

## About the Arthritis Society

The Arthritis Society is a national health charity, fueled by donors and volunteers, with a vision to live in a world where people are free from the devastating effects that arthritis has on lives. Begun in 1948 with one very clear goal – to alleviate the suffering of people crippled by arthritis – that same volunteer-led passion carries on today in communities across Canada. Through the trust and support of our donors and sponsors, the Arthritis Society is Canada's largest charitable source of investment in cutting-edge arthritis research, and a leader in proactive advocacy and innovative solutions that will deliver better health outcomes for people affected by arthritis.



# Osteoarthritis

CAUSES · SYMPTOMS · TREATMENTS

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# What is **Arthritis?**

The word  
arthritis means  
**inflammation  
of the joint**

("arthro" meaning joint and  
"itis" meaning inflammation).  
Inflammation is a medical term  
describing pain, stiffness, redness  
and swelling. Arthritis is a disease  
that can involve any of the joints  
in the body, often occurring in  
the hip, knee, spine or other  
weight-bearing joints, but can  
also affect the fingers and other  
non-weight-bearing joints.

*Symptoms of arthritis  
include joint pain, swelling,  
stiffness and fatigue.*

## Contents

What is <b>Osteoarthritis?</b> .....	1
What are <b>Early Signs of Osteoarthritis?</b> .....	3
What are the Risk Factors for Osteoarthritis? .....	7
How is Osteoarthritis Diagnosed? .....	7
How Common is Osteoarthritis? .....	8
<b>Self-management</b> .....	9
Physical Activity .....	10
Exercise .....	11
What Types of Exercise are Recommended for OA? .....	12
Physical Activities and OA .....	13
How Much Exercise is Recommended for OA? .....	14
Protect your Joints .....	15
Heat and Cold .....	17
Effective Weight Management .....	18
Eating Well .....	19
Supplements .....	20
<b>Treatments</b> .....	21
Medications .....	22
Therapies .....	24
Surgery .....	26
<b>What now?</b> .....	27
Ways the Arthritis Society Helps .....	28



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# What is Osteoarthritis?

Osteoarthritis (OA) is the most common type of arthritis. It affects more Canadians than all other forms of arthritis combined. OA is a progressive disease of the whole joint that leads to breakdown of joint cartilage and the underlying bone. (Cartilage is the tough elastic material that covers and protects the ends of bones.)

OA used to be described as a degenerative or “wear-and-tear” arthritis, but recent studies describe it as a result of the body’s failed attempt to repair damaged joint tissues.

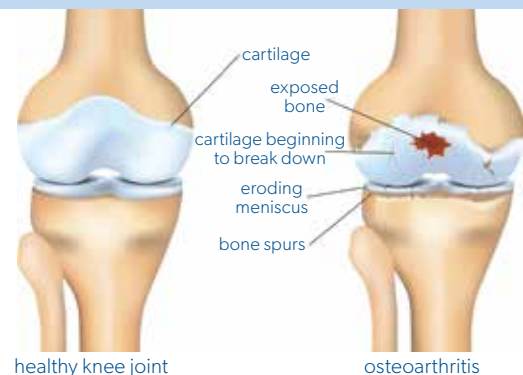
For most people this damage can occur when otherwise healthy joints are exposed to heavy workloads over a long period of time. However, for some people whose joints are formed differently or who've had a previous joint injury, even normal workloads can accelerate joint damage. Being overweight or obese is a risk factor.

The joints most commonly affected by OA are the knees, hips, big toes, hands and spine. OA affects everyone differently, but common symptoms include joint pain, aching, morning stiffness lasting less than 30 minutes, reduced range of movement in the affected joint(s) and possibly swelling. The symptoms come and go but the intensity of the pain increases over time as OA is a progressive disease.

There is currently no cure for OA. However, there are ways to manage the symptoms and improve function. They include a combination of self-management strategies (e.g. therapeutic exercise, physical activity, weight management), medications, referral to a healthcare professional specializing in orthopedic care and – for severe OA – possibly joint replacement surgery.



## Osteoarthritis



# What are the Early Signs of Osteoarthritis?

OA usually progresses slowly over a period of months or years. Early on, symptoms tend to come and go. Over time, as damage accumulates, symptoms can become more constant, occurring at rest and disturbing sleep. The good news is that symptoms can improve with treatment, even if the disease process itself is unchanged. In the past, focus was on symptoms felt in the joint, but we now know that you may experience symptoms outside of the joint as well.

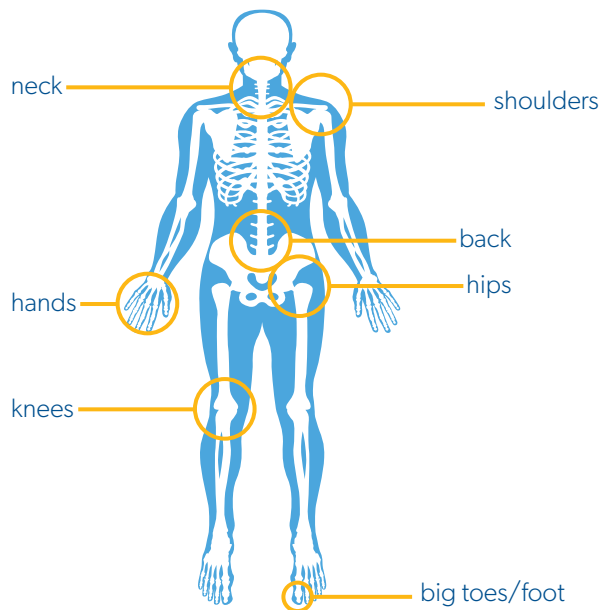


## Common joint symptoms include:

**Joint Pain:** Your joint may hurt during heavy use and improve with rest. As the disease progresses, the pain may be triggered increasingly by ordinary activities and may become unpredictable, occurring at rest and during sleep. The pain you feel may not necessarily match the degree of arthritis seen on an x-ray. Pain is a complicated process affected by what is happening inside your joint as well as factors outside of your joint, such as surrounding muscle strength, genetics, physical activity, sleep and mood.

**Joint stiffness:** A joint may be stiff after not moving it for a while, such as when you wake in the morning or sit for a long time. This stiffness usually lasts 30 minutes or less. If you find it lasting significantly longer, check with your doctor.

## Joints Most Commonly Affected by Osteoarthritis



**Joint swelling:** You may notice an increase in the size of affected joints. This can be from an increase in fluid in the joint (inflammation), or from a bony outgrowth (often found in affected finger joints and big toes).

**Joint crepitus:** You may feel a grinding sensation or notice a creaking sound when the joint moves.

**Joint instability:** Joints like the knee or hip may feel like they are giving way or buckling.

**Joint dysfunction:** A joint does not function as well as it should. This can be due to pain or reduced movement of the affected joints:

- **Hands** – you may have difficulty with fine motor activities, such as doing up buttons, writing with a pen, or gripping door handles
- **Hips** – you may have difficulty with daily activities like walking, getting in or out of a car, or putting on your shoes
- **Knees** – you may have difficulty with activities like walking, getting up from a chair, squatting, kneeling or climbing stairs
- **Neck** – you may have difficulty with activities like looking over your shoulder while driving or parking, reading a book or tablet, shaving or washing your hair
- **Lower back** – you may have difficulty with activities like carrying groceries, vacuuming, reaching a low shelf, putting on socks, or getting in and out of a car, low sofa or bed
- **Big toe** – you may have difficulty with activities like walking quickly, wearing certain shoes, running, playing soccer/field sports, golfing

**Symptoms outside the joint may include:**

**Sleep disruption:** OA symptoms may disrupt your sleep, which in turn can make your symptoms feel worse and reduce your capacity to cope.

**Altered mood:** OA symptoms can have a negative effect on your mood. Mental health issues like depression and anxiety are significantly more common in people living with chronic pain, and can in turn worsen pain and negatively impact your overall health.

**Fatigue:** It is common for people with severe pain from OA to experience high levels of fatigue (extreme tiredness, exhaustion).

**Impaired quality of life:** OA symptoms can make it harder for you to keep up with the activities and relationships that make your life enjoyable, affecting your overall quality of life and your ability to do the things you want to do.

**Pain sensitization:** Some individuals with OA experience more severe symptoms from a process called pain sensitization, which comes from abnormal pain processing by the central nervous system. It's as if the 'volume knob' on your pain system has been left turned up like a radio stuck on 'loud.' As a result, you may feel exaggerated pain in response to a painful trigger, pain in response to a non-painful trigger (e.g. light touch), or ongoing pain in the absence of any trigger.

Your feelings of pain may extend beyond the boundaries of the joint and become widespread (such as up and down your affected leg). You may also experience nerve symptoms such as tingling and shock-like sensations. See your doctor to check if these symptoms are from your arthritis, or from another cause.

## What are the Risk Factors for Osteoarthritis?

Risk factors that may increase your chances of developing OA include the following:

**Age:** The risk of OA increases with age. However, OA is not an inevitable part of aging. Many people age without having OA symptoms.

**Sex:** Women are more likely to develop OA than men.

**Family history:** Genetics can contribute to the development of OA, but just because your family member has OA does not mean you will get it.

**Excess weight:** Carrying extra weight increases your chance of getting OA in several ways. Excess weight puts more stress on weight-bearing joints such as your feet, knees, hips and spine, and increases your risk of injury as well as the rate of degeneration. In addition, fat tissue can release substances in your body that can increase joint inflammation.

**Joint injury:** OA can occur in joints that have been damaged by a previous injury, such as from a sport or accident.

**Occupations:** People who repeatedly stress a particular joint may also be at greater risk of developing OA. Examples include elite athletes, dancers, heavy machinery operators and construction workers.

**Joint misalignment/deformity:** Some people who are born with or develop malformed joints are at greater risk of OA.

**Muscle weakness:** Weakness of supporting structures around the joint such as muscles and ligaments can increase the risk of OA.

**Sedentary lifestyle:** A sedentary lifestyle increases your risk of OA.

## How is Osteoarthritis Diagnosed?

There is no single test for OA. The diagnosis can be made based on your symptoms and physical examination findings. If you are over the age of 40 and have symptoms typical of OA, your doctor will probably not do an x-ray. It is helpful to know that symptoms of osteoarthritis do not always match what is found on x-rays. For example, in early OA, your x-rays may not reflect the symptoms you are experiencing, and later in the disease process, the damage shown on an x-ray may appear more severe than the symptoms you feel.





# Self-management

An important first step is to become educated about OA and what you can do to manage symptoms on your own. This is referred to as “self-management”. You can learn ways to cope with arthritis symptoms and make lifestyle changes that may reduce pain and improve function and mood. Lifestyle changes such as increasing physical activity/exercise and reducing excess weight can have the greatest effect on OA. Developing relaxation and coping skills can help you maintain balance in your life, giving you a greater feeling of control over your arthritis and a more positive outlook. For more information, visit the Arthritis Society’s free online self-management learning resources:

[arthritis.ca/education](http://arthritis.ca/education)



## Physical Activity

A common misconception is that a painful joint requires rest. On the contrary, not enough movement can cause muscle weakness and worsening joint pain and stiffness. Light or moderate physical activity protects joints by strengthening the muscles around them, increasing blood flow to the joint and helping promote normal joint regeneration. Physical activity can also improve mood and lessen pain.

Physical activity strengthens the muscles and connective tissues around your joints, helping support joints that have been damaged by arthritis. Physical activity includes all those activities that you do as a part of everyday life – such as vacuuming the house, walking to work, even gardening. These kinds of activities can be very beneficial for your joints, and can help you maintain and improve your mobility.



## Exercise

Exercise is physical activity that involves heavier, repetitive exertion, and is designed to improve or maintain physical fitness. Lifting weights, walking on a treadmill, taking a yoga class – these are the kinds of planned motions that we do specifically to improve our flexibility, strength or endurance. Being physically active can reduce pain and fatigue, improve mobility and overall fitness, and improve your state of mind by allowing you to actively participate in your own treatment. Participating in a properly designed exercise program is a great way to help alleviate the discomfort caused by arthritis.



Targeted exercise for your joints may have added benefit. A qualified therapist, such as a physiotherapist, can work with you to develop a progressive exercise program that is tailored to you.

There is conflicting evidence about the possibility of harm from high-impact exercise, such as running, soccer or tennis, so you will need to be your own judge about what activities your body can tolerate. However, you should be prepared to modify or swap out an activity if it worsens your joint symptoms.

Joint rest is recommended when you are experiencing a flare of joint pain and/or your joint is swollen and hot. At these times, it is important to keep doing range of motion exercises.



## What Types of Exercise are Recommended for OA?



• **Therapeutic exercise:** Exercises that improve connections and response time between your brain and your muscles, increasing coordination to help the joint remain stable during physical activity and thus reduce risk of injury.



Components include neuromuscular control (developing ‘muscle memory’ by training your joints and muscles to move in healthy patterns), strengthening your muscles, balance and agility.



• **Range of motion** (also called stretching or flexibility exercises): Exercises that keep your joints moving can reduce pain and stiffness. To achieve the most benefit, these exercises should be done daily.



• **Strengthening:** Exercises that maintain or increase muscle tone and protect your joints.



These resistance-based exercises include weight-training movements done with a set of free weights, your own body weight, resistance bands or weight machines.



For example, thigh (quadriceps and hamstring muscles) strengthening is recommended for people with knee OA. The frequency of strengthening exercises should be discussed with your doctor or physiotherapist.



• **Endurance:** Exercises that strengthen your heart, give you energy, control your weight and help improve your overall health. Examples include walking, swimming and cycling.





## Physical Activities and OA

Activities like Tai Chi and Yoga that combine muscle strengthening, flexibility, and balance exercises can be beneficial in the management of OA.

These exercises can also be meditative, promoting relaxation and increasing your capacity to cope.

Many low-impact exercise options can benefit people living with arthritis. Consult your healthcare provider for suitable exercises for you.

### Examples include:



**Tai Chi:** This ancient Chinese martial art is a combination of movements performed in a slow, focused manner. Though it has many variations and styles, Tai Chi is a low-impact exercise and is reminiscent of both yoga and meditation. Tai Chi could improve pain and physical function in some people as well as alleviate depression and contribute to health-related quality of life.



**Yoga:** Numerous studies have shown the benefits of yoga for stress and anxiety. The practice of controlled breathing, simple meditation and stretching can improve a person's state of mind and help him or her better manage pain. Regular yoga under the guidance of a certified instructor can also boost one's general health and increase energy levels.

(NOTE: In some cases, people living with arthritis should avoid strenuous yoga routines, such as Bikram and power yoga.)

## How Much Exercise is Recommended for OA?

Any increase in your physical activity or exercise may help if you are not active. The right frequency, intensity, type and duration varies from person to person. A gradual increase in exercise is recommended, with an eventual target for adults of 150 minutes of moderate-to-vigorous intensity exercise per week, in sessions of 10 minutes or more (if tolerated). If you are not currently active, you are advised to start with light activities, such as walking, and attempt to increase your speed and/or distance over time.



## Protect your joints

While it's important to keep your joints moving, it's also important to avoid situations that put excessive stress or strain on your joints, as this can increase your risk of injury and make your joints deteriorate faster. Avoiding joint stress will also lead to less pain and help your joints work better, longer.

### Techniques to protect your joints include:

**Pace yourself:** Remember to alternate heavy or repeated tasks with lighter tasks. Taking a break reduces stress on painful joints and conserves energy by allowing weakened muscles to rest.

**Keep joints aligned:** Positioning joints wisely promotes proper alignment and decreases excess stress. For example, squatting and kneeling may put extra stress on your hips or knees. When lifting or carrying heavy items, keep items at waist height and avoid carrying them up and down stairs. Avoid bending your back when lifting. Remember to ask for help when you need it.

**Avoid excess joint stress:** Certain activities or occupations can place excessive stress on joints, such as hard labour, heavy lifting, repeated deep squats or repetitive movements. Avoid these higher-risk activities where possible.

**See a therapist:** Talk to your doctor about seeing a physiotherapist who can customize your exercise program, or an occupational therapist who can advise you on assistive devices and adaptations for your home or workplace.



**Use assistive devices:** Using appropriate tools and aids not only makes tasks easier, it helps to conserve your energy. Raise seat heights to decrease stress on hip and knee joints. Use a reacher to pick up items from the ground. Use a cane or walker to decrease stress on hip and knee joints.



## Heat and Cold Therapy

Taking a warm shower and using warm packs are great ways to help reduce pain and stiffness. Always use a protective barrier, such as a towel, between the warm pack and your skin.



Heat is ideal for:

- Relieving pain
- Relieving muscle spasms and tightness
- Enhancing range of motion

Using a commercial cold pack or a homemade one (from crushed ice, ice cubes or a bag of frozen vegetables) can assist in providing short-term relief from inflammation. Always use a protective barrier, such as a towel, between the cold pack and your skin.



Cold is ideal for:

- Swelling
- Decreasing pain
- Constricting blood flow to an inflamed joint



## Effective Weight Management

Just as there is no single definition of a healthy body, there is no single definition of a healthy weight – it's unique for each individual based on body composition, age, sex, lifestyle and other conditions. The best way to determine what an appropriate weight is for you is to consult with a healthcare professional.

Carrying excess weight increases the risk of developing OA in your load-bearing joints (knees, hips, ankles, spine, feet), and increases the rate at which these conditions progress. Excess weight has also been linked to OA of the hand, indicating that there is also a metabolic link to the disease, so achieving and maintaining a healthy weight is critical.

The good news is that, if you are overweight, losing even ten per cent of your body weight can help reduce strain on your knees and reduce pain. In fact, depending on the existing level of joint damage, losing weight may not only make you feel better, but could also delay or prevent the need for surgery.

There are a number of ways to achieve weight loss including healthy eating, exercise, and cognitive behavioural strategies. If you are having difficulty controlling your weight, you are advised to discuss these options with your healthcare provider.



## Eating Well

There is no conclusive evidence to suggest that what you eat can make arthritis either better or worse. However, being overweight can put excess strain on your joints. To work normally, your body needs food to supply energy, vitamins and minerals. Healthy eating will help you manage your weight and give you the energy to complete your daily activities, as well as promote a strong immune system, and bone and tissue health.

### Three ways to improve your nutrition include:



**Limit saturated and trans fats:** A healthy diet should include modest amounts of unsaturated fats. Saturated and trans fats should be limited. Choosing the right amount and types of fats can help you achieve and maintain a healthy body weight, and improve your overall health. Olive oil and cold-water fish such as salmon, trout or herring are examples of healthy choices.



**Reduce sugar intake:** Sugar contains “empty” calories and has no nutritional value. This includes honey and syrup as well as white, brown, cane and raw sugar. Limit or avoid adding sugar to drinks and cereals. Although artificial sweeteners contain fewer calories, it is best to get used to food being less sweet. Use dried, unsweetened fruit like raisins, cherries or dates to sweeten cereals since they provide vitamins, minerals and fibre.



**Eat more vegetables and fruit:** Vegetables and fruit should make up the largest component of your diet. Keep in mind that the sweetest fruits have high sugar content so best not to overdo it. Try to have at least one vegetable or fruit at every meal and while snacking. Besides being an excellent source of energy, vegetables and fruit

boost your fibre intake, which helps with digestion and weight management. They are also loaded with antioxidants, which help boost the immune system and may help maintain healthy cartilage.

## Supplements

Supplements are consumable products designed to be added to (not replace) your diet, to help you get the proper nutrition your body needs. It is always important to consult your doctor if you decide to take supplements as they may interact with medications or may contain ingredients not listed on the label.



**Vitamin D:** Low vitamin D may contribute to worsening of osteoarthritis. Vitamin D can be obtained through sun exposure, vitamin D-rich foods, or supplements. Vitamin D is also important to maintain healthy bones.



### Glucosamine and chondroitin:

These substances are found in our joints and help keep the cartilage healthy. Clinical research has not found a clear or consistent benefit from the use of glucosamine or chondroitin sulphate supplements for osteoarthritis. If you are interested in trying these supplements, talk to your healthcare provider: a trial may be reasonable to see if there is any benefit.



# Osteoarthritis Treatments

While the underlying process of OA cannot be reversed, the symptoms can often be relieved or significantly improved with lifestyle measures and medications. Surgery is reserved for severe symptoms that fail to improve with these strategies. The two main goals of treatment are to control your pain and improve your ability to function.



## Medications

Medications for osteoarthritis focus on helping to manage pain and improve joint function. For mild symptoms that come and go, you may benefit from using medication as needed. For stronger symptoms, you may require regular use of medication. The optimal treatment is what is best in each individual case – so speak with your doctor and/or pharmacist about what kind of medications are most appropriate for you.

Medications that may help relieve pain in osteoarthritis come in topical forms (e.g. creams or rubs), pill forms, and injections. Common medications used in OA are described below:

- **Topical treatments:** Topical treatments include non-steroidal anti-inflammatory drug creams and capsaicin cream.
- **Corticosteroid injections:** These injections may relieve symptoms for several weeks to months. Most people tolerate them with few side effects.
- **Acetaminophen:** Acetaminophen has fewer side effects than other pain medications. It is important to stick to the recommended dose, as a higher dose may cause liver damage.
- **Nonsteroidal anti-inflammatory drugs (NSAIDs):** If other treatments do not relieve your arthritis pain, you are advised to speak with your pharmacist or doctor about the safety of NSAIDs for you. NSAIDs may reduce pain and inflammation in OA. There are a variety of over-the-counter NSAIDs which include ibuprofen and naproxen sodium. Stronger NSAIDs are available by prescription.





- **Duloxetine:** This medication has been used to treat a number of chronic pain conditions including osteoarthritis, nerve disorders and fibromyalgia. Duloxetine may be recommended if you do not respond to or cannot tolerate acetaminophen or NSAIDs. It may have added benefit if you are also experiencing depression.
- **Other injections.** There is conflicting evidence for hyaluronic acid injections. There is limited evidence to support platelet-rich plasma injections for knee OA. Given the cost of these injections and limited evidence, corticosteroid injections are often the first choice.



For more information on medications, the Arthritis Society has a comprehensive online guide that delivers detailed information on medications used to treat arthritis:

[arthritis.ca/treatment/medication](https://arthritis.ca/treatment/medication)

## Therapies

### A **physiotherapist (PT)**

can develop an individualized program designed to help you increase your strength, flexibility, range of motion, and general mobility and exercise tolerance through a wide variety of therapeutic treatments and strategies. These include exercise prescription, physical interventions, and relaxation, in addition to advising you on other techniques for reducing pain and increasing your overall quality of life. PTs can recommend foot orthotics, knee braces and hand splints.



### An **occupational therapist (OT)**

can look at what you do in a day and develop a program to help lessen your symptoms and improve your function. An OT can do a home or workplace assessment to identify ways to protect your joints and can recommend tools and aids to help you conserve energy and improve your independence. Examples include use of a cane and raised seats to decrease stress on your hip and knee joints; use of wide-gripped tools and utensils to decrease stress on your hand joints; or the use of shoehorns or buttonhooks to help with dressing. OTs can also recommend foot orthotics, knee braces and hand splints.

Other therapies often used to help manage OA symptoms include the following:

- **Acupuncture**, an ancient Chinese therapy for alleviating pain and treating various physical and mental health conditions, involves pricking the skin with needles. While studies on the effectiveness of acupuncture for OA symptoms are somewhat mixed, you may wish to try this treatment. It is important to find a certified practitioner.
- **Massage** of muscles and other soft tissues, by a registered massage therapist, may help provide short-term relief of stiffness and pain. Other potential benefits include a reduction in stress and anxiety as well as improved mobility and overall function of the joints.

For more information visit –  
[arthritis.ca/treatment/complementary-therapies](https://arthritis.ca/treatment/complementary-therapies)

It's really important to understand that you can 'turn the volume down' on pain as you progress through self-management strategies such as regular exercise, optimal sleep and stress-reduction techniques, but it often takes effort and time. Medications that target the central nervous system may also be beneficial. Your healthcare provider can help to guide you in this process.

## Surgery

When OA becomes severe and other therapies are not working, surgery may be considered. The most common surgical procedures for OA include hip and knee replacements.

Joint replacement surgery can be performed at any age, but is usually reserved for patients with advanced arthritis. The decision to undergo surgery depends on the amount of pain and disability your arthritis is causing, as well as the risks and benefits of surgery. This should be discussed further with your doctor.

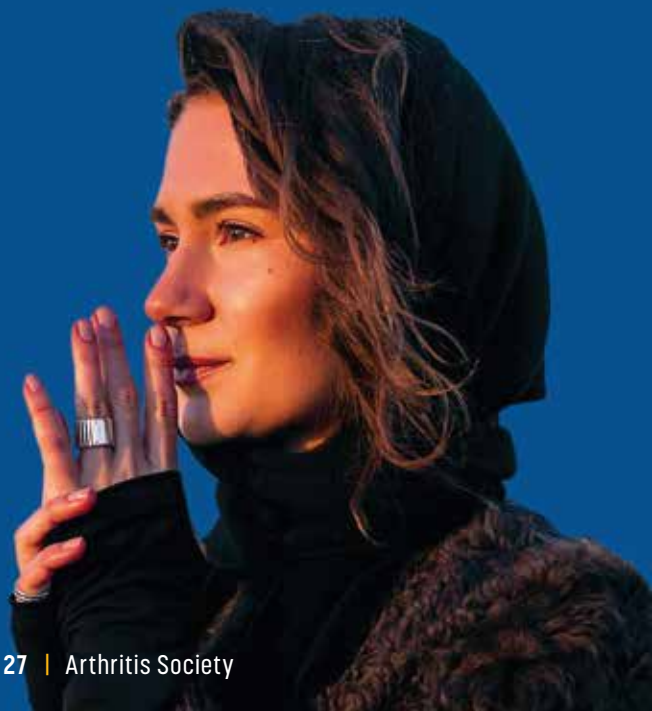
For more information visit –  
[arthritis.ca/treatment/surgery](https://arthritis.ca/treatment/surgery)



# What now?

There is currently no cure for OA. However, there are options that can help reduce risk, relieve pain and improve function.

They include a combination of self-management strategies (e.g. exercise, weight management), medications, and – for severe OA – joint replacement surgery.



## Ways the Arthritis Society Helps

### Website and Information Line

Visit our website to get information about arthritis and to find resources and events, or call our Information Line.

[arthritis.ca](http://arthritis.ca) | 1-800-321-1433



### flourish Content Hub

Find health and wellness guidance, self-management tips, inspirational stories, a sense of community and so much more to help people move through life with arthritis and flourish despite it. Visit *flourish*, our on-line content hub to help those living with arthritis.

[arthritis.ca/flourish](http://arthritis.ca/flourish)



### Self-management Education and Webinars

Our online modules and webinars help people with arthritis become their own advocate by providing expert insight into how to cope with the effects of arthritis such as chronic pain, anxiety and fatigue.

[arthritis.ca/education](http://arthritis.ca/education)



### Navigating Arthritis

Knowing where to turn can be a real challenge when dealing with the many facets of arthritis. Our new navigation guides provide a valuable reference tool for finding vital healthcare information and services in each province.

[arthritis.ca/navigation](http://arthritis.ca/navigation)