

Foot pain is a very common problem. It can have a variety of causes from improper foot wear to trauma. Regardless of the original cause, abnormal biomechanics is usually involved.

Biomechanics refers to how the muscles and joints work. Few of us appreciate the forces that our feet must contend with during the course of an average day. With every step, each foot must absorb the full weight of our bodies and if there is any momentum such as running or walking down steps, that weight is magnified.

In addition to the normal stress that the feet endure, we often increase the stress on the feet with poor supporting foot wear. We also wear shoes that might fit the foot when standing still, but do not allow the foot to expand as it normally should when we walk. Add high heels and it is no wonder we develop foot problems.

All of these things force our feet to work in ways in which they were not designed. This puts abnormal stress on the joints and ligaments that hold the feet together. Usually this abnormal stress is very subtle and so it doesn't cause pain initially. It does, however, cause subtle damage and inflammation that is so slight at first that we don't feel it. Over time, these forces cause the joints to shift, altering the normal function of the foot. The subclinical (painless) inflammation causes a calcium buildup around the joints. The calcium buildup leads to conditions such as bunions where the toe joints are enlarged and the toes become misshaped.

The inflammation of the ligaments will often increase with time and can lead to a common painful condition known as plantar fasciitis. The plantar fascia is a tough fiber band that runs from the heel to the base of the toes. Its function is to support the normal arch of the foot as well as act as a shock absorber. It also works like a spring to help preserve momentum when walking. Plantar fasciitis (fash-ee-i-tis) can be very painful and can also lead to the development of heel spurs which is a calcium buildup on the forward part of the heel where the plantar fascia attaches to the heel.

Next week I will discuss treatment approaches to dealing with these foot problems.