



What is it?

Osteoarthritis (OA) is the most dominant form of arthritis, affecting 13% of Canadian adults.

In the foot, the most commonly affected sites for OA are the midfoot joints and the first metatarsophalangeal joint. A review of relevant studies has indicated that custom foot orthoses and orthopaedic shoes can be an effective part of a midfoot OA treatment plan.

The Arthritis Society of Canada defines OA as “the result of the body’s failed attempt to repair damaged joint tissue.” This damage can be caused by traumatic injuries or a host of other factors. Anatomically, the ends of our bones are covered with a protective cartilage. That cartilage wears down over time due to mechanical stress, age and other factors. This results in bone-on-bone movement in the joint that can lead to stiffness, discomfort and pain.

Currently, there is no known reason for OA occurrence in some midfoot joints, while other joints in the foot have not degenerated.

In the foot, the most commonly affected sites for OA are the midfoot joints and the first metatarsophalangeal joint (3). A review of relevant studies has indicated that custom foot orthoses and orthopaedic shoes can be an effective part of a midfoot OA treatment plan.

What do people experience?

Early symptoms can include:

- Joint stiffness
- Joint swelling
- Joint cracking/grinding
- Pain (primarily after activity, although with progression pain can develop with activities of daily living)

Progressive manifestation of symptoms

- Foot pain
- Structural deformities
- Poor balance, resulting in an increased risk of falling
- Slower walking speed
- Difficulty walking across uneven surfaces
- Muscle weakness
- Decreased joint range of motion
- Increased foot pressures
- Difficulty ascending or descending stairs

Risk Factors

Unfortunately, osteoarthritis can affect all members of the population, but is found to be more prevalent with certain risk factors. Multiple forms of OA affecting the foot are thought to be linked to multifactorial origins.(2)

Risk factors include:

- **Age:** your risk factor for developing OA increases as you age
- **Female:** studies have suggested that OA is more prevalent in females
- **Excess weight:** excessive weight increases the pressure on the joints of your feet; the mechanical stress increases your risk of developing OA
- **Joint injury:** repetitive or traumatic injuries may increase the development of OA

Because it may manifest with a multifactorial onset, avoiding OA is difficult. You can reduce symptoms by avoiding risk factors including:

- Ill-fitting footwear
- High impact exercise
- Excessive weight gain
- Activities/actions that increase symptoms of pain

Allowing for ample rehab and physical therapy after an injury and prior to returning to your sport or activity will also help you reduce your risk.

What can you do to feel better today?

The management of your symptoms, your current level of activity, and your range of motion are important to your overall well-being.

- Physical activity and maintenance of muscle strength and joint mobility is an integral part of any treatment plan. If you are not engaged in a current exercise program, consult with your medical professional regarding modifications or restrictions.
- Listen to your body to determine if certain motions increase stress and pain, and adjust techniques to aid in the protection of your affected joint(s).
- Take a look at your current footwear choices—are your shoes comfortable, is it time to replace them? When shopping for new shoes, your pedorthist can provide you with some recommendations to increase your level of comfort and symptom relief and accommodate orthoses (if these are part of your treatment plan).

What are my options for treatment? Who can help?

Treatment goals for individuals with OA include reducing pain and managing debilitating symptoms, while allowing the individual to complete activities of daily living with greater function and mobility. Early treatment intervention is important as it may provide joint stability and slow the progression of the disease.(3)

Conservative treatment options include:

- Custom foot orthoses
- Physiotherapy
- Activity modifications
- Medications
- Injections

Prevention / Rehabilitation

As osteoarthritis is a multifactorial disease with different manifestations, there is little information on the prevention of OA. However, there are steps you can take to slow the progression.

- Maintain a healthy body weight
- Select and wear appropriate footwear
- Make activity modifications
- Maintain a regular exercise program, maintain current joint ranges of motion
- Utilize custom foot orthoses

Staying Active with pain

The two main goals of treating osteoarthritis include pain management and increasing your ability to function.

Contrary to previous ideas, maintaining physical activity is key in managing the progression of OA. Although this may seem counterintuitive, maintaining an exercise program retains muscular strength and available joint ranges of motion, which therefore may prevent stiffness.

Ensure that you have appropriate footwear for your activity needs. Your footwear choices may enhance your exercise or inhibit it without you even knowing it.

Always listen to your body and allow for ample rest time when needed. Consult with your physician, physiotherapist or kinesiologist before starting a new exercise program, or if you have any questions regarding your fitness plan.

DO YOU WANT MORE GOOD DAYS THAN BAD? IF OSTEOARTHRITIS IS HOLDING YOU BACK, READ ON!

How can SoleScience help you feel better?

Your SoleScience Pedorthist will create an individualized treatment plan that suits your specific needs, goals, and symptoms. We will work with you to determine not only what we need to do to address your current concerns, but also to prevent future problems.

Your pedorthist will complete a thorough and comprehensive foot examination at your initial appointment. A comprehensive follow-up exam will ensure that you are

meeting your goals and allow your pedorthist to reassess your treatment plan (as necessary). During these appointments we will:

- Assess joint and muscle function, including range of motion and gait assessment
- Assess your footwear for both fit and function
- Identify any risk factors that can be modified and make recommendations for change
- Identify areas of risk with specialized tools such as pressure mapping (F-Scan or Pedograph)
- Discuss a treatment plan, which may include a change in footwear, activity modification, or custom foot orthoses and/or a complementary treatment referral (such as physiotherapy)

In addition to your individual treatment plan, your SoleScience Pedorthist will provide you with educational resources to help you best maintain your foot health.

Our take on the need for custom foot orthoses

Custom foot orthoses can be a useful tool in reducing symptoms of most stages of osteoarthritis. Certain wedges can be incorporated into the device to shift the force away from the affected joint, reducing the amount of mechanical compression on the joint. Custom foot orthoses allow the device to be modified to suit your needs. When it comes to wedges, orthotics and arthritis, individual tolerance differs widely. It's possible that very small differences in the device could result in large differences in symptom relief. This makes the ability to modify a device advantageous to ensure maximum comfort.

Custom vs. OTS

Custom foot orthoses are made using a mold (cast) of your foot. This type of insole is made specifically for you and your needs. Your pedorthist will not only take a cast of your foot in a specific position, but will also choose the materials and construction details tailored specifically to your foot. The evidence suggests that custom foot orthoses can be a viable part of your treatment plan to decrease pain and discomfort and aid in movement function.

Off-the-shelf (OTS) devices are pre-fabricated for an “average” foot and are designed to slip into most footwear. This type of insole may be heat moldable, or modifiable for a degree of customization, but is not entirely custom made to your foot. There are dozens of insoles available in your local pharmacy or drugstore

that may provide support and relief for various foot conditions. When dealing with the early stages of osteoarthritis, an OTS device may be appropriate for pain management, but as the disease progresses, a custom orthotic device may be better suited to your overall needs.

Footwear recommendations

Your footwear choices are an integral part of your treatment plan and daily comfort. Ensure that your shoe choices include cushioning and proper support, with extra depth through the forefoot, a stiff heel counter, and the right fit. The shoes should not be too wide or too narrow, or place any increased pressure on any area of the foot. A rocker toe may be beneficial as well.

Your pedorthist will recommend shoe choices for you, and will take into consideration the most appropriate shoes for your work and activity requirements. If necessary, your pedorthist may also be able to stretch or modify your shoes to provide more comfort.

References

- (1) Halstead et al, (2016).
- (2) Verhoeven & Vandeputte, (2012).
- (3) Egloff et al, (2012).