

FUNCTIONAL FOOTPRINTS

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“Our feet, writes Madeline Black of *Studio M in Sonoma, CA*, “are not only our sensory input telling us where and how to step, but also they set up the balance of our pelvis and translate through the spine. How you use your feet has a direct influence on your core”

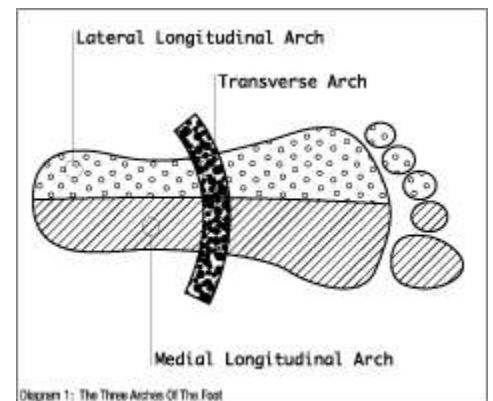
The way we stand on our feet, or how we move the feet, recruits different muscle lines up the leg into the pelvis. Body weight from our spine and pelvis is placed on the legs through the femur into the tibia. At the end of the tibia sits the talus.

The imprint of a foot can reveal a lot about the integrity of all the weight-bearing joints. Footprints indicate the myofascial and ligamentous organization of the feet, ankles, knees and hip joints. They also illustrate the amount of weight being transmitted to each leg. There is a complex and layered system of ligaments and muscles in the foot that provides both stability and movement to the bones. The foot is intended to be both pliable and supple to be able to navigate changing terrain. As the foot pushes off the ground it acts like a stable, strong lever that propels us forward.

Each foot has three arches: the lateral longitudinal, the medial longitudinal and the transverse.

When the three arches are balanced and the architecture of the foot is intact, there are three distinct points of contact on the sole of the foot. It is easy to visualize these points because they form a triangle that spans the bottom of the foot.

When you ask clients about their feet they usually respond with a quizzical look even though they connect us to the ground and act as the foundation for all of the body parts above. Feet propel us forward, backward and sideways. Each foot spreads the body’s weight over an area large enough to support and distribute the pressure as we stand, walk or run. This is quite miraculous when you compare the size of our feet to rest of the body’s height, size and weight.



HELPING CLIENTS CONNECT TO THEIR FEET

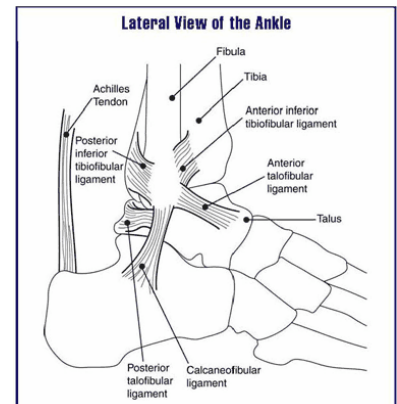
Most of us have our client or clients to stand up and check the distribution of weight in their feet. I usually ask them to imagine the “quadrupod” of the foot (rather than the three points of the triangle) and assess how the points touch the ground. Does one foot press into the ground differently than the other? What happens when they change position (without straining of

course!), so the majority of weight is in their heels, then toward the big toes, and finally toward the baby toes? How do these adjustments feel in the legs, the pelvis and the spine?

The point is not to hold ourselves in unnatural positions, but rather to assess our weight-bearing patterns in relation to the triangle/quadrupod image. The more our weight distribution approximates these configurations, the more likely it is that ground forces will travel through our feet and up into our legs, pelvis and spine in an organized manner both in standing and walking. There are many excellent options for working the feet in Pilates: apparatus exercises such as Footwork on the Reformer or Parakeet on the Cadillac for example, mobilize and strengthen but, as teachers we need to be clear on the foot shape and bones.

THE FOREFOOT

A balanced forefoot relies on the talus being in a neutral, stable position. It is also the only bone in our body that has no muscle attachments! It moves according to the structures around it. The tibia is curved over the top of the talus “shell” with the fibula supporting the talus on one side. As the weight then transfers from the talus, it spreads through the foot. Depending on how we are moving or standing, the bones of the feet shift from the outside or inside. These shifts are dynamic and in turn shift the whole structure of our skeleton.



Correcting the Talus with Pilates



Carola Trier, an original student of Joseph Pilates used to ask new students to write their name on paper with a pen held between their toes to test foot “dexterity”. Pilates is brilliant at working the feet on the Reformer or the Parakeet Bar, but only when you place them on the bar or in the straps with the intention of a neutral talus. **Prehensile** is the best foot placement to work on this idea of the feet and the contrast of the hips and spine. When the metatarsal heads are placed on the bar with the toes long and wrapped around the bar, it places the forefoot (the metatarsals and phalanges) into a supportive transverse arch. (See photo at left.)

You’re going to need to ask your client to work on an outward rotation of the thigh bones so that they can maintain a neutral alignment with the hip joint and facilitate a more congruent pattern from the feet to the pelvis.

FOOT-FRIENDLY EXERCISES

1. Groovy Toes

Sit on a chair and lean forward so you can see your feet. Place your feet so your ankles are directly below your knees. Feet should be relatively parallel to each other, approximately hip width apart.

- Lift and lower all five toes up and down.
- Lift and lower the big toe up and down.
- Glide the big toe away from and back toward the other toes.
- Glide the baby toe away from and back toward the other toes.



2. Building the Long Arches

These two exercises can be done sitting or standing. Place your feet so your ankles are directly below your knees. Feet should be relatively parallel to each other, approximately hip-width apart.

Doming the Foot

The aim of this exercise is to feel the dome of the plantar arch, tri-bone contact points and the lower extremity musculature.

Keep toes and heel flat on the floor, and lift your instep up as if it was a dome. Lower the arch with control. Think of pulling the heel and ball of the foot towards each other.



Lateral & Medial Arch

Keep toes flat and still on the floor as you try to glide your heel forward toward your 4th and 5th toes. The outer arch starts to feel like it lifts or domes away from the floor. Do the same towards 2nd & 3rd toes

3. Ankle Rotations

Stand with the heel of one foot lifted off the floor (as if in a high-heeled shoe); keep the toes and ball of that foot planted on the floor, and draw a circle with the heel.