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## **Custom-Fitted vs. Off-the-Shelf Orthotics**

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When a patient needs foot support, there are two major choices a doctor of chiropractic must consider. Should the patient be fitted with custom-made orthotics, or will off-the-shelf shoe inserts do the job? This is an important treatment decision should be based on facts. Let's start by reviewing the pros and cons of shoe inserts, which can be bought at drugstores, athletic shoe stores, or stocked in the doctor's office. Then we'll consider the pros and cons of custom-made orthotics, which are made from an image of the individual patient's foot. Armed with this information, a rational decision can be made in each patient's best interest.

### **Off-the-Shelf Inserts**

Many companies make a variety of devices that can be inserted into a patient's shoe, to support and relieve the foot. These range from rubber or silicone heel cups to full-length viscoelastic or cork inserts. Some have medial arch build-ups, while others are completely flat. There are also some off-the-shelf inserts containing magnets, rubber "acu-stims" or fluid-filled sacs.

### **Insert Pros**

Off-the-shelf shoe inserts are fitted by shoe size; some can be trimmed to fit. This makes them relatively inexpensive to stock and to fit. Their advantages are easy availability (minimal waiting period) and the relatively low cost of materials. The actual cost will usually reflect the materials used in construction, any special factors (such as magnets), and a retailing markup. Recent studies have demonstrated a decrease in plantar fasciitis symptoms<sup>1</sup> and improved pronation control<sup>2</sup> from simple over-the-counter heel or arch supports. Because these inserts are available universally, replacement is often accomplished quickly.

### **Insert Cons**

Since off-the-shelf shoe inserts are dispensed by shoe size, many people who do not have standard-size or symmetrical feet can encounter problems. Because these products are designed for people with differing foot conditions but the same shoe size, specific corrections can't be expected (since that would cause problems for those who couldn't tolerate that much correction). Even with products that can be somewhat customized, the potential for individual modification is quite limited. When patients need correction of symptomatic conditions and/or biomechanical imbalances, they may require certain heel wedges<sup>3</sup> or a properly placed support for the metatarsal arch<sup>4</sup> that can't be obtained from generic shoe inserts.

### **Custom-Fitted Orthotics**

Custom-made orthotics are an individualized pair of shoe inserts, made from an image of each foot with specific added corrections. The system can be based on either a weight-bearing, semiweight-bearing or even nonweight-bearing "subtalar-neutral" foot image. As long as the end result is individualized and not determined by foot size, the insert is "custom-fitted." The orthotics can be manufactured in a doctor's office, but are usually made by an orthotic laboratory. A wide range of materials is used in custom-fitted orthotics, from leather and cork to high-tech viscoelastic materials, carbon fiber, polypropylene and rigid plastics. The orthotics can be further customized to fit in specific shoes, including dress shoes, loafers, flats, high heels, sport shoes, boots, and even ice skates and ski boots. An especially advanced lab can even create a combination shoe-and-custom-orthotic, or a sandal-and-custom-orthotic.

### **Custom-made Pros**

The main advantages of custom-made orthotics are the excellent, personalized fit and the individualized correction of biomechanical faults. These factors help ensure rapid adaptation and relief of underlying and associated musculoskeletal complaints.<sup>5</sup> Especially when dealing with poor support for the pelvis and spine, a custom fit provides a more predictable response and longer-term symptom relief. The materials and in-shoe fit can be selected to work well in the specific patient's usual shoes. Activity levels and body mass can also be taken into account when ordering custom orthotics. Specific corrections, asymmetrical posting and lifting, and support for unusual and anomalous anatomy can also be requested. This becomes important when it is recognized that abnormality and asymmetry are common.<sup>6</sup> A heel spur correction built into a custom orthotic will often provide immediate relief. Any necessary modifications and further customizing are usually included in the laboratory's fee arrangements.

## **Custom-Fitted Cons**

Expert, professional service is required for proper fitting of a custom orthotic. Then an orthotic laboratory must accurately manufacture a shoe insert using appropriate materials with the necessary corrections for that patient. This procedure is time-consuming and depletes resources, making custom orthotic more expensive than an off-the-shelf orthotic. It depends very much on good quality control at both ends of the production chain. There is also a longer time lag from ordering orthotics for a patient to when they are delivered.

## **Conclusions**

Some patients respond well to the less-expensive, off-the-shelf shoe inserts. These patients usually have feet that are "classic" in shape, without substantial asymmetry or biomechanical problems. They must fit very comfortably into standard foot-sizing charts. Store-bought inserts can be very helpful for the limited number of patients with this type of feet and minimal biomechanical distress, particularly when the primary need is shock absorption.

Patients whose feet are not a classical form or size, or who have left/right asymmetry, will need customization for a proper fit. If there are biomechanical dysfunctions or structural imbalances, specific corrective support is definitely necessary. If the purpose is to decrease excessive pronation or improve support for the spine and pelvis, custom-fitted orthotics will be more effective in the long term. The time investment and higher cost of these is usually recovered quickly by decreases in recurring symptoms and fewer office visits. The significance of improved function in daily and recreational activities is obvious to most patients, who will accept the somewhat higher costs in exchange for the long-term health and wellness benefits.

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