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HOW HYDRAULICS REDUCE HEEL STRIKE

Shock absorption in shoes and in static shoe insoles is usually designed from a springy material, which is compressed vertically in the area of the heel in the shoe. In hydraulic powered fluid filled insoles such as **DYNA**SOLE™ insoles the shock absorption is dynamic in all directions.

The heel bone is subject to impact forces of up to 4 to 5 times body weight during running and walking. Heel pad thickness is critical as a tissue reduction of just a few millimeters can cause a great deal of pain, however an overabundance of tissue can cause reduced walking stability. The thin (1.5mm) design of the shoe insole combined with the size and location of unique fluid channels permit improved shock absorption in shoes without reducing stability.

When walking, the fluid initially provides the heel pad with from one to two extra millimeters of shock absorption. The insole significantly reduces the load on the heel bone as it slows the impact of the heel strike on the heel pad which reduces the amount that a heel pad will flatten. When the heel strike occurs it takes a short time for the fluid to move through the heel compartment due to uniquely configured longitudinal channels with built-in flow barriers. As a result the impact redistribution time is increased and this is when shock absorption in fluid filled shoe insoles starts. With each heel strike fluid pressures build up and then subside around the heel pad effectively providing shock absorption. The fluid then quickly flows away in a massaging “compression wave” under the sole of the foot to the forefoot giving the heel unobstructed and stable contact with the shoe.

The thickness of the design assures stability and makes shoe insoles versatile enough to be installed in every type of shoe.