

Osteoarthritis

Best-evidence care

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Evidence-based, first-line osteoarthritis management should be person-centred, support self-management and take an interdisciplinary or multidisciplinary approach that revolves around lifestyle and behavioural interventions with optional use of adjunctive therapies. In settings where there are no interdisciplinary or multidisciplinary teams, evidence-based and reliable online resources and support may be helpful.

Osteoarthritis is a serious condition, affecting the structures of synovial joints, including the cartilage, subchondral bone, ligaments, muscles and synovial fluid. It is a disease of the whole joint, and affects more than 3 million people in Australia.^{1,2} Symptomatic osteoarthritis is a debilitating condition that is often associated with significant pain and impaired function, thereby negatively impacting quality of life.³

In Australia, osteoarthritis contributed to 2.5% of the total disease burden and 20% of musculoskeletal disease burden in 2023 (disability-adjusted life years).⁴ Even more concerning is that people with osteoarthritis have twice the risk of all-cause mortality compared with their peers without the condition.⁵ Although the reason for this is unclear, it may be attributed to associated comorbidities. People with osteoarthritis shoulder a high comorbidity burden, with the most prevalent conditions associated with osteoarthritis being hypertension, and circulatory and metabolic diseases.⁶

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It is well known that osteoarthritis is a very costly condition. Healthcare for osteoarthritis in Australia was estimated to cost around \$4 billion in 2020–21, with most of this cost being attributed to surgical procedures.⁴ Most (86%) of the costs were associated with hospital services, with only 9% spent on primary care and 5% on other referred services, such as imaging. Knee arthroplasty is the most common surgical procedure, with 64,846 procedures performed in 2022 (compared with 52,863 hip and 8,636 shoulder arthroplasties). Although it is considered to be an effective procedure in people with severe end-stage osteoarthritis, around 20% of knee arthroplasty recipients are

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dissatisfied with the results following the procedure, suggesting that patient selection for the procedure should be improved.⁷ People with osteoarthritis commonly present for joint arthroplasty without having tried the recommended first-line lifestyle and behavioural interventions, namely education for self-management, therapeutic exercise, physical activity and weight management. In Australia, analyses from 2019 showed that \$875 million would have been saved if 68% of people with knee osteoarthritis avoided surgery, and adopted first-line lifestyle and behavioural interventions.⁸ Delivery rates of these first-line strategies remain substantially lower than rates of surgical referrals

KEY POINTS

- Osteoarthritis is a common condition in Australia that can be debilitating.
- Core components of best-evidence, first-line osteoarthritis management are education and support for self-management, increasing physical activity and weight management (if appropriate).
- First-line management strategies can be supplemented with adjunctive therapies, including analgesic medication, bracing and orthoses, and walking aids. However, the evidence on the effectiveness of these therapies is conflicting.
- Joint replacement surgery for osteoarthritis is a last-resort option and is only indicated if the condition is significantly impacting a person's quality of life and other nonsurgical management strategies have either failed or are not appropriate.
- Care for people with osteoarthritis needs to be person-centred, support self-management and ideally use an interdisciplinary or multidisciplinary approach.
- In settings where there are no interdisciplinary or multidisciplinary teams to collaborate and help deliver best-evidence osteoarthritis care, clinicians can opt to use online resources and support when available.

and pharmacological treatments.⁹ This could be attributed to the need for more support for primary care clinicians, such as GPs and physiotherapists, in delivering and implementing these strategies in management plans for people with osteoarthritis.¹⁰ This article highlights the current evidence around evidence-based osteoarthritis management and discusses recommendations to facilitate this care in clinical practice.

What is evidence-based, first-line osteoarthritis management?

International osteoarthritis clinical guidelines consistently recommend that at the core of best-evidence, first-line osteoarthritis management are lifestyle and behavioural interventions, including education and support for self-management, increasing incidental physical activity and participation in structured exercise, and weight management, if appropriate.^{11,12}

Education and supporting self-management

Providing education about what osteoarthritis is and guidance on how to self-manage it is an essential component of providing high-value osteoarthritis care.^{13,14} Education is at the crux of self-management programs, which are designed to encourage people with osteoarthritis to modify their behaviour by engaging in lifestyle interventions (e.g. increasing physical activity levels) and to be actively managing their own condition. Ultimately, the goal is to empower people with osteoarthritis and promote self-efficacy by helping them develop skills such as problem solving,

TABLE. USING STAGES OF CHANGE AS A FRAMEWORK TO GUIDE HEALTH PROFESSIONALS IN SUPPORTING SELF-MANAGEMENT

Stage of change	Definition	Possible strategies for application in clinical practice
Precontemplation	No intention of changing behaviours	<ul style="list-style-type: none"> • Information sharing • Decision support tools
Contemplation	Uncertain about behaviour change	
Preparation	Starting the process of changing behaviour	<ul style="list-style-type: none"> • Decision support tools • Goal-setting and follow up • Shared decision-making • Motivational interviewing • Problem solving and overcoming barriers
Action	Adopting new behaviours	
Maintenance	Adhering to behaviour change over time	

shared decision-making with their health professionals, and knowing how and where to identify helpful resources.¹⁵

What can I recommend?

Health professionals can support people with osteoarthritis in self-managing their condition by employing a range of strategies, such as:

- sharing information with patients about the diagnosis and available treatment, and expectations from diagnosis and treatment, as well as patient-facing education to help people understand their condition(s) to improve their health
- consulting and collaborating with patients through shared decision-making, goal-setting and following up, and allowing them to set the agenda by asking their perspective for the consultation
- partnering with the patient and developing strategies for self-management together.¹⁵

It is important to note that information sharing alone is unlikely to improve outcomes and motivate behaviour change, and active behaviour change interventions are unlikely to be effective if the person is not willing and motivated to self-manage their condition.¹⁵ The Stages of Change framework may be helpful for health professionals to identify the appropriate strategies that can help with this (Table).^{15,16}

Physical activity and exercise

Increasing physical activity or engaging with exercise is strongly recommended for people with osteoarthritis.¹² A recent network meta-analysis showed that exercise was more effective than usual care for pain relief and functional improvement in people with hip or knee osteoarthritis, and reached minimal clinically important differences.¹⁷ This meta-analysis also demonstrated that exercise was just as effective for pain relief and functional improvement compared with oral NSAIDs and paracetamol.¹⁷

What can I recommend?

Although it is widely accepted that increasing physical activity and exercise is beneficial for people with osteoarthritis, it is often difficult to know what exactly to recommend to patients. Another network meta-analysis demonstrated that aerobic and mind-body exercises (such as yoga and tai-chi) were the most effective in improving pain and function in people with knee and hip osteoarthritis compared with usual care.¹⁸ Strength and flexibility exercises had lower effect sizes but were still effective compared with usual care.¹⁸ Therefore, the evidence has shown that any form of exercise is beneficial for people with osteoarthritis. There are many recommendations that you could make for a person with osteoarthritis, but the focus should be on helping people to identify physical activity and exercise forms that they enjoy, are likely

to engage with for the long term and are happy to progress. Another option is to refer people with osteoarthritis to allied health professionals who are experienced in prescribing and developing physical activity and exercise plans, such as physiotherapists and exercise physiologists.

Weight management

Clinical guidelines strongly recommend weight management as a core strategy for people with osteoarthritis.¹² Evidence shows that a 5 to 10% reduction in weight significantly improves osteoarthritis symptoms in people who are overweight or obese and that there is a dose-response relationship.^{19,20} Most of the literature focuses on the effect of consuming anti-inflammatory diets (such as the Mediterranean diet) and low calorie diets on osteoarthritis symptoms, with varying results and high heterogeneity across studies.²¹ A meta-analysis demonstrated that very low calorie diets (less than 800 kilocalories per day) were the most effective dietary intervention for weight loss and improved physical function in people with osteoarthritis who were overweight or obese.²² Furthermore, a recent randomised controlled trial in Melbourne showed that a very low calorie diet was effective in achieving clinically relevant weight loss and was considered safe for people with knee osteoarthritis who were overweight or obese.²³ However, it is important to be cautious with recommending this strategy as it has little long-term benefits, and is not nutritionally sufficient.²⁴

What can I recommend?

Very low calorie diets, such as meal replacements, may be an appropriate strategy to recommend to a person with osteoarthritis who is overweight or obese to achieve significant short-term weight loss and improve function. However, adhering to a very low calorie diet can be challenging. Instead, long-term weight loss can be achieved by:

- an initial significant weight loss
- reaching the self-determined goal weight

- adopting a physically active lifestyle
- having a regular meal rhythm
- healthy eating
- controlling overeating habits
- self-monitoring lifestyle behaviours.²⁵

As per the strategies above, it is important to focus on the willingness and motivation of the patient to adopt new behavioural strategies. Referral to dietitians or nutritionists may benefit a person with osteoarthritis who may require further food education and strategies for behaviour change.

Other treatments and management strategies

First-line management strategies can be supplemented with adjunctive therapies, including analgesic medication, bracing and orthoses, and walking aids.²⁶ However, the evidence on the effectiveness of these therapies is conflicting, and they should only be used when their benefit may help facilitate an individual's adherence to first-line interventions or to enhance the effects of these treatments.^{27,28} Analgesic medication, specifically NSAIDs, can be used to manage increased pain or flare-ups but are not recommended for long-term use.²⁹ The current Royal Australian College of General Practitioners (RACGP) guidelines recommend the use of oral NSAIDs 'at the lowest effective dose for a short period' and to inform patients of possible adverse events, such as gastrointestinal, renal and cardiovascular effects.¹¹

There is limited evidence for the efficacy of other adjunctive therapies, such as supplements or nutraceuticals and intra-articular injections. There are currently no supplements or nutraceuticals that are recommended by any guidelines for osteoarthritis management.²⁷ In fact, glucosamine, chondroitin, fish oil (or omega 3) and vitamin D are strongly recommended against for managing osteoarthritis symptoms because of the lack of evidence in high-quality clinical trials and publication bias (industry-sponsored trials).^{27,30} As for intra-articular injections, most clinical guidelines recommend against their use,

except for corticosteroid injections, which are recommended for managing knee osteoarthritis.²⁷ The RACGP Guideline for the Management of Hip and Knee Osteoarthritis recommends the use of corticosteroid injections for short-term pain relief; however, these recommendations were based on very low-quality evidence and the guideline also warned of their potential harms if used repeatedly.¹¹

Although joint replacement surgery is a cost-effective intervention, particularly for people with end-stage knee or hip osteoarthritis, not everyone with osteoarthritis will need joint replacement.^{31,32} Between 20 and 40% of people who undergo joint replacement surgery do not need it and up to 25% will not be satisfied with their outcomes.^{33,34} Joint replacement surgery for osteoarthritis should only be indicated if the condition is significantly impacting a person's quality of life and other nonsurgical management strategies have either failed or are not appropriate.³⁵ Surgical intervention should be the last resort.

Facilitating best-evidence, first-line osteoarthritis management

To facilitate best-evidence care for people with osteoarthritis, it is important that the right health professionals are delivering the right care at the right time and in the right place. Care for people with osteoarthritis needs to be person-centred, support self-management and use an interdisciplinary or multidisciplinary approach.³⁶

In the NSW public health system, the Osteoarthritis Chronic Care Program (OACCP) serves to provide care for people with osteoarthritis that is tailored and person-centred, and uses a team of health professionals to deliver optimal care.^{37,38} Depending on the location, the team may include physiotherapists, rheumatologists, dietitians, psychologists, social workers, occupational therapists, orthotists and orthopaedic surgeons. The OACCP has improved access to best-evidence, first-line

osteoarthritis care for people in NSW public hospitals. In some people, the OACCP has improved osteoarthritis symptoms sufficiently to enable them to delay joint arthroplasty or avoid it altogether.³⁹ Unfortunately, osteoarthritis management programs, such as the OACCP, are not widely available across Australia. In primary care settings, multidisciplinary care is probably more appropriate, where best-evidence care is also delivered through collaborations between health professionals, drawing on the strengths of different disciplines.⁴⁰ Building and maintaining professional networks to facilitate team-based care, and knowing when and where to refer patients, are key to all clinicians involved in best-evidence osteoarthritis care.⁴¹

Online resources and support

In settings where there are no interdisciplinary or multidisciplinary teams to collaborate and help deliver best-evidenced osteoarthritis care, clinicians can opt to use online resources and support when available. A new eLearning program for all health professionals has been launched to support the development of knowledge and skills in best-evidence osteoarthritis care: the Arthritis Training, Learning and Upskilling of Health Professionals program (ATLAS). ATLAS was developed as a result of the National Strategic Action Plan for Arthritis and the National Osteoarthritis Strategy, which identified seven priorities to ensure that all Australians at risk of or with osteoarthritis, regardless of where they are on their osteoarthritis journey, receive best-evidence care and support for self-management.^{10,42-44} ATLAS aims to help build workforce capacity to deliver the right arthritis care at the right time, with the right team and in the right place. The program features several learning streams for health professionals wanting to improve their knowledge and skills in arthritis care that include best-evidence management of both osteoarthritis and rheumatoid arthritis (RA). The learning content

LEARNING MODULES DEVELOPED FOR ATLAS eLEARNING

- Person-centred care and communication skills*
- Introduction to osteoarthritis: epidemiology, risk factors and progression
- Talking to people about their osteoarthritis
- History-taking and physical assessment
- Management planning, supporting self-management and behaviour change*
- Physical activity and exercise*
- Weight management*
- Adjunctive therapies
- Pharmacotherapy
- Surgical interventions
- Interdisciplinary care and service delivery
- Evidence-based practice

Abbreviation: ATLAS = Arthritis Training, Learning and Upskilling of Health Professionals.

* Shared osteoarthritis and rheumatoid arthritis module.

(Box) was developed by internationally renowned clinical and research experts in the area using a capability-driven approach and a core capabilities framework for health professionals delivering osteoarthritis care.^{36,45}

A similar framework was used to develop the RA content, and some modules are common to both osteoarthritis and RA. These modules serve to provide knowledge to all healthcare professionals on best-evidence osteoarthritis care, particularly health professionals working in under-resourced settings where immediate expertise in the area from specialists and allied health professionals may not be readily available. For example, weight management is a core management strategy for people with osteoarthritis who are overweight or have obesity. However, some clinical settings may not have access to a dietitian or nutritionist who can support the person with osteoarthritis in their weight loss. The module on weight

management provides evidence-based information on weight management strategies for people with osteoarthritis using the most up-to-date clinical guidelines and recently published high-quality papers, such as systematic reviews or randomised controlled trials. ATLAS learners have access to these publications, as well as downloadable patient-facing resources that they can give to their patients and support their practice. ATLAS is currently freely available for health professionals to use and can be accessed online (www.atlas.arthritis.com.au).

Reliable, evidence-based and freely available consumer-facing resources can also be used to facilitate the delivery of and educate patients about best-evidence osteoarthritis care, such as:

- My Joint Pain or My OA (<https://myoa.org.au/>)
- Joint Action Podcast (<https://www.jointaction.info/podcast>)
- Arthritis Australia (<https://arthritisaustralia.com.au/types-of-arthritis/osteoarthritis/>)
- Osteoarthritis of the Knee (https://arthritisaustralia.com.au/wordpress/wp-content/uploads/2022/09/ArthAus_Osteoarthritis_knee_Sept2022.pdf)
- Versus Arthritis (<https://versusarthritis.org/>)
- Osteoarthritis Action Alliance (<https://oaaction.unc.edu/en/>).

Conclusion

Best-evidence, first-line osteoarthritis management involves lifestyle and behavioural interventions (such as education about osteoarthritis and how it is managed), techniques to support self-management, increasing physical activity and managing weight, if required. Interdisciplinary or multidisciplinary team approaches, similar to the OACCP, are considered the 'gold standard' for delivering the different elements of a tailored and person-centred management plan, where people with osteoarthritis are either

managed in an interdisciplinary team or referred on to other disciplines with clinical expertise in other areas. However, not all settings may have access to other disciplines, and there are a whole host of other reasons why this may not be possible. Upskilling and training through education that uses evidence-based content and provides patient-facing supporting resources can help health professionals in under-resourced settings to deliver evidence-based osteoarthritis care. **MT**

References

A list of references is included in the online version of this article (www.medicinetoday.com.au).

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ONLINE CPD JOURNAL PROGRAM

List at least four strategies that can help achieve long-term weight loss in patients with osteoarthritis.



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