

The Truth About Insoles

The difference between the common insole that comes in your shoe and sophisticated custom orthotics dispensed by a doctor can be confusing. Here's a primer.

by Edwin Black

The insole and orthotic market has exploded, creating plenty of consumer confusion in the blast. Just what are *insoles*, what are *orthotics*, how much should they cost, where do you get them and what can they do for you? The details are often debated by healthcare professionals who work with insoles and orthotics daily. Construction techniques, materials, therapeutic benefits, the effects on walking and running--there are plenty of opinions. Understandably, the consumer easily gets lost in the shuffle.

That's why *Stride's* Underfoot column will draw on the expertise of our sister publication, *BioMechanics*, to answer the most important questions consumers face about what they should and should not put in their shoe. Making the right decision can help forestall a future foot or back problem, or help remedy an existing condition. For instance, the right orthotic can relieve heel pain, correct a malaligned gait, promote safe and efficient running and even save the life of a diabetic patient with an insensitive foot.

Choosing the wrong device can actually create more problems than it solves. Ironically, the more options you have, the more difficult it becomes to choose correctly.

Insoles vs. Orthotics

First some definitions. An *insole* is the flat cushioning interface between the shoe and your foot. Because a common insole is basically a flat pad, and not shaped like your foot, it offers zero support, and frankly, precious little cushioning. Whatever benefits it does offer won't last long because common insoles can wear down quickly. Just how quickly depends upon the person, the shoe and the use.

An *orthotic* (more properly called an orthosis, yet popularly referred to as an orthotic) is a shoe insert molded to the shape of your foot. It provides support, shock absorption and other benefits. In a word, what separates an insole from an orthotic is simply the degree of sophistication. That's where the confusion begins.

Virtually every shoe comes with a preloaded or factory inserted insole. In years gone by, too often these have been worthless bits of flat latex padding. But in an effort to create better fitting and better performing shoes, manufacturers have substantially upgraded their insoles. Today's leading shoe companies, such as Ecco, Lowell, Mephisto, Nike, Rockport and SAS are preloading souped-up molded insoles that provide metatarsal and heel support, moisture and odor resistance, that dissipate shock and that are indeed a technologic marvel considering the recent history of factory provided devices. The cost to you is ostensibly free because the insoles are included in the shoes. But smart shoppers know that no company adds a high-tech insole without folding the cost into the overall cost of the shoe. But it's worth it.

The next step in the orthotic continuum are over-the-counter (OTC) customizable insoles and even OTC orthotics, such as those sold by Pedifix, Johnson & Johnson and Spenco. These companies have a great deal of medical experience, but they have made everyman versions of their product for the retail market. Cost is

anywhere from \$5 for a low-end Dr. Scholl's to about \$6 for a very usable Pedifix Pump Pal to about \$10 for Johnson & Johnson's Specialist and about \$20 for a top-of-the-line Spenco device with a heat-moldable plastic shell augmented by a soft top cover.

Once you graduate from the OTC retail marketplace, the devices are referred to as "orthotics" or "orthoses" because a doctor or other practitioner--such as a podiatrist, pedorthist or physical therapist--fits a carefully selected device to your foot and customizes it. It is not just a shoe insert, but part of the treatment or management of your condition, or an attempt to avoid acquiring one as a result of your particular workstyle, lifestyle or play-style. Often, these practitioners are working with a prefabricated or ready-to-use device, adding and subtracting from its shape until it's just right. Cost is anywhere from \$10 to \$125, depending upon the quality of the prefab, your medical condition, the amount of work your practitioner does and even your area of the country.

At the far end of the continuum are custom orthotics derived from a three-dimensional impression of your foot rendered in plaster or foam, or possibly via laser scanning or digitizing. Custom orthotics are sophisticated medical products requiring a high degree of biomechanical skill and, again, are specifically designed and modified for your individual condition and use. Cost: generally anywhere from \$100 to \$500, and like the prefab, the cost is completely dependent upon the medical complications, the type of practitioner, your geographic locale and often what your insurance dictates.

To complicate matters with progress, the same laboratories that make America's most sophisticated and costly doctor-prescribed custom orthotics have responded to the pressures of managed care by marketing simplified, less expensive versions of their devices. This new genre of customizable prefabricated orthotics represents a great deal of medical and manufacturing know-how, married to the economic and demographic realities of the day. They are compromises, but often good compromises.

What results from the simple stuff getting complicated and the complicated stuff getting simple is a set of categories often only the experts can distinguish. Orthotic terms are thrown around like low-calorie labels were until recent FDA regulations. In short, you must understand a lot just to ask the right questions. Here are some answers.

Rigid vs. Flexible vs. Accommodative

Doctors often divide orthotics into three categories: *rigid, flexible and accommodative*. Rigid orthotics are generally made of some form of hard plastic and are designed to control your foot. For example, a rigid device could prevent your step from turning in (*pronating*).

Flexible orthotics are as the name implies, made from more flexible material: either a lighter-weight plastic or composite, and sometimes even multiple layers of plastic and cushioning material such as Poron.

The third category is accommodative, which means soft and cushioning. These devices are often made for people who can't tolerate the harder species and/or who need protection for either diabetic, arthritic or other sensitive conditions.

Although doctors and therapists in the biomechanics mainstream find it handy to pigeon-hole orthotics into one of these three groups, it's actually quite misleading. All orthotics are designed to bend under the weight of the human body. The material is important. But consider this: while a very thin piece of "rigid" plastic under the weight of a 115 lb. woman would indeed be quite stiff, that same device under a 230 lb. man would be quite flexible. Furthermore, there are very dense fabrications of accommodative EVA that are stiff enough to control the foot.

What's important is not the label, but the problem and the solution.

Self-Medication vs. Prescriptive

Many variables come into play when selecting and fitting an orthotic. What is your existing or potential foot problem? How does your step or activity pattern relate to your feet, ankles, knees, hips and back? What type of shoe will you be wearing--cross-trainers, dress shoes, high heels, flats, pumps, rugged walkers, ski boots? What kind of socks will you be wearing--nylons, thick or thin, gym socks, summer or winter wear? Is your shoe designed with extra vertical depth to accommodate an orthotic? When you plop that insert into your shoe, have you allowed for support where you need it? Or have you created a problem by inserting a device that only adds to the pressure on your foot? These questions require expert answers.

If the orthotic doesn't fit the shoe and sock combination, you may only be compressing your foot and worsening or creating a problem. Or, you may be doing absolutely nothing because the orthotic is not designed for the problem you have.

That's why choosing a retail insole is self-medication pure and simple. But so is buying aspirin, cough syrup or allergy medicine. It's a matter of degree. Starting out with a store-bought OTC customizable molded insole or orthotic is not a bad idea if you have mild symptoms, or want to experience the first level of beneficial effects of shock absorption, or if you are seeking pain relief. But be forewarned: the same OTC orthotic or insole can be offered to two people and they will each experience different results. One person may feel as if she is walking on clouds; the other may feel cramped and pained.

Don't be turned off because a simple OTC product didn't work--maybe the orthotic or insole just need fitting, or perhaps you need a different device altogether. For example, you may need an orthometric examination to discover a longer leg on one side, which can significantly affect how an orthotic is prescribed and constructed.

That's why healthcare professionals are so important. The right ones have experience with orthotics. Do you need an orthotic, and if so, which one? Depending on the problem being treated, some of America's most prestigious orthopedic surgeons, podiatrists, pedorthists, physiatrists and physical therapists will work with an inexpensive OTC or prefabricated device. In other cases your doctor may insist on a custom set, giving you the benefit of custom foot therapy.

The important thing is the fitting. Whether an OTC, doctor-provided prefabricated device or custom orthotic, if it isn't fitted to the person, the orthotic may do more harm than good. Can you fit yourself? Many do and quite successfully. But often you must liken the process to getting contact lenses. You can go for the inexpensive Express lenses--but you still need professional fitting. Otherwise, you're the blind leading the blind.

Unquestionably, you will pay more for the practitioner's time and effort than if you go to the drugstore and choose for yourself. But that's the difference between getting self treatment and doctor treatment. Unfortunately, too often the doctor's advice will be colored by economic realities anyway. Can you *afford* a custom device? Will your insurance pay for it? In many cases, insurance excludes custom orthotics or dictates a price too low for anything but a prefabricated model.

The automobile insurance industry created the chop shop industry by paying unconscionably low prices for body work, and forcing garages to install used car parts. Now the health insurance industry is doing the same to human body work. The trend shows up in everything from prosthetic legs to knee braces to orthotics. Some patients simply stand up for their own dignity and make their own decision. They pay for their own health, if they can, because it's worth it.

In future issues, we'll discuss special orthotics for runners and diabetics. We'll take a look at the different materials that are available and how they might affect your foot. And, we'll address cost issues.

Sooner or later, you'll be making a decision about insoles or orthotics. When you do, knowledge *underfoot* will help you hit the ground running.

Edwin Black is the editor-in-chief of BioMechanics and edits four orthotic columns every month in that magazine.

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