



THE SHORT FOOT EXERCISE TO BUILD STRONGER FOOT ARCH

By Chris Watts-Motion Dynamics

The Foot is a highly developed, biomechanically complex structure. It bears the full weight of our body, plus the weight of gravity and the forces placed upon our feet during propulsion and locomotion. This can be up to 8 times the weight of our body!

The 26 bones of the foot comprise a quarter of all the bones of our body.

The hind foot has 2 of the 7 Tarsal bones. The mid foot has 5 of those Tarsal bones and the forefoot has 5 metatarsals with the Phalanges or fingers containing 14 bones. To add to the complexity of the foot, there are 33 joints of which 20 are actively articulated during movement. That articulation is made possible by 20 muscles and 120 tendons.

With over 7,000 nerve endings, our feet were designed to sense and feed back the type of ground under our feet with incredible precision. This intricate wiring and structure gives the feet the strength and stability for unsupported endurance during walking and running.

To be steady and reliable, our feet must be pliable, strong and resilient enough to provide us with both stability and mobility.

When wearing shoes, we tend to box our feet in, constrict their circulation and hinder the mobility of their joints and thus the full strengthening of our foot muscles.

It is essential that we begin to strengthen our feet and ankles, increase the foot's circulation and dexterity, decrease foot cramping and even heighten the arches of our feet.

Are you training your foot arches?

Humans are the only animals with a foot arch. People with flat feet (pes planus) who lack arches develop a host of joint problems that manifests itself throughout the musculo -skeletal system.

There are 4 arches in the foot: 2 transverse arches and 2 longitudinal arches with a dome like support structure above them that are formed by the navicular and talus bones, as well as numerous ligamental and muscular structures. These act upon the foot a little bit like a suspension bridge. As we bear weight, the tension actually lifts our foot arch upwards like cables on a bridge.

Many people revert to shoe insoles, foot Orthotics and/or taping to support and stabilize the foot arches. These inserts will not strengthen the core foot systems. In fact, they weaken them.

Foot stability training begins with targeting the intrinsic muscles on the plantar aspect of the foot via what we call “short foot exercises” shown in the picture below.

Foot arch training

Therapeutic exercise of the intrinsic foot muscles on the bottom or plantar aspect of your foot has been traditionally described as occurring during toe flexion exercises, such as towel curls and marble pick-ups. While these exercises do activate some of the plantar muscles, they also involve substantial activation of the *flexor hallucis longus* and *flexor digitorum longus* muscles, which are our major toe flexors.



Seen in the photograph above, the ‘short foot exercise’ has been described as a means to isolate and contract the intrinsic foot arch builders. The foot is ‘shortened’ by using the intrinsic muscles to pull the first *metatarsophalangeal joint* towards the *calcaneus*, thus elevating the *medial longitudinal arch*.

Training the foot arch system via these short foot exercises will improve foot function and therefore

shock absorption. This will reduce arch collapse and re-build navicular height and arch height, improving balance. People who completed 4 weeks of short foot exercises demonstrated improved dynamic balance compared to those who performed 4 weeks of towel curl exercises and enhanced the capacity and control of the foot arch support system. This is where elastic power is generated and the shock of landing during sport activity is absorbed.

Do you have flat feet?

Do you have plantar fasciitis?

Do you often suffer from foot cramps?

How is your balance?

Should you want to know more about corrective exercises for the foot and ankle, please email us or visit our website:

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For further information, contact Chris at: chris@chriswatts.biz or visit his web site at: <http://www.chriswatts.biz>

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