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# Bunions

## (Hallux Valgus)

**Description:** The first metatarsal (the bone behind the big toe) shifts outward, while the big toe (hallux) points inward (valgus). This causes a bony bump on the inside of the foot near the big toe.

**Symptoms:**

- May cause the area around the big toe to become painful
- Sometimes, the bump becomes red and swollen, often from friction of that area
- Decreased range of motion/mobility in the big toe
- Could lead to excessive pronation (inward roll of the foot)

**Possible Causes:**

- **Improper footwear:** A shoe that is too small or too narrow can push the big toe inward. Over time, this can permanently change the alignment of the toes. An extreme example of this would be high heels, as the pointed toe and elevated heel put pressure on the ball of the foot.
- **Poor foot biomechanics and/or foot muscle imbalances**:
  - If the calves are too tight and/or the shins are not strong enough, your foot will have limited dorsiflexion (the ability of the foot to extend upwards). This will often cause the foot to roll inward more (overpronate) and cause you to push off of the inside of the big toe instead of the front of the toe. This repetetive motion can eventual cause a bunion by pushing the toe inward.
  - Overpronation (excessive inward roll of the foot) as a result of weak intrinsic foot muscles can also create a bunion in the same way.
- **Underdeveloped anterior (shin) muscles.** These assist in extending the toes and foot up. If these are too weak, the flexor muscles on the bottom of the foot will become more dominant and eventually pull the big toe down and in, creating a bunion. Weak shin muscles will also reduce the amount the foot is able to dorsiflex, creating instability and compensation patterns that result in bunion formation.
- **Heredity**: Some people are more prone to developing bunions due to hereditary foot structure.

**Other considerations:**

- The muscle imbalances previously described can also eventually lead to *Hammertoes*
  - Hammertoe is when a toe is stuck in a bent position at the middle joint

**Self treatment options**:

- ☐ **Support:** If a bunion has already formed, your foot will likely collapse inward (overpronate). Adding arch support can help maintain proper foot alignment to prevent the bunion from getting worse and to alleviate the symptoms until the cause is addressed.
- ☐ **Stretching:** Addressing tightness in the foot and calf can help prevent improper mechanics that cause bunions.
  - Foot stretches:
    - Plantar Fascia stretching, rolling, and massaging
    - Toe Spread Exercise
  - Calf stretches: It is important to address tight calf muscles as they can lead to limited dorsiflexion.
    - Gastroc and Soleus Stretches and Foam Rolling

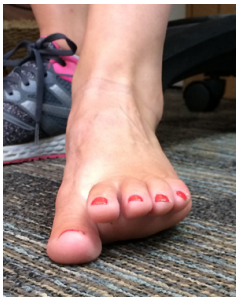
☐ **Strengthening:** It is important to remember that support will only treat the symptoms of bunions and will not solve the underlying cause.

- Toe extensors, flexors
- Intrinsic foot muscles
- Anterior (shin) muscles

☐ **Products:**

- Footwear with a wider and and/or longer toe box will relieve th e pressure on the big toe and help prevent further protrusion. Because bunions inhibit proper toe off, shoes with a rocker sole may be helpful in both pain relief and to prevent them from worsening.
- Correct toes, insoles, Foot Rubz, resistance band

☐ **Free Clinics:** Most people walk and run in a way that puts excessive braking and friction on their joints, muscles, and tendons. Take a **FREE Good Form Running** and/or **Good Form Walking** clinic to have your form analyzed! Our **Stretch, Strengthen, and Roll** class will cover common muscle imbalances and how to correct them.



**Toe Flexion and Extension Exercise:** Push your big toe into the ground, while lifting your 4 smaller toes. Hold for 3-5 seconds, then push your 4 smaller toes into the ground while lifting your big toe off the ground. Do not allow the ball of the foot to rotate. Repeat 10x each foot many times throughout the day.

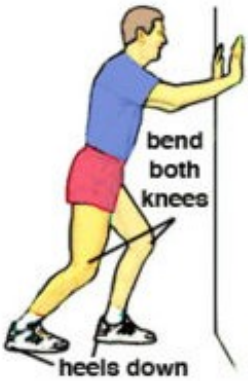
**Rolling out Plantar Fascia:** Helps promote recovery by increasing circulation and flexibility. Could be done before or after exercise and throughout the day.

**Dorsiflexion with Resistance Band:** Tie one end of a resistance band to a stationary object and the other to your forefoot. Dorsiflex the foot by slowly pulling the forefoot toward your shin. Hold for 3-5 seconds and slowly let the band pull the foot back to a plantarflexed (pointed down) position. Repeat 15-20 times per foot multiple times per day. Progress by using a stiffer band, performing the movement more slowly, and dorsiflexing (lifting up) the toes throughout the exercise.

**Calf Stretches**

**Gastroc**: Stand with your right foot back. Keep your back knee straight and forward leg bent. Keeping your heel planted on the floor & toes facing straight ahead, lean forward from the ankles toward the wall. Hold for 30 seconds, then switch legs.


**Soleus:** Stand with your right foot back. Put a slight bend in your back knee and forward leg bent. Keeping your back heel planted on the floor & toes facing straight ahead, lean forward from the ankles toward the wall. Hold for 30 seconds, then switch legs.







**Toe Spread Exercise:** Lift all toes while keeping the metatarsal heads (ball of the foot) and heel on the floor. Then push the little toe downward in a lateral (outward) direction, while pushing the big toe slowly downward in a medial (inward) direction. This has been shown to both decrease the angle of the bunion as well as increase the strength of the muscles that work to keep the toes separated.

*Dorsiflex foot*

*Walk Forward on Heels*

**Shuffle (Heel) Walks:** This will help to strengthen the anterior (shin) muscles to assist with dorsiflexion and help gain calf length. Begin by dorsiflexing your foot. With your foot dorsiflexed, walk forward on your heels 30 steps, then turn around and walk back. To increase effectiveness dorsiflex (lift up) your toes.