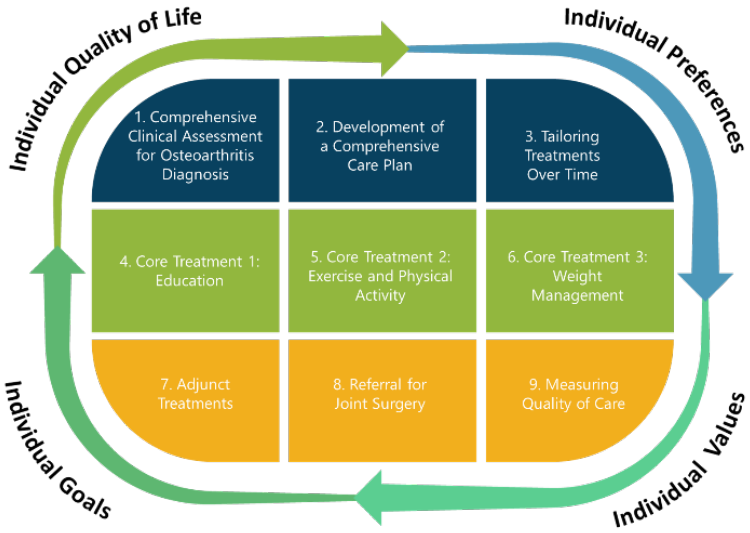
Comprehensive Quality Care Standards for Osteoarthritis of the Hip and Knee

Osteoarthritis (OA) is the most common type of arthritis and is a chronic, progressive condition with no cure. As Albertans live longer and with higher rates of obesity, the prevalence of OA continues to increase, particularly in the lower limbs. OA of the hip and knee joints can significantly impact a person's mobility and quality of life.

These nine care standards support care for adults with osteoarthritis of the hip and knee. The nine standards focus on assessment, diagnosis, treatment, self-management, and measurement of this condition for people across all health care settings. **This is the clinician version of the standards. The version for individuals with OA is here.**



Standard 1: Comprehensive Clinical Assessment for Osteoarthritis Diagnosis

For adults who present with the typical signs and symptoms of osteoarthritis, a diagnosis can be made through a comprehensive bio-psychosocial clinical assessment. No imaging is required to make the diagnosis.

This standard sets out the components that should be present to make an accurate clinical diagnosis of osteoarthritis (OA). OA is a chronic disease caused by joint changes from a progression of cartilage loss which may result in pain, declining quality of life, loss of function and increasing disability. Both regulated and non-regulated clinicians may be involved in the assessment and care of an individual with OA.

Adults (typically aged 40 years and older) who present with joint pain, swelling or stiffness in their hips, knees or lower backs[1-2] should be assessed thoroughly to determine if they have OA in their knees or hips. If the individual does not have hip and/or knee OA then these standards are not appropriate and other guidelines and tools should be used to inform diagnoses and care.

<table>
<tr><th rowspan="2">OA of the Hip or Knee Will Likely Present With</th><th colspan="2">It is Likely NOT OA of the Hip or the Knee if the Individual Presents With:</th></tr>
<tr><th>Indication</th><th>Suggest Investigating</th></tr>
<tr><td rowspan="6">• Persistent atraumatic movement-related joint pain
• Aching
• Swelling
• Joint instability due to bone misalignment
• Catching; and/or
• Morning stiffness lasting less than 30 minutes</td><td>• A recent history of injury</td><td>• Meniscal tears, ligamentous injury</td></tr>
<tr><td>• Joint locking</td><td>• Loose body or other joint pathology</td></tr>
<tr><td>• Joint instability</td><td>• Ligament laxity</td></tr>
<tr><td>• Prolonged morning joint-related stiffness;</td><td>• Inflammatory conditions such as rheumatoid arthritis</td></tr>
<tr><td>• Hip or knee pain referred from the lumbar spine</td><td>• Conditions of the spine</td></tr>
<tr><td>• Hot swollen joints or general ill health</td><td>• Gout, inflammatory arthritis</td></tr>
<tr><td>These symptoms may affect more than one joint at a time. Prior injuries, existing comorbidities and congenital deformities may be present along with typical OA symptoms.</td><td colspan="2">These indications will require additional investigations to identify appropriate diagnosis.

Consider the Arthritis Alliance of Canada OA diagnosis tool to distinguish between inflammatory and non-inflammatory (osteoarthritis) arthritis.

Consider the possibility of back pain becoming chronic comorbidity.</td></tr>
</table>

Meniscal tears can occur as a result of a traumatic injury, or they can be a degenerative process that occur in people over 40. Both mechanisms of tearing can progress to OA but the treatment of a traumatic injury will differ. These standards are not appropriate for guidance on treatment of an acute traumatic injury.

Three Elements of a Comprehensive Assessment

If OA is suspected, a diagnosis can be made with a comprehensive bio-psychosocial clinical assessment. A complete assessment for diagnosis should contain three elements and this form can be used to record findings from each element:

1. Asking Five Screening Questions (below) to rule out other pathologies.
2. Documenting a thorough Health History which can contain several elements , but must include recording:
    - History of joint trauma
    - Descriptions of pain experience
    - Identifying other known comorbidities and their current management; and
    - Understanding of the person's current knowledge of OA.
3. Performing a Physical Exam to establish a baseline and inform diagnosis and care planning. The examination can contain several elements, but must include assessing:
    - Diagnostic tests
    - Collecting a baseline of function

Screening Questions[1]

If inflammatory arthritis or other serious pathologies are identified, then these standards are not the appropriate tool for the individual.

1	Does the individual have joint pain in their hip, knee or low back?	**Yes,** proceed	No, consider using a different resource or diagnosis aid
2	Does the individual have morning stiffness in their joints greater than 30 minutes?	**No**, proceed	Yes, consider tools for diagnosing inflammatory arthritis
3	Is the individual's join pain generally related to activity?	**Yes**, proceed	If no, does the individual have pain with rest?
			No, proceed / Yes, investigate other pathologies
4	Is the individual experiencing symptoms of joint stability, such as 'giving way', lock or repeated clicking?	**No**, proceed	Yes, perform a complete joint examination to determine if a ligament pathology is also present before proceeding.
5	Is the individual avoiding ALL activities due to pain, stiffness or weakness?	**No,** proceed	Yes, assess psychosocial factors and administer the PHQ-4 to carefully inform care planning.

Serious pathologies which may require urgent care and/or a different approach to care planning:

Indicators	Pathology	Action
Fever, meningism, history of immuno-suppression/intra-venous drug use	Infection	Perform additional investigations and consult other practice guidelines
Rheumatoid arthritis, polymyalgia rheumatica, giant cell arteritis	Inflammatory arthritis	
Osteoporotic fracture, traumatic fall with risk of fracture	Fracture	
History of cancer, unexplained weight loss, significant night pain, severe fatigue	Tumor	

Psychosocial risk factors which may affect diagnosis and care planning:

Question to Ask	What to Look For
Do you think your pain will improve or become worse?	Belief that joint pain is harmful or potentially severely disabling
Do you think you would benefit from activity, movement or exercise?	Fear and avoidance of activity or movement
How are you emotionally coping with your joint pain?	Tendency to low mood and withdrawal from social interaction
What treatments or activities do you think will help you recover?	Expectation of passive treatment(s) rather than a belief that active participation will help

Presence of psychosocial risk factors, indicated by a positive answer to any of the above, means the individual will benefit from reassurance and education to reduce chronicity. Revisit these psychosocial risk factors for those with OA pain that is not being managed after six weeks of treatment.

Imaging

Imaging and laboratory investigations are **not required** to assist with **clinical OA diagnosis** of typical presentation[3]. **Clinical diagnosis is sufficient to begin care planning** and treatment of OA and clinical presentation, in combination with shared decision-making should guide the ongoing management of OA. Findings on imaging may not always match the individual's symptoms, and do not predict the response to treatment.

If the screening questions have indicated further investigation is required or if the diagnosis is uncertain, then considering imaging. The assessing clinician can begin with preliminary imaging and proceed to advanced imaging only if indicated.

Immediate Orthopaedic Surgeon Referral

The goal with these standards is to encourage an adequate trial of OA treatment prior to referral to a surgeon (Standard 8). However, **there are certain criteria that would result in an 'urgent' classification of the individual, and therefore warrant immediate referral to an orthopaedic surgeon.** The criteria include a suspected fracture or ligament injury, or for the individual with OA: very poor quality of life such as that resulting from loss of independence and pain interrupting sleep, no lower limb strength, or no range of motion in the affected joint.

Standard 8 provides more details on a routine referral to surgeon after non-surgical OA treatment has been exhausted. **You will need an x-ray to refer to an orthopaedic surgeon**.

Assigning an Osteoarthritis 'Stage' to the Individual

Typical terms for OA clinical stages are: 'early/mild', 'moderate' or 'advanced/late'. The nine standards will not use any of these 'clinical stage terms' to describe an individual's OA and/or their applicable treatment options. This is because **clinical presentation should guide the use of these standards and the tailoring of treatments is appropriate no matter what the "assigned OA stage"** (clinical or radiographical). It would be a disservice to the individual with OA to suggest that a specific OA classification limits or discourages certain treatment options (more in Standard 2 and Standard 3).

Standard 2: Development of a Comprehensive Care Plan

A care plan is developed in collaboration with the person living with osteoarthritis of the hip or knee through discussion of evidence-informed treatment options. Using a shared decision-making approach will ensure the individual's health priorities, goals, values, and preferences provide a foundation for the care plan.

The osteoarthritis (OA) care plan describes the treatments discussed with the individual and chosen to address a range of items. **A care plan is a living document: it will evolve over time**. Standard 3 describes how to tailor care over time after the initial care plan is created.

Building an OA Management Care Plan

A care plan is developed considering the person's:

- Assessed health concerns
- Readiness for change
- Goals
- Values and preferences
- Overall wellbeing
- Prior experiences with OA treatments

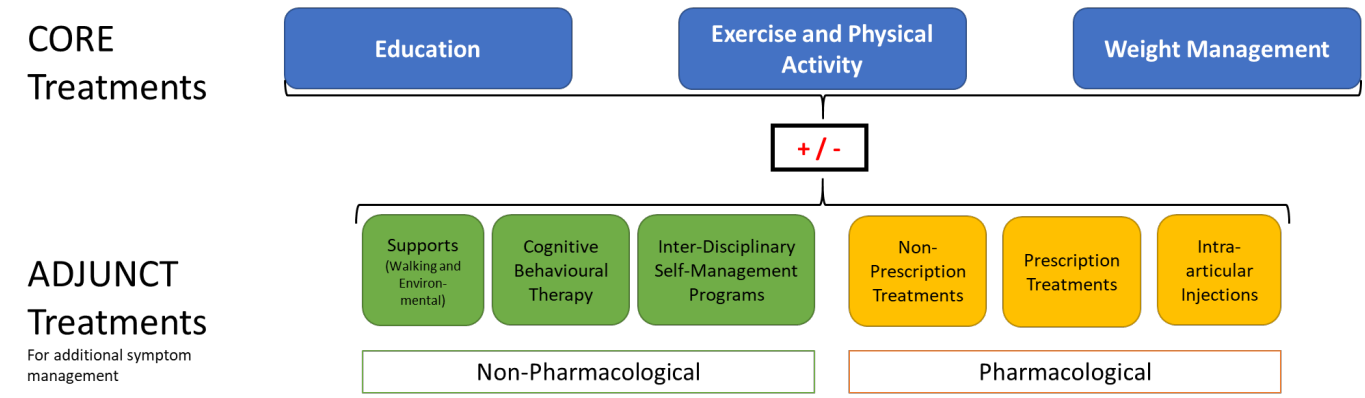
While keeping all the items described above in mind, an OA care plan will be built by:

1. Selecting specific Core Treatment(s)
2. If required: selecting a combination of specific Adjunct Treatment(s) to support participation in Core Treatments
3. Attaching SMART goal(s) to the selected treatment(s)
4. Choosing a specific follow-up plan (Standard 3) and revising the care plan as necessary, based on the individual's needs and preferences.

Building a care plan takes patience, collaboration, and trial and error. This form is a template for documenting an initial care plan. Using the principles of shared decision-making with the individual, identify the most important priorities to address and this will help guide the initial care recommendations. Each individual seeks care at different points in their disease activity, their symptomology, and with varying levels of knowledge about OA.

The OA Treatments Toolbox is provided below. They are structured to:

1. Promote the trialling of Core Treatments[1-4], which have the strongest evidence for OA management; and
2. Use Adjunct Treatments to support the return to these Core Treatments throughout a care journey.



OA Treatments Toolbox

Core Treatments can be *tailored* to the individual's needs and preferences. They include:

1. Education[1] to provide knowledge and skills that empower the individual with OA to understand the disease and available evidence-informed treatments – See Standard 4.
2. Exercise and Physical Activity[1,3] to encourage the individual to foster movement to influence joint health and achieve their activities of daily life – See Standard 5.
3. Weight Management[1,3] to support the individual to prevent increased joint loading to influence joint health and achieve movement for their activities of daily life – See Standard 6.

Adjunct Treatments can also be *tailored* to the individual's needs and preferences. They are used to support the trials of and achievement of Core Treatments. See Standard 7 for more information.

These tables provide examples of specific treatments in every treatment category to assist the clinician with the building of a care plan. More detail is available for clinician guidance on stepping through the OA treatments Toolbox. Shared decision-making techniques are evidence-based and promote satisfaction and success with the care plan.

The OA Self Management Toolkit is for individuals with OA. This document is an education booklet with introductory information about OA, and three tools for the individual: a Report Card, a Treatment Menu, and an example Resource Inventory . These tools can support and empower the individual in choosing their own preferred treatment options and can promote self-management of OA management in the long term.

It is important to keep in mind that each individual with OA seeks care at different points in their OA journey. Chronic disease management can be overwhelming to individuals with OA, particularly when individuals try to change too much at one time. For individuals that are ready, encourage them to start with setting one to two goals that are important to them, and breaking them down into smaller steps. Ultimately, the complexity of the care plan should be proportional to the individual's experience and enthusiasm, while remaining realistic.

Putting a Care Plan into Action

As soon as feasible after an OA diagnosis, the individual with OA will have:

1. A documented care plan
2. Direction on actions to take to begin the care plan
3. Begun trialling at least one treatment option; and
4. A plan for follow-up (more in Standard 3).

An example of how a multi-disciplinary team may be used to achieve an actioned care plan quickly is provided.

The exception to this is if the individual is a candidate for immediate referral to an orthopaedic surgeon (Standard 1). In which case a treatment plan should still be created but in complement with the surgeon's orders. Standard 8 talks more about how surgery may only be one step in the ongoing journey of management of OA.

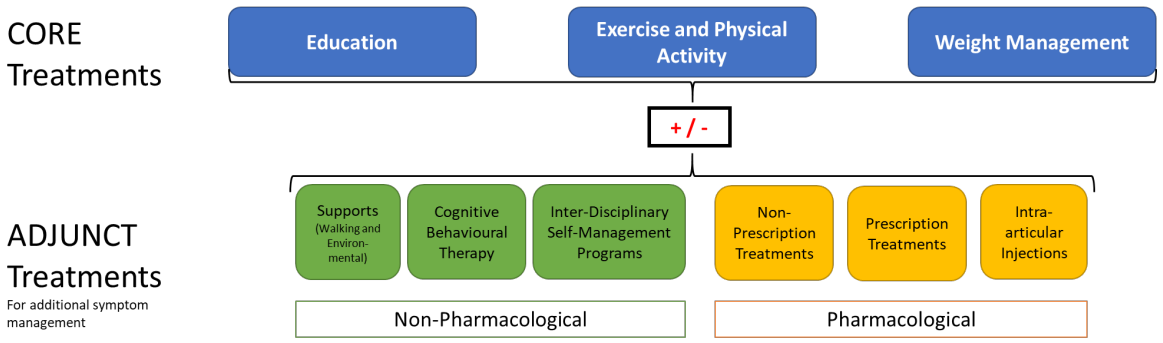
Standard 3: Tailoring Treatments Over Time

Treatment selection will vary for each individual. To navigate a life-long journey with osteoarthritis (OA), it is important to strive for confidence in self-management. However, people with OA of the hip or knee often require support to manage this chronic and evolving condition. Tailoring treatments depends on the individual's symptoms, experiences, needs, goals, and their care plan and self-efficacy. Collaboration between clinicians of different disciplines will likely be required as an individuals OA care journey develops.

After starting the initial care plan (Standard 2), osteoarthritis (OA) care will continue for everyone differently. This is because every person's life and OA will evolve differently. Tailoring of care depends on symptom evolution, experience with treatments and individual needs.

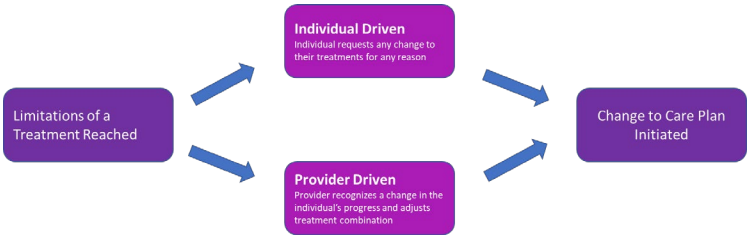
Tailoring Treatments

As described in Standard 2, the OA Treatments Toolbox is used to build the initial care plan. The OA Treatments Toolbox can also be used to guide tailoring of the care plan as the individual's symptoms and needs evolve. After building the initial care plan, it becomes a living document that should be modified and updated over the individual's lifetime.



There are no one-size-fits-all rules for how to combine treatments and tailor care for the individual with OA; clinical expertise should be combined with the individual's goals and needs. The care team will work with the person to determine if the selected treatments are effectively managing their symptoms and improving function to meet their goals. **Treatments that were once effective may become ineffective for symptom management and/or the individual's goals. Treatments that were ineffective may become effective again if they haven't been trialled for some time.**

Modifications are appropriate when the individual asks for them or if the clinician notices a decline in the individual's function or quality of life. Shared decision-making techniques should be employed for conversations about care plan modification.



Standard 1 proves detail on how imaging is not required for OA diagnosis and does not reliably correlate with symptoms[1]. Imaging is also not necessary for ongoing monitoring of OA progression[2]. However, if symptoms progress rapidly and OA features need investigation then imaging can become important. Additionally, up to date imaging may be required to assist an orthopaedic surgeon in their surgery planning (Standard 8). A referral to a surgeon is a possible modification to a care plan but typically referral is not appropriate if at least 12 weeks of non-surgical OA treatment have not been trialled. The exception to this is if the criteria for immediate surgeon referral are met.

Collaboration Between Clinicians

The clinician should work with the individual with OA to understand who the Primary Clinician for OA management is. It is beneficial when the Primary Clinician practices at the individual's medical home and has prescribing privileges (i.e. for some Adjunct Treatments). It is through **multi-disciplinary clinician collaboration**, between the Primary Clinician and supporting disciplines, that the individual with OA will receive the best support for their care journey. Properly supported people are more likely to adopt treatment recommendations for a chronic and evolving condition like OA[3].

The Primary Clinician should take the lead in:

- **Building a network of supporting clinicians** as the individual with OA trials different treatments
- Making introductions and seeking open communication (verbal or written) with the supporting clinicians to promote comprehensive and collaborative care for the individual
- Communicating the changes in the individual's health status and care plan to the supporting clinicians as appropriate
- Guiding the individual on modifying their care plan and tailoring their treatments over time

Many supporting clinicians will offer specific treatments for a structured period of time, rather than longitudinal care. Some supporting clinicians will work in a dedicated team at the same centre as a Primary Clinician, other supporting clinicians will work at separate organizations in the community. Supporting clinicians are responsible for:

- Asking the individual with OA to identify their Primary Clinician
- Seeking open communication (verbal or written) with the Primary Clinician throughout the treatment period, as required
- Planning and providing a clear discharge when appropriate

- Providing a 'warm hand over' to the Primary Clinician after the treatment period.

Follow-ups: Planning and Execution

The purpose of follow-up appointments is to:

1. Evaluate the response to a new treatment or;
2. Monitor the evolution in symptomology and the need to modify a care plan

Similar to modifying the care plan, there is no one-size-fits-all for scheduling follow-ups. Regardless, the plan for follow-up should be clear between the individual and the clinician. Shared decision-making techniques should be used to structure the conversations about the follow-up plan and the individual with OA should be empowered to contact the clinician to change this plan whenever they have questions or a clinical concern. This form may be used to provide a record of the new follow-up plan when it is made.

Since OA is a chronic disease with no cure[4], the primary clinician will need to be in touch with the individual with OA for their lifetime. Frequency of follow-ups may vary with time, symptomology and needs of the individual. As the care plan evolves, the follow-up plan should evolve too.

Striving for Confidence with Self-Management

The individual with OA lives with their disease every day, while clinicians, even the Primary Clinician, only briefly intersect with this journey. Throughout the OA journey, from building the initial care plan to end of life, the goal is to empower the individual to employ strategies to cope with their OA. Every Core Treatment (Standard 4, Standard 5, and Standard 6) emphasizes the principles of self-management, and Adjunct Treatment of Additional Self-Management Programs (Standard 7) provides an opportunity for more in-depth exploration of self-management techniques.

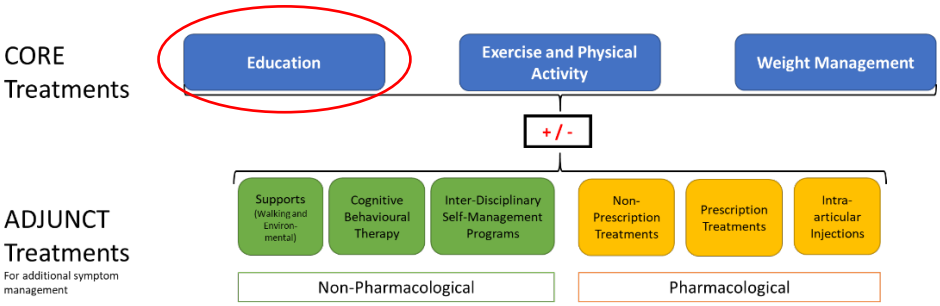
Individuals should be encouraged to record which OA treatments they have tried from the care plan and keep detailed notes on frequency, duration, changes in symptoms, and overall experience. Note: journaling can be accomplished in any format that is comfortable to the individual. Self-monitoring and evaluation should be encouraged during care planning and at follow-up visits, so individuals feel empowered and understand that they are in charge of their care journey.

Every clinician should support the individual to apply expanding OA knowledge to gain confidence in making treatment and self-management choices as symptoms change. Self-management coping strategies for OA include:

- Priority and goal setting
- Self-evaluation
- Problem-solving
- Mental health management
- Symptom management:
  - Thermotherapies
  - Activity self-selection
- Seeking clinician appointments as needed

Standard 4: Core Treatment 1 – Education

Osteoarthritis (OA) education' programs should be offered to all people diagnosed with OA of the hip or knee. Understanding OA empowers the individual with the knowledge and tools to self-manage their symptoms and enjoy life as much as possible. Accessible education resources can be provided in various formats, including in-person group education programs, community-based programs, virtual platforms and written materials.



Education should be offered to all individuals diagnosed with osteoarthritis (OA) and continued to be offered throughout their lifetime to address their knowledge gaps. Education empowers and equips the individual with OA with the knowledge and tools to self-manage their condition and health outcomes. Selecting new education options with each revision of a care plan will allow for:

- Basic information about OA to be regularly refreshed
- Emerging evidence for OA to be translated in a reasonable time frame to the individual
- Opportunities to build community with others living with OA
- A chance to inspire selection and revisiting of treatment options and self-management strategies, particularly for symptom management options including:
    - Thermotherapy (Standard 7); and
    - Activity self-selection (Standard 5).

At all follow-up visits, reassess the individual's symptoms and function and offer additional education resources that will support the individual's current needs and goals. Information they are directed to should address the individual's needs, goals, preferences, and values while also incorporating health change principles.

Types of OA Education Classes

There are two types of education classes relevant to individuals with OA:

1. Education classes that provide broad, possibly introductory, information about a topic

i.e. An introduction to OA class

i.e. An introduction to nutrition and OA class

2. Education classes that are specific to understanding a treatment

   i.e. Education about how a pool exercise program will affect their joints and how to adapt exercises for their needs

   i.e. Good Life with osteoArthritis: Denmark® (GLA:D®) education sessions

   i.e. Self-management coping strategy classes

Finding or Designing OA Education Resources

Education sessions can be delivered in verbal, written and/or virtual formats.

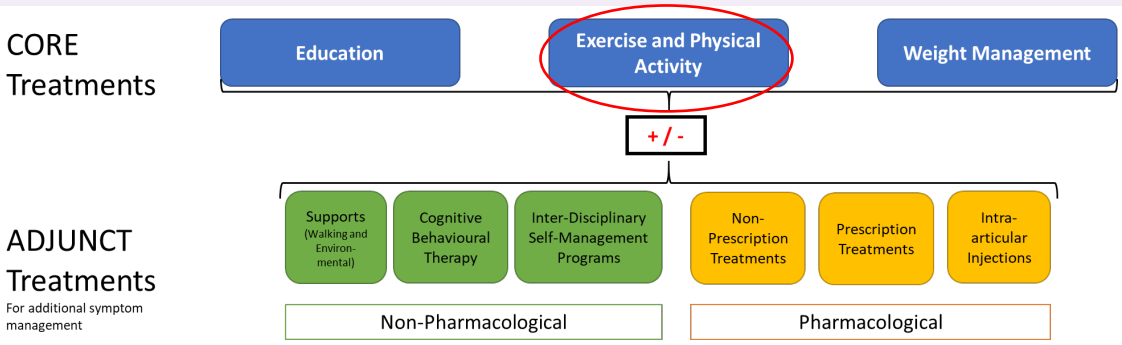
The OA Self Management Education Booklet aligns with the topics for an introduction to OA education and can be provided to the individual with OA as early as first confirmation of diagnosis. There is also an accompanying Powerpoint™ presentation for the booklet. Examples of publicly available materials are provided in the Health Resources Matrix.

Look for community organizations as well as health organizations to find applicable educational programs. For instance, a recreation centre may have an OA focused class. Build relationships with local educational programs and keep a Resource Inventory up to date with the program schedule for these classes and to ensure individuals with OA are directed to the program that is most applicable to their gaps in knowledge.

If there are no local education programs running in the area, consider running one. Consider using group teaching to build a community for individuals with OA to connect with one another. Locally developed materials should align with these standards, the OA Treatments Toolbox and best evidence. Successful education material should be presented in 'patient friendly' language and offer opportunities for interaction and question answering. Consider partnering with other agencies or programs as well to deliver a multi-disciplinary approach.

Standard 5: Core Treatment 2 – Exercise and Physical Activity

Individualized exercise and physical activity programs should be integrated into the care plan for people with osteoarthritis (OA) of the hip or knee. Individualized programs provide support and information on progressive exercises and how to modify those activities as symptoms change. These programs focus on improving strength, endurance and function which will help support regular movement and improve overall health. Use of shared decision-making techniques will ensure the individual's priorities, values and preferences are considered when setting their wellness goals.



Individuals with osteoarthritis (OA) of the hip or knee often experience weakness in their lower extremities[1-2] which, combined with poor neuromuscular function, may lead to functional and mobility decline over time. A sedentary lifestyle is one of the major risk factors of OA as it aggravates symptoms and contributes to a lower quality of life[3]. Physical deconditioning due to inactivity not only exacerbates symptoms but can also negatively impact overall health[1,4].

Regular exercise and physical activity are among the most effective treatments to improve symptoms and maintain physical fitness in people with OA of the hip or knee[4,5]. Exercise and physical activity are related but not equal and have a variety of benefits and components (see below).

Self-management strategies (Standard 3) should be discussed in conjunction with introduction of exercise prescription and physical activity programs. If the individual with OA gains confidence in understanding their body and options for modifying their exercises and physical activities, they will be better able to safely exercise and carry out their activities on a day-to-day.

Understanding Prescribed Exercise vs. Physical Activity

	Prescribed Exercise	Physical Activity
Defining Features	• Purposeful movements • Targeted to specific body parts • Structured movements	• Any leisurely action or task performed in everyday environments • Encourages movement of all body parts • For improving overall health and wellness

	Prescribed Exercise	Physical Activity
	• Repetitive movements	• No structure • Not targeted • Not purposefully repetitive
Examples	• 6 week arthritis pool therapy program • GLA:D® program	• Gardening • Walking to the store
Benefits	• Helps reduce OA symptoms including severity of pain and mobility restrictions • Reduce medication dependency • Improve mental health and cognitive function • Protects joints from further deterioration	
	• Weight bearing exercise can significantly improve the health of the cartilage of the affected joint • Some structured programs will allow for individual self-referral	• Self-select and self-modify readily
Prescriptions should include	• Education on safe practices • Steps for improving levels of exercise and physical activity • Support to lead an active lifestyle	
	• Education to understanding the specific exercises and why they were chosen	• Education on how physical activity impacts joint pain, particularly impact vs. non-impact

Prescriptions may include	• Range of motion
	• Targeted muscle strengthening
	• Neuromuscular training
	• Aerobic exercises
		• Activities that help to increase heart rate and level of exertion. This can include:
		  ○ Moderate activities
		  ○ Vigorous activities when safe to do so.

Prescribing Movement

During care planning with an individual, the Primary Clinician should offer options for exercise and physical activity to address strength and flexibility, in balance with cardiovascular fitness. Alternatively, depending on the scope of the Primary Clinician's expertise, they can refer to other clinicians, particularly those qualified and experienced in prescribed exercise to develop a targeted exercise program. Most recommended exercises and physical activities for hip and knee OA target lower extremities, including trunk/core, gluteal, quadriceps, hamstring, and calf muscles.

It is important to use shared decision-making techniques to build movement into a care plan. If the individual is choosing exercise and activity they are interested in, they will be more likely to enjoy and complete them. A well-rounded movement plan[4,6]:

- Accommodates for the individual's baseline wellness
- Addresses the individual's:
  - Needs
  - Goals
  - Symptom;
  - Socioeconomic status
  - Preferences
  - Values
- Has a preliminary plan for progression
- Collects outcome measures
- And incorporates:
  - Daily movement goals (see below)
  - Education on safe practices:
    - Recovery strategies
    - Pain tracking and managing strategies
    - Pacing and modification strategies
  - Strategies to improve motivation to maintain an active lifestyle.

Prescribed movement can be suggested as independent work for the individual or as part of joining structured programs. The Tables of Examples for the OA Treatments Toolbox provides a variety of categorized examples of independent or structured programs. Structured programs may be offered on-site or virtually, with individual supervision or in a group setting. Note that structured programs may incur costs. The individual's socioeconomic status should be considered before selecting treatment options.

Over time, work with the individual with OA to safely and gradually progress the intensity, frequency and duration of an exercise or physical activity. Build relationships with the community-based exercise program providers in the area to ensure individuals with OA are directed to the program that is most applicable to their needs.

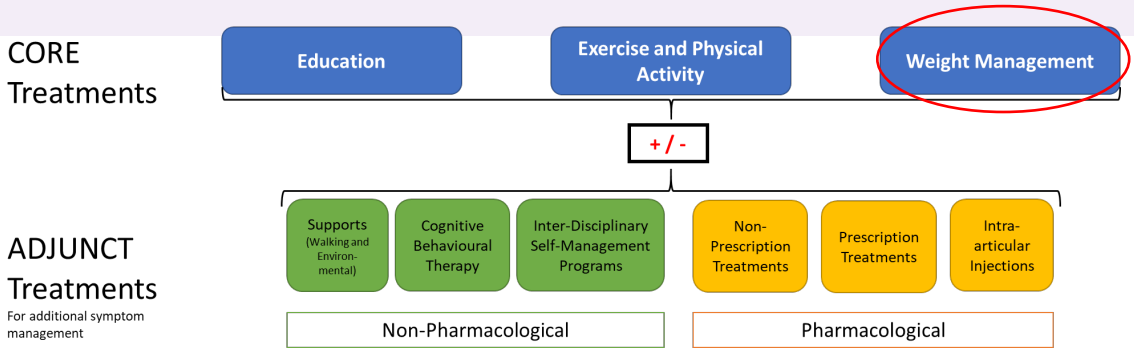
Movement Target

With clinician approval for medical safety a target of 150 minutes of moderate to vigorous aerobic movement per week is recommended[7-8].

	Moderate Movement	**Vigorous Movement**
Description	Individuals can carry a conversation while performing these movements.	Individuals would feel a little out of breath during conversation while performing these movements.
Examples	i.e. Brisk walking, biking, household chores, yard work and dancing.	i.e. Faster-paced walking, biking uphill and swimming.

Standard 6: Core Treatment 3 – Weight Management

When an individual identifies weight management as a priority in their care plan, they should be offered weight management options that are tailored to support their individual needs. Use of shared decision-making techniques will ensure the individual's priorities, goals, values and preferences are built into their weight management plan.



A higher body weight and excess body fat have been linked with the development and progression of osteoarthritis (OA). This is due to additional mechanical stresses on the lower limb joints with higher body weight, and a metabolic and inflammatory relationship between body fat and OA disease progression[1]. Therefore, weight maintenance, or prevention of weight gain, is a foundational strategy in OA management. This is particularly important due to the risks of weight gain associated with both aging and inactivity.

For individuals who are overweight or obese, weight reduction may also be beneficial for reducing OA symptoms and slowing disease progression. **Studies have shown that losing 5-10% of body weight can reduce joint forces/stresses and improve OA-related pain, physical function, and quality of life.** Behaviour-based weight management approaches (using nutrition, activity, and behavioural control strategies) usually result in sustained weight loss of 3-5% of body weight, which can still be effective in improving symptoms.

Although sustained weight loss might support reduction of symptoms, the body has mechanisms to defend against weight loss, and most individuals experience weight gain. Strategies and recommendations around weight management should focus on improvements in overall health, OA symptoms, and physical function rather than weight lost or numbers on a scale. Changing body composition (decreasing body fat without weight change) may also be beneficial.

Body Mass Index (BMI) is a screening tool used to classify normal, overweight and obesity in adults. It is calculated by dividing weight in kilograms by height in metres squared (kg/m2). BMI only provides information about body size. It is not useful to identify the health status of an individual. When used in combination with waist circumference, it can indicate risk for obesity related illness such as diabetes, hypertension, and cardiovascular disease. Another tool is the Edmonton Obesity Staging System[3].

(EOSS). The EOSS is a classification system which takes into account the comorbid and functional impact obesity has on an individual's health to determine their stage of obesity (stage 0-4) and guide treatment options[8].

Collaborating on Weight Management

Weight bias is the negative attitudes, beliefs, and assumptions towards individuals with obesity. One of the most important strategies to reduce weight bias is self-awareness. Clinicians should identify and address their own personal assumptions and attitudes about weight. Several resources are available including the Canadian Adult Obesity Clinical Practice Guidelines: *Reducing Weight bias in Obesity Management Practice and Policy*.

Understanding the individual's health priorities, goals, values, and preferences is the starting point for having a discussion around weight management for OA. This includes asking the individual for permission to discuss body weight, assessing their weight history, previous and current behaviour management strategies, and interest in additional strategies or supports. Caution and supervision around weight management may be needed in individuals who are at-risk for conditions such as malnutrition or sarcopenia.

All people, regardless of body size, are equally as susceptible to malnutrition and sarcopenia.[4] However, these conditions can be harder to identify in larger bodies as muscle loss and inadequate nutrient intake may be difficult to assess without proper tools and associated discussion[5]. **Malnutrition and sarcopenic obesity significantly complicate the person's efforts to participate in their OA treatment, and therefore these conditions should be addressed first.[6]** Seek referral or consult a Registered Dietitian for assistance supporting the nutrition status of people with OA.

There are a range of strategies available to support weight management in OA based on the individual's needs. Use shared decision-making techniques to create a plan that is tailored to the individual's goals, values, and preferences. This may incorporate[7-8]:

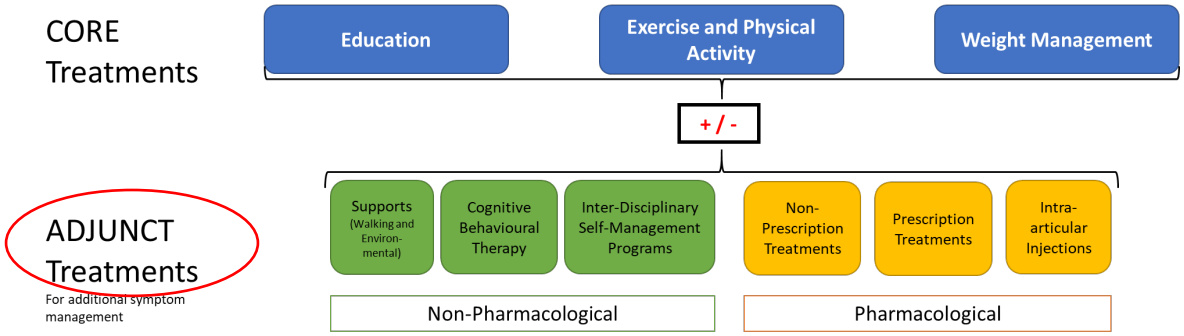
- Weight management services to support lifestyle intervention and behaviour interventions (nutrition, physical activity, sleep, stress reduction), to help the individual reach their health goal.
    - Examples provided in the Health Resource Matrix, in the Treatment Menu and on the Tables of Examples for the OA Treatments Toolbox.
- Coordination and complementation with the individual's exercise and physical activity care plan (Standard 5).
- Referral to supports for mental health or psychotherapy, which may assist with managing sleep, stress, and chronic pain as well as eating behaviours such as emotional eating.
- Referral to appropriate supporting clinicians
    - Possibly including referral to specialized multidisciplinary care for individuals with obesity.

Continuing Education

For some clinicians the skills required for offering the support described in this standard may be an evolving skill set. There are several resources provided in the Health Resources Matrix to explore continuing education.

Standard 7: Adjunct Treatments

If the individual with hip or knee osteoarthritis (OA) is unable to participate in Core Treatments, reports minimal progression towards goals, or requires additional support to manage symptoms the care team can consider Adjunct Treatments. Adjunct Treatments include non-pharmacological and pharmacological interventions to improve the individual's pain, function, and ability to participate in Core Treatments. Use of shared decision-making techniques will ensure the individual's priorities, values and preferences are considered when choosing Adjunct Treatments.



Core Treatments (Standard 4, Standard 5, and Standard 6) are essential foundations of every care plan and have the strongest evidence for management of osteoarthritis (OA)[1-4]. However, Adjunct Treatments can be considered if individuals with OA:

- Find it difficult to participate in Core Treatments
- Report minimal progression toward their goals
- Require additional support to manage symptoms

Adjunct Treatments are used to improve the individual's ability to fully participate in Core Treatments. The clinician can provide evidence informed non-pharmacological and pharmacological treatments options to support the individual's goals. In particular, muscle weakness, joint pain and fear of exacerbating symptoms can be barriers to adhering with prescribed exercise and physical activity (Standard 5). Addressing these physical and emotional barriers with Adjunct Treatments can support:

- Affected joints to ease mobility[5]
- Behavioural change[1]
- Long-term commitment to exercise and physical activity[1].

The clinician may refer to other disciplines with additional skills in OA management and expertise in specific Adjunct Treatments to build and strengthen the individual's support network. This multidisciplinary care team approach combined with collaboration with the individual will ensure the

individual's priorities, values and preferences are considered when pursuing Adjunct Treatments. **Any additional costs of Adjunct Treatments should be considered and discussed with the individual before adding to an OA care plan.**

Non-Pharmacological Interventions

Non-pharmacological Adjunct Treatments include any non-medicinal intervention proven to support symptom management. They are:

- Supports (walking and environmental)[1,5]
- Cognitive behavioural therapy[1]
- Inter-disciplinary self-management programs[1]

Supports – Walking and Environmental

The use of walking supports can improve stability, mobilization, minimize the risk of falling and the severity of injury if a fall does occur, and reduce the lower limb loading that can increase pain. Walking supports include:

Type	Facts and Benefits	Examples
Assistive Devices	• Reduces load on compromised hip or knee joints for joint stability • Increases size of base of support for overall balance improvement • Redirect a portion of body weight to the upper extremities	• Canes • Crutches • Hiking poles/walking sticks • Walkers
Braces	• Worn under clothing • Support joint and improve alignment • Redistribute forces on weight-bearing joints • Decrease pain • Improve overall function	• Custom offloading brace • Soft sleeve support
Footwear and Orthotics	• Decrease pain • Improve overall function • Improve alignment	• Orthotics: ○ Commercial or custom made • Footwear Note: consider cost vs. benefit. See learn mores for more information.

The use of environmental supports can conserve energy and provide options for safe movement. Environmental supports include:

Type	Facts and Benefits	Examples
Assistive Technologies	• Conserve energy • Reduce painful joint positions • Promotes independence for activities of daily living	• Long shoehorn • Long Handled Reacher • Sock aids
Home Adaptations	• Reduces painful joint position • Increasing seat to floor height can impact joint loading forces, magnitude of movement and stability • Promotes Safety/Fall Prevention	• Raised toilet seat • Toilet armrests/commodes • Higher seat/hip cushions

Supports are relatively affordable options that can address symptoms and allow individuals to better participate in exercise and physical activities. If these treatment options are applicable, the Primary Clinician can refer the individual to appropriate supporting clinicians or medical supply stores that are familiar with the walking supports commonly used by people with hip or knee OA. The individual can also self-refer to many clinicians who have supports expertise.

Cognitive Behavioural Therapy

The individual's OA pain experience can be influenced by changes in physical, emotional, behavioural, and cognitive states[1].

Cognitive behaviour therapy can be offered to individuals to:

- Support mental health[1]
- Develop stress and anxiety management strategies
- Develop pain coping strategies[1]
- Promote behavioural modifications[1]

The clinician may offer advice for these or refer the individual to skilled supporting clinicians or other trained cognitive specialists.

Inter-Disciplinary Self-Management Programs

Inter-disciplinary self-management programs offer resources and strategies to help individuals develop, adhere to, and modify their goals and course of action in response to their evolving symptoms[1]. These programs are more specific and focused than the self-management principles embodied in Core Treatments; the programs are appropriate for an individual who has struggles with employing coping strategies and wants more practice and examples. These programs aim to increase an individual's confidence to self-manage their symptoms and health outcomes. These programs emphasize the following topic areas:

- Priority and goal setting: Empowering individuals to play an active role in identifying what needs to change and set realistic goals including appropriate pace setting.
- Self-evaluation strategies: Helping individuals monitor their progression and changes in symptoms, in order to recognize when they need to ask for additional support.
- Problem-solving strategies: Evaluation of progress in meeting goals and how to overcome barriers and challenges.
- Mental health strategies: Guidance for managing emotional impacts of OA for individuals and their family support systems.
- Symptom management options including:
    - Thermotherapy: Heat modalities and cryotherapy to manage joint inflammation; and
    - Activity self-selection: Building their understanding of their local structured exercise programs and physical activity options so they can choose new ones as they wish.

When these programs are offered in a group setting, they can also provide an opportunity for individuals to build a support network and feel less alone (universality). Peer support can improve self-management of OA[6-7].

All education resources and sessions (Standard 4) will be combined with guidance on self-management strategies. The clinician should work with the individual to review and modify self-management strategies on an ongoing basis and as symptoms evolve.

Pharmacological Interventions

Pharmacological treatments include three types of medications:

- Non-prescription treatments: topical and oral
- Prescription treatments: topical and oral
- Intra-articular injectables

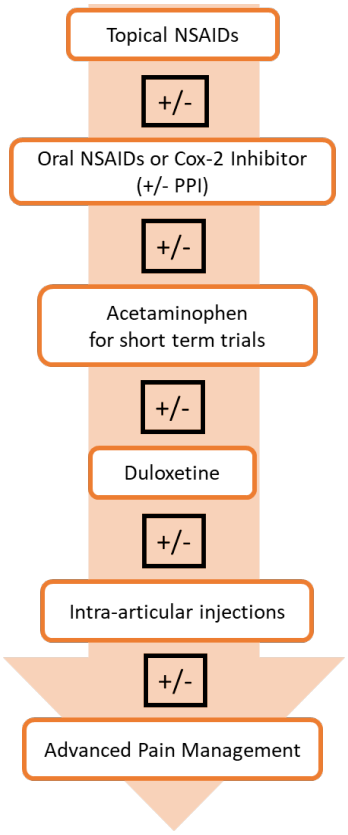
Pharmacological pain management strategies can be recommended by a primary care physician and/or in collaboration with a pharmacist or nurse practitioner. Prior to making pharmacological treatment recommendations, it is important that the clinician team assess the individual's:

- Symptoms
- Pain experience
- Comorbidities
- History of pharmacological treatment use

Complications, side effects and possible interactions of the OA with other medicines should also be considered. Further consultation with other medical specialties may be required to ensure safety of the individual with OA prior to making recommendations. Intra-articular injections should be performed by a skilled clinician.

Symptom self-management strategies should be discussed in conjunction with pharmacological treatment planning. Pharmacological treatments should be used to reduce pain symptoms to promote and enable full participation in Core Treatments. Since medications cannot reduce pain to zero and come with the potential for side effects or tolerance development, encourage the individual to combine pharmacological treatments with other non-pharmacological treatments such as thermotherapy or activity self-selection to help optimize pain management.

As symptoms evolve, the pain management strategy must be modified to suit the individual's current needs. Below is a stepped algorithm for pharmacological treatments that may be used by the clinician when considering options for best relief of the individual's current pain symptoms. The individual's needs, preferences, values, blood pressure, risks of side-effects and socio-economic status must be discussed when making pharmacological treatment choices. Selection of pharmacological treatments will influence the follow-up plan the clinician and the individual agree to (Standard 2). The individual with OA must be reassessed, as needed, to understand the efficacy and side effects of the pharmacological treatment(s), and to highlight any need for modifications in a timely manner.



The algorithm should be read top to bottom. These tables provide example medications for each category from the algorithm.

The algorithm begins with topical nonsteroidal anti-inflammatory drugs (NSAIDs) for individuals who have mild pain from their OA. Topical NSAIDS are better suited for knee OA versus the hip as the knee joint is closer to the surface of the skin allowing for better penetration of the medication. Next, consider an oral NSAID or Cox-2 inhibitor for patients without contraindications. NSAIDS and Cox 2 Inhibitors can cause serious side effects and increase risk of CV events. Try to use at the lowest dose for the shortest time-period possible. Consider providing a prescription for a PPI for gastroprotection in patients with increased GI risk. A short-term trial of acetaminophen could also be tried. Note that in clinical trials, acetaminophen appears to offer little clinically meaningful benefit. However, a short-term trial is often recommended as it is considered relatively safe compared to alternatives. This might also be a good choice for patients unable to take oral NSAIDs.

If oral NSAIDS do not provide adequate relief or a patient has a contraindication to oral NSAIDs, consider a trial of duloxetine for those with moderate to severe pain. Duloxetine has an official indication only for knee OA but may also be beneficial in patients with hip OA with comorbid depression and anxiety.

Intra-articular injections include steroids, hyaluronic acid preparations and platelet rich plasma (PRP). These can be considered if complementary supplements are still not providing adequate pain relief. Stem cell therapy is also a form of intra-articular injection, but Health Canada has a moratorium on this. Note: the evidence on all intra-articular injections is evolving and costs vs. benefits should be carefully considered.

The final option in the algorithm is advanced pain management. Advanced pain management includes:

- Opioids: oral or transdermal (not recommended)
- Peripheral nerve block
- Referral to an orthopaedic surgeon for joint surgery assessment (Standard 8)

Opioids are not recommended for routine use to treat OA pain[8]. Opioids can have harmful side effects.

Cannabinoids are not routinely recommended for individuals with OA[9].

Prescribing Adjunct Treatments

Pain medications must be prescribed very carefully, and a full history of the individual's active prescriptions, history of addictions, comorbidities and pain experience must be evaluated. Based on the pharmaceutical treatment algorithm, develop a tailored medication plan taking into consideration the individual's symptoms, ability to participate in Core Treatments, other health conditions, and values and preferences.

Use the Resource Inventory to track which Adjunct Treatments are available locally. Use the Tables of Examples of OA Treatments Toolbox to consider the breadth of options for adjunct treatments.

Standard 3 describes how it is every clinician's responsibility to communicate to the Primary Clinician, and vice versa. Any changes in the care plan or health status of the individual should be communicated. This is particularly important for the management of pharmacological treatments. Communications between clinicians can emphasize that the goal is to provide Adjunct Treatments to encourage return to Core Treatments.

At all follow-up visits, work with your individual with OA to reassess, track, and modify their Adjunct Treatments to better reflect their current needs and progress. This collaborative process will improve commitment to Core Treatments.

Standard 8: Referral for Joint Surgery

Individuals with osteoarthritis (OA) of the hip or knee may be considered for joint surgery if they have severe symptoms and poor quality of life that has not improved after exhausting their non-surgical (conservative) care options. While joint replacements have very positive health outcomes for many individuals and can help them return to conservative treatments faster, non-urgent surgery should be considered an option only after conservative treatments stop working. The use of shared decision-making techniques will ensure individuals understand the benefits and risks of surgical options and help set expectations for functional outcomes.

Despite optimizing non-surgical (conservative) options, individuals with osteoarthritis (OA) may still experience a progression of symptoms and deterioration of function and mobility, which impacts their quality of life. At this time, a referral for joint surgery may be appropriate for advanced pain management. An adequate trial of supported conservative care is strongly recommended before joint surgery is considered. This will help to ensure that appropriate candidates are referred for a consult with a surgeon in a timely manner.

This referral decision for joint surgery should be supported with:

- Readiness of the individual; and
- Declining trends in patient reported pain, mobility and functional ability (Standard 9);

Individuals who are beyond non-surgical(conservative) treatment may require an 'urgent' referral to surgery. The criteria for that classification can be found here.

This standard aligns with the most recent Hip and Knee Surgical Care Path.

When to Refer

If the individual with OA reports a progression of symptoms and functional decline which has not improved after an adequate trial of conservative care (below), a referral for joint surgery may be considered. Indicators of declining conditions include:

- Decreased function and mobility:
    - An inability to maintain usual work duties, self care, or daily activities
    - An increased reliance on others
- Increased use and dependency on gait aids for activities of daily living:
    - Individuals may start with a cane and progress to a walker or wheelchair, to help stabilize themselves and stay mobile
- Increased use and dependency on increasing doses of prescription pain medication or opioids to achieve mobilization

- Pain interrupting sleep
- Documented decline in quantitative patient reported outcome measures (PROMs) (Standard 9).

An Adequate Trial of Conservative Care

It is important to acknowledge that individuals seek system-supported care for their OA at different points in their OA progression. Some individuals seek support early in their OA disease activity and will have many conservative treatment options available to them. Other individuals seek support at a later point of progression and quality of life of the individual may have already declined. Therefore, conservative care should be trialed for at least 12 weeks. Twelve weeks is:

- The reasonable period for an individual to see changes from commitment to exercise, physical activity and/or weight management, and determine if conservative treatments will be appropriate to the individual
- A reasonable period to try options, that the individual may not have had or known about before.

It is important to recognize that the 12 weeks trial of conservative care is supportive of (and not opposing to) the success with surgical outcomes.

Starting and Completing the Referral

Before referring an individual for surgical consultation, the Primary Clinician should advise the individual should that there are risks and benefits of surgical joint replacement, and there should be a discussion about appropriate expectations for functional outcome after surgery. Surgical options for hip or knee OA can include total joint replacements, partial replacements (hemiarthroplasty), joint resurfacing, and revisions. It is important to discuss whether surgery would effectively meet the individual's health needs and evaluate their willingness to undergo the surgical preparation and rehabilitation processes. Although, the surgeon will explain the details of any risk factors with the individual, the referring clinician should discuss with the individual that:

1. They may or may not be a suitable candidate for surgery as per the Hip and Knee Surgical Care Path.
2. Certain factors like the presence of comorbidities [learn more] will have to be adequately optimized prior to approval for surgery.

Once the individual provides informed consent for the coordination of a referral, they may be guided through the process. Refer to the provincially standardized Hip and Knee Referral Form and the Alberta Referral Directory to refer the individual to one of the eleven Albertan hip and knee central intake clinics.

The referral form should be complete and compiled with the required appropriate x-rays ,additional applicable details on medical history and a history of the conservative treatments trialed to date. If the referral is not complete, the referring clinic will send the original referral form back to the referring clinician and request outstanding information. This should be avoided as it may result in delays for the

individual's wait times for surgeon consult.

Support the individual with OA to understand that their first assessment at the Hip and Knee Central Intake Clinic will be screened to evaluate whether they are an **appropriate** **candidate for surgery**, and a consult with a surgeon may follow after that. Candidacy for surgery will be evaluated at the surgeon consult again. It is important to empower the individual with OA to take an active role in discussing the criteria for surgery and the status of their comorbidities with both the specialist screening physician (if applicable) and the surgeon. It is also important to emphasize that their OA care will not end if surgery is not the correct step for them (see below).

An individual's candidacy for surgery may evolve with time. Collaboration between the individual and all clinicians (including the screening specialist and/or surgeon) is essential to ensure up to date information about symptoms and quality of life is documented and the individual's care plan is current.

> With the full implementation of these standards the relationship between referring clinician and surgeon will shift over time. A more equal partnership in optimizing the individual with OA for surgery will be possible with a broader understanding of OA management and the criteria for risk reduction prior to surgery.
>
> **Steroid injections should not be performed less than six weeks before the date of surgery.**

Ongoing OA Management

It is important to note that conservative (non-surgical) care does not stop after:

- A referral for joint surgery
- The decision and wait-listing for surgery; nor
- The surgery.

The continuation of conservative treatments will:

- Help individuals optimize their general health pre-operatively
- Improve their chances for greater functional recovery after surgery
- Improve their general health and joint care long after the surgery
    - Joint care includes the care of replaced joints as well as the care of joints still at risk of requiring replacement.

At follow-up visits, after surgery, continue to recommend appropriate conservative management options in order to conserve the repaired joint, speed recovery, maximize function and conserve other joints.

Standard 9: Measuring Quality of Care

For any health care intervention or program to reliably demonstrate success, a multi-faceted approach to continuous measurement of outcomes must be applied. The influence of these standards in Alberta will be measured, but measurement of outcomes can also happen at a local level.

Alberta has a proud history of demonstrating successful high-quality healthcare using measurement of outcomes, particularly in bone and joint healthcare. We define quality care with six dimensions: acceptability, accessibility, appropriateness, effectiveness, efficiency, and safety.

Bringing measurement into your local setting can help you improve business operations as well as demonstrate that the care you are delivering is of high quality and successful in supporting individuals with OA.

Types of Data

There are two types of data that can be collected:

- Administrative data
- 'Patient reported' data provided by the individual with OA

Administrative data is the responsibility of the provider and can include anything to do with the workflow at the local centre. Collecting administrative data helps improve business operations to offer efficient and accessible services for the individual with OA.

'Patient reported' data consists of two types:

1. Patient Reported Outcome Measures (PROMs)
2. Patient Reported Experience Measures (PREMs)

It is important to gather both PROMs and PREMs to properly evaluate the effectiveness, acceptability and appropriateness of the care delivered. See below for guidance on which PROMs and PREMs to use for management of OA.

Measuring Outcomes at Your Clinic

As your team works to adopt the *Comprehensive Quality Care Standards for OA of the Hip and Knee* at your practice, it is recommended that you also incorporate measurement to track your team's progress and the progress of your individuals with OA. The following is recommended:

1. Collect data electronically using an Electronic Medical Record (EMR) system with effective extraction.
2. Work towards achieving four measurement goals:

a. Monitoring your OA patients as a cohort at your centre. This may be done by adding a specific label (e.g. 'OA') or creating a 'panel'.
b. Collect PROMs every 12 months at a minimum to track the individual's OA symptom progression (unless discharged – Standard 3).

    i. For the purposes of management of OA EQ5D-5L and the Subjective OA Performance Score (SOAPS) are recommended.

    ii. The Patient Specific Functional Scale (PSFS) is also a useful tool for attaching outcomes to goals the individual has set.

    iii. The Health Resources Matrix provides guidance on which PROM/PREM is appropriate for which Standard.

c. Collect PREMs to ensure the individual's perspective is informing the delivery of care

    i. For the purposes of management of OA: the Alberta OA Experience Measure (AOAEM) is recommended; and

    ii. The Health Resources Matrix provides guidance on which PROM/PREM is appropriate for which Standard.

d. Care plan created using the OA Treatments Toolbox for each patient (or follow care plan if supporting provider)

3. Assign clear roles in your team for responsibilities with tracking, analyzing, interpreting, and actioning measurement results to *continuously* drive the improvement of the quality of your care.

    a. If your organization would like assistance in this area, you can contact Alberta Bone and Joint Health Institute (ABJHI) for information on services that are available: info@albertaboneandjoint.com.

Additional information to consider how to implement the above recommendations is provided.

Remember: if you are a clinician delivering care, you can collect health data for the purposes of quality improvement of your service delivery at any time. If you are uncertain whether your data collection purposes align more closely with quality improvement or research, please explore the Alberta Innovates A pRoject Ethics Community Consensus Initiative (ARECCI) program. Data collection for the purposes of research does require ethics approval through a certified ethics board.

Learn More Sections

1. Osteoarthritis Clinicians [Go Back]

Clinicians (Regulated Health Care Professionals) Who Can Diagnose Osteoarthritis	Clinicians Who May Participate in the Assessment and Treatment of Osteoarthritis

• Family physicians
• Nurse practitioners
• Physiotherapists
• Occupational therapists
• Chiropractors
• Specialty physicians including:
  ○ Sport and exercise medicine physicians
  ○ Rheumatologists
  ○ Physiatrists
  ○ Orthopedic surgeons
	Regulated Health Care Professionals:
	• Family physicians
	• Nurse practitioners
	• Physiotherapists (Allied Health)
	• Occupational therapists (Allied Health)
	• Pharmacists (Allied Health)
	• Registered Dietitians (Allied Health)
	• Psychiatrists
	• Psychologists/mental health therapists
	• Chiropractors
	• Specialty physicians including:
	  ○ Sport and exercise medicine physicians
	  ○ Radiologists
	  ○ Rheumatologists
	  ○ Physiatrists
	  ○ Orthopedic surgeons
	Non-regulated Health Care Professionals:
	• Podiatrists
	• Pedorthists
	• Kinesiologists
	• Exercise physiologists
	• Recreational therapists
	• Counsellors

[Go Back]

2. Reviewing the Individual's History [Go Back]

Adults (typically aged 40 years and older) who present with joint pain, swelling or stiffness in their hips, knees or lower backs should be considered for an osteoarthritis (OA) assessment. A diagnosis of OA can be made with a comprehensive bio-psychosocial clinical assessment that contains three elements: screening to rule out other possible pathologies, a detailed health history and a physical examination. This form can be used to record findings from each element.

A comprehensive review of the individual's history should include:

- History of joint trauma:
    - Identifying the joints with pain or stiffness symptoms
    - Past medical history of the symptomatic joint
    - Joint instability from ligament pathology
- Descriptions of pain experience:
    - Determining the period of joint stiffness in the mornings
    - Understanding the individual's pain experience (intensity, type, when, and sleep quality)
    - Mechanical symptoms, possibly from cartilage pathology
- Identifying limitations on activities and mobility:
    - Understanding the engagement in activities
        - Consider asking: How many minutes of exercise and/or physical activity (Standard 5) do you do per week?
    - Understanding the avoidance of activities because of pain, stiffness, or weakness
    - Understanding co-morbidities and their current management
    - Understanding the person's support network, lifestyle, and occupation:
        - Consider asking the Poverty Screening Question: "Do you (ever) have difficulties making ends meet?" to help inform care planning
    - Screening for falls in the past six months.

[Go Back]

3. Physical Examination for Clinical Assessment [Go Back]

Adults (typically aged 40 years and older) who present with joint pain, swelling or stiffness in their hips, knees or lower backs should be considered for an osteoarthritis (OA) assessment. A diagnosis of OA can be made with a comprehensive bio-psychosocial clinical assessment that contains three elements: screening to rule out other possible pathologies, a detailed health history and a physical examination. This form can be used to record findings from each element.

The physical examination helps to deepen the understanding of the individual's disease activity and allows for a baseline collection of information to inform treatment planning overtime. It is important to explain the process and ask for consent as the clinician moves through each step of the physical examination. Consider the following physical and observational assessments to inform the diagnosis:

- Tests to confirm diagnosis:
    - Observation of spinal and general posture
    - Observation of knee joint alignment when weight bearing and non-weight bearing
    - Scanning of lower extremity to evaluate referred pain and neurological signs
    - Observation of joint appearance and presence of swelling in knees only
    - Assessment of affected and associated joints' range of motion, strength, and stability tests:
        - Internal rotation (hips)
        - Flexion (both)
- Collecting a baseline of function:
    - Recording of height, weight, body mass index (BMI) and blood pressure*
    - Assessment of balance
    - Observation of gait pattern to test for mobility function
        - Timed Up and Go tests[6]
    - Assessment of risk for falls and/or functional strength of lower extremities using:
        - 30 sec Sit to Stand[6]

*Blood pressure is only necessary for medication modification.

Timed Up and Go Test[6]

Instructions:

1. Instruct the individual.
2. On the word “go” begin timing.
3. Stop timing after the individual sits back down.
4. Record time.

Interpretation:

- ≤ 10 seconds = normal
- ≤ 20 seconds = good mobility, can go out alone, mobile without walking support (Standard 7)
- ≤ 30 seconds = concerns, cannot go outside alone, requires walking support (Standard 7)

* A score of ≥ 12 seconds has been shown to indicate a high risk for falls

Age Matched Norms:

Age	Mean in seconds
20-29	8.57 +/- 1.4
30-39	8.56 +/- 1.23
40-49	8.86 +/- 1.88
50-59	9.90 +/- 2.29
60-69	7.9 +/- 0.9
70-79	7.7 +/- 2.3
80-89	No device: 11.0 +/- 2.2 With device: 19.9 +/- 6.4
90-101	No device: 14.7 +/- 7.9 With device: 19.9 +/- 2.5

If any of the following apply, then neurological problems may be present which would require further evaluation:

- Slow tentative pace
- Loss of balance
- Short stride
- Little or no arm swing
- Steadying self on walls
- Shuffling
- En bloc turning
- Not using assistive device properly

Sit to Stand Test

Instructions:

1. Instruct the individual.

2. On the word “go” begin timing.

3. Count the number of times the individual comes to a full standing position in 30 seconds.

4. The count is the individual’s score, compared to below.

Interpretation:

A below average score indicates a risk for falls.

Age	Men	Women
60-64	<14	<12
65-69	<12	<11
70-74	<12	<10
75-79	<11	<10
80-84	<10	<9
85-89	<8	<8
90-94	<7	<4

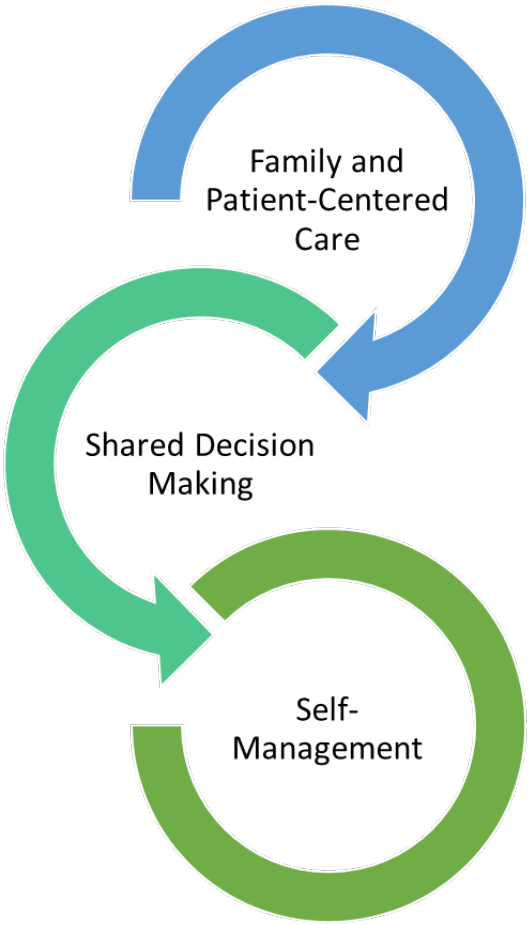
[Go Back]

4. Shared Decision Making

Go Back to Standard 1 Go Back to Standard 2 Go Back to Standard 3

Shared decision-making (SDM) techniques and processes are emphasized throughout these standards. The use of SDM is essential to achieving 'family and patient-centric' care. SDM is evidence-based and proven to improve outcomes for the individual such as satisfaction with and adherence to care plans.

Standard 2 describes how sharing the decision making is important for building a care plan. This toolkit provides more detail on the 3-talk model that can be used to practice SDM in everyday practice.



The inter-twining principles that ground the Comprehensive Quality Care Standards for Osteoarthritis of the Hip and Knee .

Go Back to Standard 1 Go Back to Standard 2

5. Additional Investigation Information [Go Back]

Imaging and laboratory investigations are **not required** to assist with **clinical OA diagnosis** of typical presentation. A **clinical diagnosis is sufficient to begin care planning** and treatment of OA and clinical presentation, in combination with shared decision-making should guide the ongoing management of OA. Imaging findings may not always match the individual's symptoms, and do not predict the response to treatment.

If the screening questions have indicated further investigation is required or if the diagnosis is uncertain, then consider imaging. The assessing clinician can begin with preliminary imaging and proceed to advanced imaging only if indicated.

Category	**Preliminary Imaging**	**Advanced Imaging – to be avoided for Hip and Knee OA**
Types of Imaging	X-rays, weight bearing if possible (details below)	• MRIs • CT scans • Ultrasounds
Appropriate Use	• Joint is difficult to examine making the clinical OA diagnosis uncertain • OA clinical disease activity progresses atypically, and an immediate referral to a surgeon may be appropriate • Other pathologies are suspected (see below) • To assist with administering an injection treatment (Standard 7) • Non-surgical OA Treatments have been exhausted and a referral to an orthopaedic surgeon is appropriate (Standard 8)	• Other pathologies are suspected (other guidance documents will need to be consulted) • Ultrasounds are sometimes appropriate to accompany injection treatments (Standard 7)

If Imaging Indicated, Preferred X-ray Views for Hip or Knee OA

If preliminary imaging is indicated, then the follow x-ray views are appropriate for hip and knee OA and all should be captured when weight bearing, if the individual with OA can manage this. Most views in the table are also those requested by orthopaedic surgeons for the provincially standardized hip and knee arthroplasty referral.

Knee	**Hip**
• Anterior-posterior weight bearing • Lateral • Skyline • Tunnel view	• Anterior-posterior pelvis centred at pubis • Anterior-posterior and lateral of proximal half of affected femur

Notes:

1. Skyline x-ray is optional for arthroplasty referral.
2. Tunnel view x-ray: is an anterior-posterior weight bearing at 30° flexion of the knee. This view is optional for arthroplasty referral.

Note: repeated use of x-rays to track OA progression is not typically warranted. Repeated x-rays do not provide added value to treatment planning unless the progression of symptoms is unexpected ***and*** an x-ray has not been done in 1-2 years.

[Go Back]

6. Immediate or 'Urgent' Referral to Orthopaedic Surgeon

The goal with these standards is to encourage an adequate trial of non-surgical (conservative) OA prior to referral to a surgeon (Standard 8). However, **there are certain criteria that would result in an 'urgent' classification of the individual, and therefore warrant immediate referral to an orthopaedic surgeon.** The individual's experience is very important to consider as an arthroplasty has positive health outcomes for many individuals and can help them return to OA management faster.

Refer immediately to an orthopaedic surgeon if:

1. Other pathologies are identified:
    a. Suspected fracture; or
    b. Ligament injury
2. During the documenting of history or the performing of the physical exam the individual with OA describes all the following:
    a. Dull/aching pain punctuated by short episodes of unpredictable pain; and
    b. Pain interrupting sleep; and
    c. Loss of independence and ability to do self care; and
    d. Increase of frequency and dosing of pharmacological treatments; and
    e. Avoidance of all daily activities.
3. Increased reliance on use of narcotics
4. Preliminary imaging was appropriately pursued and radiographical evidence reveals as severe joint spacing reduction.

[Go Back]

7. Assigning of 'Osteoarthritis Stage' to the Individual [Go Back]

Clinical OA Stage

- Various consistent, validated definitions in literature
- Subjective in two dimensions:
  - Individual's perception and reporting.
  - Clinician's perception of individual
- No measurable clinical objectivity

Radiographical OA Stage

- Validated definitions in radiological literature
- Does not reliably correlate with symptoms[2]
- Kellgren and Lawrence Radiographic Criteria for Assessment of OA provided in the AAC OA Tool

Clinical presentation should guide the use of these standards and the OA Treatments Toolbox options is appropriate regardless of OA stage (clinical or radiographical). It would be a disservice to the individual with OA to suggest that a specific 'OA stage' limits or discourages treatment options (more in Standard 2 and Standard 3).

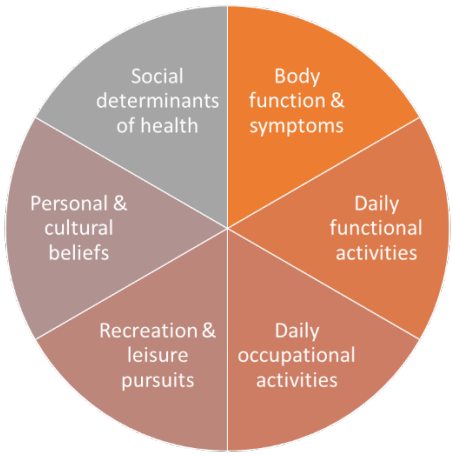
The only situation in which radiographical OA classification may alter an approach to care planning is if the person's OA disease activity triggers the criteria for an immediate referral to an orthopaedic surgeon [learn more].

Individuals will seek care at different points in their disease journey; a clinician's diagnosis may be building on care the individual has already received. For instance, an individual may still be 'early' but has been managing their condition for some time: their disease activity may be 'early' but their journey and their perception of treatment options may be 'advanced'.

8. Overall Wellbeing [Go Back]

An osteoarthritis (OA) management care plan considers the individual's overall wellbeing. Overall wellbeing includes multiple factors:

- Body function and symptoms such as pain, swelling, joint range of motion, strength, balance, and any comorbidities.
- Mental health fitness.
- Daily functional activities such as personal care, walking, climbing stairs, sleep, housework, and meal preparation.
- Daily occupational activities such as employment and family responsibilities.
- Recreation and leisure pursuits and interests.
- Personal and cultural beliefs and attitudes towards health, activity, and exercise.
- Social determinants of health including gender/gender identity, race/racialization, indigeneity, income/income security, employment/job security.



Elements of wholistic care planning

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9. SMART Goals [Go Back]

SMART goals are a tool of shared decision-making and are becoming more common in healthcare. The use of SMART goals can promote adherence to the osteoarthritis (OA) management Care Plan by meeting the individual where they are at in their readiness to change. Meet the individual where they are at by tailoring the scope of the goal appropriately. This also helps both the individual and the clinician attach accountability to the changes. SMART goals are:

S	Specific	The goal is specific to the OA treatment selected, i.e. going to the pool for aerobics.
M	Measurable	The frequency that the treatment will be employed, i.e. going to the pool two days per week.
A	Attainable	The treatment is chosen in context of the individual's life, i.e. going to the pool two days a week is a significant but realistic change from their current activity and this is available and accessible to them.
R	Rewarding	The treatment is meaningful to the individual, i.e. going to the pool includes a chance to visit with a dear friend and together they will be working on changes for their OA.
T	Timely	The treatment has some due dates attached, i.e. the pool visits will start next week and they will be reviewed in 4 weeks with the lead clinician

SMART goals take practice to write and are most successful when they are created in collaboration between a clinician and an individual with OA (shared decision-making). For some clinicians the skills required for the collaborative care described in these standards may be new territory. The following are suggestions for additional training that clinicians may find beneficial:

- This toolkit for learning more about shared decision-making techniques
- Health Change Methodology
- Motivational interviewing
- Any training that focuses on 'family and patient centered care'

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10. Using the Osteoarthritis Treatments Toolbox

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To start the development of a care plan: understanding the health priorities, goals, values, preferences, overall wellbeing and experiences with treatments of your individual with osteoarthritis (OA) of the hip or knee. Use shared decision-making techniques with your individual to identify the most important problem to address and this will help guide the initial care recommendations you make.

Each individual seeks care at different points in their disease activity, their symptomology, and with varying levels of knowledge about OA. **The OA Treatments should be *tailored* to the individual's needs**:

1. Many individuals with OA will begin their journey early in their disease and can use the OA Treatments Toolbox systematically, increasing the intensity and/or the intrusiveness of the treatments, as their disease progresses.

2. Other individuals with OA will be seeking clinician support later in their disease progression and will immediately require a more complex care plan with a combination of Adjunct Treatments (Standard 7) to support some exploration of Core Treatments (Standard 4, Standard 5, and Standard 6).

For all individuals with OA effective management requires trial and error with the evidence-based OA treatments. Not all treatments will work for all individuals. Some treatments may work for a short period of time and then not again. Some treatments can be returned to after a long break and may be more successful when the individual's goals, preferences or symptoms have changed.

The OA Treatments Toolbox allow the clinician to use their expertise to combine any number of treatments to ultimately support:

- Ongoing engagement in Core Treatments; and
- Self-management

The following are instructions for how to use the OA Treatments Toolbox to build a care plan. Also use these tables for specific examples of each sub-category of treatments.

1. Choose Core Treatments first
    a. They have the strongest evidence for OA management.
    b. They should be emphasized every time a care plan is modified (Standard 3).
2. Use Adjunct Treatments for additional symptom management
    a. The use of Adjunct Treatments enables the individual with OA to continue to participate in Core Treatments.
    b. Use clinical judgement to combine any treatments that will support the individual to participate in Core Treatments.

    c. Discuss with the individual the difference between the use of active treatments as opposed to passive treatments.

3. Work with the individual with OA to set SMART goals for their selected treatment.
4. Use your local Resource Inventory to discuss how and where the individual will trial the selected treatments.
5. Document the care plan and discuss a specific plan for follow-up appointments (Standard 3).
    a. Provide the individual with a copy of the care plan and the follow-up plan to promote self-management

While the OA Treatments Toolbox is a tool for clinicians, clinicians should not use it in isolation without collaborating with the individual. Shared decision-making techniques can be used to build the individual's care plan. The Treatment Menu and the Resource Inventory from the OA Self Management Toolkit are the individual-facing tools that align with the OA Treatments Toolbox

Note: if the individual with OA presents with symptoms that require immediate referral to surgery (see Standard 1), then the building of a care plan should be structured to complement the orthopaedic surgeon's orders, whether the individual is a surgical candidate or not. See Standard 8 for more details: the OA management journey does not end with surgery.

Go Back to Standard 2 Go Back to Standard 3

11. Osteoarthritis Self Management Toolkit

Go Back to Standard 2 Go Back to Standard 3

The Osteoarthritis (OA) Self Management Toolkit is **a handout for the individual with OA**. It is evidence-based and adaptable to many healthcare settings. The toolkit can be used to build a care plan and to progress a care plan over time as the individual's symptoms progress.

The OA Self Management Toolkit was designed with the principles of 'family and patient-centric care' in mind. The tools are easy to use in combination with shared decision making techniques to promote the individual's self-management of their OA. It was also created in collaboration with individuals with OA.

Tool in OA Self Management Toolkit Components	Purpose of the Component
Education Booklet	Provides introductory information on OA from basic facts to introductions to coping techniques.
Report Card	A one-time worksheet for the individual with OA to reflect on their experiences of OA treatments to date and identify their values and goals.
Treatment Menu	Presents specific examples of treatment options for the individual with OA to select from. The menu is structured in alignment with strength of evidence for the treatment[1]. The menu aligns with the OA Treatments Toolbox (Core Treatments are higher on the menu) but presents the treatments in a public facing way that promotes ongoing trial and error, and self-choice for the individual with OA.
Resource Inventory	Aligned with the Treatment Menu structure, this tool presents specific information on 'where' and 'how' the individual with OA can trial their selected treatments. It is crucial to putting an OA management care plan into action. Resource Inventories are region specific and should be actively maintained for local accuracy. This is an Example of regionally adapted Resource Inventory. This is a Template for creating a new regionally adapted Resource Inventory.

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12. Self-Management

Go Back to Standard 2 Go Back to Standard 3 Go Back to Standard 4
Go Back to Standard 5

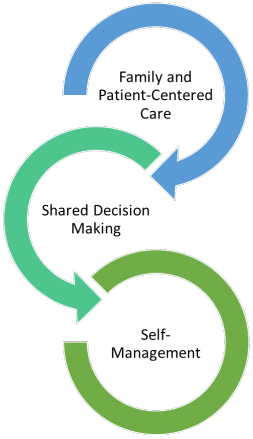
Osteoarthritis (OA) is a progressive disease with no cure. Osteoarthritis Research Society International (OARSI) and Patient and Community Engagement Research (PaCER) findings have concluded that the individual needs to have control of their care journey. The individual lives with their evolving disease every day, while the clinicians only provide support for short periods of time or short interactions[13]. Throughout these nine standards, the principles of self-management are reinforced. Confidence in self-management can be supported by employing 'family and patient-centred care' principles using shared decision-making techniques.

All the processes and strategies described in these standards focus on empowering the individual to gain knowledge and to make choices for their OA journey based on that expanding knowledge. The principles of self-management are crucial to day-to-day symptom management. Symptoms of OA can flare up without explanation and the empowered, engaged and educated individual will be able to take action when this occurs.

As care progresses, every clinician should support the individual to gain confidence in applying their expanding OA knowledge to make treatment and self-management choices. Self-management strategies for OA include:

- Priority and goal setting
- Self-evaluation
- Problem-solving
- Mental health management
- Symptom management:
  - Thermotherapies
  - Activity self-selection
- Seeking clinician appointments as needed

More detail is provided in Standard 7 for those individuals who want to build more confidence in self-management techniques.



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Go Back to Standard 5

13. Example of Appointment Structure: Diagnosis to Care Plan Start [Go Back]

Below is a template for appointment structuring, which clinicians/clinician teams might consider adopting to work in alignment with these standards. Collaboration between physicians and allied health strengthens the experience for an individual with osteoarthritis (OA) for these first few appointments. Identify the person in your team who is best suited and has the greatest strength or training for the activities described below. For instance: therapists (e.g. physiotherapists, occupational therapists) have extensive training in setting SMART goals using shared decision-making techniques.

Appointment Number	Example Activities	Suggested Responsible Team Member
1	• Individual presents with pains that may indicate OA. • Schedule individual for comprehensive assessment appointment.	• Primary clinician of individual's choice (See Standard 3)
2	• Comprehensive assessment. Confirm OA diagnosis.	• Primary clinician (who can diagnose OA])
	• Introduce the OA Self Management Toolkit and provide it as a handout for home reading.	• Allied health

	• Ask the individual to reflect on their goals and values to support the:
	  ○ SMART goal writing process
	  ○ Treatment choosing process for the next visit.
		• Allied health

3	• Explain Core vs. Adjunct Treatments. ○ Consider using small group appointments to promote community building among individuals with OA	• Allied health
	• Collaborate to build a care plan	• Allied health
	• Review and choose a follow-up plan	• Primary clinician

[Go Back]

14. Active vs Passive Treatment

Go Back to Standard 2 Go Back to Standard 3

The word ‘treatment’ is used to describe evidence-based options for osteoarthritis (OA) management. Treatments can encompass a range of interactions between an individual and a clinician:

- Active treatments: the individual with OA is a full participant in the treatment (i.e. pool therapy program and using self-management skills).
- Passive treatments: the individual with OA receives an intervention from a clinician (i.e. an intra-articular injection).

Regardless of whether the treatment is active or passive, throughout these nine standards the principles of ‘family and patient centred’ care are emphasized to encourage the use of shared decision-making techniques with the individual with OA and ultimately to promote self-management of OA.

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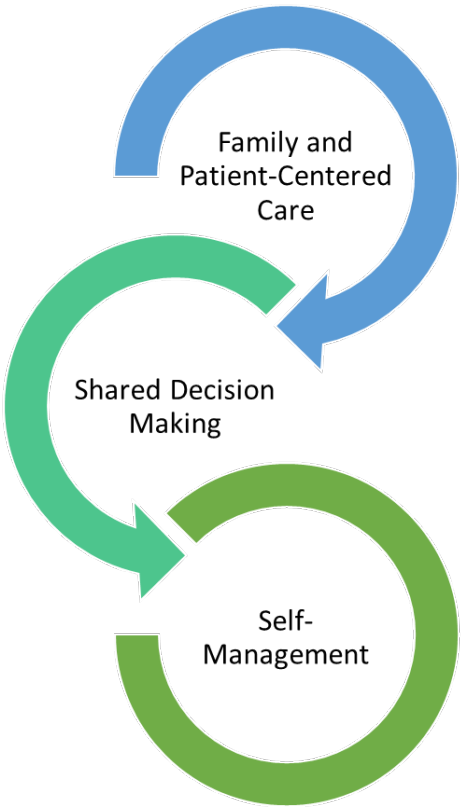

15. Modifying a Care Plan [Go Back]

To modify a care plan: review the documented and progression of health priorities, goals, values, preferences, and overall wellbeing of the individual with osteoarthritis (OA). Document an updated assessment of the individual's OA symptoms. Understand the experiences the individual had with previous treatments, such as:

- Physiological response to the treatment, especially if any complications or adverse reactions arose
- Preference for the treatment
- Preference for the delivery mode of the treatment.

After the above information is reviewed and understood:

1. Use the Tables of Examples of the OA Treatments Toolbox to suggest substitutions within categories or to suggest new treatments to build a new combination for the care plan, as appropriate.
    a. Discuss the importance of participating in Core Treatments
    b. Adjunct Treatment selections should support the continued participation in Core Treatments
2. Final selections for care plan modification should be made through a collaboration between the individual and a clinician.
    a. The individual with OA can review their Treatment Menu to consider their interests in new treatments.
    b. Shared decision-making techniques can be used to guide this collaboration.
    c. Set new SMART goals for each new selection, keeping self-efficacy and new priorities in mind.
3. Document changes to the care plan.
    a. Set a new follow-up plan
    b. Provide the individual with a copy of the modified care plan and the modified follow-up plan to promote self-management
4. Communicate changes to the care plan to the full team of clinicians supporting the individual.

While the OA Treatments Toolbox is a tool for clinicians, the Treatment Menu and the Resource Inventory from the OA Self Management Toolkit are the individual-facing tools that align with the OA Treatment Toolbox.

The exception to the above guidelines is if referral to surgery is appropriate.

- Immediate referral to an orthopaedic surgeon may be appropriate if OA symptoms progress

rapidly. Review the criteria for immediate referral to an orthopaedic surgeon.

- Referral to an orthopaedic surgeon may also be appropriate if non-surgical (conservative) treatments have been trialled and they are no longer effective (for symptom management and/or the individual's goals).
- Refer to Standard 8 for details on referrals for joint surgery and continuation of OA management treatments during surgery wait times and after surgery. **Hip or knee surgery is not the end of an OA care journey.**

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16. Referral Between Clinicians

Go Back to Standard 3 Standard 4 Standard 5 Standard 6 Standard 7

The following matrix is provided to guide clinicians on referrals and building a multi-disciplinary team of support for an individual with osteoarthritis (OA). Some supporting clinicians will work in a dedicated team at the same centre as a Primary Clinician, other supporting clinicians will work at separate organizations in the community.

	Category of OA Treatments in the Toolbox								
Discipline that may offer the treatment	**Education**	**Exercise and Physical Activity**	**Weight Management**	**Supports (Walking and Environmental)**	**Cognitive Behavioural Therapy**	**Inter-disciplinary Self-Management Programs**	**Non-prescription Pharma Treatments**	**Prescription Pharma Treatments**	**Intra-articular Injections**
Family Physicians	X		X*				X	X	X*
Nurse Practitioners	X						X	X	X*
Physiotherapists	X	X		X	X*	X			restricted
Occupational therapists	X	X		X	X*	X			
Kinesiologists	X	X				X			
Exercise physiologists	X	X				X			
Sport and Exercise Medicine Physicians	X	X					X	X	X
Radiologists									X
Rheumatologists	X						X	X	X
Pharmacist	X					X	X	X	
Physiatrists	X						X	X	X
Chiropractors		X							
Orthopaedic surgeons	X						X	X	X
Registered Dietitians	X		X						
Counsellors			X		X	X			
Psychiatrists			X		X	X			
Psychologists/mental health therapists			X		X	X			
Podiatrists				X					X
Pedorthists				X					

Note: The method of delivery of conservative OA treatments can vary between disciplines, between practices and between communities. Clinicians should talk with their individual with OA to make sure the referral will be the right fit for the individual.

*Note: Clinicians can offer these services with the applicable training.

Go Back to Standard 3 Standard 4 Standard 5 Standard 6 Standard 7

17. Discharge Planning [Go Back]

Discharge planning is crucial for treatments that have a scheduled end date (i.e. a 6-week structured pool therapy program). If discharge is applicable, supporting clinicians should introduce discharge planning at the beginning of a treatment to help prepare an individual with osteoarthritis (OA). Discharge planning should include:

- Acknowledging that the treatment will come to an end
- Discussing the intended outcomes of the treatment and the plans to measure these outcomes to demonstrate success of the treatment (Standard 9)
- Explaining what happens after the treatment:
    - i.e. Supporting clinician will write a letter back to the Primary Clinician.
    - i.e. Individual will need to contact Primary Clinician to review and update or modify care plan.
- Providing examples of options if the treatment goals were not reached for the individual:
    - i.e. Doing the treatment again
    - i.e. Modifying the care plan to include:
        - A different combination of treatments; or
        - New, more intrusive and/or intensive treatments.

Supporting clinicians should seek opportunities to provide a warm hand over at the completion of discharge.

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18. Warm Hand Over [Go Back]

There are a few reasons why a warm hand over may be required:

- A treatment with a supporting clinician is beginning
- A treatment with a supporting clinician is coming to an end
- A clinician reaches the limit of their scope of practice and the individual with osteoarthritis (OA) will require more advanced or different support
- A new Primary Clinician is required

A warm hand over should include the following to achieve success:

- Discussion with the individual with OA to collaborate on:
    - Understanding the need for a hand over; and
    - The selection of the new clinician.
- Introductions between clinicians and with the individual with OA
- Chart sharing or transferring, as appropriate
- Discussion on next steps for support for the individual's care plan
- Review of the individual's goals, values, preferences, and needs.

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19. Scheduling Follow-ups [Go Back]

A follow-up to evaluate the response to a specific new treatment should be scheduled at a reasonable period to allow for the trial of the treatment. Clinical expertise or clinician consultation should be used to determine a reasonable trial period. Note that many active treatments require commitment and time to see results. However, the individual with osteoarthritis (OA) should be empowered to seek a follow-up prior to the scheduled appointment if any complications or concerns arise. Safe participation in the treatment is paramount, especially as the individual's knowledge about OA treatments and confidence with self-management is evolving.

If the individual with OA is progressing well with treatments, it may simply be necessary to schedule a check-in at a reasonable period to ensure the overall wellbeing of the individual on their OA journey. There are several factors that may influence the scheduling of a follow-up appointment (see below). **If you are the Primary Clinician, consider no more than one year between appointments**. If you are a supporting clinician, collaborate with the Primary Clinician and the individual with OA to determine frequency of follow-ups. Regardless of the frequency period chosen for check-ins, the individual with OA should be empowered to seek appointments whenever they have concerns or questions.

The following factors may affect the overall frequency of follow-up appointments:

1. The individual's:
    a. Rate of symptom evolution and/or disease activity
    b. Quality of life changes
    c. Life circumstance changes (i.e. change in occupation or support)
    d. Socio-economic status
    e. Mental health
    f. Experience with other clinicians
    g. Physiological response to treatments
    h. Preference for treatments.
2. A clinician's:
    a. Practice preference and clinical expertise
    b. Clinic protocols
    c. Clinical expertise
    d. Observations of the individual's possible rate of disease activity.

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20. Topics for an Introductory Education Class on Osteoarthritis [Go Back]

An introduction to Osteoarthritis (OA) class should include the following topics:

- Overview of OA: Causes, symptoms, and prognosis
- Self-management strategies:
    - Daily symptom management through:
        - Application of thermo-therapies; and
        - Activity self-selection.
    - Healthy behaviours and lifestyle modifications:
        - Nutrition; and
        - Physical activity.
- Core Treatments and Adjunct Treatments and the strength of evidence available for each
- Importance of each Core Treatment: education, exercise and physical activity, and weight management
- Safe movements for joints
- Benefits and risks of Pharmacological and Non-Pharmacological treatments
- Safe use of walking aids and assistive devices
- The role of the Primary Clinician and how supporting clinicians will have different expertise to support other treatments
- The importance of making a care plan with specific goals and updating that care plan as symptoms and life evolve
- Tracking symptoms and treatment trials.

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21. Tailoring Movement Over Time [Go Back]

Progression of prescribed exercise or physical activity or osteoarthritis (OA) treatment can happen when the individual feels comfortable and shows achievement of their wellness goals. At all follow-up visits, discuss and reassess your individual's:

- Physical activity plan
- Participation in individualized exercise plan
- Evolving goals
- Evolving symptoms
- Overall progress in physical and mental wellness
- Overall OA care plan; and
- Any additions of adjunct treatments to the overall OA care plan.

These discussions can inform how you modify your recommendations for the prescribed exercise or physical activity. Maintain your local Resource Inventory with up-to-date information about the structured exercise programs offered, their scheduling, wait times and costs. Continue to use shared decision-making techniques at each follow-up.

The inherent progressive nature of prescribed exercise will ensure a safe and gradual increase in frequency, intensity, and duration of the exercises to help individuals reach their goals.

Activity modification can happen in the big picture: by modifying one's choice of activity pursuits (i.e. choosing cross-country skiing instead of downhill skiing). But activity modification can also happen in the day-to-day: by modifying the chosen activity on any given day to help manage symptoms (i.e. walking half a kilometre today if symptoms have flared, and increasing back to two kilometres again next week, or parking further away to provide a new opportunity to walk). Overall, non-impact activities (i.e. cross-country skiing) are better options than repetitive loading activities (i.e. running).

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22. Components of Prescribed Exercise Programs [Go Back]

Prescribed exercise programs that are designed to target muscles related to supporting the affected hip and knee joint may include:

Range of Motion: Moving the joint to its full range will improve joint health and mobility, muscle action and relaxation. Best performed when muscles and joints are warmed up, i.e. after activity such as walking or cycling.

Targeted Muscle Strengthening: Includes weight-bearing and non-weight-bearing exercises to strengthen the specific muscles supporting the affected joints as well as strengthen the core muscles. This will improve function, balance, and reduce the risk of injury. Stronger muscles around your joints can help stabilize the joint and slow changes to the bone and cartilage.

Neuromuscular Training: Coordinated muscle movements to improve strength, balance, agility, neuromuscular control and appropriately apply load on joints.

Aerobic Exercises: Cardiovascular exercises that vary in intensity but performed in longer duration. Over time, it can improve endurance, energy, and general physical and mental wellness.

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23. Custom Braces [Go Back]

Custom knee or hip braces may help with pain management and provide an enhanced feeling of stability to painful joints. Knee braces are typically made of a strong but light material that is formed to the unique shape of the individual's knee. Hip braces are more flexible and resemble lycra bicycle shorts with strapping about the hip and leg. Bracing is most effective when worn directly on the skin, under clothing.

Examples of Hip and Knee Braces

Most osteoarthritis (OA) clinical guidelines do not cite strong evidence for braces for OA treatment, and therefore the guidelines do not recommend them. However, for some patterns of joint wear, some people with arthritis may find braces assist with pain management and foster a sense of confidence to continue with their exercise and physical activity.

Custom braces are more expensive than off-the-shelf braces. There may be assistance available from the Alberta Aids to Daily Living to assist with the cost of bracing. Bracing is not ideal for everyone with OA and the individual with OA is encouraged to speak to his/her health care provider to determine if this may be an option to consider.

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24. Custom Orthotics [Go Back]

Custom orthotics may help some individuals with osteoarthritis (OA) feel more stable. They are typically made from a mold of the individual's unique foot shape to help correct alignment and may improve foot and ankle comfort with gait. Most of the OA clinical guidelines do not cite strong evidence for orthotics for OA treatment, and therefore the guidelines do not recommend them. With appropriate discussion between the individual and clinician, and with education for the individual about proper expectations from custom orthotics this treatment may be a beneficial option for some individuals.

Custom orthotics are more expensive than off-the-shelf orthotics. Orthotics are not ideal for everyone with arthritis and the individual with OA is encouraged to speak to his/her health care provider to determine if this may be an option to consider.

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25. Custom Footwear [Go Back]

Custom footwear is one example of walking supports that may offer a sense of pain relief and increased comfort to the individual with osteoarthritis (OA). They are typically made from a mold of the individual's unique foot shape to accommodate an unusual foot shape. Custom footwear offers good heel control and an adequate toe box.

Most of the OA clinical guidelines do not cite strong evidence for custom footwear for OA treatment, and therefore the guidelines do not recommend them. However, custom footwear can provide confidence to the individual to continue with their exercise and physical activity.

Custom footwear are more expensive than off-the-shelf footwear and may not be of any greater benefit than a shoe that fits the foot well, with enough room in the toe box, fits the heel well without slipping and supports the arch of the foot.

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26. Environmental Supports [Go Back]

The use of environmental supports can conserve energy and provide options for safe movement. Environmental supports include:

Type	Facts and Benefits	Examples
Assistive Technologies	• Conserve energy • Reduce painful joint positions • Promotes independence for activities of daily living	• Long shoehorn • Long Handled Reacher • Sock aids • Elastic shoelaces • Long handled sponges

Home Adaptations	• Reduces painful joint position
	• Increasing seat to floor height can impact joint loading forces, magnitude of movement and stability
	  ○ Decreases the amount of forward backward trunk sway for transfers
	  ○ Reduces amount of hip extension/knee flexion required for transfer
	• Promotes Safety/Fall Prevention
		• Raised toilet seat
		• Toilet armrests/commodes
		*Feet should be planted on the floor for pelvic stability
		*Check manufacture weight limits
		• Higher seat/hip cushions
		• Bath seat/Bench
		• Handrails on stairs
		• Bedrail/assists
		• Tub grab bars, wall bars

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27. Intra-articular Injections [Go Back]

The body of evidence for injection treatments for osteoarthritis (OA) is evolving. Many OA clinical guidelines do not provide conclusive recommendations because of this. However, some individuals with OA respond very well to injections and can use them to continue comfortably with their Core Treatments.

Different injections have different purposes, and for some individuals a combination of injections may be appropriate, and different compounds may be injected at different times:

- Steroid (i.e. cortisone) is a potent anti-inflammatory medication. Steroids generally works quickly and generally does not provide lasting benefits compared to hyaluronic acid and/or platelet rich plasma. Steroids provide moderate pain relief and restoration of function; they are also cost-effective. Steroids are conditionally recommended for acute (1-2 weeks) and short term (4-6 weeks) pain relief. Consider repetitive injections if effective, no more often than three-four months.
- Hyaluronic acid (HA) is a compound found in normal, healthy joint fluid. HA is diminished in arthritic knees. HA injections are best in an arthritic joint, i.e. one that is not swollen. HA effects generally are more long lasting compared to steroids, possibly providing benefit for six-twelve months. HA provide improved pain relief and restoration of function compared with placebo.
    - Theoretically, to be most effective the HA preparation must be high molecular weight and highly cross-linked.
    - Common OA clinical practice guidelines has been published for use with knees only, however it has been used effectively for hips as well.

- Platelet rich plasma (PRP) is a form of biologic injection that is an emerging therapeutic treatment option. Preparation varies by clinic; there is no Health Canada approved product in this category.

- Combining HA and steroids for knee OA patients can provide significant improvement in pain outcomes and may provide a more rapid onset, and longer duration of action than either therapy alone. However, there are potential concerns regarding cartilage loss with regular injecting this combination of therapies. There is insufficient evidence to support other combinations of intra-articular injection therapy.

Only some clinicians are trained in accurate injection delivery .“The accuracy of intra-articular injections depends on the joint and on the skills of the practitioner, imaging may improve accuracy.”[1]

Steroid, HA and PRP injections can also be given with or without local anaesthetic. The effects of local anaesthesia on the cartilage are an emerging body of evidence as well.

Stem Cells

Stem cells are cells that can change into any tissue in the body. In theory, stem cells can be changed into cartilage to replace the lost or damaged cartilage in an arthritic joint. Health Canada currently has a moratorium on any use of stem cell therapy[2]; in Canada this form of treatment is only available through

a research study. The theoretical effects of stem cell therapy are not at the stage that it is a consistently reliable and predictable treatment option. The Bone and Joint Health Strategic Clinical Network (BJH SCN) has a white paper on stem cells therapy for Alberta and there is more information available at MyHealth Alberta here: https://myhealth.alberta.ca/Alberta/Pages/stem-cell-treatment-for-osteoarthritis.aspx

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28. Advanced Pain Management [Go Back]

Opioids

Opioids are not recommended for routine use to treat osteoarthritis (OA) pain. Opioids have harmful side effects, including[3]:

- Cognitive effects
- Increased risk of falls
- Increase in pain symptoms (opioid hyperalgesia)
- Risk of tolerance that may lead to dose escalation
- Risk of addiction
- Risk of overdose, particularly if used in combination with other prescribed medications, alcohol, and/or in the presence of other health conditions including sleep apnea.

Prior to prescribing opioids, assess all risks and the medical history of the individual carefully. If the individual with OA requires advanced pain management, the clinicians should aim to prescribe the lowest effective dose, ideally <50mg morphine equivalents per day, and for a short duration. The Canadian Opioid Prescribing Guideline can also be consulted to provide further guidance. A strong opioid prescription plan for the individual includes:

- A clear discussion of the benefits and risks of opioids
- Instructions on when and how to consume the medication
- Instructions on the duration of the prescription
- A plan for frequent follow-up with the prescriber to ensure that the medication is helping for pain and function and not causing adverse side effects
- A naloxone kit with each prescription if prescribing to individuals at risk, such as those who:
    - Are receiving a high dose
    - Have a complex medical history
    - Have comorbidities
- A clear discussion about how short-term opioid use is meant to support the continued participation in Core Treatments.

The clinician should diligently monitor changes in the individual's function, adherence to prescribed dose and frequency and any adverse side effects, which may require a treatment modification.

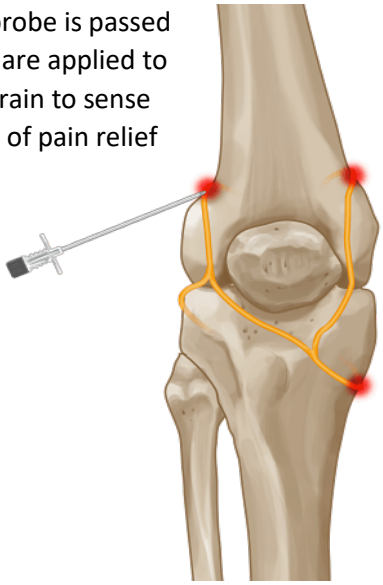
Peripheral Nerve Blocks[4-6]

The body of evidence for injection treatments for osteoarthritis (OA) is evolving. Many OA clinical guidelines do not provide conclusive recommendations because of this. However, some individuals with OA respond very well to injections and can use them to continue comfortably with their Core

Treatments.

Peripheral nerve blocks can be used at the knee to provide pain relief from OA. The geniculate nerve wraps around the knee and provides sensation to the joint. With ultrasound guidance, this nerve can be isolated and local anaesthetic can be infiltrated around the nerve. If 'freezing' the nerve results in pain relief for a few hours, this is a good indication that a procedure termed a radiofrequency ablation ('burning') of the geniculate nerve will provide more lasting pain relief.

The radio-frequency ablation is a simple, 10-minute procedure where a probe is passed through a small needle onto the nerve. Radio-frequency electrical waves are applied to the probe which ablates the nerve making it unable carry signals to the brain to sense pain. When this technique is applied to a knee with OA, six-to-12 months of pain relief is anticipated.



There is a risk of hypoesthesia as an adverse event. Individuals with OA should be observed for stability, perhaps complete a TUG test, before they are discharged from the treatment session.

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29. Cannabinoids and Stem Cells [Go Back]

Cannabinoids

Health Canada has stated that "there is no scientifically defined dose of cannabis for any medical condition"[7]. Health Canada has also advised that the scientific evidence support the safety and efficacy of cannabinoids for medical purposes is unfounded.

For further reading the following are available for the clinician:

- Alberta Health Services (AHS) directory of resources: https://www.albertahealthservices.ca/info/Page15989.aspx
- Collection and summary of recent literature

For the individual with osteoarthritis (OA): myHealth Alberta provides answers to many frequently asked questions.

30. Bone and Joint Health SCN

Go Back to Standard 9 Stem Cells Hip and Knee Surgical Care Path Surgical Candidacy About Care Standards

The Bone and Joint Health Strategic Clinical Network (BJH SCN) is one of eleven SCNs run by Alberta Health Services (AHS).

Strategic Clinical Networks (SCNs) are mandated to create improvements within focused areas of health care. They are networks of people who are passionate and knowledgeable about specific areas of health. They are tasked with finding new and innovative ways of delivering care that will provide better quality, better outcomes, and better value for every Albertan.

The BJH SCN vision is *Keeping Albertans Moving.* The BJH SCN Mission is *To create a person-centred, integrated system to optimize bone and joint health of Albertans by working together with our partners.*

To read more about the BJH SCN visit their website here:

The BJH SCN's Transformational Road Map for 2020-2025 can be found here:
https://www.albertahealthservices.ca/assets/about/scn/ahs-scn-bjh-roadmap-summary-2020-2025.pdf

Go Back to Standard 9 Stem Cells Hip and Knee Surgical Care Path Surgical Candidacy About Care Standards

31. Hip and Knee Surgical Care Path [Go Back]

The Hip and Knee Surgical Care Path is authored by the Albertan Hip and Knee Replacement Clinical Committee. The Clinical Committee is a partnership between the Alberta Orthopaedic Society the Bone and Joint Health Strategic Clinical Network.

As well as inpatient care requirements for hip or knee joint replacement, the care path details criteria for:

- Referral to an Albertan Hip and Knee Clinic
    - The contact information for the clinics can be located on the Alberta Referral Directory (see the Health Resource Matrix for more information);
- Surgical candidacy .

It is recognized that clinician familiarity with the Hip and Knee Surgical Care Path is limited outside of the orthopaedic surgeons' practices. With the full implementation of these standards, the familiarity with the care path will grow over time.

Referral to orthopaedic surgeons at their central-intake hip and knee clinics does vary in Alberta, despite the Hip and Knee Surgical Care Path. This is because surgeons' practices vary slightly across the province: some surgeons offer individuals a variety of non-surgical OA treatment options, other surgeons do not include OA management treatments in their scope of work. With the implementation of this standard, the OA treatment trial period will be formalized, regardless of the clinician supporting that trial.

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32. Surgical Candidacy [Go Back]

An individual with osteoarthritis (OA) is not an appropriate candidate for elective hip or knee joint replacement surgery in Alberta if:

- At least 12 weeks of OA management treatments have not been trialled and documented;
- Cognitive/neurologic impairment is present
- Orthopaedic challenges are present, such as:
    - A history of infection in the joint
    - The surgery is technically unfeasible
    - The joint cannot be reconstructed.
- The individual is not willing or able to be compliant with the care path, which includes:
    - Being willing to undergo the surgical optimization and health management protocols prescribed by the surgeon
        - This includes attending the Hip and Knee Surgical Care Path [learn more] prescribed pre-operative teaching class; and

      Note that the 'pre-operative teaching class's is not equivalent but complementary to non-surgical OA education, for the appropriate audience ofconfirmed surgical candidates.
    - Being willing to commit to the rehabilitation after the surgery.
- An extreme medical risk is present (see below)
- There is no demonstrated decline in patient reported outcome measures (PROMs) (Standard 9).

Note: capture of formal PROMs varies across the province and may represent some administrative obstacles to a clinic/clinician. With the full implementation of these standards these obstacles will be overcome with time through the support of the Bone and Joint Health Strategic Clinical Network (BJH SCN) [learn more] and its collaborators (Standard 9).

Often surgeons will not recommend elective (non emergent) joint replacement surgery for individuals with unmanaged comorbidities that carry excessive medical risk for the surgery, such as:

- Cerebral vascular diseases
- Diabetes
- Cancer
- Heart disease
- Renal disease
- Hepatic disease
- Obesity

If the individual is managing their comorbidities, evaluation of candidacy will be a discussion with the surgeon. If comorbidities are unmanaged, pre-operative surgical optimization at the Hip and Knee Central Intake Clinic may be appropriate, or the individual may need to return to their Primary Clinician to create care plans for their other conditions. The Hip and Knee Central Intake Clinic is responsible for

communicating their decision about surgical candidacy and any medical recommendations back to the primary referring clinician, typically by letter.

> Note: surgeons' practices vary slightly across the province: some surgeons offer individuals a variety of non-surgical OA treatment options, other surgeons do not include OA management treatments in their scope of work. With the implementation of this standard, the OA treatment trial period will be formalized, regardless of the clinician supporting that trial.

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33. The Alberta Orthopaedic Society [Go Back]

The Alberta Orthopedic Society was incorporated in 1995.
https://www.albertadoctors.org/leaders-partners/leaders/sections/section-members/orthopedics

Their secretariat can be contacted here: _____

34. Six Dimensions of Quality [Go Back]

The Health Quality Council of Alberta was established under legislature in 2003. They developed the Alberta Quality Matrix for Health which has widespread success, particularly in driving quality improvement in Alberta Health Services' (AHS') Strategic Clinical Networks (SCNs).

The Six Dimensions of Quality can be defined as:

Dimension	Definition
Acceptability	Health services are respectful and responsive to user needs, preferences and expectations
Accessibility	Health services are obtained in the most suitable setting in a reasonable time and distance
Appropriateness	Health services are relevant to user needs and are based on accepted or evidence-based practice
Effectiveness	Health services are based on scientific knowledge to achieve desired outcomes
Efficiency	Resources are optimally used in achieving desired outcomes
Safety	Mitigate risks to avoid unintended or harmful results

More information on HQCA can be found here: https://www.hqca.ca/
More information on AHS' SCNs can be found here: https://www.albertahealthservices.ca/scns/scn.aspx
The complete Alberta Quality Matrix for Health can be found here: https://www.hqca.ca/about/how-we-work/the-alberta-quality-matrix-for-health-1/

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35. Administrative Data [Go Back]

Administrative data includes anything that can be collected about how the clinicians work to deliver the care to the individuals. This likely includes time stamps to document when certain milestones are hit such as:

- The date a referral is received
- The date of a first appointment
- The date of subsequent appointments
- The date a treatment is completed
- The date of discharge

Administrative data can also include charting completed by the clinicians to collect key characteristics about the individuals. It is best if this information is translated out of long form answers into simple check boxes as much as possible to make it easier to extract the information for analysis later.

Administrative data can be collected on paper or electronically in an electronic medical record (EMR) software system. Electronic recording of administrative data exponentially improves the ability to analyze data for quality improvement initiatives.

It is very important to combine administrative data with 'patient reported' data from the individual to get a complete picture of the quality of care being delivered.

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36. How to Start Measuring Outcomes at Your Clinic [Go Back]

Consider the following prompts as your planning develops to incorporate measurement into your clinic practice and your service delivery matures. Measuring the quality of your care will improve business operations and the experiences of your individuals with osteoarthritis (OA).

Item to Consider	Questions to Ask	Tips
How you collect your data	• Are you collecting Electronically or manually? • Are you using an Electronic Medical Record (EMR) system?	• Consider collecting data electronically to strengthen data tracking and data preservation • Consider using an EMR that provides you with the flexibility to adapt your data collection to your needs
The frequency at which you will collect your data	• What does the evidence tell you is a reasonable frequency to collect data? • How can you balance this with the administrative duties of your business?	• Standard 3 provides some guidance on reasonable frequency for checking on an individuals' progress with specific types of treatments
Roles of team members	• Which team members are responsible for managing the data? • Which team members will review the data?	• Consider having one team member for managing data, and one for reviewing • Planning ahead about data collection methods and frequencies will make these roles more straightforward
Establishing a baseline	• Before you make any changes to your care: what is the current quality of your care?	• Change cannot be measured if there is nothing to compare it to • Gather a baseline before making any changes to the care your team delivers
Communicate results to the team	• How will your full team know what the data says about the care they are delivering? • How will your team understand the importance of the changes they need to make? • How will you celebrate your team for the changes they do make?	• Consider using simple graphs to highlight changes and celebrate success
Using the data to ***continuously*** drive quality improvement of care	• Which team members will be responsible for investigating your data? • How will your team make decisions about what changes to make to your service delivery to improve your data? • How will you hold each other accountable to track those changes?	• Form a quality team that meets regularly • Review the data together and understand what it says about the quality of your service delivery • Work together to understand and investigate problems • Carefully plan changes including understanding which data should shift if the change can be identified as successful

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37. Research vs. QI [Go Back]

A pRoject Ethics Community Consensus Initiative (ARECCI) program is a hosted by Alberta Innovates. It was established to assist with the planning for ethical risks for projects that are not research projects. These projects might include program evaluations, quality improvement, health innovations or knowledge translation. All of these projects involve people and their information and therefore careful planning is required to protect that information. ARECCI provides support for this planning by providing decision support tools, training opportunities and ethics consultants.

ARECCI has all their tools and additional information available here. In particular, the ARECCI Screening Tool is useful for determining if your project is a research project or not. The Screening Tool asks questions to help you think through the purpose of your project.

Quality Improvement vs. Research Projects

	Quality Improvement	**Research**
Purpose	Use existing knowledge to improve local care	Discover new, generalizable knowledge
Strategy	Multiple small sequential observable tests; interventions, adapted based on learnings	Usually one large, well-controlled study; interventions planned in advance
Ethics Review	Performed according to local policies	Performed by a research ethics board
Sample Size	Focus on gathering enough information to achieve a reliable measurement; project continues until aim is achieved and may involve ongoing measurement to ensure change is sustained	Sample size calculation with goal of adequate power to detect a meaningful difference; study ends when enrolment met
Analysis	Occurs in an ongoing manner throughout multiple tests of change; often utilizes run charts and control charts	Occurs after data collection complete or at a defined interim analysis; often utilizes hypothesis testing
Dissemination	Findings shared locally; may be shared broadly for purpose of sharing learning from local efforts	Findings shared broadly for purpose of increasing knowledge

Quality Improvement vs. Research Data

	Quality Improvement	**Research**
Aim	To bring new knowledge into daily practice	To discover new knowledge
Tests	Many sequential, observable tests	One large blind test
Bias	Accept consistent bias	Design to eliminate bias
Sample Size	Gather “just enough” data to learn & complete another cycle	Gather as much data as possible, “just in case”
Measuring Improvement	Run charts, Shewhart control charts	Hypothesis, stat tests (t-test, F-test, chi square), p-values

	Quality Improvement	Research
Confidentiality	Data used only by those involved	Subjects' identities protected

38. Alberta Bone and Joint Health Institute

Go Back to Standard 9 About Care Standards

The Alberta Bone and Joint Health Institute (ABJHI) was established in 2004. The institute offers data services and partners with health organizations to drive quality improvement change. ABJHI is a trusted third party that links data from many sources to provide a picture of an individual's care journey.
https://www.albertaboneandjoint.com/

39. Process for Updating the Standards [Go Back]

The Conservative Osteoarthritis (OA) Clinical Committee meets annually every spring to review these Comprehensive Quality Care Standards for Osteoarthritis of the Hip and Knee.

Any clinician or individual with OA has the right to put forward a request for a change to the Comprehensive Quality Care Standards. To clarify this process, we have outlined the steps below:

1. Gather as much scientific or data evidence together as you can to support the reason for your question, request, or recommendation
2. Summarize the evidence and your 'ask'
3. Submit these items to the Alberta Bone and Joint Health Institute (ABJHI) by end of December of each year
4. ABJHI will review the requests with the chair of the Conservative OA Clinical Committee
5. If the topic is approved for clinical committee discussion, ABJHI will arrange for more in-depth investigation of evidence, as required
6. Decisions made at the Conservative OA Clinical Committee meeting are documented by ABJHI
7. The corresponding changes to the care standards are made by ABJHI
8. The revised care standards will then be updated on the _____ and disseminated as appropriate.

Please submit your requests by **end of December of each year** for consideration for the clinical committee agenda of the following spring.

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About Care Standards

Comprehensive Quality Care Standards for Osteoarthritis of the Hip and Knee includes nine consensus-based statements that draw on the evidence to guide the ideal non-surgical (conservative) care for individuals with osteoarthritis (OA) in Alberta.

These standards guide the reader through an OA care journey, while still acknowledging that each individual will have a unique OA journey and care should be tailored to them. This body of work is living and will be updated approximately annually.

These standards were authored by the Conservative OA Clinical Committee. The committee works on behalf of the Bone and Joint Health Strategic Clinical Network (BJH SCN) and is supported by the Alberta Bone and Joint Health Institute (ABJHI). The current Conservative OA Clinical Committee membership is:

Chair: Donna Davies	Alberta Health Services Physiotherapist Central Zone Practice Lead
Dr. Joanne Homik	Rheumatologist
Allyson Jones	University of Alberta Professor Dept of Physical Therapy; School of Public Health
Marni Wesner	Sports Medicine University of Alberta Glen Sather Sport Medicine Clinic, Assistant professor University of Alberta
Christine Gregoire-Gau	Occupational Therapist, Camrose Musculoskeletal Clinic
Ted Findlay	Family Physician at the Calgary Chronic Pain Centre, Assistant Professor at Dept. of Family Medicine at the University of Calgary
Sarah Koles	Musculoskeletal Radiologist in Calgary, associate clinical professor at the Cumming School of Medicine, University of Calgary
Kimberley Phillips	Pharmacist, Extended Health Team at the Foothills Primary Care Network
Steve Kwan	Orthopaedic Surgeon, Chief of Surgery Chinook Regional Hospital
Sheila Kelly	Orthopaedic nurse, Manager Bone and Joint Health Strategic Clinical Network

The Health Quality of Ontario's *Quality Standards for Care for Adults With Osteoarthritis of the Knee, Hip, or Hand* were an inspiration for this body of work for Albertans.

Jump to:

Purpose

The purposes of these standards are to:

- Help individuals with osteoarthritis (OA) and their social supports to understand the best care options for conservative hip and/or knee OA management in Alberta.
- Guide clinicians on evidence-informed and consensus-based best practices for achieving high quality care in conservative OA management.
- Provide health care organizations with tools to measure, analyze and structure improved quality care for individuals with hip or knee OA.

Audience

These standards are written with three audiences in mind:

1. Individuals with high potential to develop, suspected or diagnosed OA of the hip or knee ('Individuals with OA' version)
2. Albertan clinicians that offer conservative (or community, or non-surgical) care to people with OA of the hip and knee (Clinicians version)
3. Health care organizations that offer services in OA care (Heath Resource Matrix).

Scope

These standards outline care from diagnosis of OA to the ongoing management of OA throughout an individual's life. When used appropriately, these standards are intended to raise the quality of OA care in Alberta by employing best practice and current evidence.

These standards provide a structure for planning OA treatments as a person with OA explores their options and manages their evolving symptoms. The treatments with the consistently strongest evidence are presented as the three Core Treatments, and options for Adjunct Treatments are described to support full participation in Core Treatments. Individual choice within their environment and life circumstance is crucial to the successful management of OA and to delivering 'family and patient centered care'.

It is hoped that these standards will influence:

- A clinician's practice style to include:
    - Shared decision-making
    - Integrated collaborative care with their colleagues of complementary disciplines
    - 'Family and patient centred care'.
- A clinician's practice emphasis to focus on the three core treatments, the OA treatments with

the strongest reviewed evidence:

    - Education
    - Exercise and Physical Activity
    - Weight Management

- A clinician or health care organization's daily activities with respect to measurement capture and quality of care delivered; and
- An individual with OA's [Individuals with OA version

    - Sense of empowerment to navigate their OA care and options
    - An individual's understanding of the three Core Treatment

These standards are also intended to be respectful of:

- A clinician's expertise and experience
- Differences in health care organization's purposes and goals
- An individual's choices.

Key Definitions

The following definitions are provided to offer clarity for the purposes of this document.

Conservative Management

'Conservative OA management' is the practice of conserving an individual's joints with the goal of slowing disease activity and managing evolving symptoms to preserve quality of life.

Individual with OA

Throughout this document, people who have OA are referred to as individuals or people with OA. This has been chosen for a consistent approach since the use of 'patient' and 'client' can vary with clinical disciplines.

Treatments

The word 'treatment' is used to describe options for OA management. However, treatments can encompass a range of interactions between an individual and a clinician: active and passive treatments.

Regardless of whether the treatment is active or passive, throughout these standards the principles of 'family and patient centred' care are emphasized to encourage shared decision-making with the individual with OA. Both active and passive treatments can and should be a choice made by the individual.

Principles of Care

This *Comprehensive Quality Care Standards for Osteoarthritis of the Hip and Knee* is grounded by the vision and mission of Alberta Health Services (AHS) and the Bone and Joint Health Strategic Clinical Network, to provide a 'family and patient-centered', high quality health system that is accessible and sustainable for all Albertans.

The AHS Vision: *Healthy Albertans. Healthy Communities. Together.* AHS's 5 values are present throughout this document and guide how Albertans work together with patients, clients, families, and each other:

- Compassion
- Accountability
- Respect
- Excellence
- Safety

'Family and patient centered' care is driven by:

- Individual preferences
- Individual values
- Individual goals
- Individual quality of life.

Ethics and Inclusivity

All individuals with OA have the right to:

- Respectful language and physical examination from their clinicians; and
- Equitable access to care regardless of age, socio-economic status, gender, race or body size.

Clinicians engaged in OA care are expected to act with a high ethical standard and to be inclusive of the holistic needs of all individuals.

AHS, BJH SCN and their partners are supportive of Indigenous Health and Wellness' wholistic model of health.

Measuring Change in OA Care in Alberta

The BJH SCN in partnership with ABJHI are committed to making big improvements in Alberta's OA care, particularly with respect to the management of OA in community care.

This work will take time as it requires building many trusting partnerships with multi-disciplinary providers and with individuals with OA. The more data that can be gathered the greater the understanding of the strengths and weakness of OA care in Alberta.

As data becomes available, ABJHI will report on Alberta's success with improving the quality of OA care. Reports will become publicly available as they are formalized and will be published in regularly recurring intervals. There are a few complementing initiatives underway that will allow for the development of these reports. The following is a list of performance indicators that will be monitored to demonstrate successful change in OA Care in Alberta:

1. Increasing participation with any and all online materials
2. Increasing number of sites collecting Patient Reported Outcome Measures (PROMs) and Patient Reported Experience Measures (PREMs)
3. Increasing enrollment of clinics in a network of providers who are agreeing to follow these standards
4. If a participating site is audited minimal variance from evidence informed practices and the values of these standards is identified
5. A loop of continuous quality improvement is growing across the network of participating sites:
    a. Participating sites are willing to share data with ABJHI (securely and in accordance with the Health Act)
    b. Sites are willing to participate in audits to inform their ongoing strives for quality care.

Methodology

This committee's work has been built on the important thinking and exploratory work completed by many groups in advance of the committee being struck. These groups include:

- The BJH SCN's H&K OA Surgical Program, work completed from 2004-present
    - This program is grateful for the partnership with ABJHI and Alberta Orthopaedic Society
- Patient and Community Engagement Research (PACER) groups for their work on individual's experiences with OA and navigating care in Alberta
- The BJH SCN's Core Committee
- Various BJH SCN adhoc advisory groups that contributed to the original MSK Model, which has evolved into this body of work
- Albertan researchers for advancing scientific knowledge in OA
- Partners at AHS' Health Professionals, Strategy Practice for their work on the AHS Rehabilitation Model of Care
- Work of specialty groups, which include but are not limited to:
    - Canadian Orthopaedic Foundation
    - Good Life with osteoArthritis: Denmark (GLA:D) Canada
    - Arthritis Alliance of Canada

    - Arthritis Society
    - Osteoarthritis Research Society International
- The BJH SCN's Transformational Roadmaps

After the Conservative OA Clinical Committee was struck in 2019, a review of a range of resources was conducted: clinical practice guidelines on OA, work from the groups above, and documents on quality of care for OA. The committee agreed that none of the reviewed materials covered everything that was needed to guide the quality of community (upstream) OA care in Alberta.

This body of work was researched, written, and discussed between 2019 and 2021. The following was completed:

- Review of international clinical practice guidelines released in the last two years
- Search for recent (2015 and younger) supporting empirical evidence using databases such as PubMed, Google Scholar.
    - Included grey literature where applicable.
- Additional literature was accumulated through the expertise of the committee to support the decisions they made through consensus.

Consensus was built by:

- Consulting with specific committee members and consultants in alignment with their expertise for drafting the content of the standard relevant to their particular expertise.
- Eight rounds of full committee review, discussion, and editing.
    - Rules on quorum and achieving consensus were followed as per the Terms of Reference for the committee.
- Coordination with a second round of consultant reviewers including:
    - Three clinicians with expertise not represented in the membership of the committee
    - Representatives of the target audience for this body of work:
        - Three primary care physicians
        - Three patient advisors.
- Review and incorporation of consultant reviewer's feedback based on committee's consensus.

These Comprehensive Quality Care Standards will be maintained as a live body of work.

Conflicts of Interest

Except as noted below, the committee members report no relationships that could be viewed as potential conflicts of interest (e.g. financial interest, patents, employment relationship), or undue

influence on any recommendations, guidelines, or findings presented in this document.

In instances of potential conflict noted below, the member disclosed the potential conflict to the committee and abstained from providing input in discussions relevant to the conflict.

Member	Nature of Conflict
Dr. Marni Wesner	Engaged advocate for hyaluronic acid manufacturers.

Acknowledgements

Over many years, inter-disciplinary clinical experts and 'patient advisors' contributed directly and indirectly to the ideas for this document, including:

- Patient and Community Engagement Research (PACER);
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- The BJH SCN's Conservative OA Working Group; and
- Alberta Bone and Joint Health Institute (ABJHI)

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