

# Unraveling the Mysteries of the Bunion

In many ways, hallux valgus more commonly known as "bunions" remains a mystery. What causes it? Why does it seem to run in some families but not others? Is it caused by wearing pointy shoes? If it is caused by shoe wear, why doesn't everyone who wears those shoes develop bunions? These and other questions are investigated in this review of the problem.

Here's what we know so far. Studies have been done that show shoe wear is a factor. But it isn't the only factor because some people who don't wear shoes also develop hallux valgus or bunions. Anatomically speaking, we know there is a problem in the line up of the bones of the first toe.

It's this bony misalignment that causes a disruption in the way the muscles of the toes and foot work. Without the necessary muscle balance, the bones remain at an angle to one another causing the distinctive pattern that suggests bunions. And once the bone angle and muscle balance have been disrupted, then the surrounding ligaments and joint capsule get stretched out (called laxity).

And there's one more anatomic piece to this problem. Normally, there are two tiny round bones underneath the base of the big toe. These bones are called sesamoid bones. They may be small but their influence is huge. The sesamoids help create a pulley mechanism that allows for normal movement of the big toe as you walk. They help absorb ground forces with every step you take.

In hallux valgus (bunions), the altered bony alignment moves the bones of the first toe away from the sesamoids. There is a downward spiraling effect that ultimately leads to instability of the big toe and foot.

If you or your family members have a tendency toward bunions, what can you do to avoid this problem? Clearly, you can't do much about the family tendency. Bunions tend to be most common on the mother's side and among Caucasians more than African Americans.

Let's take a look at some of the other factors that contribute to bunions. First, there is the problem of shoe wear mentioned earlier. For some people, high-heeled, narrow shoes are a problem. Likewise wearing shoes that are too small contributes to the problem. This is especially true when these types of shoe are combined with being overweight. Putting a lot of weight through the big toe during standing and excessive walking activities can really push the envelope so-to-speak.

What if you are born with naturally loose ligaments or a flat foot? Are you guaranteed to develop a bunion? Not necessarily. And the reason why not isn't clear yet either. Likewise, if you are born with a short big toe or extra long second toe, there is an increased risk (but not guarantee) that bunions may develop over time.

Many studies have been done on the problem of hallux valgus. There are reports on the role of each individual anatomical and biomechanical change that contributes to the problem. And still we don't know how to prevent or even adequately treat this condition.

There is a need for further studies to really answer the questions of what causes this problem and how does it come about. The ultimate goal is to prevent hallux valgus with a secondary goal of treating it effectively when it does develop.

Reference: A. M. Perera, FRCS (Orth), et al. Current Concepts Review. The Pathogenesis of Hallux Valgus. In The Journal of Bone and Joint Surgery. September 7, 2011. Vol. 93-A. No. 17. Pp. 1650-1661.