed, explain that there is no strong evidence of benefit for
- 5 paracetamol or glucosamine, and the risks of strong opioids may outweigh
- 6 the benefits.
- 7 1.4.9 Review with the person whether to continue treatment. Base the
- 8 frequency of reviews on clinical need.

For a short explanation of why the committee made these recommendations and how they might affect practice, see the [rationale and impact section on topical, oral and transdermal medicines](#).

Full details of the evidence and the committee's discussion are in [evidence review I: clinical and cost effectiveness of oral, topical and transdermal medicines for the management of osteoarthritis](#).

9 **Intra-articular injections**

- 10 1.4.10 Do not offer intra-articular hyaluronan injections to manage osteoarthritis.
- 11 1.4.11 Consider intra-articular corticosteroid injections when other
- 12 pharmacological treatments are ineffective or unsuitable. Explain to the
- 13 person that these will only provide short-term relief.

For a short explanation of why the committee made these recommendations and how they might affect practice, see the [rationale and impact section on intra-articular injections](#).

Full details of the evidence and the committee's discussion are in [evidence review J: clinical and cost effectiveness of intra-articular injections for the management of osteoarthritis](#).

1 **1.5 Follow-up and review**

2 **Follow-up appointments**

3 1.5.1 Consider patient-initiated follow-up for most people with osteoarthritis.

4 1.5.2 Consider planned follow-up for people with osteoarthritis when their
5 individual needs and preferences suggest that this is necessary, taking
6 into account:

- 7 • treatments or interventions that need monitoring
- 8 • their ability to seek help for themselves
- 9 • their occupation and activities
- 10 • the severity of their symptoms or functional limitations.

11
12 People with multiple long-term conditions are likely to benefit from a
13 tailored approach in line with [NICE's guideline on multimorbidity](#).

14 1.5.3 Advise people with osteoarthritis to seek follow-up if planned management
15 is not working within an agreed follow-up time or they are having
16 difficulties with the agreed approaches.

For a short explanation of why the committee made these recommendations and how they might affect practice, see the [rationale and impact section on follow-up appointments](#).

Full details of the evidence and the committee's discussion are in [evidence review L: regular follow-up and review](#).

17 **Imaging for management of osteoarthritis**

18 1.5.4 Do not routinely use imaging for follow-up and to guide non-surgical
19 management of osteoarthritis.

For a short explanation of why the committee made this recommendation and how it might affect practice, see the [rationale and impact section on imaging for the management of osteoarthritis](#).

Full details of the evidence and the committee's discussion are in [evidence review M: clinical and cost effectiveness of imaging during the management of osteoarthritis](#).

1 **1.6 Referral for joint replacement**

2 1.6.1 Consider referring people with hip, knee or shoulder osteoarthritis for joint
3 replacement if:

- 4 • their joint symptoms (such as pain, stiffness and reduced function) are
5 substantially impacting their quality of life **and**
6 • non-surgical management (for example, therapeutic exercise, weight
7 loss, pain relief) is ineffective or unsuitable.

8 1.6.2 Use clinical assessment when deciding to refer someone for joint
9 replacement, instead of systems that numerically score severity of
10 disease.

11 1.6.3 Do not exclude people with osteoarthritis from referral for joint
12 replacement because of:

- 13 • age
14 • sex
15 • smoking
16 • comorbidities
17 • overweight or obesity, based on measurements such as BMI.

18 1.6.4 If discussing referral for joint replacement, explain to the person being
19 referred that the risks of joint replacement can vary depending on BMI.

For a short explanation of why the committee made these recommendations and how they might affect practice, see the [rationale and impact section on referral for joint replacement](#).

Full details of the evidence and the committee's discussion are in [evidence reviews O: indicators for referral for possible joint replacement and P: outcomes of joint replacement surgery dependent on body mass index](#).

1 **1.7 Arthroscopic procedures**

- 2 1.7.1 Do not offer arthroscopic lavage or debridement to people with
3 osteoarthritis.

For a short explanation of why the committee made this recommendation and how it might affect practice, see the [rationale and impact section on arthroscopic procedures](#).

Full details of the evidence and the committee's discussion are in [evidence review N: clinical and cost effectiveness of arthroscopic procedures for the management of osteoarthritis](#).

4 **Terms used in this guideline**

- 5 This section defines terms that have been used in a particular way for this guideline.

6 **Atypical features**

- 7 Atypical features could include a history of trauma, prolonged morning joint-related
8 stiffness, rapid worsening of symptoms or the presence of a hot swollen joint.

9 **Flares**

- 10 A temporary worsening of symptoms (pain, swelling and stiffness) that:

- 11 • is worse than normal
12 • may affect sleep, activity, function and psychological wellbeing
13 • may lead to change in therapy for at least 24 hours.

14 **Treatment package**

- 15 A treatment package is defined as any treatment for osteoarthritis (including:
16 exercise, manual therapy, electrotherapy, acupuncture, devices and pharmacological
17 treatments) combined with 1 of the following:

- 1 • behaviour change approaches, including joint protection principles, pain coping
- 2 skills training (including spouse-assisted coping skills training), goal setting;
- 3 motivational coaching; weight management counselling and workplace risk
- 4 counselling
- 5 • an education programme given by 1 or more healthcare professionals over
- 6 multiple sessions, including those based on behavioural theory.

7 **Walking aids**

8 Walking aids include walking sticks, crutches, walking frames and rollators. They
9 support the person with osteoarthritis to move around independently and safely by
10 improving their walking pattern and balance or reducing weight bearing on the
11 affected joint.

12 **Recommendations for research**

13 The guideline committee has made the following recommendations for research.

14 **Key recommendations for research**

15 **1 Exercise**

16 What is the clinical and cost effectiveness of supervised group and individual
17 exercise compared with unsupervised exercise for people with osteoarthritis?

For a short explanation of why the committee made the recommendation for research see the [rationale section on therapeutic exercise](#).

Full details of the evidence and the committee's discussion are in [evidence review C: clinical and cost effectiveness of exercise for the management of osteoarthritis](#).

18 **2 Devices**

19 What is the clinical and cost effectiveness of devices compared with usual care for
20 the management of painful foot and or ankle osteoarthritis?

For a short explanation of why the committee made the recommendation for research see the [rationale section on devices](#).

Full details of the evidence and the committee's discussion are in [evidence review H: clinical and cost effectiveness of electrotherapy for the management of osteoarthritis](#).

1 **3 Topical medicines**

- 2 What is the clinical and cost effectiveness of topical non-steroidal anti-inflammatory
- 3 drugs and topical capsaicin for osteoarthritis-affected joints other than the knee?

For a short explanation of why the committee made the recommendation for research see the [rationale section on topical, oral and transdermal medicines](#).

Full details of the evidence and the committee's discussion are in [evidence review I: clinical and cost effectiveness of oral, topical and transdermal medicines for the management of osteoarthritis](#).

4 **4 Follow-up strategies**

- 5 What is the clinical and cost effectiveness of patient-initiated follow-up compared
- 6 with routine follow-up for people with osteoarthritis?

For a short explanation of why the committee made the recommendation for research see the [rationale section on follow-up appointments](#).

Full details of the evidence and the committee's discussion are in [evidence review L: regular follow-up and review](#).

7 **Other recommendations for research**

8 **Patient information**

- 9 What information on the management of flare-ups do people with osteoarthritis, their
- 10 family and carers need after diagnosis?

- 1 What information do people with osteoarthritis from different ethnic and
- 2 socioeconomic groups and those with learning disabilities, issues with health literacy
- 3 and severe mental illness (and their family and carers) need?

For a short explanation of why the committee made the recommendations for research see the [rationale section on information and support](#).

Full details of the evidence and the committee's discussion are in [evidence review B: post-diagnostic information on osteoarthritis for people with osteoarthritis, their family and carers](#).

4 **Manual therapy**

- 5 What is the clinical and cost effectiveness of manual therapy for people with
- 6 osteoarthritis, when used alone and when in combination with therapeutic exercise?

For a short explanation of why the committee made the recommendation for research see the [rationale section on manual therapy](#).

Full details of the evidence and the committee's discussion are in [evidence review E: clinical and cost effectiveness of manual therapy for the management of osteoarthritis](#).

7 **Acupuncture and electroacupuncture**

- 8 In which people with osteoarthritis could acupuncture or electroacupuncture be a
- 9 clinically and cost-effective treatment?

For a short explanation of why the committee made the recommendation for research see the [rationale section on acupuncture](#).

Full details of the evidence and the committee's discussion are in [evidence review F: clinical and cost effectiveness of acupuncture for people with osteoarthritis](#).

1 **Extracorporeal shockwave therapy**

- 2 What is the clinical and cost effectiveness of extracorporeal shockwave therapy for
3 managing osteoarthritis?

For a short explanation of why the committee made the recommendation for research see the [rationale section on electrotherapy](#).

Full details of the evidence and the committee's discussion are in [evidence review G: clinical and cost effectiveness of electrotherapy for people with osteoarthritis](#).

4 **Footwear**

- 5 What is the clinical and cost effectiveness of footwear for managing lower limb
6 osteoarthritis?

For a short explanation of why the committee made the recommendation for research see the [rationale section on devices](#).

Full details of the evidence and the committee's discussion are in [evidence review H: clinical and cost effectiveness of devices for the management of osteoarthritis](#).

7 **Topical and oral medicines**

- 8 What is the clinical and cost effectiveness of topical local anaesthetics for people
9 with osteoarthritis?
- 10 What is the clinical and cost effectiveness of antiepileptics and antidepressants
11 (other than duloxetine) for people with osteoarthritis?
- 12 What is the clinical and cost effectiveness of weak oral opioids for people with
13 osteoarthritis?

For a short explanation of why the committee made the recommendations for research see the [rationale section on topical, oral and transdermal medicines](#).

Full details of the evidence and the committee's discussion are in [evidence review I: clinical and cost effectiveness of oral, topical and transdermal medicines for the management of osteoarthritis](#).

1 Intra-articular injections

2 What is the clinical and cost effectiveness of intra-articular corticosteroids for
3 managing osteoarthritis-affected joints other than the knee?

4 What is the clinical and cost effectiveness of intra-articular stem cells for managing
5 osteoarthritis?

For a short explanation of why the committee made the recommendations for research see the [rationale section on intra-articular injections](#).

Full details of the evidence and the committee's discussion are in [evidence review J: clinical and cost effectiveness of intra-articular injections for the management of osteoarthritis](#).

6 Referral criteria for joint replacement

7 What are the most important indicators that someone with osteoarthritis (including
8 shoulder osteoarthritis) would benefit from joint replacement? For example:

- 9
- presence of night pain
- 10
- non-response to non-pharmacological interventions
- 11
- joint instability symptoms
- 12
- presence of flares
- 13
- numerical summary scores.

For a short explanation of why the committee made the recommendation for research see the [rationale section on referral for joint replacement](#).

Full details of the evidence and the committee's discussion are in [evidence review O: indicators for referral for possible joint replacement surgery](#).

1 **Imaging for management of osteoarthritis**

2 What is the clinical and cost effectiveness of imaging for informing non-surgical
3 management (for example, exercise or weight loss) in primary care for people with
4 osteoarthritis?

5 What is the clinical and cost effectiveness of imaging for use at different parts of the
6 care pathway (for example, primary care, intermediate care or secondary care)
7 before surgery for people with osteoarthritis?

For a short explanation of why the committee made the recommendations for research see the [rationale section on imaging for management of osteoarthritis](#).

Full details of the evidence and the committee's discussion are in [evidence review M: clinical and cost effectiveness of imaging during the management of osteoarthritis](#).

8 **Rationale and impact**

9 These sections briefly explain why the committee made the recommendations and
10 how they might affect practice.

11 **Assessment and diagnosis**

12 [Recommendations 1.1.1 and 1.1.2](#)

13 **Why the committee made the recommendations**

14 There was no evidence showing that imaging is beneficial for diagnosing
15 osteoarthritis. The committee agreed that imaging adds little value and that
16 osteoarthritis can be diagnosed by taking a thorough history and doing an
17 examination. They noted that current practice is to make a diagnosis based on
18 NICE's previous recommendation. This specified an age of 45 or older, activity-
19 related joint pain and no morning joint-related stiffness (or stiffness lasting no longer
20 than 30 minutes) as criteria for diagnosis. The committee agreed there was no
21 evidence to change this recommendation. They also noted that clinical diagnosis
22 without imaging would mean that second appointments or consultations to discuss
23 imaging results would not be necessary. The committee agreed that imaging can be

1 useful if [atypical features](#) are present that could suggest an alternative or additional
2 diagnosis, such as other inflammatory arthritides (for example, rheumatoid arthritis)
3 and malignancy.

4 **How the recommendations might affect practice**

5 Imaging is frequently used when diagnosing osteoarthritis, despite uncertainties
6 about its benefit, the resource implications and potential for delays in starting
7 management. The recommendations should reduce unnecessary resource use and
8 be cost saving.

9 [Return to recommendations](#)

10 **Information and support**

11 [Recommendations 1.2.1 to 1.2.3](#)

12 **Why the committee made the recommendations**

13 Evidence showed that generally people wanted more information about
14 osteoarthritis. This included information about the causes of osteoarthritis to address
15 any misconceptions about the condition, what their diagnosis means for the future
16 and where to find more information on self management. The committee based their
17 recommendations on the evidence and their experience. They agreed that it is
18 important to tell people that diagnosis is made clinically without imaging. This would
19 help reassure and dispel any belief that X-rays or other forms of imaging are needed
20 to diagnose osteoarthritis.

21 The committee noted the importance of information that offers hope for the future
22 and supports self-management strategies (for example, information that emphasises
23 symptom-reducing behaviours, like exercising). They agreed that explaining the core
24 treatments for osteoarthritis would help people understand that pharmacological
25 treatments are not a long-term solution. They also agreed that information about
26 recognising flares and how to manage changes in pain would help the person better
27 understand how their condition may vary over time and what they can do about it.
28 The committee noted more research was needed on information about managing
29 flares and information for different populations of people with osteoarthritis.

1 The committee made [recommendations for research on what information people with](#)
2 [osteoarthritis need](#).

3 The committee agreed that each person's experience of osteoarthritis differs and
4 therefore tailoring the information to their needs, as described in [NICE's guideline on](#)
5 [patient experience](#), is important. They also agreed that osteoarthritis is more
6 common in older people who are likely to have other conditions. Therefore, the
7 recommendations on delivering an approach to care that takes account of
8 multimorbidity in [NICE's guideline on multimorbidity](#) are particularly relevant to
9 people with osteoarthritis.

10 **How the recommendations might affect practice**

11 The recommendations generally reflect current practice because information is likely
12 to be already provided, but they advise on areas in which practice can be improved.

13 [Return to recommendations](#)

14 **Therapeutic exercise**

15 [Recommendations 1.3.1 to 1.3.4](#)

16 **Why the committee made the recommendations**

17 Evidence showed that exercise benefits people with osteoarthritis more than other
18 interventions looked at when developing this guideline. The committee concluded
19 that exercise has a clinically important benefit for people with osteoarthritis, as well
20 as general health benefits and a superior safety profile compared with other common
21 treatments, such as analgesia. The committee noted that exercise should be a core
22 treatment for people with osteoarthritis alongside information and support and weight
23 loss (if appropriate). The committee agreed that therapeutic exercise (exercise that
24 specifically aims to prevent progression and manage symptoms) was important.
25 Therefore, therapeutic exercise should be tailored to the needs of the person, such
26 as joint-site-specific exercises. Limited evidence showed that supervised exercise
27 had some benefits compared with unsupervised exercise. The committee's expert
28 consensus was that supervised exercise is likely to be of greater benefit than
29 unsupervised exercise for people with osteoarthritis. This is because supervised

1 exercise may enable tailored exercise and social support, which may increase
2 adherence and lead to people with osteoarthritis forming a regular exercise habit.

3 The committee also thought that shared decision making is important when deciding
4 the form of exercise delivery and type of exercise, as well as considering personal
5 preference and service availability. The committee, acknowledging the importance of
6 exercise, made further recommendations to support people to continue therapeutic
7 exercise by emphasising its benefits while acknowledging that exercise may initially
8 be difficult. They wanted to reassure people with osteoarthritis and healthcare
9 professionals that exercise is not harmful to osteoarthritic joints, and that doing
10 regular and consistent exercise over a long period of time can reduce pain and
11 increase functioning and quality of life.

12 The committee noted that further evidence may be needed and made a
13 [recommendation for research to compare the clinical and cost effectiveness of](#)
14 [supervised group and individual exercise with unsupervised exercise.](#)

15 Evidence showed that [treatment packages](#) had a clinically important benefit on
16 physical function compared with education or behaviour change interventions alone.
17 They also had consistent beneficial changes in quality of life, pain and physical
18 function compared with standard care. However, they showed no superiority to
19 individual therapies (such as exercise, manual therapy and electrotherapy). The
20 committee agreed that a person-centred approach is important. Additional education
21 or behavioural change approaches may help some people achieve their goals, but
22 others may not need this. Therefore, the committee recommended combining
23 therapeutic exercise as part of a structured treatment package because this may be
24 more suitable for some people and motivate them to continue with therapeutic
25 exercise.

26 **How the recommendations might affect practice**

27 Current practice around exercise therapy varies. These recommendations may lead
28 to a change in practice by recommending tailored exercise and using treatment
29 packages.

30 [Return to recommendations](#)

1 **Weight loss**

2 [Recommendation 1.3.5](#)

3 **Why the committee made the recommendation**

4 The committee acknowledged that evidence on the effects of weight loss for people
5 with osteoarthritis had limitations. However, for people with knee osteoarthritis,
6 evidence generally showed that as the amount of weight loss increased, the benefits
7 for quality of life, pain and physical function increased. The committee acknowledged
8 the challenges people can have with losing weight and maintaining this weight loss
9 and recommended that they are supported.

10 The committee acknowledged that, for people who are overweight, losing more than
11 10% of their body weight may be the most beneficial, but this may not be achievable
12 for all. They wanted to emphasise that losing any amount of weight would be
13 beneficial, but that losing more would have more benefits. They agreed that also
14 explaining that losing 10% of their body weight is likely to be better than 5% might
15 help provide an incentive and encourage weight loss. They also agreed that advising
16 on the amount of weight to lose can help people with osteoarthritis by providing a
17 target for them to work towards.

18 The committee determined that, although evidence was from people with knee
19 osteoarthritis, this could be applied to people with other osteoarthritis-affected joints.
20 This is because of the potential additional benefits of weight loss seen in other
21 populations, such as reducing inflammatory factors, that may be beneficial for all
22 joint sites and general wellbeing. The committee also agreed that osteoarthritis is a
23 multi-joint disease and people presenting with the condition in 1 joint may end up
24 getting it in another. Weight loss may help reduce this risk.

25 **How the recommendation might affect practice**

26 This recommendation somewhat reflects current practice but may lead to a change
27 in how people with osteoarthritis and healthcare professionals discuss weight loss.
28 This is unlikely to have a significant resource impact.

29 [Return to recommendation](#)

1 **Manual therapy**

2 [Recommendations 1.3.6 and 1.3.7](#)

3 **Why the committee made the recommendations**

4 The committee acknowledged recent evidence that showed some clinical benefits of
5 manual therapy for hip and knee osteoarthritis. However, the benefits were stronger
6 if manual therapy was combined with exercise. Clinical and economic evidence
7 showed that exercise alone was more effective than manual therapy alone and the
8 combination of manual therapy and exercise. So, the committee concluded that
9 manual therapy should only be considered alongside therapeutic exercise. Most
10 studies provided therapy for less than 3 months and on average for 7 weeks. The
11 committee agreed that the duration of manual therapy would be similar, but would
12 vary according to the person's needs. They agreed that further research was
13 needed, in particular evidence from well-powered, high-quality studies with adequate
14 blinding and on other osteoarthritis-affected joints. They made a [recommendation for
15 research on manual therapy for people with osteoarthritis used alone and in
16 combination with therapeutic exercise](#).

17 **How the recommendations might affect practice**

18 Current practice around manual therapy varies. Adding manual therapy to exercise
19 would be a slight change in practice, but it would not have a substantial resource
20 impact because it is not needed long term.

21 [Return to recommendations](#)

22 **Acupuncture**

23 [Recommendation 1.3.8](#)

24 **Why the committee made the recommendation**

25 The available evidence was predominantly for knee osteoarthritis. This showed a
26 lack of benefits of acupuncture and some evidence of harm. Economic evidence also
27 showed that using acupuncture for osteoarthritis is not cost effective, so the
28 committee did not recommend its routine use. There was some evidence of clinical
29 benefit and cost effectiveness for electroacupuncture but this is of very low quality

1 because of small study sizes and inconsistency between studies. Evidence for
2 electroacupuncture suggested it showed a benefit compared with sham acupuncture
3 but not compared with acupuncture or no treatment. The committee considered that
4 the inconsistent evidence could result from some people responding more to
5 electroacupuncture than others. Because there is uncertainty about who might
6 benefit from acupuncture or electroacupuncture, the committee made a
7 [recommendation for research on acupuncture and electroacupuncture for](#)
8 [osteoarthritis](#).

9 **How the recommendation might affect practice**

10 The recommendation reflects current practice so the committee agreed there should
11 be no change in practice or resource impact to the NHS.

12 [Return to recommendation](#)

13 **Electrotherapy**

14 [Recommendation 1.3.9](#)

15 **Why the committee made the recommendation**

16 Although there were many studies on electrotherapy, the findings were inconsistent
17 and mostly showed little benefit of electrotherapy. The committee acknowledged that
18 most studies were small with fewer than 100 participants and that evidence from
19 direct comparisons of electrotherapy with other interventions was uncertain. Based
20 on additional evidence published since the 2014 guideline, the committee agreed
21 there is not enough evidence to recommend electrotherapy, including
22 transcutaneous electrical nerve stimulation (TENS), for people with osteoarthritis.

23 Extracorporeal shockwave therapy showed some evidence of benefit compared with
24 a sham intervention. However, this evidence was uncertain because of the small trial
25 sizes and challenges in using appropriate sham techniques. The committee agreed
26 that further research using an appropriate sham with more than 50 participants in
27 each study arm is needed and made a [recommendation for research on](#)
28 [extracorporeal shockwave therapy](#).

1 **How the recommendation might affect practice**

2 The committee noted that although the use of some electrotherapy modalities in the
3 NHS has decreased, other modalities with unclear evidence of benefit continue to be
4 used. Also, people with osteoarthritis may self prescribe electrotherapy devices. This
5 recommendation may reduce the prescription and use of TENS.

6 [Return to recommendation](#)

7 **Devices**

8 [Recommendations 1.3.10 and 1.3.11](#)

9 **Why the committee made the recommendations**

10 Evidence from a small study on walking aids showed that they benefit quality of life
11 and reduce pain compared with no device. There was no evidence on adverse
12 events, but the committee agreed that the chance of adverse events with walking
13 aids was minimal. They agreed that the evidence, supported by their expert opinion,
14 was enough to recommend walking aids for people with lower limb osteoarthritis.

15 The committee concluded that there was not enough evidence to support the use of
16 insoles, braces, tape, splints or supports. They also noted that there is a potential
17 risk that some of these devices could cause significant adverse events, such as
18 blistering and other pressure damage. The committee acknowledged that research
19 on devices has challenges, such as appropriate sham devices for comparisons.

20 The committee agreed that further research is needed on devices, through studies
21 that have a larger number of participants, sufficient blinding and allocation
22 concealment. Because most of the evidence was for knee osteoarthritis, they made
23 a [recommendation for research on devices for painful foot and ankle osteoarthritis](#).

24 The committee also noted that evidence on footwear had limitations, and made a
25 [recommendation for research on footwear for managing lower limb osteoarthritis](#).

26 **How the recommendations might affect practice**

27 Use of devices for osteoarthritis is inconsistent in current practice. Currently, insoles,
28 braces, tape or supports may be used by some people with osteoarthritis because
29 they were previously recommended by NICE. The recommendations may change

1 practice with using devices. But, the practice of using walking aids is unlikely to
2 change. There is a potential for some cost savings to the NHS.

3 [Return to recommendations](#)

4 **Topical, oral and transdermal medicines**

5 [Recommendations 1.4.1 to 1.4.9](#)

6 **Why the committee made the recommendations**

7 The committee agreed that pharmacological treatments may be useful for reducing
8 symptoms and supporting people to start other more effective treatments, such as
9 therapeutic exercise. However, they noted that the risks of pharmacological
10 treatments should be understood and that treatments should not be overused or
11 used when they are not needed. The committee agreed that it was difficult to define
12 treatment strengths and durations that would be generalisable to everyone. This is
13 because people with osteoarthritis can have a variety of comorbidities and factors
14 that might influence treatment. Therefore, the committee emphasised that treatments
15 should use the lowest effective dose for the shortest possible time.

16 Topical non-steroidal anti-inflammatory drugs (NSAIDs) were clinically effective in
17 reducing pain for people with knee osteoarthritis and generally the most cost-
18 effective medicine for osteoarthritis. They were also associated with minimal adverse
19 events. Evidence on topical NSAIDs came from studies including people with knee
20 osteoarthritis and 1 study including people with hand osteoarthritis. The evidence
21 showed no clinically important difference for hand osteoarthritis, but the committee
22 noted this was uncertain because it was based on 1 study. The committee noted that
23 although evidence only showed benefit for knee osteoarthritis, other osteoarthritis-
24 affected joints may also benefit from topical NSAIDs. There was some evidence
25 showing that topical capsaicin reduces pain in knee osteoarthritis, but not hand
26 osteoarthritis, and has minimal adverse events. However, capsaicin is more
27 expensive and topical NSAIDs were considered a better option. The committee
28 made a [recommendation for research on topical medicines for osteoarthritis-affected](#)
29 [joints other than the knee](#).

1 Oral NSAIDs were found to be cost effective and evidence showed they slightly
2 reduced pain and increased physical function. The committee acknowledged the
3 [Medicines and Healthcare products Regulatory Agency \(MHRA\) safety warnings on](#)
4 [NSAIDs for cardiovascular safety, renal safety](#) and [gastrointestinal risk](#). They agreed
5 that NSAIDs, as well as other pharmacological treatments for osteoarthritis, should
6 be used for as short a time as possible and that the potential harms for
7 gastrointestinal, cardiovascular and liver and kidney adverse events should be
8 carefully considered when prescribing.

9 Evidence showed that adding gastroprotection can reduce gastrointestinal bleeding
10 or perforation. However, this was associated with an increase in cardiovascular
11 adverse events compared with oral NSAIDs alone. The committee agreed that this
12 may be unrelated to the addition of gastroprotection and that randomised controlled
13 trial evidence alone may not be the best source for safety evidence, because the
14 population size and length of follow-up are usually limited. Therefore, they also used
15 their clinical experience and guidance from other organisations, including the MHRA.
16 Based on this, the committee agreed that gastroprotection may be helpful for some
17 people, such as those at risk of gastrointestinal bleeding, and recommended
18 considering its use while prescribing NSAIDs.

19 Evidence showed that opioids also have the potential for harm, including
20 gastrointestinal and central nervous system adverse events. The committee
21 acknowledged further potential harms such as physical dependence, opioid-induced
22 hyperalgesia and tolerance. Cost-effectiveness evidence showed that
23 buprenorphine, a transdermal opioid, was generally more cost effective than oral
24 strong opioids (such as morphine, oxycodone and tramadol). This evidence was
25 from people having buprenorphine who had not had opioids before, but this was
26 generally not the case for people having oral strong opioids. All people had already
27 tried a type of analgesia such as NSAIDs or paracetamol. However, the committee
28 acknowledged the [MHRA safety warning on opioids](#) and recommendations in [NICE's](#)
29 [guideline on medicines associated with dependence or withdrawal symptoms](#), which
30 advises against the use of modified-release opioids. Therefore, the committee
31 recommended against the use of strong opioids. Evidence from 1 small study of
32 weak opioids showed a clinically important benefit in reducing pain. The committee

1 agreed that there was not enough evidence of benefit and on potential risks.
2 Therefore, they did not recommend their use unless for short-term pain relief and if
3 all other pharmacological treatments are contraindicated, not tolerated or ineffective.

4 Although paracetamol has a low potential to cause adverse events, evidence
5 showed that it has no additional benefit in reducing osteoarthritis pain and improving
6 quality of life and physical function compared with placebo. Evidence on
7 glucosamine was inconsistent and the largest benefits were shown by smaller
8 studies that were of lower quality. Because glucosamine is not used in current
9 practice and there is no strong evidence of benefit the committee recommended
10 against its routine use for people with osteoarthritis.

11 The committee determined that there was not enough evidence to make
12 recommendations on weak opioids, antiepileptics, antidepressants, rubefacients and
13 topical local anaesthetics. The committee made [recommendations for research on](#)
14 [antiepileptics, antidepressants and weak oral opioids](#) and [topical local anaesthetics](#)
15 [for osteoarthritis](#). Duloxetine was not included in the recommendation for research
16 because many studies have already investigated its use, but there is less evidence
17 for other antidepressants that may be used more regularly in the NHS to manage
18 pain (such as tricyclic antidepressants). They did not make a recommendation for
19 research on rubefacients because they did not think that these would benefit people
20 with osteoarthritis.

21 The committee agreed that pharmacological treatments should be periodically
22 reviewed with the person. They recommended this should be done according to
23 clinical need.

24 **How the recommendations might affect practice**

25 Current practice in pharmacological treatment for osteoarthritis varies in the types of
26 treatments used and how people access treatment (such as buying medicines over
27 the counter instead of accessing them through healthcare services). These
28 recommendations may cause changes in current practice towards using medicines
29 for a shorter time, increasing use of topical NSAIDs, and reducing use of
30 paracetamol and opioids.

1 [Return to recommendations](#)

2 **Intra-articular injections**

3 [Recommendations 1.4.10 and 1.4.11](#)

4 **Why the committee made the recommendations**

5 There was no evidence showing that hyaluronan injections improved quality of life or
6 physical function, or reduced pain, in people with knee or hip osteoarthritis. Evidence
7 showed a potential harm for hip osteoarthritis. Limited evidence for other
8 osteoarthritis-affected joints showed inconsistent benefits and some potential harms.
9 Based on their expert opinion, the committee agreed that these results were
10 generalisable to other forms of osteoarthritis and that hyaluronan injections should
11 not be offered.

12 Evidence showed that corticosteroid injections had inconsistent benefits on
13 improving quality of life and physical function for people with hip osteoarthritis, and
14 reducing pain for people with knee osteoarthritis. There was also no evidence
15 showing long-term benefit beyond 3 months. Given the potential benefits and
16 committee expert opinion, they agreed that intra-articular corticosteroids could be
17 considered for people with osteoarthritis if other treatments have not worked,
18 provided the person was made aware that the injection would only provide short-
19 term relief. Based on their expert opinion, the committee agreed that this evidence
20 was generalisable to other osteoarthritis-affected joints.

21 The committee acknowledged that there was a lack of consistent evidence on
22 corticosteroids (especially for non-knee joint sites), so they made a [recommendation](#)
23 [for research on intra-articular corticosteroids](#).

24 There was some evidence from very small studies that showed a potential benefit of
25 stem cell injections. The committee noted that this is an experimental treatment and
26 agreed that it should not be used outside research. They made a [recommendation](#)
27 [for research on intra-articular stem cell injections](#).

1 **How the recommendations might affect practice**

2 The recommendation for intra-articular hyaluronan injections reflects current practice
3 so the committee agreed there should be no change in practice or resource impact
4 to the NHS. Corticosteroid injections are used in current practice, but recommending
5 them only for the short-term relief of symptoms may lead to a reduction in their use
6 and a cost saving to the NHS.

7 [Return to recommendations](#)

8 **Follow-up appointments**

9 [Recommendations 1.5.1 to 1.5.3](#)

10 **Why the committee made the recommendations**

11 There was no evidence on follow-up for people with osteoarthritis. Therefore, the
12 committee based their recommendations on their expert opinion. In current practice,
13 follow-up is mainly symptom-led or people with osteoarthritis raise the condition as a
14 concern during follow-up consultations for other conditions. The committee agreed
15 that symptom-led follow-up is likely to be appropriate for most people with
16 osteoarthritis. This is because they may be able to self-manage their condition
17 effectively after getting information and guidance on management strategies.
18 However, the committee also acknowledged that follow-up should focus on the
19 person's needs, so there are some situations in which planned follow-up may be
20 necessary. The committee noted that agreeing a specific time for people to seek
21 additional help if the management is not improving their symptoms is important. They
22 also agreed that it was important to manage osteoarthritis and other conditions the
23 person may have holistically. Because there was no evidence in this area the
24 committee also made a [recommendation for research on the effectiveness of patient-
25 initiated compared with routine follow-up.](#)

26 **How the recommendations might affect practice**

27 These recommendations generally reflect current practice. Because they include self
28 management and pre-existing appointments for other conditions, they are unlikely to
29 cause a substantial increase in costs.

30 [Return to recommendations](#)

1 **Imaging for management of osteoarthritis**

2 [Recommendation 1.5.4](#)

3 **Why the committee made the recommendation**

4 There was no evidence on using imaging to manage osteoarthritis. Therefore, the
5 committee used their expertise to inform the recommendation. They acknowledged
6 that imaging was important for confirming the severity of structural joint changes
7 when planning or considering surgery. But it was unclear who should do this imaging
8 because some surgeons may only accept a referral for surgery if they are provided
9 with imaging results, whereas others may prefer to do their own imaging after
10 referral. However, in most cases, imaging should not be needed for managing
11 osteoarthritis because it does not guide how the condition will respond to treatment.
12 The committee made a [recommendation for research on using imaging to inform
13 non-surgical management of osteoarthritis](#).

14 **How the recommendation might affect practice**

15 The recommendation reflects current practice, so the cost impact is likely to be
16 minimal. It may be cost saving by reducing the use of imaging for people with
17 osteoarthritis.

18 [Return to recommendation](#)

19 **Referral for joint replacement**

20 [Recommendations 1.6.1 to 1.6.4](#)

21 **Why the committee made the recommendations**

22 Evidence on referral criteria for joint replacement was limited. This evidence
23 suggested that non-response to analgesics may be associated with a need for joint
24 replacement. Longer duration of symptoms did not appear to be associated with the
25 need for joint replacement, which may show that the symptom duration is less
26 relevant than non-response to treatments. Evidence for the Oxford Hip and Knee
27 scores and the Knee injury and Osteoarthritis Outcome score (KOOS) and Hip
28 disability and Osteoarthritis Outcome Score (HOOS) summary score showed that
29 these numerical scales alone were unlikely to determine whether someone should

1 have surgery, so they were not recommended for use. The committee agreed that
2 the decision to refer someone for joint replacement should be based on clinical
3 assessment after trying all appropriate treatments. Given the absence of evidence,
4 the committee made a [recommendation for research on indicators for joint](#)
5 [replacement in people with osteoarthritis](#).

6 Evidence on weight loss before surgery showed that, after hip or knee replacement,
7 there was no difference in outcomes for people in different BMI categories. People
8 who were overweight or obese based on BMI did not have an increased mortality
9 rate after surgery and had improved health-related quality of life and patient-reported
10 outcome measures. For people who were underweight based on BMI, evidence
11 showed an increased mortality rate. However, the committee considered that this
12 may be due to comorbidities and that the effect may be exaggerated by the smaller
13 number of underweight participants in studies. Some studies combined the healthy
14 weight group with the underweight group, which made interpreting the evidence
15 more difficult. The committee acknowledged that BMI can give a false impression of
16 the risks and that other factors need to be considered, such as comorbidities. The
17 committee concluded that BMI, and other measurements of whether someone is
18 overweight or obese, should not be a barrier to joint replacement. They also
19 concluded that the varying risks of surgery in relation to a person's BMI should be
20 explained.

21 Similarly, the committee agreed that everyone should be treated equally, and people
22 should not be excluded from referral for joint replacement based on their age, sex,
23 smoking habits or comorbidities. They agreed that there are few contraindications to
24 surgery and the surgeon would be best placed to assess and discuss suitability of
25 joint replacement on a case-by-case basis.

26 **How the recommendations might affect practice**

27 Current practice is inconsistent, despite previous NICE recommendations. If all
28 centres adopt these recommendations, then it may lead to an increase in the number
29 of referrals for surgery and subsequently more joint replacements done overall.

30 [Return to recommendations](#)

1 **Arthroscopic procedures**

2 [Recommendation 1.7.1](#)

3 **Why the committee made the recommendation**

4 There was no evidence showing that arthroscopic procedures reduce pain and
5 improve physical function. Evidence also showed possible harms with arthroscopic
6 procedures compared with sham procedures. Cost-effectiveness evidence showed
7 that arthroscopic procedures were more costly than standard care.

8 The committee agreed that arthroscopic procedures were not commonly used in
9 clinical practice for osteoarthritis.

10 **How the recommendation might affect practice**

11 The recommendation reflects current practice, so there should be no change in
12 practice or resource impact.

13 [Return to recommendation](#)

14 **Context**

15 Osteoarthritis is the most common form of arthritis. It typically presents with joint
16 symptoms such as pain and stiffness, mostly affecting the knee, hip, hand and foot
17 joints. Symptoms vary from mild and intermittent, to more persistent or severe. The
18 condition does not inevitably get worse, but symptoms fluctuate and flare-ups are
19 common. Osteoarthritis has a negative impact on daily activities, quality of life and
20 health outcomes. It can affect people's physical, social and emotional life; more than
21 half of people with osteoarthritis report that it seriously affects their family and
22 working life.

23 Osteoarthritis is more common in women, people living in deprived areas, people
24 aged 45 and over and people living with obesity. The prevalence of osteoarthritis is
25 increasing. Many people with osteoarthritis have multiple long-term conditions,
26 making their care more complex.

27 NICE produced a guideline on the care and management of osteoarthritis in 2014.

28 This updated guideline makes recommendations on diagnosing and managing

1 osteoarthritis, based on new evidence. This includes information and support, non-
2 pharmacological and pharmacological treatments, follow-up, and referral for joint
3 replacement. The aim of this guideline is to improve management of osteoarthritis
4 and the quality of life for people with the condition.

5 **Finding more information and committee details**

6 To find NICE guidance on related topics, including guidance in development, see the
7 [NICE webpage on arthritis](#).

8 For details of the guideline committee see the [committee member list](#).

9 **Update information**

10 This guideline is an update of NICE guideline CG177 (published February 2014) and
11 will replace it.

12 © NICE 2022. All rights reserved. Subject to [Notice of rights](#).