



## What is Hallux Valgus?

Hallux valgus (HV), also known as bunion deformity, occurs when the joint of the big toe moves out of alignment. This often causes the joint to deviate towards the outside of the foot, and the toe to move on the opposite angle, towards the smaller toes. As a consequence, a bump forms at the joint.

The development of hallux valgus is thought to be multifactorial and may be due to environmental factors, which include poor fitting footwear, and structural factors (hereditary predisposition, excessive pronation), or a combination of the two (1).

## What do people experience?

HV affects each person individually, with a range of symptoms that may result in pain or discomfort or the presence of structural deformities absent of pain.

### Early symptoms can include:

- Joint stiffness
- Joint swelling
- Redness
- Joint pain
- Development of a bump over the big toe joint

## Progressive manifestation of symptoms

- Joint pain
- Structural deformity of the big toe
- Structural deformity of the second toe; as the first toe deviates towards the second toe, it can cause it to cross over the first toe or result in a hammer toe deformity, corns, blisters, or other pain in the second toe
- Decreased balance—increased risk of falls (2)
- Slower walking speed
- Difficulty walking across uneven surfaces
- Muscle weakness
- Decreased joint range of motion
- Increased foot pressures under the ball of the first toe
- Difficulty ascending or descending stairs

In elderly patients, an unstable gait pattern may be associated with hallux valgus, including decreased walking speed and stride length over uneven surfaces (2).

## Risk factors & how to avoid discomfort

Unfortunately, hallux valgus affects all factors of the population, but is found to be more prevalent with certain risk factors.

Risk factors include:

- **Age:** chance of developing hallux valgus increases with age
- **Female:** studies suggest hallux valgus is more prevalent in females; may be linked to excessive high heeled shoe use
- **Joint injury:** repetitive or traumatic injuries to the big toe joint may increase the development of hallux valgus
- **Activities:** exercise or occupations that increase the stress on the big toe joint can result in the manifestation of the deformity, including ballet dancers or gymnasts

Because it may manifest with a multifactorial onset, avoiding hallux valgus may be difficult, especially if there is a family history. You can reduce symptoms by avoiding risk factors including:

- Ill-fitting footwear
- High impact exercise

- Ample rehab/physical therapy prior to returning to sport or activity post-injury
- Excessive weight gain
- Activities/actions that increase symptoms of pain

## **What are my options for treatment? Who else can help?**

Treatment goals for individuals with hallux valgus include pain and symptom management, while allowing the individual to complete activities of daily living (ADLs) with greater function and mobility. Early treatment intervention is important as it may provide greater joint stability and slow the progression of the deformity and consequently improve or maintain your quality of life (2).

### **Conservative treatment options include:**

- Custom foot orthoses
- Cushioning: off-the-shelf pads and toe sleeves
- Accommodative footwear
- Bunion night splint
- Physiotherapy and stretching
- Medications
- Injections

In severe cases, surgical interventions may be necessary. This type of intervention should only be discussed after conservative treatment options have been exhausted without significant pain relief or management.

There are several healthcare providers and other professionals that may help with symptom and exercise management. Other professionals may include:

- Dieticians
- Kinesiologists
- Physiotherapists
- Occupational therapists
- Foot care nurses or chiropodists

## **Staying active with pain**

Conservative treatments, which may include custom orthoses and/or changing your current footwear, play a key role in maintaining and staying active with hallux valgus.

While it is important to stay active, limiting your activity to movements that are not painful or less intensive will provide symptom relief.

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.

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## **REDUCE PROGRESSION, AND PROLONG SURGERY AS MUCH AS POSSIBLE.**

To feel better, 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 maintain your foot health.

Specific to hallux valgus, your pedorthist may recommend a bunion night splint to help slow the progression in the early stages. Custom foot orthoses have been shown to decrease overall pain and symptomatic factors as well as slow the progression of the deformity as a conservative treatment plan (3). Your pedorthist may also recommend using a toe sleeve over your second toe to decrease pressure points associated with the movement of your big toe.

## **Our take on the need for custom foot orthoses**

Hallux valgus (HV) is a prominent joint disorder, more common among women than men. The prevalence of hallux valgus today can present a considerable individual burden due to symptomatic pain, development of OA and abnormal gait patterns (1).

Conservative treatment interventions have been shown to decrease symptoms of pain and discomfort, slow the progression of hallux valgus and therefore delay or reduce the need for surgical interventions.

## **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 take a cast of your foot in a specific position and choose the materials and construction details tailored specifically to you. The evidence suggests that custom foot orthoses can be a viable part of your treatment plan to decrease symptoms of pain and discomfort and aid in movement function (3).

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 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 hallux valgus, 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 day-to-day comfort. Ensure that your shoe choices include cushioning and support, with extra depth through the forefoot, a stiff heel counter, and a proper fit. The shoes

should not be too wide or too narrow, or place any increased pressure on any area of the foot. A stiff rocker toe may be beneficial as well, as it will decrease the effort required to toe off at the end stage of your walking cycle.

Other features to look for:

- Wide, deep toe box to accommodate for toe deformities
- Seamless construction through the upper shoe – will limit the pressure on or around the big toe joint
- Laces or buckles as closures may provide a better fit overall than slip-on styles
- Avoid heeled shoes as much as possible

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

## **References**

- (1) Reina et al, (2012).
- (2) Nix et al, (2013).
- (3) Farzadi et al, (2015).