NICE National Institute for Health and Care Excellence

NICE guideline

Osteoarthritis in over 16s: diagnosis and management

NICE guideline

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Your responsibility

The recommendations in this guideline represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, professionals and practitioners are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or the people using their service. It is not mandatory to apply the recommendations, and the guideline does not override the responsibility to make decisions appropriate to the circumstances of the individual, in consultation with them and their families and carers or guardian.

All problems (adverse events) related to a medicine or medical device used for treatment or in a procedure should be reported to the Medicines and Healthcare products Regulatory Agency using the Yellow Card Scheme.

Local commissioners and providers of healthcare have a responsibility to enable the guideline to be applied when individual professionals and people using services wish to use it. They should do so in the context of local and national priorities for funding and developing services, and in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities. Nothing in this guideline should be interpreted in a way that would be inconsistent with complying with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

Contents

This guideline replaces CG177.

This guideline is the basis of QS87.

Overview

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.

Who is it for?

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

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.

1.1 Diagnosis

1.1.1 Diagnose osteoarthritis clinically without imaging in people who:

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

1.1.2 Do not routinely use imaging to diagnose osteoarthritis unless there are atypical features or features that suggest an alternative or additional 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 diagnosis.

Full details of the evidence and the committee's discussion are in evidence review A: additional benefit of imaging in the diagnosis of osteoarthritis.

1.2 Information and support

1.2.1 When giving information to people with osteoarthritis, their families and carers, tailor it to their individual needs (such as language and culture), ensure it is in an accessible format and follow the recommendations on:

- enabling patients to actively participate in their care in NICE's guideline on patient experience in adult NHS services
- putting shared decision making into practice in NICE's guideline on shared decision making
- delivering an approach to care that takes account of multimorbidity in NICE's guideline on multimorbidity.

1.2.2 Explain to people with osteoarthritis that:

- it is diagnosed clinically and usually does not need imaging to confirm the diagnosis **and**
- management should be guided by symptoms and physical function **and**
- the core treatments for the condition are therapeutic exercise and weight management (if appropriate), along with information and support.

1.2.3 Advise people with osteoarthritis where they can find further information on:

- osteoarthritis and how it develops (including flares and progression over time), and information that challenges common misconceptions about the condition
- specific types of exercise
- managing their symptoms
- how to access additional sources of information and support after consultations, such as peer-to-peer support and support groups
- benefits and limitations 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.

1.3 Non-pharmacological management

Therapeutic exercise

1.3.1 For all people with osteoarthritis, offer therapeutic exercise tailored to their needs (for example, local muscle strengthening, general aerobic fitness).

1.3.2 Consider supervised therapeutic exercise sessions for people with osteoarthritis.

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

- doing regular and consistent exercise, even though this may initially cause pain or discomfort, will be beneficial for their joints
- long-term adherence to an exercise plan increases its benefits by reducing pain and increasing functioning and quality of life.

1.3.4 Consider combining therapeutic exercise with an education programme or 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 review C: clinical and cost effectiveness of exercise for the management of osteoarthritis
- evidence review K: clinical and cost effectiveness of treatment packages for the management of osteoarthritis.

Weight management

1.3.5 For people with osteoarthritis who are living with overweight or obesity:

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

  For guidance and information on weight management, including recommended interventions to support weight loss, see NICE's topic page 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 management.

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 living with overweight or obesity.

Manual therapy

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

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

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

Acupuncture

1.3.8 Do not offer acupuncture or dry needling to manage 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.

Electrotherapy

1.3.9 Do not offer any of the following electrotherapy treatments to people with osteoarthritis because there is insufficient evidence of benefit:

- transcutaneous electrical nerve stimulation (TENS)

- ultrasound therapy
- interferential therapy
- laser therapy
- pulsed short-wave therapy
- neuromuscular electrical stimulation (NMES).

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.

Devices

For guidance on devices for knee osteoarthritis, see the NICE medical technologies guidance on AposHealth for knee osteoarthritis.

1.3.10 Consider walking aids (such as walking sticks) for people with lower limb osteoarthritis.

1.3.11 Do not routinely offer insoles, braces, tape, splints or supports to people with osteoarthritis unless:

- there is joint instability or abnormal biomechanical loading **and**
- therapeutic exercise is ineffective or unsuitable without the addition of an aid or device **and**
- the addition of an aid or device is likely to improve movement and function.

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.

1.4 Pharmacological management

Topical, oral and transdermal medicines

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

- alongside non-pharmacological treatments and to support therapeutic exercise
- at the lowest effective dose for the shortest possible time.

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

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

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

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

  Offer a gastroprotective treatment (such as a proton pump inhibitor) for people with osteoarthritis while they are taking an NSAID.

1.4.5 Do not routinely offer paracetamol or weak opioids unless:

- they are only used infrequently for short-term pain relief **and**

- all other pharmacological treatments are contraindicated, not tolerated or ineffective.

  Explain to people with osteoarthritis that there is no strong evidence of benefit for paracetamol. For more information about opioids, see NICE's guideline on medicines associated with dependence or withdrawal symptoms.

1.4.6 Do not offer glucosamine or strong opioids to people to manage osteoarthritis.

1.4.7 If the person with osteoarthritis asks about glucosamine or strong opioids, explain that:

- there is no strong evidence of benefit for glucosamine
- the risks of strong opioids outweigh the benefits.

1.4.8 Review with the person whether to continue treatment. Base the 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, evidence review I: appendices A to D, evidence review I: appendices E to J: clinical and cost effectiveness of oral, topical and transdermal medicines for the management of osteoarthritis.

Intra-articular injections

1.4.9 Do not offer intra-articular hyaluronan injections to manage osteoarthritis.

1.4.10 Consider intra-articular corticosteroid injections when other pharmacological treatments are ineffective or unsuitable, or to support therapeutic exercise. Explain to the person that these only provide short-term relief (2 to 10 weeks).

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.

1.5 Follow-up and review

Follow-up appointments

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

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

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

People with multiple long-term conditions are likely to benefit from a tailored approach in line with NICE's guideline on multimorbidity.

1.5.3 Advise people with osteoarthritis to seek follow-up if planned management is not working within an agreed follow-up time or they are having 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 and review.

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

Imaging for management of osteoarthritis

1.5.4 Do not routinely use imaging for follow-up or to guide non-surgical 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.

1.6 Referral for joint replacement

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

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

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

1.6.3 Do not exclude people with osteoarthritis from referral for joint

replacement because of:

- age
- sex or gender
- smoking
- comorbidities
- overweight or obesity, based on measurements such as body mass index (BMI).

1.6.4 If discussing referral for joint replacement, explain to the person with osteoarthritis that the risks of joint replacement can vary depending on the factors listed in recommendation 1.6.3.

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 review O: indicators for referral for possible joint replacement surgery
- evidence review P: outcomes of joint replacement surgery dependent on body mass index

1.7 Arthroscopic procedures

1.7.1 Do not offer arthroscopic lavage or debridement 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 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.

Terms used in this guideline

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

Atypical features

Atypical features could include a history of recent trauma, prolonged morning joint-related stiffness, rapid worsening of symptoms or deformity, the presence of a hot swollen joint, or concerns that may suggest infection or malignancy.

Flares

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

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

Treatment package

A treatment package is defined as any treatment for osteoarthritis (this could include: exercise, manual therapy, devices and pharmacological treatments) combined with one of the following:

- behaviour change approaches, including ways to reduce pain and straining when using joints, pain coping skills training (including spouse-assisted coping skills training), goal

setting; motivational coaching; weight management counselling and workplace risk counselling

- an education programme given by 1 or more healthcare professionals over multiple sessions, including those based on behavioural theory.

Walking aids

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

Recommendations for research

The guideline committee has made the following recommendations for research.

Key recommendations for research

1 Exercise

What is the clinical and cost effectiveness of supervised group and individual 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.

2 Devices

What is the clinical and cost effectiveness of devices compared with usual care for 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 devices for the management of osteoarthritis.

3 Topical medicines

What is the clinical and cost effectiveness of topical non-steroidal anti-inflammatory 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, evidence review I: appendices A to D, evidence review I: appendices E to J: clinical and cost effectiveness of oral, topical and transdermal medicines for the management of osteoarthritis.

4 Follow-up strategies

What is the clinical and cost effectiveness of patient-initiated follow-up compared 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 and review.

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

Other recommendations for research

5 Patient information

What information on the management of flares do people with osteoarthritis, their family and carers need after diagnosis?

What information do people with osteoarthritis from different ethnic and socioeconomic groups, and those with learning disabilities, issues with health literacy 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.

6 Manual therapy

What is the clinical and cost effectiveness of manual therapy for people with 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 Electroacupuncture

Is electroacupuncture a clinically and cost-effective treatment for any subgroup of people with osteoarthritis?

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.

8 Extracorporeal shockwave therapy

What is the clinical and cost effectiveness of extracorporeal shockwave therapy for

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 the management of osteoarthritis.

9 Footwear

What is the clinical and cost effectiveness of footwear for managing lower limb 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.

10 Topical and oral medicines

What is the clinical and cost effectiveness of topical local anaesthetics for people with osteoarthritis?

What is the clinical and cost effectiveness of antiepileptics and antidepressants (other than duloxetine) for people with osteoarthritis?

What is the clinical and cost effectiveness of weak oral opioids for people with 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, evidence review I: appendices A to D, evidence review I: appendices E to J: clinical and cost effectiveness of oral, topical and transdermal medicines for the management of osteoarthritis.

11 Intra-articular injections

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

What is the clinical and cost effectiveness of intra-articular stem cells for managing 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.

12 Referral criteria for joint replacement

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

- presence of night pain
- non-response to non-pharmacological interventions
- joint instability symptoms
- presence of flares

- 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.

13 Imaging for management of osteoarthritis

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

What is the clinical and cost effectiveness of imaging for use at different parts of the care pathway (for example, primary care, intermediate care or secondary care) 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.

Rationale and impact

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

Diagnosis

Recommendations 1.1.1 and 1.1.2

Why the committee made the recommendations

There was no evidence showing that imaging is beneficial for diagnosing osteoarthritis. The committee agreed that imaging adds little value and that osteoarthritis can be diagnosed by taking a thorough history and doing an examination. The committee agreed that imaging can be useful if atypical features are present that could suggest an alternative or additional diagnosis, such as other inflammatory forms of arthritis (for example, rheumatoid arthritis) and malignancy.

How the recommendations might affect practice

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

Return to recommendations

Information and support

Recommendations 1.2.1 to 1.2.3

Why the committee made the recommendations

Evidence showed that generally people with osteoarthritis wanted more information about their condition. This included information about the causes, what their diagnosis means for the future and where to find more information on self-management. The committee based

their recommendations on the evidence and their experience. They agreed that it is important to tell people that diagnosis is made clinically without imaging, that imaging rarely provides any extra information helpful for diagnosing or planning non-surgical treatment for osteoarthritis, and that it would only be used if there were suspicion of an alternative diagnosis or other complications. This would help reassure and dispel any belief that X-rays or other forms of imaging are needed to diagnose osteoarthritis.

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

The committee agreed that each person's experience of osteoarthritis differs and therefore tailoring the information to their needs, as described in NICE's guideline on patient experience in adult NHS services, is important. They also agreed that osteoarthritis is more common in older people who are likely to have other conditions. Therefore, the recommendations on delivering an approach to care that takes account of multimorbidity in NICE's guideline on multimorbidity are particularly relevant to people with osteoarthritis.

How the recommendations might affect practice

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

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Therapeutic exercise

Recommendations 1.3.1 to 1.3.4

Why the committee made the recommendations

The evidence showed that exercise has a clinically important benefit for people with osteoarthritis, as well as general health benefits and a superior safety profile compared with other common treatments, such as analgesia. In particular, the committee highlighted the importance of therapeutic exercise to help manage and reduce symptoms and improve or maintain physical functioning over the long term. For most benefit, they recommended this be tailored to the needs of the person, such as joint-site-specific exercises.

Limited evidence showed that supervised exercise had some benefits compared with unsupervised exercise. The committee's expert consensus was that supervised exercise is likely to be of greater benefit than unsupervised exercise for people with osteoarthritis. This is because supervised exercise may enable tailored exercise and social support, which may increase adherence and lead to people with osteoarthritis forming a regular exercise habit.

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

The committee noted that further evidence may be needed and made a recommendation for research to compare the clinical and cost effectiveness of supervised group and individual exercise with unsupervised exercise.

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

to continue with therapeutic exercise.

How the recommendations might affect practice

Current practice around therapeutic exercise varies. These recommendations may lead to a change in practice by recommending tailored exercise (including supervised exercise) and using treatment packages.

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Weight management

Recommendation 1.3.5

Why the committee made the recommendation

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

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

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

may help reduce this risk.

How the recommendation might affect practice

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

Return to recommendation

Manual therapy

Recommendations 1.3.6 and 1.3.7

Why the committee made the recommendations

The committee acknowledged recent evidence that showed some clinical benefits of manual therapy for hip and knee osteoarthritis, with no evidence being identified for other joint sites. However, the benefits were stronger if manual therapy was combined with exercise. Clinical and economic evidence showed that exercise alone was more effective than both manual therapy alone and the combination of manual therapy and exercise. So, the committee concluded that manual therapy should only be considered alongside therapeutic exercise. Most studies provided therapy for less than 3 months and on average for 7 weeks. The committee agreed that the duration of manual therapy would be similar, but would vary according to the person's needs. They agreed that further research was needed, in particular evidence from well-powered, high-quality studies with adequate blinding and on other osteoarthritis-affected joints. They made a recommendation for research on manual therapy for people with osteoarthritis used alone and in combination with therapeutic exercise.

How the recommendations might affect practice

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

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Acupuncture

Recommendation 1.3.8

Why the committee made the recommendation

The available evidence was predominantly for knee osteoarthritis. This showed a lack of benefits of acupuncture and some evidence of harm. Economic evidence also showed that using acupuncture for osteoarthritis is not cost effective, so the committee did not recommend using acupuncture or dry needling. There was some evidence of clinical benefit and cost effectiveness for electroacupuncture but this was of very low quality because of small study sizes and inconsistency between studies. The evidence for electroacupuncture suggested it showed a benefit compared with sham acupuncture but not compared with acupuncture or no treatment. The committee considered that the inconsistent evidence could be the result of some people responding more to electroacupuncture than others. Because there is uncertainty about who might benefit from electroacupuncture, the committee made a recommendation for research on electroacupuncture for osteoarthritis.

How the recommendation might affect practice

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

Return to recommendation

Electrotherapy

Recommendation 1.3.9

Why the committee made the recommendation

Although there were many studies on electrotherapy, the findings were inconsistent and mostly showed little benefit. The committee acknowledged that most studies were small, with fewer than 100 participants, and that evidence from direct comparisons of electrotherapy with other interventions was uncertain. The committee agreed there is not enough evidence to recommend electrotherapy for people with osteoarthritis.

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

How the recommendation might affect practice

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

Return to recommendation

Devices

Recommendations 1.3.10 and 1.3.11

Why the committee made the recommendations

Evidence from a small study on walking aids showed that they benefit quality of life and reduce pain compared with no device. The committee agreed that walking aids have the advantage of reducing the pressure in the leg joints, which helps stability and movement to encourage physical activity and independence. This is particularly the case while waiting for joint replacement or if surgery cannot be undertaken, because the aid helps support exercise and confidence with walking. Overall, they agreed that the evidence, supported by their expert opinion, was enough to recommend walking aids for people with lower limb osteoarthritis.

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

The committee agreed that further research is needed on devices, through studies that

have a larger number of participants, sufficient blinding and allocation concealment. Because most of the evidence was for knee osteoarthritis, they made a recommendation for research on devices for painful foot and ankle osteoarthritis. The committee also noted that evidence on footwear had limitations and made a recommendation for research on footwear for managing lower limb osteoarthritis.

How the recommendations might affect practice

Use of devices for osteoarthritis is varied in current practice. Currently, insoles, braces, tape or supports may be used by some people with osteoarthritis because they were previously recommended by NICE. The recommendations may change practice with using devices. But the practice of using walking aids is unlikely to change. There is a potential for some cost savings to the NHS.

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Topical, oral and transdermal medicines

Recommendations 1.4.1 to 1.4.8

Why the committee made the recommendations

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

Topical non-steroidal anti-inflammatory drugs (NSAIDs) were clinically effective in reducing pain for people with knee osteoarthritis and generally the most cost-effective medicine for osteoarthritis. They were also associated with minimal adverse events. Evidence on topical NSAIDs came from studies including people with knee osteoarthritis and 1 study including people with hand osteoarthritis. The evidence showed no clinically

important difference for hand osteoarthritis, but the committee noted this was uncertain because it was based on 1 study. The committee noted that although evidence only showed benefit for knee osteoarthritis, other people with osteoarthritis-affected joints may also benefit from topical NSAIDs. There was some evidence showing that topical capsaicin reduces pain in knee osteoarthritis, but not hand osteoarthritis, and has minimal adverse events. However, capsaicin is more expensive and topical NSAIDs were considered a better option. The committee made a recommendation for research on topical medicines for osteoarthritis-affected joints other than the knee.

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

Evidence showed that adding gastroprotection can reduce gastrointestinal bleeding or perforation. However, this was associated with an increase in cardiovascular adverse events compared with oral NSAIDs alone. The committee agreed that this may be unrelated to the addition of gastroprotection and that randomised controlled trial evidence alone may not be the best source for safety evidence, because the population size and length of follow-up are usually limited. Therefore, they also used their clinical experience and guidance from other organisations, including the MHRA. Based on this, the committee agreed that use of gastroprotection should be offered with NSAIDs.

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

opioids showed a clinically important benefit in reducing pain. The committee agreed that there was not enough evidence of benefit and on potential risks.

Although paracetamol has a low potential to cause adverse events, evidence showed that it has no additional benefit in reducing osteoarthritis pain and improving quality of life and physical function compared with placebo. However, the committee discussed that some people cannot use NSAIDS. Therefore, they recommended against the routine use of paracetamol but noted some circumstances where it may be used.

Evidence on glucosamine was inconsistent and the largest benefits were shown by smaller studies that were of lower quality. Because glucosamine is not used in current practice and there is no strong evidence of benefit the committee recommended against its use for people with osteoarthritis.

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

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

How the recommendations might affect practice

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

Return to recommendations

Intra-articular injections

Recommendations 1.4.9 and 1.4.10

Why the committee made the recommendations

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

Evidence showed that corticosteroid injections had inconsistent benefits on improving quality of life and physical function for people with hip osteoarthritis, and reducing pain for people with knee osteoarthritis. There was no evidence showing long-term benefit beyond 3 months. Given the potential benefits and committee expert opinion, they agreed that intra-articular corticosteroids could be considered for people with osteoarthritis if other treatments have not worked, provided the person was made aware that the injection would only provide short-term relief (2 to 10 weeks). The committee agreed that when used, corticosteroid injections should only be used to supplement and support people to participate in therapeutic exercise where possible. Based on their expert opinion, the committee agreed that this evidence was generalisable to other osteoarthritis-affected joints.

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

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

How the recommendations might affect practice

The recommendation for intra-articular hyaluronan injections reflects current practice so the committee agreed there should be no change in practice or resource impact to the

NHS. Corticosteroid injections are used in current practice, but recommending them only for the short-term relief of symptoms may lead to a reduction in their use and a cost saving to the NHS.

Return to recommendations

Follow-up and review

Recommendations 1.5.1 to 1.5.3

Why the committee made the recommendations

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

How the recommendations might affect practice

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

Return to recommendations

Imaging for management of osteoarthritis

Recommendation 1.5.4

Why the committee made the recommendation

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

How the recommendation might affect practice

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

Return to recommendation

Referral for joint replacement

Recommendations 1.6.1 to 1.6.4

Why the committee made the recommendations

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

determine whether someone should have surgery, so they were not recommended for use. The committee agreed that the decision to refer someone for joint replacement should be based on clinical assessment after trying all appropriate treatments for that person. These should have been tried for a sufficient length of time to ensure they are not effective at reducing symptoms before referral happens. Given the absence of evidence, the committee made a recommendation for research on indicators for joint replacement in people with osteoarthritis.

Evidence on weight loss before surgery showed that, after hip or knee replacement, there was no difference in outcomes for people in different body mass index (BMI) categories. People who were overweight or obese based on BMI did not have an increased mortality rate after surgery and had improved health-related quality of life and patient-reported outcome measures. For people who were underweight based on BMI, evidence showed an increased mortality rate. However, the committee considered that this may be due to comorbidities and that the effect may be exaggerated by the smaller number of underweight participants in studies. Some studies combined the healthy weight group with the underweight group, which made interpreting the evidence more difficult. The committee acknowledged that BMI can give a false impression of the risks and that other factors need to be considered, such as comorbidities. The committee concluded that BMI, and other measurements of whether someone is overweight or obese, should not be a barrier to joint replacement.

Similarly, the committee agreed that everyone should be treated equally, and people should not be excluded from referral for joint replacement based on their age, sex or gender, if they smoke or any comorbidities. They agreed that there are few contraindications to surgery and the surgeon would be best placed to assess and discuss suitability of joint replacement on a case-by-case basis. The committee also recommended that the varying risks of surgery in relation to a person's specific circumstances should be explained.

How the recommendations might affect practice

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

Return to recommendations

Arthroscopic procedures

Recommendation 1.7.1

Why the committee made the recommendation

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

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

How the recommendation might affect practice

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

Return to recommendation

Context

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

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

NICE produced a guideline on the care and management of osteoarthritis in 2014. This updated guideline makes recommendations on diagnosing and managing osteoarthritis, based on new evidence. This includes information and support, non-pharmacological and pharmacological treatments, follow-up, and referral for joint replacement. The aim of this guideline is to improve management of osteoarthritis and the quality of life for people with the condition.

Finding more information and committee details

To find NICE guidance on related topics, including guidance in development, see the NICE topic page on arthritis.

For full details of the evidence and the guideline committee's discussions, see the evidence reviews. You can also find information about how the guideline was developed, including details of the committee.

NICE has produced tools and resources to help you put this guideline into practice. For general help and advice on putting our guidelines into practice, see resources to help you put NICE guidance into practice.

Update information

September 2022: This guideline updates and replaces NICE guideline CG177 (published February 2014).

Minor changes since publication

October 2023: We added a link to our medical technologies guidance on AposHealth for knee osteoarthritis to the section on non-pharmacological management.

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