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# SOLE-ful awareness:

## Incorporating barefoot training into active-aging protocols

**Looking for new programming possibilities to add to your schedule this year? Held safely inside or offered outdoors when weather permits, barefoot training can improve foot mobility and stability, which helps to promote better balance and reduce falls risk for participants**

by Lawrence Biscontini, MA

*Fitness/wellness centers follow standardized cleaning guidelines and recommendations that include disinfection of floors and mats in group exercise rooms as part of their cleaning protocol. Still, it is optimal for participants to purchase and reuse their own mats for classes where appropriate and practicable. Prescreening is critical, along with safe places to remove shoes and socks. For individuals who cannot sit on the floor and/or maneuver shoes on and off, it is important to accurately describe what class participation involves, whom classes are recommended for, and what equipment is needed.*

Lifestyles today include more time spent sitting, and people often ignore the very muscles intended to carry them through their lives—their foot muscles. The feet are the body's foundation. Healthy feet are im-

portant to proper gait and mobility, while foot problems have been linked to falls.<sup>1</sup> In fact, fear of falling is consistently reported by older adults.<sup>2</sup> This fear results in many individuals limiting their activities.<sup>3</sup>

Active-aging fitness professionals combine current research with popular activities to provide participants with the most functional approaches. Barefoot training is one such approach.

Classes that *regularly* encourage barefoot training are offered for active older adults with the goal of improving foot stability and mobility. Some simple skills and drills that incorporate these training activities might be the right step for those who are

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*Photo: Michael Held/Unsplash*

ready to challenge themselves. By teaching and guiding participants on how to exercise their feet, professionals can help individuals take care of their feet—preserving “foot fitness” and function—so their feet can take care of them as they age.

## Why barefoot training?

Industry veterans may recall some initial seasons of Jane Fonda’s prechoreographed workouts and Judi Sheppard Missett’s Jazzercise® that encouraged participants to shed their shoes and discover their bodies from their feet up. As the industry evolved with new exercises and perhaps due to a lack of proper education, injuries such as shin splints increased. The footwear industry developed new shoes to help, with marketing strategies encouraging everyone to lace up for exercise.

Research and education have evolved and become more accessible over time. Today, the fitness industry realizes the need to pay attention to foot health through proper exercises that maintain normal movement, as barefoot walking is an activity of daily living for most people. Whether walking

around the home or trekking to the bathroom first thing in the morning, many go barefoot or wear loose slippers. In addition, programs such as yoga for active aging and barre barefoot classes help participants develop skills for greater foot engagement, which can increase proprioception—the body’s ability to perceive its position in space—and enhance balance ability.

Professionals who advocate barefoot programs for active older adults include Stacey Lei Krauss, founder of Cardio Yoga® (formerly known as the willPower Method®). According to Lei, simply being barefoot stimulates the skin, the body’s largest organ. “We need our skin’s feedback, especially under our feet to tell us what’s there,” she says, “so as we age, the [smarter] feedback we can get, the better!”

Foot awareness skills incorporated into programs make a training regime more complete, working and exercising the body from the ground up. Krauss concurs. She states that “when our feet are not confined to a little box, or shoe, our toes have more space to spread out. Toe spread leads to a

wider base of support”—creating new freedom of movement—“and this can provide us with better balance,” she suggests.

Eileen Byrnes, a group fitness instructor, movement specialist and certified reflexologist based in Sandy Hook, Connecticut, agrees with Krauss. Byrnes claims that “there’s a need to retrain our feet to be natural shock absorbers, to strengthen our lower-leg complex, and to open all of the muscles in each foot that get inhibited in shoes.” She believes that training while barefoot is imperative, “just as most people spend a good amount of time in their own homes barefoot.”

While Byrnes advocates including muscular conditioning-while-barefoot from youth, she believes it’s never too late to incorporate foot-muscle training into active-aging fitness classes to help these muscles become more functionally fit. In fact, research shows that training barefoot or in minimalist shoes may improve stability and help reduce the risk of falling, plus some of the fear associated with it.<sup>4</sup> Says Byrnes, “Since muscles know no age—only use and disuse—there is no better

time than now to start to address a fear of falling using our very feet muscles that move us forward anyway!”

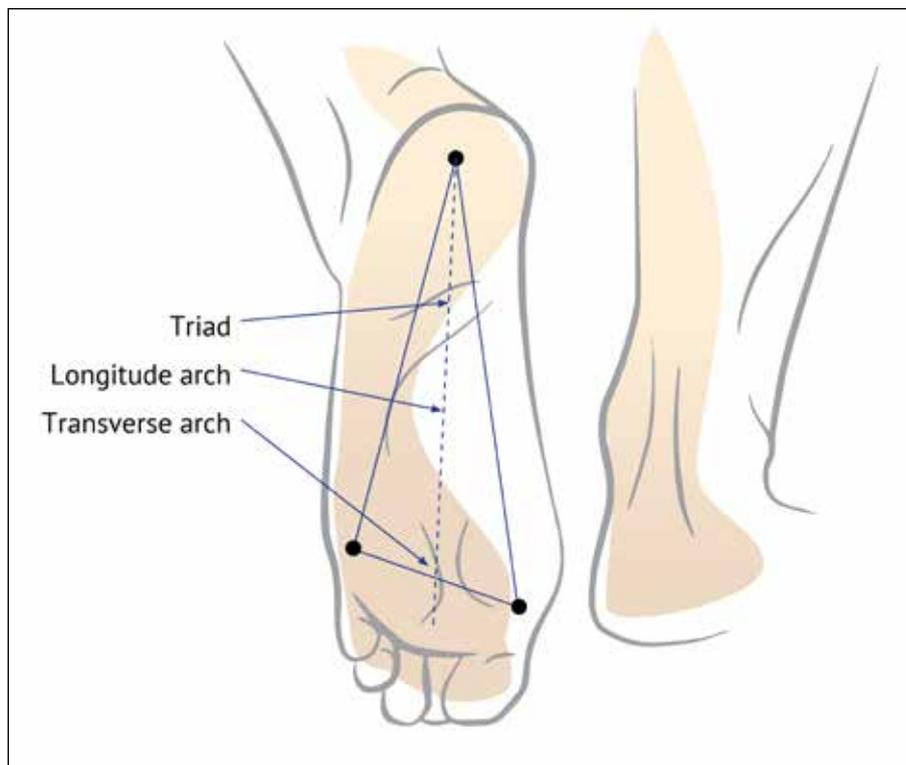
### Fostering better stability

What happens when we walk or move around unshod? As Krauss and Byrnes attest, we may awaken the muscles of our feet. Inside shoes, those muscles may be incapable of achieving their full potential because they cannot move appropriately or react to real, changing surfaces.

When shoes with lateral, arch and ankle supports are worn, the intrinsic stabilizers in the feet and ankles tend to “turn off” in the presence of artificial, external stabilization,<sup>5</sup> simply because they are not needed. Without shoes, however, the feet respond with immediate internal, active stabilization. The foot and ankle proprioceptors (sensory receptors that respond to position and movement) automatically turn on to stimulate or connect the human kinetic chain of 26 bones, 33 joints and more than 100 muscles. The feet are second only to the spine in having the most kinesthetic proprioceptors in the body.

Working barefoot most efficiently trains the foot “triangle,” which is the area under the big toe, little toe and heel bone.<sup>6</sup> This area provides stability during both stationary positions and mobility.

Imagine a triangle connecting the *transverse arch* (located on the foot heel) with the areas below the big toe and the pinkie toe, as depicted in Figure 1 (see this page). The *longitudinal arch* runs from below the middle toe to the heel, with the muscles in this area under the arch assisting with balance. In barefoot training, these muscles work together to foster intrinsic (natural, essential), active muscular stabilization during upright positions like standing and when engaged in gait. As a result, when shoes are worn once again, individuals have developed more stimuli that may transfer to better stability.



**Figure 1.** Working barefoot trains the ‘foot triangle,’ an area that provides stability while a person is stationary or mobile. Source: Lawrence Biscontini

The barefoot trend is not just for active-aging group classes. Personal trainers sometimes invite their clients to move to a shoeless environment gradually when training. Yury Rockit, a barefoot specialist based in New York City, advocates both personal trainers and group fitness instructors encourage shoeless training for older adults *wherever prudent and possible*.

“When we work our personal and group clients barefoot,” Rockit states, “their muscles in the feet grow stronger, allowing for better balance and a stronger foundation to their base of support.” He recommends minimalist shoes for individuals who are unable to go barefoot, or fear doing so. These shoes “give protection while promoting much more feet strengthening than traditional shoes,” he says. Wearing the new shoes for short durations works best at the start to allow people to become accustomed to their feel.

Many people need to progress to bare feet due to the reality (and feeling) of instability and tentativeness of walking without shoes. Gait is different without shoes. The extent of the alteration can depend on a person’s weight, skills and fitness.<sup>7</sup> It’s best to progress over time.

For healthy older adults with no feet-related issues (e.g., peripheral neuropathy), progression from shod to barefoot work may involve a slow transition. As with any new training regime for clients, little bouts of barefoot movements initially may produce the greatest gains until an individual becomes familiar with new sensations around the feet and ankles.

### Training the triangle

The movement samples below can serve as a starting point for professionals to teach barefoot-training basics to participants. Al-

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though standing proves more functionally appropriate for both gains in foot strength *and* gait efficiency, most of the movements can be done seated.

Rockit instructs participants to work to a point that is comfortably challenging, yet never painful. He recommends they try each series to their best ability, eventually progressing to 3–5 minutes per series. Sitting tall comfortably at the edge of their seats, individuals will likely be able to see their feet without the need to bend forward, he says. “You will notice that some toes can move with more freedom than others, and even notice significant differences between your feet; this is normal,” he observes.

Some older adults should not do activity with bare feet. People with diabetes, peripheral neuropathy or other immune deficiencies need to wear shoes or minimalist or other protective gripping soles, according to the American Diabetes Association (ADA).<sup>8</sup> Ordinary socks provide too little protection and pose a fall risk on hardwood floors. [Ed. For individuals with peripheral neuropathy, ADA recommends shoes with silica gel or air midsoles to be worn with polyester or polyester-blend socks for walking and for other weight-bearing activities.<sup>8,9</sup>]

The cues below can help guide participants through these series of movements.

## Part 1. Seated

Sit upright at the edge of your seat, with your feet placed flat on the floor (a). Your knees and ankles should be roughly hip distance apart.



a. Raising & Lowering/start



b. Raising & Lowering

### Seated Series 1: Raising & Lowering

Raise and lower your toes as you can, keeping your heels in contact with the floor always (b). Try also to raise the balls of your feet off the floor with as much range of motion as possible. You will feel tightening in the front of your legs in the muscles called the anterior tibialis. Strengthening these muscles will help in fall prevention and gait recovery (if walking is difficult following injury or illness, for example).



a. Toe Fans/start



b. Toe Fans

### Series 2: Toe Fans

Wiggle your toes for about one full minute (a), keeping the balls of your feet on the floor. Next, with the balls of your feet still on the floor, raise and lower all your toes with as much range of motion as you can (b). Think about trying to see as much floor between your toes as possible when they are up and spread out like a fan. Move slowly and intentionally.



a. Ankle Inversion/start



b. Ankle Inversion

### Series 3: Ankle Movements

**Ankle Inversion:** Imagine the soles of your feet are lights (a). Keeping your knees as still as possible, shine your “lights” towards each other. Keep the outer edges of your feet connected to the floor (b). You will have maximal movement near your big toes and minimal movement towards your little toes. The less your knees move, the more you will strengthen your ankle muscles and your gait.



a. Ankle Eversion



b. Ankle Eversion

**Ankle Eversion:** Keeping your knees as still as possible, shine your “lights” away from each other (a). Keep the inner edges of your feet connected to the floor (b). You will have maximal movement near your little toes and minimal movement towards your big toes. The less your knees move, the more you will strengthen your ankle muscles and your gait.



a. Ankle Circles



b. Ankle Circles

#### Series 4: Ankle Circles

Sit back in your chair. Either hold the back of your right leg hamstring area with both hands just above your knee or cross your right ankle over your left thigh and rest it there. Make ankle circles for 30 seconds in each direction at a slow, controlled speed with the maximum range of motion you can in your ankle (a, b). Strive not to move any other body part. Repeat with your other foot.

### Part 2. Standing

Hold onto a chair or wall as needed for the following movements. Aim to decrease your hand's contact points over time as your self-confidence and strength increase.



a. Walking in Place



b. Walking in Place

#### Standing Series 1: Gait

*Walking in Place:* While you stand stationary, raise and lower your feet in opposite directions. Start by raising your right heel, simultaneously raising your left toes and ball of your left foot (a). Slowly lower and change sides, raising your left heel and simultaneously raising your right toes and ball of your right foot (b). Repeat this slow “walking in place” movement for one full minute, trying to amplify your range of motion each time.



a. Leg Crosses/start



b. Leg Crosses

*Leg Crosses:* Stand tall with your feet aligned under your hips (a). Cross your right leg in front of your left leg and tap down with your heel (b). Pause briefly and return. Repeat this movement for up to 30 seconds. Repeat with your other leg. This movement improves stability and strengthens the inner-thigh muscles, which can help decrease shuffling.

[Ed. Lawrence Biscontini demonstrates these movements in a short video available to view on the International Council on Active Aging® website. See the “Resources” sidebar on this page for details.]

Older adults vary greatly in their abilities and biomechanics. It's important always to commence from a feeling of being comfortable and safe before progressing to more challenging movements.

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## Resources

### Internet

#### American Diabetes Association: Injury-Free Exercise–11 Quick Safety Tips

[www.diabetes.org/healthy-living/fitness/getting-started-safely/injury-free-exercise-11-quick-safety-tips](http://www.diabetes.org/healthy-living/fitness/getting-started-safely/injury-free-exercise-11-quick-safety-tips)

#### Lawrence Biscontini:

[findLawrence.com](http://findLawrence.com)

<https://findLawrence.com>

### Multimedia

Biscontini, L. (2019). Barefoot Warmup (*instructed by Lawrence Biscontini*). Imperfekt Productionz. Available to view on the International Council on Active Aging® website at [www.icaa.cc/SOLE-ful-awareness](http://www.icaa.cc/SOLE-ful-awareness)

### Print

Mende, R. (2007). Why foot health is vital to physically active aging. *Journal on Active Aging*, 6(4), 84–86; July/August issue\*

The editors. (2002). If the shoe fits. *Journal on Active Aging*, 1(5), 16–19, 50; September/October issue\*

\* The above articles are just some of the resources available to International Council on Active Aging® members in the “Articles” library at [www.icaa.cc](http://www.icaa.cc). Search using the keyword or category function to locate articles easily.

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Photo: Shashi Chaturvedula/Unsplash

## 'From the ground up'

By adding barefoot training to fitness protocols for active older adults, professionals may help their participants improve not only their stability and mobility, but also their overall self-efficacy through improved skills. In the best cases, individuals may decrease their risk—and fear—of falling.

Older adults rediscover their feet by training without their shoes, while barefoot training can open a new dimension to both group fitness and personal training activities in organizations. And for those individuals who move with their best feet forward, wellness truly starts from the ground up. 🌀

*Lawrence Biscontini serves on the International Council on Active Aging® Advisory Board. He has contributed articles to the Journal on Active Aging®, written several books on*

*active aging, and presented at many conferences including regularly at ICAA's annual conference. Winner of several international fitness awards (including a Lifetime Achievement award), he stars in more than a dozen online training DVDs for barefoot and minimalist training for active aging. For more information about Biscontini or to contact him, visit [www.findLawrence.com](http://www.findLawrence.com).*

## References

1. Menz, H. B., & Lord, S. R. (2001). The contribution of foot problems to mobility impairment and falls in community-dwelling older people. *Journal of the American Geriatrics Society*, 49(12), 1651–1656. <https://www.ncbi.nlm.nih.gov/pubmed/11843999>
2. Tomita, Y., Arima, K., Tsujimoto, R., et al. (2018). Prevalence of fear of falling and associated factors among Japanese community-dwelling older adults. *Medicine*, 97(4), e9721. <https://doi.org/10.1097/MD.00000000000009721>

3. Liu, M., Hou, T., Li, Yuxiao, et al. (2021). Fear of falling is as important as multiple previous falls in limiting daily activities: a longitudinal study. *BMC Geriatrics*, 21, 350. <https://doi.org/10.1186/s12877-021-02305-8>
4. Li, F., Fisher, K. J., & Harmer, P. (2005). Improving physical function and blood pressure in older adults through cobblestone mat walking: A randomized trial. *Journal of the American Geriatrics Society*, 53(8), 1305–1312. <https://doi.org/10.1111/j.1532-5415.2005.53407.x>
5. Hatzitaki, V., Pavlou, M., & Bronstein, A. M. (2004). The integration of multiple proprioceptive information: Effect of ankle tendon vibration on postural responses to platform tilt. *Experimental Brain Research*, 154(3), 345–354. <https://doi.org/10.1007/s00221-003-1661-8>
6. Shakoor, N., & Block, J. (2006). Walking barefoot decreases loading on the lower extremity joints in knee osteoarthritis. *Arthritis and Rheumatology*, 54(9), 2923–2927. <https://doi.org/10.1002/art.22123>

[Ed. Also cited as follows (*Arthritis Today* has ceased publication): Shakoor, N., & Block, J. (2006). Going barefoot decreases loads on lower extremity joints in osteoarthritis. *Arthritis Today Magazine: Rheumatic Diseases*, 54, 2923–2927.]

7. Broscheid, K.-C., & Zech, A. (2016). Influence of barefoot, minimalist and standard footwear conditions on gait and balance in healthy older adults. *Journal of the American Geriatrics Society*, 64(2), 435–437. <https://doi.org/10.1111/jgs.13980>
8. Colberg, S. R., Sigal, R. J., Yardley, J. E., et al. (2016). Physical activity/exercise and diabetes: A position statement of the American Diabetes Association. *Diabetes Care*, 39(11), 2065–2079. <https://doi.org/10.2337/dc16-1728>
9. American Diabetes Association. (2002). Diabetes mellitus and exercise. *Diabetes Care*, 25(supplement 1), s64. <https://doi.org/10.2337/diacare.25.2007.S64>

*Images of barefoot training movements courtesy of Lawrence Biscontini/Imperfekt Productionz*