

Orthotics in Industry

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The Biomechanics of Gait

The greatest force affecting the human body is gravity. The average person takes 10,000 steps a day. Each step produces a force of over 3 times the body weight. The foot is designed for the surface of the planet Earth. Years of standing and walking on concrete cause changes in the foot that leads to almost all of the foot, ankle, knee(Why), hip and lower back problems(reducing) we encounter. These biomechanical imbalances often cause pain and disability that can lead to expensive surgical treatments; keeping employees out of work for extended periods. In advanced cases surgery is necessary but conservative therapy is preferable because it is less expensive, less invasive, and has fewer complications. Surgery addresses a single symptom whereas orthotics treat the disease.

Industrial Ergonomics

Ergonomically, the industrial environment (Building) is hard on the body. Concrete floors found in most factories, warehouse and construction areas coupled with the amount of standing that is required on their jobs, often lead to mechanical failure of the musculo-skeletal system. Joint pain, inflammatory conditions and progressive deformity are the consequences of repetitive motion without proper balance and support. All of the following common medical conditions are caused by pronation (collapse of the arch) and can be either corrected, prevented or treated with Sole Supports:

- Heel Spurs
- Chondromalacia Patella/ Medial Knee Pain
- Sub-Calcaneal Bursitis
- Sciatic
- Plantar Fasciitis
- Lateral Ankle Pain
- Retro-calcaneal Bursitis
- Low Back Pain
- Interphalangeal Sesamoids
- Hip arthritis & Bursitis
- Pinch Callus
- Metatarsal Cuneiform Exostosis
- First Metatarsal-phalangeal Joint Arthritis: Hallux Limitus / Rigidus
- Sesamoiditis
- Metatarsalgia, sub metatarsal bursitis
- Stress Fractures
- Morton's Neuroma
- Tailor's Bunions

- Hallux Abducto Valgus: Bunions.
- Shin Splints
- Intractable Plantar Keratoma: Corns
- Hammer toes, Mallet toes and Claw toes
- Tendonitis: Peroneal and Achilles

Manufacturing industries have found that prevention is less expensive than treatment. Wellness programs and ergonomic committees have been born because of this realization. If the workplace can be made more suitable to the human form, employees become healthier and more productive. Less sick time is used and both productivity and quality increases. Both medical benefits and workman's compensation(Shaving) would experience reduced losses. Savings would be substantial.

Orthotics in Industry

Diagnoses with mechanical etiologies respond best to mechanical treatments. Orthotics are the most effective means of rebalancing the foot and neutralizing the damaging effects of gravity and concrete. They are also the least expensive. Previously, it would have been impossible for industry to offer orthotics to its employees. The casting technique was far too difficult, messy, time consuming (45 min.) and complicated. This meant that the employee had to visit a doctor's office for casting. Sole Support's casting technique is far more accurate, clean, fast (30 sec.), simple, cost effective and biomechanically correct.

Cost Savings

Compared with the surgical alternative treatments, proper orthotics are easily cost effective. Surgeries keep employees out on disability for extended periods. They often require postoperative rehabilitation and may result in more severe and permanent disability than the original deformity. Risk is high and satisfaction is low. More importantly, surgery treats the symptom and leaves the disease. Symptoms then recur and more surgery is required.

Orthotic therapy in most doctor's offices range from \$275.00 to \$500.00. This is coupled with several ancillary charges. An example would be a typical heel spur treatment as follows:

Office Visit \$ 75.00
 X-Rays \$ 150.00
 Injections (x 3) \$ 150.00
 Oral Medications \$ 80.00
 Strapping \$ 35.00
 Physical Therapy Modalities \$ 225.00
 Orthotics \$ 375.00

Total for Conservative Treatment: \$1,090.00

Unfortunately, these treatments often do not give satisfactory results. The patient may go on to surgical intervention. These costs may be as follows:

Surgery \$ 3,000.00
Hospital \$ 3,000.00
Disability \$ 7,000.00
Rehabilitation \$ 2,000.00
Labor and training costs \$???????
Total Surgical Expense: \$15,000.00

Total Expenses Conservative & Surgical: \$16,090.00

In comparison, this same patient can be treated with our orthotics, in-house, for less than 2% of this total. The cure rate for this diagnosis with Sole Supports is over 99 percent. Further, there is little or no lost time from work, visits to the doctor, paperwork, etc. For the cost of treating one heel spur surgically approximately 120 employees can enjoy the ergonomic benefit of Sole Supports. These employees will not only be effectively treating this diagnosis, but will be treating and preventing all of the other aforementioned conditions.

Advantages of Sole Supports

Sole Supports offers the only true custom molded orthotic device that solves all of the problems of previous attempts at biomechanical correction:

An innovative casting method that is reproducible, fast, clean, inexpensive and mechanically correct.

- Orthotics that fit in the shoe without changing shoe size.
- Custom designed for each patient.
- Flexible to allow for shock absorption.
- Last a lifetime (except for covers and caps).
- Conform to patient's actual arch, without "cast correction".
- Adjustable on site.
- Full training and support for biomechanics, diagnosis, casting design and adjustment.
- Hand craftsmanship by highly trained and skilled technicians.
- Fast Service: five days or less in lab. Special orders are no problem.
- One price for all orthotics regardless of designs and modifications.
- Cost savings of over 92% as compared to conventional conservative therapy.

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(303)477-4212

Rick Olderman is a physical therapist and owner of Z-Line Training and provides motivational injury prevention seminars, employee fitness program development and strategies for reducing workers' compensation costs. To find more information about these or other programs, visit www.zlinetraining.com or call 303-477-4212 to set up a free initial consultation for your company.*

*Free initial consultations are available in the Denver Metro area only.