

## Bye-Bye Bunions!

*By adding a few foot strengtheners to your asana routine, you can ease the pain caused by bunions—or prevent them from developing in the first place.*

By DOUG KELLER

A bunion is an all-too-common foot problem that can easily develop into a painful deformity if left unchecked. Medical science treats bunions as a progressive disorder and cites hereditary factors as the main culprit. But from a more holistic perspective, constrictive shoes, coupled with the fact that we rarely stretch, massage, or otherwise properly exercise our feet, are also contributing factors. The good news is that a few warm-ups and exercises for the feet, along with targeted yoga poses, can slow the progression of bunions caused by hereditary factors, and even halt the formation of bunions resulting from neglect and ill-fitting shoes. Even if you don't have bunions, these exercises will reduce soreness and fatigue, and keep your feet healthy and strong.

### HOW BUNIONS DEVELOP

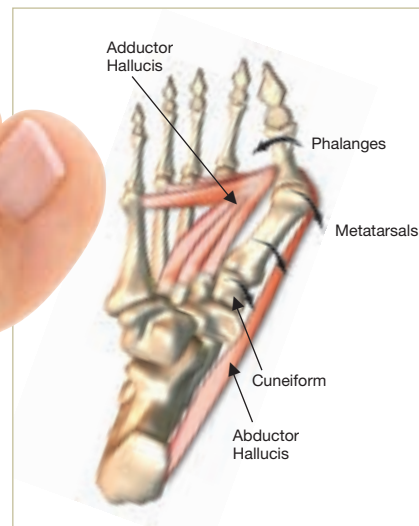
A bunion (or prominent, bony bump) most often develops from a “zigzag” of the bones at the ball of the big toe: the big toe “zigs” in toward the other toes, while the metatarsal “zags” out, causing irritation and even calcification at the

head of the metatarsal. This is usually accompanied by the collapse of the inner arch of the foot. Each problem amplifies the other: the collapse of the arch accelerates the formation of the bunion, while the bunion itself further diverts the metatarsals, undermining the arch. The bunion becomes a bigger problem when it becomes inflamed and sore from the pressure that you put on it as you walk.

Our genes determine the shape of the bones and the strength of the ligaments holding the foot together, so the cause is

partly hereditary: the head of the metatarsal bone of the big toe can be unusually rounded or convex, which makes it more likely that the toe will slide on its surface to turn in. At the other end of the metatarsal, the cuneiform bone upon which it rests can be shaped in a way that causes the metatarsal to shift outward (Fig. 1).

But heredity is not the only cause. Tight shoes—combined with a habit of walking with the feet turned out—



**Fig. 1: ANATOMY OF A BUNION** *If the metatarsal or cuneiform bones are shaped unusually, the metatarsal tends to shift outward. When the adductor hallucis gets tight, it pulls the phalange of the big toe inward and the abductor hallucis becomes overstretched.*

weaken the ligaments of the arch by putting pressure on the big toe metatarsal while forcing the big toe itself to turn inward by pushing it aside as you walk. As a result, the toes get bunched together as the adductor muscles in the sole of the foot (especially the adductor hallucis) become tight, pulling the big toe in toward the others. The progressive formation of the bunion goes largely unchecked because the abductor muscle (the abductor hallucis), which is designed to resist that pull and keep the big toe aligned, has become weak and over-stretched.

Thus bunions—and muscular imbalances that encourage the formation of bunions—can cripple us by misaligning the big toe and weakening the structure of the foot. Let's begin by looking at a muscle that plays a major supporting role in the power of the big toe, and then look at ways of realigning the big toe.

#### ACTIVATING YOUR ARCHES

The tibialis anterior runs from the base of the big toe through the forward part of the arch of the foot (Fig. 2). One way to give this muscle a workout is to practice picking up a napkin with your foot, scrunching up your toes to grab it. You'll feel a muscle activate at the base of your big toe as your ankle flexes and your foot inverts (i.e., flips sideways) to lift the napkin. That's the tibialis anterior.

You can also activate the tibialis anterior by lifting the big toe, keeping the mound of the toe grounded (Fig. 3) while intentionally lifting the arch from behind the big toe mound. The lift of the arch, without inverting the foot and keeping the ball of the toe grounded, comes from the tibialis anterior. You must keep this muscle activated and the ball of the big toe down to strengthen the muscles that realign the big toe. The following exercises help you accomplish this.

✦ *The tibialis anterior isn't the only foot muscle that supports healthy alignment of the big toe; the tibialis posterior does, too. To learn how to activate and strengthen the tibialis posterior, log onto [YogaPlus.org](http://YogaPlus.org) and click on "Yoga Therapy for Your Arches."*



**Fig. 2: THE TIBIALIS MUSCLES** *The tibialis anterior muscle inverts the foot and lifts the front of the arch. The tibialis posterior muscle lifts the middle of the arch.*



**Fig. 3: ACTIVATING THE TIBIALIS ANTERIOR** *Keep your heel and the mound of your big toe grounded (you can use your finger to help) as you lift your big toe. Draw energy up from below the big toe mound toward your ankle to activate the arch.*

#### TREAT YOURSELF TO A FOOT MASSAGE

Tightness in the sole of the foot contributes to the formation of bunions and causes the toes to be cramped. It's difficult, if not impossible, to strengthen the arch or work with the toes when they are stuck together in this way, so you should start with a foot massage to release the adductor muscles. You can use your thumbs or roll a tennis or golf ball beneath the mounds of the toes to release these muscles. Start at the base of the big toes and massage down through the inner arch. Work back up along the little toe

side of the foot, and anywhere else in the sole that feels tight (Fig. 4).

Next you'll need to create some space between the toes so that they can regain their mobility. Work your fingers as far between your toes as possible, cupping the sole of your foot in your palm, and working the toes back and forth with a "yoga handshake" to loosen them (Fig. 5). As you get used to this, you can increase the effectiveness of the stretch by alternating between an upward handshake (interlacing your fingers between your toes from the sole of the foot upward) and a downward handshake (interlacing the fingers from the top of the toes downward).

To complete the warm-up, take each toe individually and gently pull it away from the heel. Although the purpose is not simply to "crack" the toe, a cracking or popping sound can signify a release.

#### STRENGTHENING KEY MUSCLES

Next, sit on the floor or on a chair with your knees bent and your feet parallel.

Lift all of your toes while keeping the balls of your toes and your inner heel grounded. See how much you can lift your arch, not just from the ball of the big toe, but also from the center of the sole in front of the heel.

Of course, you may find that just lifting the toes can itself be a challenge. A sheath of fascia runs across the front of the ankle and acts like a kind of pulley for the toe extensor muscles—the muscles that run all the way up to the front of your shin and act to draw the toes toward the front of your shin. If the ankle is tight, the fascia can limit the movement of these extensor muscles, making it difficult to lift your toes. Poses such as *vajrasana* (thunderbolt pose) or *virasana* (hero pose) stretch this fascial sheath at the fronts of your ankles, freeing up these muscles and restoring mobility to the toes.

Once you get the toes moving, try this: after lifting all of your toes, keep your small toes lifted and extend *only your big toe* forward and down toward



**Fig. 4: FOOT MASSAGE** Start at the base of your toes and massage down through the inner arch to release the adductor muscles.



**Fig. 5: "YOGA HANDSHAKE"** To create more space between your toes, cup the sole of your foot with the palm of your hand and interlace your fingers between your toes.

the floor. This action is your primary "workout" and the key to battling a bunion, provided that you:

- Keep the lift of the arch (as in Fig. 3). This provides the resistance you need to strengthen the muscles along the instep of the foot. Ground your big toe mound and inner heel to keep the arch strong, and avoid simply inverting the foot.

- Reach out through the big toe, as if you're trying to extend it forward to push a button as it comes down. This is quite different from just pressing the tip of your toe down into the floor, which just scrunches the toe. After lifting and extending your big toes several times, you're likely to feel the muscle that runs from your inner heel through the inner arch to your big toe (the abductor hallucis) begin to tire. That's your target muscle.

**+** To learn ayurvedic marma therapy for your feet, log onto [YogaPlus.org](http://YogaPlus.org) and click on "Marma Therapy for Bunions" or "Sole Support."



**Fig. 6: LITTLE TOE EXERCISE** To strengthen your outer ankle, raise all your toes, then extend only your little toe out and down to the floor.

To go further in strengthening your feet as a whole, raise all of your toes, and then extend only your little toes out and down to the floor (Fig. 6). This works the muscles running from the little toe along the outer shin and even along the outer thigh, strengthening the alignment on the little toe side of the foot, while building and stabilizing healthy arches. Weakness and tightness in this side of the foot and ankle often accompanies hyperextension of the knees, as well as pronation of the feet, or fallen arches. Strengthening your outer ankles and shins in this way helps your knees, particularly if you have flat feet.

For the last exercise, keep your middle toes lifted and your toes spread, and extend *only* your big toes and little toes out and down toward the floor (Fig. 7). This builds the transverse arch at the front of the foot, as well as strongly working both the inner and outer edges of the foot, which energizes and balances the inner and outer arches.

You might think of this last stage of the exercise as fully realigning the four corners of the foot—big toe mound, little toe mound, inner heel, and outer heel. When the heel bone and toes are properly aligned at these corners, your foot functions well in forward-moving actions such as walking, just as a car drives best when its wheels are properly aligned (Fig. 8).

These toe exercises can be incorporated into many yoga poses to enhance



**Fig. 7: ADVANCED TOE EXERCISE** Keeping the middle toes lifted and spread, extend your big and little toes out and down to the floor.

your overall alignment and increase both the resilience of your arches and the strength of the foundation in your feet, with additional benefits for your knees and hips. If you have bunions, these exercises will help you slow or even halt their progress. And even if you don't have bunions, these actions will help you to fully engage all the way from your feet through your knees and hips, enhancing the overall health of these joints.

#### DO YOU NEED SURGERY?

Particularly during the big toe exercise described above, watch how the big toes move as you lift and extend them. When you lift your big toes, they will likely



**Fig. 8: THE FOUR CORNERS** of the foot are like tires on a car. Much like the wear and tear caused by misalignment of the tires, the feet get worn and sore as bunions develop.

point away from each other as they lift. When you extend them forward and down, they should draw more parallel to each other through activation of the abductor hallucis. If your big toes refuse to cooperate, join them with a rubber band to help pull them toward each other as you lift and extend them. You may want to put padding between the mounds of the big toes to avoid irritating the bunions.

In the case of advanced bunions, even doing these exercises with the use of a

rubber band may not be enough to overcome the diversion of the big toe if it is already pulled so far sideways that the flexor and extensor muscles of the toe get crisscrossed. As a result, when you lift your big toes in the toe exercises, these muscles only pull the toes further sideways, like an archer drawing his bow, and the exercises will not work. In this case, surgery may be necessary, especially if it becomes too painful to stretch and work the muscles of the foot effectively.

## REDISCOVER THE STANDING POSES

The toe exercises are particularly effective and important to practice in the standing poses of hatha yoga. Asanas in which the ankle is neutral, such as the front foot in bent-leg poses like *virabhadrasana* (warrior pose) 1 and 2 and *parshvakonasana* (side angle pose), provide the best opportunity for effective work.

In standing poses in which the front knee is bent, such as in the warrior poses, keep your front shin vertical—without letting your knee extend beyond the heel—and ground your weight in the center of your heel as you practice lifting, spreading, and extending through your big and little toes (Fig. 9). This strengthens the arches at the inner and outer edges of the foot and realigns your toes. Practice this while slowly bending and straightening the knee, and you'll find that these actions in your foot help your knee to track properly, and can even release tightness in your hip, particularly as you work the little toe side of your foot.

Standing poses in which the front ankle is extended, such as the front foot in *trikonasana* (triangle pose) (Fig. 10) and *parshvottanasana* (angle pose), also challenge you to ground and extend through the big toe, since you have to reach more strongly through the big toe while keeping the mound of the toe grounded. This can be more comfortable than bent-knee poses, since there is far less pressure on the bunion—and thus less pain—and the stronger work leads to greater benefits for your knee as well as for the big toe muscles, provided that you're careful not to lock (i.e., hyperextend) your knee. Keep a tiny “micro-bend” in your knee as you work with your foot.

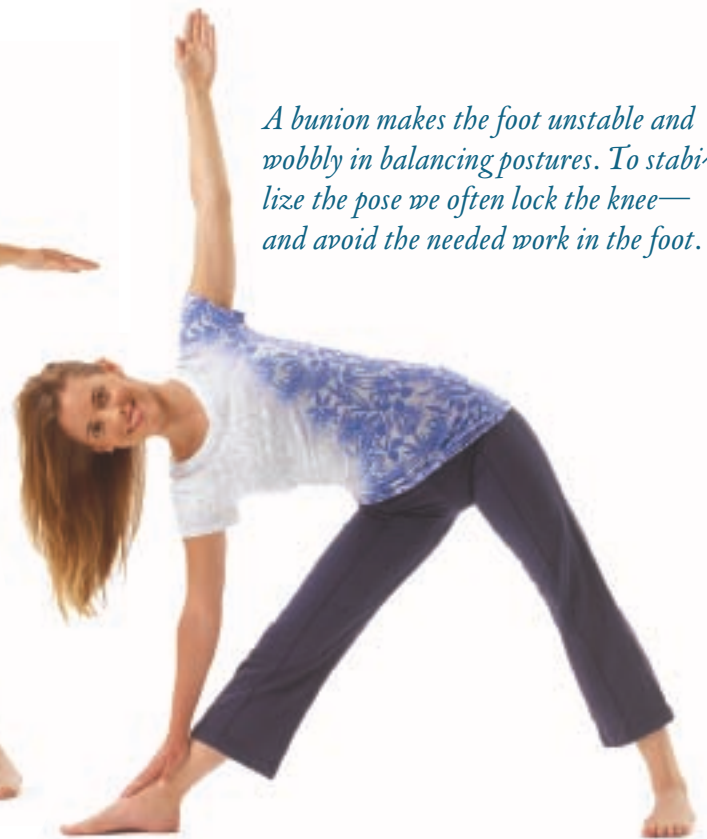
Poses in which you balance on one leg, such as *ardha chandrasana* (half-moon pose), are the most challenging. They can be extraordinarily difficult for people with bunions, especially because

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Fig. 9: **WARRIOR 2** Keep your shin vertical and your heel grounded as you lift, spread, and extend your big and little toes.



*A bunion makes the foot unstable and wobbly in balancing postures. To stabilize the pose we often lock the knee—and avoid the needed work in the foot.*

Fig. 10: **TRIANGLE POSE** Strongly ground and extend through the big toe of your front leg to keep the tibialis anterior and abductor hallucis engaged.

**Fig. 11: DOWNWARD DOG**  
 Lift your arches as you spread and extend through your toes. To strengthen your feet, keep your heels off the floor.



of the tendency for the knee to lock and the arch to collapse from the bunion. The bunion makes the foot very unstable and wobbly, since the bones of the foot are unable to stabilize, and thus we often lock the knee to stabilize the posture—and avoid the needed work in the foot. Instead of succumbing to this habit, practice keeping a microbend in your knee and lift your toes to shift your weight


back onto the heel. This will strengthen the arch and prevent locking in the knee as you spread your toes as much as possible for balance. The toe exercise of extending both your big and little toes becomes especially challenging—and effective—when you're balancing on one foot, and it's easy to experience how the actions of the foot are closely related to the health of your knee.

#### WORKING THE FEET IN HATHA POSES

Downward-facing dog allows you to work strongly with the lift of the arch as you spread and extend through the toes. As always, keep a microbend in your knees to prevent them from locking, and keep your heels hovering above the ground (Fig. 11). This will strengthen your feet while still stretching your calves and hamstrings.

*Urdhva mukha shvanasana* (upward-facing dog) or *bhujangasana* (cobra pose) stretches the fronts of your ankles and strengthens the toe extensors, especially if you reach straight back through your big toes (so that the inner edges of the feet are parallel, rather than sickling), while also bringing your little toes down toward the floor. Lightly press all of your toenails—especially those of the big and little toes—into the floor to align and work your feet.

Bridge pose (*setu bandhasana*) strongly works the arches and toes as long as you keep your thighs and feet parallel. If you



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work your feet as described in this article, there's no need to turn your feet inward as students are sometimes instructed to do. The work you're doing in your arches and toes while keeping the inner corners of your feet grounded will keep you from splaying your feet outward.

Last but not least, seated forward bends provide an opportunity to work the feet without experiencing the painful consequences of bearing weight on a bunion. Place a yoga block at the sole of your foot and a strap around the block, so that you can work the actions of the foot as if you were standing on the floor (Fig. 12). Press through the toe mound (especially beneath your big toe) and into the block, keeping the block square while working your toes.



*Fig. 12: **SEATED FORWARD BEND** Place a block at the sole of your foot and secure it with a strap. Be sure to keep the block square while you practice the toe exercises.*

In conclusion, the fundamental poses of hatha yoga provide an opportunity for a complete workout for your feet that is highly effective for preventing, slowing, and even halting the progress of bunions. It takes a little extra effort and attention, but your practice as a whole will benefit from it, even if your feet don't (yet) show any signs of bunions. When you add a little warm-up and workout for your arches and toes, yoga will keep your feet happy and healthy. +