



**South County**

**Orthopedics Specialist**

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### **Hallux Valgus aka Bunion deformity**

Hallux valgus, or more commonly known as a bunion deformity, is a common disorder that can occur in adults, adolescents, or juvenile. Characteristically a bunion is when there is a lateral deviation of the proximal phalanx of the great toe with a prominent medial eminence. It is usually accompanied by deformities and symptoms of the lesser toes specifically the second and third.

The cause of adult hallux valgus can be classified into two categories intrinsic and extrinsic. Intrinsic factors include genetic predisposition, ligamentous laxity of the first tarso-metatarsal joint, and pes planus, or flat foot. Extrinsically, there have been studies that support the hypothesis that shoes with small toe boxes and a high heel can cause a bunion which is why women are more likely to develop bunions compared to men.

Juvenile and adolescent hallux valgus differ from adult in that bunions are seen on bilateral feet, are often familial, and pain is not the primary complaint. Instead, the cosmetic appearance of the feet is the primary complaint.

#### **Clinical Presentation**

The most common complaint for adult hallux valgus is pain, difficulties with shoe wear, and skin irritation on the medial side of the great toe at the site of the metatarsal phalangeal joint. If severe and chronic, compression of the digital nerve may also cause symptoms. Lesser toe disorders include calluses under the metatarsal heads.

Through the use of weight bearing x-rays the hallux valgus angle and intermetatarsal angle can be calculated which will categorize the deformity into mild, moderate, or severe. The classification will further assist the treatment that would be best suited for correction, giving the best aesthetic and functional result.

#### **Treatment**

##### **Non-surgical Treatment**

Our aim is to educate each patient about what hallux valgus is and what the contributing factors are so that corrections can be made. It is our recommendation to wear wider footwear specifically at the toe box to accommodate the toe malalignment, shoes with soft leather or cloth fabric to alleviate pressure and painful symptoms. Padding can also be beneficial which can include over the counter pads, donuts and toe spacers.

## Surgical Treatment

Surgical treatment is indicated when conservative therapies have failed resulting in continued pain, limitations of daily activities, and inability to wear footwear. There are several surgical procedures that have been used for the treatment of hallux valgus, below will be three common procedures: Chevron metatarsal osteotomy, Scarf metatarsal osteotomy, and Lapidus.

The Chevron metatarsal osteotomy is a V-shaped cut of the first metatarsal head which allows the distal aspect of the bone to be translated in the lateral direction. The cut bone is then fixed in this new position with a small dissolvable pin. The excess bone on the medial side of the foot is then resected so that it is flush with the new alignment of the metatarsal. This procedure is used when the hallux valgus deformity is mild.



The Scarf metatarsal osteotomy is a Z-shaped cut on the first metatarsal resulting in two components of the bone, a proximally based dorsal fragment and a plantar fragment which is comprised of the plantar surface and the metatarsal head. A “push and pull” technique is then performed by pushing the plantar fragment and pulling the dorsal fragment. The osteotomy is held together through the use of screws for fixation. The excess bone on the medial side of the foot is then resected so that it is flush with the new alignment of the metatarsal. This procedure is usually used when the hallux valgus deformity is moderate.

A Lapidus procedure is the fusion between the first metatarsal and medial cuneiform. In order to fuse the two bones together the proximal base of the first metatarsal and medial cuneiform cartilage surfaces are removed, the toe is reduced to decrease the intertarsal angle and two screws are placed in a crisscross manner across the metatarsal medial cuneiform joint for fixation.



#### **Post-operative care for chevron and scarf metatarsal osteotomy**

After surgery you will wake up with bandages and a post-op shoe on your foot. You are able to immediately weight bear as tolerated and a pair of crutches will be given to you following surgery to assist with walking. You are welcome to use a cane, walker, or crutches to assist with walking with the post-op shoe. Please keep the dressing clean and dry. 2-3 days following surgery you will come into the clinic to get a dressing change, continue to keep the dressing

clean and dry with the post-op shoe on. The next appointment will be 2 weeks from your surgery date, where the sutures will be removed. New dressing will be applied with a continued emphasis on a toe spacer between the 1<sup>st</sup> and 2<sup>nd</sup> toe. Home exercise program will be discussed including range of motion of the first toe (dorsiflexion and plantarflexion), edema control, and scar massage. At the 6-week post-op appointment x-rays of the foot will be taken, you will be transitioned out of the post-op shoe into supportive athletic shoes, and low impact aerobic exercises will be allowed (walking, elliptical, stationary bike) . At this time the toe spacer can be discontinued. One final post-op check will happen at 12 weeks post-op with x-rays of the foot, if everything is healing well and the patient is progressing, will begin to transition back into their daily activities.

### **Post-operative care for Lapidus**

After surgery you will wake up with a posterior molded splint. You will not be able to put weight on your foot for 6 weeks. We recommend using crutches, knee scooter, or wheelchair. You do not need to take off the splint, you just need to keep the splint clean and dry. To assist with swelling control, elevate your foot and continue to stay off of it. 2 weeks after surgery you will come in for your first post-op appointment, we will remove the splint, sutures, and transition you into a walking boot or a short leg cast depending on age and comorbidities. New dressing will be applied with a continued emphasis on a toe spacer between the 1<sup>st</sup> and 2<sup>nd</sup> toe. Home exercise program will be discussed including range of motion of the first toe, edema control, and scar massage. At this point you will be able to transition to limited heel weight bearing for balance, but you may not walk fully in the walking boot or short leg cast. At the 6-week post-op appointment x-rays of the foot will be taken, you will transition into weight bearing as tolerated in the walking boot and can discontinue the toe spacer. Continue with range of motion exercises, scar massage, and edema control. At your 12-week post-op appointment another set of x-rays will be taken and if healing of bone allows you will transition out of your walking boot into supportive shoes. You may begin light aerobic exercises that are low impact, no high impact exercises such as running or jumping. The 4<sup>th</sup> post-op visit will be 6 months post-op, x-rays of the foot will be taken to make sure there is full fusion of the bone.

### **Post-operative care for Lapiplasty**

With the newer advancements in the Lapidus procedure and 3D correction of the bunion, we now use more precise cutting blocks and stronger plating system for fixation. Therefore, the post-operative immobilization has changed. Patients are non-weight bearing for 2 weeks, then progress to a weightbearing boot for the next 4-6 weeks until the bone (osteotomy) is healed (8 weeks). Then the transition is into shoes and similar rehab program.

### **Additional links**

<https://www.footcaremd.org/conditions-treatments/toes/bunions>

<https://orthoinfo.aaos.org/en/diseases--conditions/bunions/>

<https://www.orthobullets.com/foot-and-ankle/7008/hallux-valgus>