

# Orthotics could be the right fit for you

**P**rescription in-shoe orthotics have proven to be a major weapon in the treatment and prevention of foot-related ankle and leg problems, as well as in enhancing performance. Orthotics, which are prescribed from molded casts of the feet in special positions, have various uses and indications. Examples could be to redistribute weight to different areas of the foot, to control abnormal motion or position of the foot and ankle, to enhance alignment of the lower leg and to help dissipate shock forces generated through the foot, leg and spine.

A common misconception is that orthotics are arch supports. Actually, orthotics do much more than support the arch. Their major role involves controlling positioning of the foot and lower extremity during the different phases of gait. This is much easier to understand after a short review of the role of the foot in the walker or runner.

Basically, the foot has three jobs in the walking or running athlete: shock absorption when the heel hits the ground, ground accommodation or shaping to the surface of the ground in stance and pushing off or propulsion. Each of these actions demand particular motions of the foot and rotational motions of the lower and upper legs, pelvis and spine. The terms used to describe these foot motions are pronation and supination. These are complex motions taking place in the joints of the foot and lower ankle; three motions in three directions simultaneously. It is important to understand that pronation and supination are normal motions. Problems can arise when the timing, velocity, or amounts of pronation or supination are off. Various inherited foot types and leg shapes are common problems for these motions. Examples are flat foot, high arches, bow legs, knock knees and one leg shorter than the other. All of these examples will cause abnormal pronation or supination factors. When these abnormal motions and positions of the foot occur, abuse, wear and tear and over-use problems are seen. Conditions like arch and heel pain, shin splints,

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Achilles tendonitis, and knee problems are a few examples.

It is important to note that these foot imbalance problems are much more common than uncommon. National health statistics and surveys state that up to 75 percent of Americans exhibit some minor to major foot or leg mal-alignment syndromes. It's not surprising, then, with the large amounts of people running, doing aerobics, playing tennis, etc., that overuse-type injuries have skyrocketed to epidemic proportions. Persistent recurring problems are often warning signs that these bio-mechanical (the science of the joints and muscles working together) factors should be examined.

Orthotics are made from different materials. Often the demands of your particular sport or activity will be a big factor. Over the past fifteen years, I have found that flexible plastics are by far the most successful materials. Graphites, fiberglass, leathers, and other compressible materials are also commonly used.

Many athletes will ask, "Do I need orthotics?" Better questions often are: "Would I benefit from them? Will I be less susceptible to injury? Will they help my performance?" Often the answer is yes to all of the above questions. Once it's understood what the role of the orthotics devices are - to capture the optimum alignment and functioning position of the feet and lower legs, to enhance normal motion and position of the various segments of the foot and ankle and that the device doesn't act as an arch support, crutch or brace - athletes will better understand their value and uses.

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