

## MANAGING OSTEOARTHRITIS WITH EXERCISE

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Millions of Canadians suffer from osteoarthritis, the most common form of arthritis. Osteoarthritis accounts for more trouble with climbing stairs and walking than any other disease, and is the most common reason for total hip and knee replacement surgeries. This article provides a review of the current scientific understanding of osteoarthritis, including common symptoms, risk factors/causes and the role of active exercise as an effective management strategy.

It is important to first understand what osteoarthritis is. Many joints in our body have smooth cartilage surfaces that glide against each other, which allow two or more opposing bones to move freely and perform a specific set of movement(s). A joint becomes arthritic when there is wearing down of these cartilage surfaces, and a change in the composition of the bone underneath the cartilage occurs. Soft tissue structures in and around the joint are also affected. An arthritic joint does not mechanically function like it is supposed to. This may result in a number of symptoms including:

muscle tightness and weakness, joint pain and stiffness, decreased ranges of motion, instability and creaking in the joints, swelling, inflammation, joint thickening (i.e. finger nodules, bunions), secondary movement patterns, and physical de-conditioning. Weight-bearing joints such as the hips and knees are most commonly affected, but osteoarthritis can affect any area of the body, including the hands, neck, and low back.



Osteoarthritis risk factors/causes are usually multi-factorial, meaning that there is usually no single cause, but rather a combination of several different factors. The more risk factors an individual has, the greater chance they have of developing osteoarthritis. These risk factors/causes may include but are not limited to: advancing age, genetic predisposition, mechanical overload from occupational and recreational activities, direct joint injury, lack of exercise, and being overweight or obese.

Exercise has been shown to be an effective management strategy for osteoarthritis. In general terms, exercise can be viewed as guided and coordinated movements which strengthen and rehabilitate our bodies. Exercise increases our functional capacity to withstand occupational, recreational, and everyday stresses to our body more efficiently, thereby minimizing the risk of joint injury and subsequent disability. Natural chemicals called endorphins have anti-inflammatory and pain relieving properties and are released by the body during exercise. Joint movement also transports nutrients and waste products to and from cartilage. For every extra pound of weight that someone carries, they put an extra three to five pounds of stress on a weight bearing joint. Regular exercise can allow an individual to keep their weight down, and their muscles and joints flexible and strong.

The individual components of exercise can exert specific positive benefits in the body. **Aerobic or Endurance** exercise improves the body's capacity to deliver oxygen to working muscles and organs. Swimming, cycling, jogging, water aerobics, and power walking are a few examples of this type of exercise. It is recommended that an individual engage in a minimum of 30 minutes of endurance exercise at least three times per week. This type of exercise will also burn calories and help maintain healthy body weight.

**Resistance or Strengthening** exercise helps a muscle's ability to contract and do work. This type of exercise can help maintain bone density and strengthen muscles to support our joints. It will also boost metabolism and assist in maintaining a healthy body weight. Examples of this type of exercise include weight machines in a fitness facility, dumbbells, or resistance tubing.

**Flexibility** exercises help maintain a joint's complete movement or range of motion. Stretching is the most familiar form of this type of exercise but it can also include activities such as Tai Chi, Pilates, and Yoga. Holding a sustained stretch for 15-30 seconds can result in modest flexibility gains. This type of exercise becomes especially important when preparing for any endurance or strengthening activity to help ready the body and minimize the risk of injury. Where appropriate, agility and proprioceptive/balance exercise may also be added.



Additional management strategies may be employed in conjunction with exercise in the management of osteoarthritis. This may include proper diet and nutrition, ice and heat therapy, and supplementation with glucosamine sulphate, omega-3 fatty acids, and natural anti-inflammatory agents. Treatment from Regulated Health Professionals who utilize manual mobilization therapies, soft tissue therapy, electrotherapy, acupuncture, and rehabilitation strategies can significantly help to decrease pain by restoring normal muscle and joint motion, and promote healing of arthritic or injured areas.

Osteoarthritis is common and affects millions of Canadians. The good news is that the negative effects of osteoarthritis can be successfully managed with active exercise strategies. Exercise can encompass a wide range of activities. Therefore choose activities that are safe and enjoyable. This will make it more likely for you to stay consistent with those activities. There may be some initial discomfort when beginning an exercise program. This may be your body's normal response when starting a new activity and should not last more than one to two weeks. Start slowly and progress gradually. If discomfort persists beyond this point, consult with an experienced individual to make sure the exercise you are performing is appropriate and being done correctly. For more information, visit [www.nhwc.ca](http://www.nhwc.ca).

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