



## Osteoarthritis and What to do About the Pain

By Dr. Delia Roberts

Osteoarthritis (OA) is the type of arthritis that develops when the cartilage that lines the inside of a joint deteriorates. It's a very common disease, affecting 1 in 7 Canadians, and although it's associated with aging, it can affect younger people as well. It is most frequent in those over the age of 65 years, reaching 30% for people between the ages of 50 and 70 years. But nearly 1/3 of people with OA report being diagnosed at a much younger age - before they are 45 years old. Osteoarthritis is also more common in women than in men.

It's a serious disease; people with OA can experience severe pain, where the loss of function becomes so limiting it leads to other health problems. When OA is present, people are twice as likely to have other health issues than those who do not have OA. While there is no known cure, there are steps that can be taken to lower your risk of developing OA, slowing it's progression, and minimizing the symptoms. These are real things that you can do to ensure that you can continue to be able to work and enjoy life.

No joint is immune to OA, but the most common sites are knees, hips, big toes and spine. Joint injuries can lead to OA, especially if the cartilage is damaged during the event, or the alignment of the joint is changed due to ligament tears. Joint alignment affects the way that forces are applied to the cartilage, which in turn directly affects the health of this tissue.

Lack of physical activity can also make joints more susceptible to OA - cartilage requires cycles of loading and unloading to remain healthy. Other factors that can increase the risk of developing OA include obesity due to the increased load on the joints. Genetics also play a role in the shape of the joint and the strength and health of the joint structures that can affect the way that forces are applied to the cartilage, the degree of inflammation in the joint and/or the ability of the cartilage to regenerate and stay healthy.

There are four defined stages of OA, the earliest being Stage I.

- Stage 1: In this phase there is only minor damage to the cartilage. Symptoms are usually very mild if present at all. Early warning signs are joint pain that increases with activity or when the joint is held fully extended or compressed. There can also be stiffness, which lessens with movement. If you experience intermittent but reoccurring pain, have sustained an injury to your joint, or have risk factors such as obesity or a family history of OA, speak to your health care provider to determine if this is the beginning of this disease. If treated before there is much structural damage to the joint, the progression can be greatly slowed. Unfortunately, while this is the time when prevention is most important, it is often hard to motivate people to address something that hasn't yet affected their lifestyle at all. However, it's critical to realize that maintaining a healthy body weight and good strength and mobility in the muscles surrounding the injured joint can have a huge impact in reducing the risk of OA progressing.
- Stage II is characterized by the appearance of bone spurs on an x-ray, but the joint space is still normal. At this stage the cartilage is still present and there is a good level of joint fluid, but symptoms are more likely to appear. There may be pain after long bouts of activity, stiffness with long periods of inactivity, some loss of range of motion and discomfort with the joint fully compressed or extended. Again, at this stage maintaining strength and agility in the joint, while reducing the load through body weight management and the use of a supportive brace can slow the progression of the disease.

As the cartilage continues to erode, the joint becomes more inflamed and irreversible changes to the underlying bone become more apparent. Symptoms are also more frequent and increase in intensity.

- Stage III: When the joint space is narrowed, the disease is considered to have reached stage III. Symptoms include increased pain and some swelling of the joint following activity, along with more frequent complaints of stiffness. It is likely that over-the-counter medications will be required for pain control.
- In stage IV, the joint space is essentially non-existent, bone spurs are pronounced, there is more inflammation, and the pain can become severely limiting. At this stage medications may no longer be sufficient for pain control leaving surgery for joint realignment or replacement as the main treatment options.

Even though the diagnosis of OA is mainly by imaging (usually an x-ray), these findings and degree of impairment don't always match. Some people have a high degree of pain and limitation of activity with relatively little loss of cartilage and disruption of bone, while other's joints can look terrible, but their function remains high. There are some things that you can do to make sure that you fall into the high function group, starting with prevention and continuing through with self-maintenance.

First and foremost is maintaining good level of muscle strength, mobility and balance. This means getting regular exercise, including some resistance training as well as workouts to increase range of motion and agility. Training the reflexes around the joint can really help reduce the amount of pain and stiffness that is experienced. In these types of exercises, the focus is on consciously stabilizing the joint while load is applied. By starting small and

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gradually adding balance challenges or sudden increases in load like small hops, or catching a weighted ball, the joint 're-learns' which muscles to contract to provide stability (take a look at the resource list for exercise and training options). Posture and control are important, so if you have concerns about your joints, it's well worth speaking to your health care provider about a referral to a kinesiologist or physiotherapist to get you started with a good program. Even a few minutes a day can make a big difference in reducing pain and maintaining good function.

A diet rich in fruits and vegetables, cold-water fish and nuts can provide you with natural anti-inflammatories and the other materials needed for joint health. The evidence for the benefits of supplements containing these substances is mixed. While some studies report that pain is reduced with things like glucosamine and chondroitin sulfate, curcumin and collagen, others do not. Supplements can be very expensive to purchase, so given the uncertainty about their effectiveness they may not be worth the cost.

Other non-pharmaceutical strategies are to use some kind of supportive bracing, depending on the joint. For the knee there are numerous options from soft elastic sleeves available over the counter through to custom rigid braces. A new design that is part way in between provides support for the knee and hip. Produced by a company in Vancouver, BC, the Stoko Tights System uses a series of cables that are woven into the tights and can be tensioned to mimic the natural fascial support of the body.

Ice and analgesic creams may offer relief for the early stages of OA, however, once the joint inflammation is more advanced, they may not be effective. Over the counter non-steroidal anti-inflammatory medications or acetaminophen are the next step, but when OA is advanced, they may also be insufficient. Stronger pain medications can be prescribed by your physician, but they generally contain opiates and carry a danger as they are highly addictive. It's important to discuss your level of pain and function, lifestyle and sensitivity to side effects with your health care provider to ensure the best strategy for pain management and health.

A number of different kinds of joint injections can help with moderate OA. They include artificial joint fluid that can provide cushioning and lubrication for several

months. Injections that contain steroids act by suppressing the inflammation for pain relief, but again, they only last a few months. A number of other injections are being studied, however, to date there is limited evidence as to their effectiveness. Platelet rich plasma (PRP) is an injection of growth factors and other constituents isolated from your own blood that promote healing. This treatment has been approved by Health Canada but is not covered by any insurance plans and may be most effective for treating the early stages of OA. Stem cells derived from either fat cells or bone marrow are also being studied as a treatment for OA, however, to date they are not approved by Health Canada and are not available as a treatment in Canada outside of research studies.

The last options for pain relief and improved mobility are joint reshaping or replacement surgeries. Mainly done on the hips and knees, these surgeries require a long period of recovery, and for best outcomes, a focused rehabilitation. They are not possible for all joints, and even when they are, there are some movements that will remain limited, once again making prevention your very best strategy.

To avoid OA and maintain a high level of function it's essential to pay attention to the health of your joints throughout the

lifespan. This means staying active and strong, including some balance and agility movements in daily activities, maintaining a healthy weight and eating a diet rich in vegetables, fruits and healthy fats. Not only will this approach help your joints, but will also improve every other aspect of life. Stay active and stay well!

## Resources and Information

[BCFSC Fit to Work Program](#) – created by Dr. Delia Roberts to help lower injury and incident rates, improve employee well-being and decrease absenteeism and turnover.

Online resources from the [Canadian Arthritis Society](#)

The [Vancouver Coastal Health OsteoArthritis Integration System](#) (OASIS) program offers online classes and help with managing your OA.

[Research-based exercise program](#) to improve function for hip and knee OA.

[Resources for self management](#) including exercise programs for osteoarthritis.

[Stoko bracing system](#) - Use the code [FITWORK](#) for a 10% discount. 🇨🇦

