

# Education Resource Center

A Service of Foot Levelers, Inc.

Pronation and Orthotic Support



## Pronation and Orthotic Support

### The Pronated (Flat) Foot

When a foot is severely pronated, or flat, it means its arches have fallen. Flat feet are less shock-absorbent and make for a less stable “base” for everything above: bones, muscles, ligaments and tendons throughout the body.

### Feet are the body’s foundation. Flat feet can cause serious problems all the way up the Kinetic Chain.

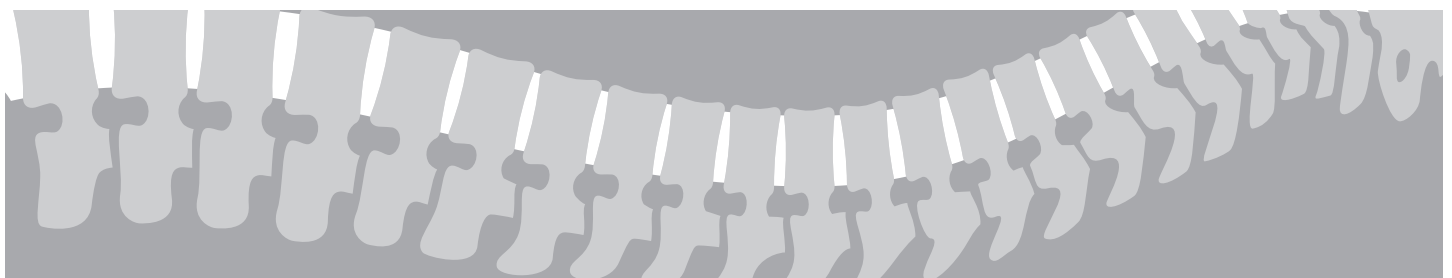
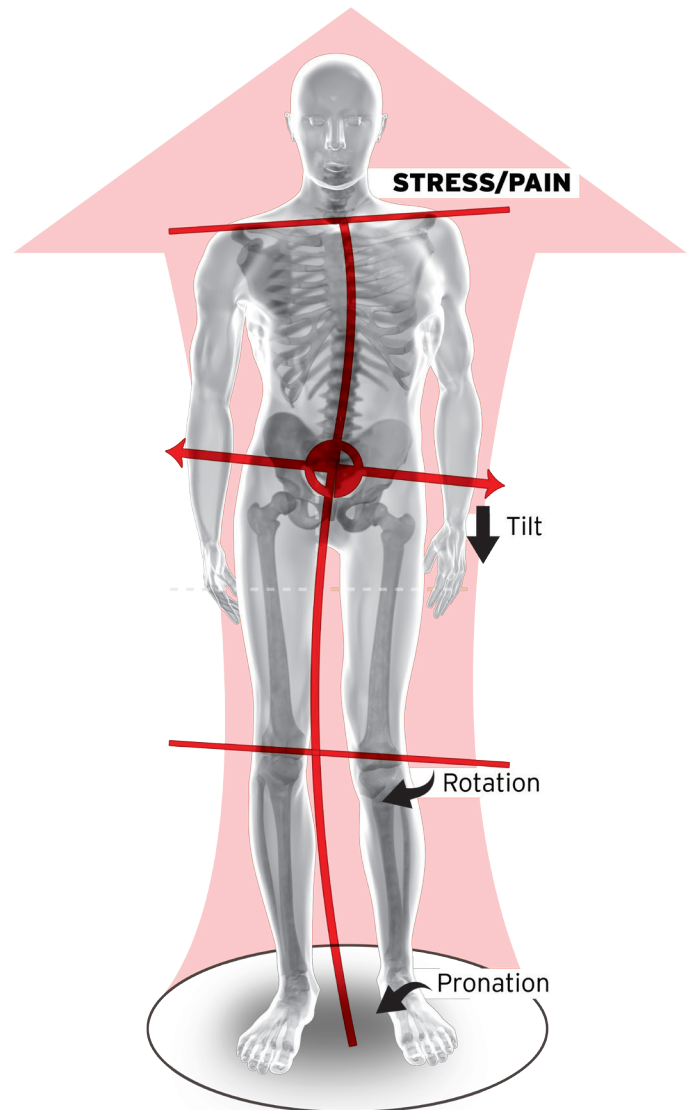
Because pronation shifts the body out of its natural alignment, patients may experience aches and pains in the feet, knees, hips, neck and/or spine. Flat feet can also lead to injury and problems like shin splints, Achilles tendinitis and plantar fasciitis. Women with flat feet are 50% more likely than those without to have low back pain.<sup>1</sup>

Biomechanical problems also exist when one arch is lower than the other, creating asymmetry. The pelvis may drop slightly as the leg’s support structure—the foot—drops. The body may lean slightly to the side. The muscles and tendons must work harder, yet less efficiently, to “make up” for the imbalance.

Up to 1/3 of your patients may suffer from flat feet.<sup>2</sup>

### Some of the most common causes of flat feet are:

- Stress over time of everyday activity; walking, standing
- Injury (stretched/torn ligaments, broken bones)
- Birth abnormality
- Health conditions, such as rheumatoid arthritis
- Nerve problems<sup>3</sup>



### Risk factors include:

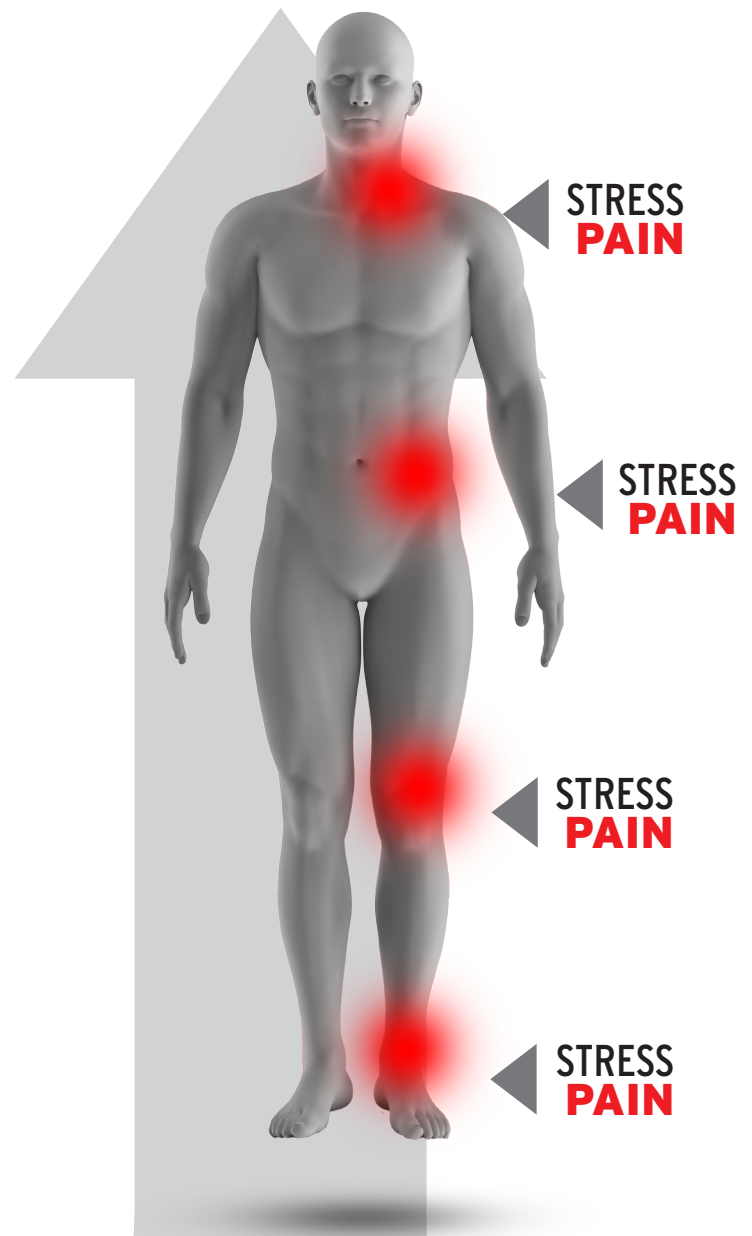
- Obesity
- Diabetes
- Aging
- Pregnancy

### Causes of Flat Feet

The connective tissue or plantar fascia on the underside of the foot is critical to maintaining the foot's healthy arched shape. Injury and certain health conditions can cause the fascia to stretch out and flatten, but so can everyday, ongoing stressors like walking and standing. In fact, repetitive, low impact force over time can be just as devastating as a sudden, high impact force, like injury—meaning every patient is at risk for flattened feet. Once the fascia stretches out, it is unable to “spring back.” With the foot structure flattened, the body's very foundation is in trouble.

### Treatment

- Extremity adjusting to endure proper positioning of bones and joints.
- Have your patients wear functional orthotics in every pair of shoes; these provide support and comfort for flat feet, while helping to control excessive pronation.
- Functional orthotics also help lift and position the foot to create health arches.
- Foot Levelers recommends the FootWheel™ and THERA-CISER® to stretch and strengthen the bottom of patients' feet.



### Reference

1. Menz, H.B., Dufour, A.B, Riskowski, J.L, Hillstrom, H.J. and Hannan, M.T. Foot posture, foot function and low back pain: the Framingham Foot Study.
2. Franco, Abby Herzog (1987). Pes Cavus and Pes Planus Analyses and Treatment. Physical Therapy 67 (5): 688-694.
3. Currie, S. The Flat Foot-A Closer Look. 2011. In: American Journal of Clinical Chiropractic. Available online: [http://www.chiropractic-biophysics.com/clinical\\_chiropractic/2011/2/11/the-flat-foot-a-closer-look.html](http://www.chiropractic-biophysics.com/clinical_chiropractic/2011/2/11/the-flat-foot-a-closer-look.html).

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