

## RUNNERS, SHOES AND STAYING INJURY FREE by BOB WEIL, DPM



Lots of runners out there man, you see 40,000 spaces gone in a flash for the October 2013 Chicago Marathon, and it is no different for the New York City race or around the country. That's of course, in addition to the millions of recreational joggers and walkers.

Here are my observations in the area of shoes, the role of the foot in running, some common running related problems and prevention strategies. Number one, keep-

ing it simple-if you have had success with your brand or type of shoes, stay with them. This is a challenge often, because the shoe companies are always changing models and I have had runners who were not happy with new models that were "supposed to be the same" as the previous ones but were not. Nothing wrong with trying something new, but why argue with success? Don't run in worn out shoes-change two-three times a year.

There is incredible hype regarding minimalist (less is better), shoes. Actually, minimal shoes have been around forever-they were called RACING FLATS! Runners who used the flats as "all the time" shoes had more overuse problems. Most did better with using their shoes for training most of the miles and then switching to flats for races only. Some runners have been tempted to look at the minimal shoes for routine use, but I would recommend that you take your time and be gradual and if there are problems go back to the training shoe that worked well for you. In the best of athletes, in all sports, I have always liked some barefoot running, but just on grass or sand; there are barefoot runners and those who wear barely "toe huggers" and if they are doing well, I don't argue with them, but we have got to pay attention to whatever the surface they are running on to be properly protected.

### Knowing Your Foot Type:

It is important to know your foot type. What is your foot structure? Do you have excessive pronation? Do you have high arches? How flexible are your foot/ankle joints? So many runners still are not running in the best shoes for their foot type, let alone jumping into minimalist shoes. What is your history regarding problems? Probably half of runners at all levels have had some type of overuse injury, like plantar fasciitis to shin splints to runners' knee? Often, it is foot type and foot mechanics that can predispose you to problems and injuries or create chronic or ongoing problems.

### The Role of the Foot in Running:

The foot is a mechanical marvel designed to perform some specific functions during the running gait cycle. The terms pronation and supination describe normal positional changes in the foot and ankle. Both pronation and supination are complex tri-plane motions with the joints moving in three directions simultaneously. The pronated foot loosens the joints to allow shock absorption (we hit the ground with about 1/2 our weight in each step walking; this doubles or triples with running). Pronation also allows the loosened foot to adapt to the ground surface.

Once the body passes over the foot, this loose bag of bones, (pronation) becomes a rigid lever to propel the body forward. This other position is called supination. Many overuse injuries in running are related to abnormal forces associated with these positional changes. Flat feet or excessive pronation can cause the expected push-off of supinated phase to be either too late or totally absent. Abnormal strain to the structures of the feet and legs can result from this. Since inner rotation of the lower legs accompanies pronation of the foot, problems with ankles, shins, knees, and lower back can result from this increased torque caused by excessive pronation. The high arch or supinated foot, though less common, can cause its own problems with lack of enough shock absorption in associated knee, hip and low back problems. Examination of the runner standing, walking or running can reveal specifics about these

foot positions and mechanics, identifying weak links in the alignment of the foot, ankle, knee and hip structures can be very valuable in preventing overuse injuries. Stability tests like single leg balance and squat positions give good information regarding some of the structural alignment potential problems.

Why does one person over-pronate while another functions more normally and is less pronated? Often, it is genetics or inherited foot structure. Blame your parents if you have excessive pronation. Women, because of their wider hips as well as their hormonal makeup differences, have a tendency to be more loose jointed or flexible. Also, some of the alignment factors with the wider hips and knees can be involved in the tendency to either pronate too much or not enough again depending on the foot structure and hip width. High arch feet can also cause problems related to over-supination. Limited shock absorption, as mentioned above can cause strain to structures above. This foot type is also inherited.

By far, the best method of dealing with these foot mechanics abnormalities is with competent prescription orthotics, which combined with proper shoes (usually neutral) are the best of all worlds. In the past, orthotics were often confused with arch supports. The thinking was arch supports would "hold up" flat feet. If the feet didn't hurt, orthotics weren't considered. Today, we know that it is not support but alignment and position that count. Often, runners will ask do I need orthotics? It is much better to ask if you would benefit from them.

Many running injuries involve the "terrible too's" (too much, too soon, too aggressive), so especially if you're new to the game, take it easy. Don't forget to always warm up and cool down; start and finish with some walking. Include some strength training for feet, ankles, legs. I like foot and ankle rubber bands to strengthen these areas; they incorporate all muscles and tendons in the lower legs. Balance exercises are great; soft Bosu and tilt boards help the whole lower extremity.

Running injuries are common, so if you have got a history of foot, ankle, knee problems, get your foot mechanics checked by a podiatrist or specialist. Always get fit properly and OH YEA-HAVE FUN!

Dr. Bob Weil is a Long Island native who moved to Chicago many years ago where he still practices podiatry. He hosts a weekly radio show, "The Sports Doctor" on WDCB 90.9 FM and writes for numerous newspapers and magazines. You can access previous radio shows and articles on his website at [www.SPORTSDOCTORRADIO.com](http://www.SPORTSDOCTORRADIO.com).

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