

## Hallux valgus

The common term for hallux valgus is bunion. It is characterized by a mostly painful medial deviation of the metatarsal head 1 and the simultaneous deviation of the ossa phalageale 1 laterally towards the other toes. As a result, deformities and displacements of the other toes may occur.

The causes have not yet been definitively determined. However, they may be a dysbalance of the extrinsic and intrinsic foot muscles, a biomechanical disorder such as hyperpronation, or heredity.

The development of hallux valgus is promoted by the following factors:

- Wearing shoes that are pointed at the front.
- Wearing shoes with a raised heel area (heels) due to overloading and pushing apart the metatarso-phalangeal joints
- insufficient training of the foot muscles

More rarely, hallux valgus develops as a result of trauma or rheumatoid arthritis.

Degree: Hallux valgus angle (HVA) / Intermetatarsal angle (IMA)

- Normal: less than 15 degrees / 9 degrees
- Mild: 15 to 30 degrees / 9 to 13 degrees
- Moderate: 30 to 40 degrees / 13 to 20 degrees
- Severe: over 40 degrees / over 20 degrees

Root et al. divided HV deformity into four stages, as outlined below:

- Stage 1: Lateral displacement of the hallux at the MTP joint
- Stage 2: Progression of the hallux abduction (hallux pressing against the second toe)
- Stage 3: Increased intermetatarsal angle, possible associated second hammertoe deformity
- Stage 4: Partial/Complete hallux dislocation at the MTP joint

The conservative treatment consists in reducing the symptoms.

- Shoe modification: Low-heeled, wide shoes.
- Orthoses: Improves alignment and support.
- Analgesics: Acetaminophen and NSAIDs.
- Ice: Icing the inflamed deformity to reduce inflammation.
- Medial bunion pads: Prevents irritation of HV deformity.
- Stretching: Helps maintain joint mobility in the affected joint.

Surgical methods can be used when conservative treatments are not sufficient:

**Osteotomy** - A cut in the first metatarsal bone puts it into a less adducted position and the method varies in position and shape depending on the surgical strategy.

**Arthroplasty** - The mobility of the first MTP joint is maintained while relieving the pain. The joint is removed (total joint arthroplasty) or replaced with an implant (hemiarthroplasty).

**Arthrodesis** - Fusing the metatarsocuneiform or MTP joint into the correct position. This is only performed when the joint is severely degenerated and regaining functionality is unlikely.

**Soft tissue procedures** - primarily involves soft tissue (McBride procedure). In this, the fibular sesamoid is excised, causing Interphalangeal joint flexion, MTP joint hyperextension and medial deviation of the hallux.

### **Differential Diagnosis to Hallux valgus deformity**

- Osteoarthritis
- Freiberg's disease
- Hallux rigidus
- Morton's neuroma
- Turf toe
- Gout
- Septic joint

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