

Z-Mechanics: the Biomechanics of Z-Coil® Footwear

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Z-Coil® footwear is best known for its shock-absorbing abilities. But impact reduction is not the only way in which Z-Coil shoes positively affect the functioning of the human body. Other notable benefits derive from the footwear's built-in Z-Orthotic™ and from the subtle movements of the coil.

The first unexpected benefit to the body for many people is an almost immediate improvement in posture. The footwear's rigid Z-Orthotic cradles the foot and supports the arch. This apparently allows it to correct any misalignment of the foot that is ordinarily transferred up the kinetic chain to the legs, hips, and spine. As the stance is leveled and corrected, muscles that pull the body into compensating positions relax and let the body assume its normal upright position. Muscles, bone, cartilage, nerves, and even internal organs all benefit from the body being properly aligned.

Andrew Kejmar of Eureka, California, found this to be

the case as soon as he put on a pair of Z-Coil shoes. "Immediately, my body was corrected from the way that it usually stands. I felt my hips properly aligned and I noticed a feeling of new and correct posture," he says, adding, "The weight being evenly distributed on my feet makes it an absolute pleasure to walk. Pressure has been relieved from my feet, ankles, lower legs, knees, thighs, and my back. I feel as though I am 15 years younger when I wear these shoes."

The second unexpected benefit that seems to accrue to wearers of Z-Coil shoes is an apparent improvement in balance. Repetitive stress injuries are just one result of walking or

standing for long hours on hard, flat, unchanging surfaces. The other result is that, since the feet and legs rarely change angle, the balance centers in the ears and brain get only a fraction of the stimulation that they are able to receive. As a consequence, they may atrophy or become lazy. Some physicians have speculated that micro-movements in the coils cause the nerves in the feet and legs to call for



many more slight muscular adjustments, and that this may, in turn, exercise the balance centers. Additionally, some researchers have wondered whether the micro-movements of the coils might stimulate the nerve signals from the feet, making the signals to the balance centers "louder" and, thus, more likely to be "heard" and responded to.

After contracting polio as a child, Lloyd Lagace of Mojave, California, found walking difficult until he tried Z-Coil shoes. Now, he says, "I can walk with no pain and better balance than I've had in more than 50 years."

Other features of Z-Coil footwear that improve the functioning of the feet and the whole body are the extra-wide toe box, the rocker bottom on the forefoot sole, and the flex line in the forefoot. The extra wide toe box relieves undue pressure on the feet,

which can result in ailments ranging from ingrown toenails to hammer toes, hallux valgus, and Morton's Neuroma.

The rocker bottom on the sole of the forefoot helps the foot move smoothly and quickly through the toe-off portion of the gait, reducing the length of time the weight of the body settles on the metatarsals and phalanges, and reducing the effort required of the gastrocnemius and soleus (calf muscles). Combined with the flexible coil, the whole sole of a Z-Coil shoe functions like a double rocker, which serves to make the gait smoother still.

The flex line in the forefoot of a Z-Coil shoe, which crosses the ball of the foot right where the full-length Z-Orthotic ends, helps to insure that the foot bends where it is supposed to bend, right between the metatarsals and phalanges, and not where it shouldn't, at the arch.

These features all combine to make Z-Coil footwear the best, most biomechanically sound equipment for the feet available. To learn more about this unique line of products, visit www.zcoil.com or circle #142 on the reader service card.

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