



## DR. SCOTT O'CONNOR

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### Shoe Selection (with Stephen Pribut)

Running shoes should be selected carefully. Factors to weigh when looking for a new shoe include:

- Past experience with shoes
- Current Problems
- Biomechanical Needs
- Environmental Factors
- Running and Racing Requirements

If you have been having no problems in running or racing, it would be hard to recommend a change of shoe. It is difficult, if not impossible to improve upon a situation in which all is going great. I would advise getting a few pairs of what seem to be your favorite shoes before the manufacturer changes the shoe. Historically unannounced changes are often made by manufacturers. This can vary from a subtle change in the cushioning around the heel to a major structural midsole change. Manufacturers have discontinued a model of shoe, only to resume production a few years later with a line of shoes boasting the same name, but with completely different characteristics.

One of the best means of finding out information about running shoes is to locate a good running shoe store, that maintains an excellent reputation among your local running community. They can help you not only with fit but also review desired shoe characteristics with you. They can also alert you to changes that may occur in the manufacturing of your favorite shoe. If the soles of your shoes have been wearing too quickly they might recommend another model with better wearing shoes. More likely, however, you have probably been wearing your old shoe for too long. Failing to replace worn shoes is a major cause of running injuries. Estimates vary, as do individuals, as to when is the best time to replace your running shoes. The usual estimates place the mileage at somewhere between 350 and 550 miles. This means that many individuals should be replacing their shoes before they show major wear. In spite of the lack of wear the shoe will be gradually losing its shock absorption capacity as well as possibly starting to lose some of its stability.

#### Definitions

- **Last:** The template or model upon which the shoe is built. Different manufacturers use different lasts.
- **Outer-Sole:** The outermost part of the sole, which is treaded. On running shoes the tread is designed for straight ahead motion. Court shoes and cross trainers have their tread optimized for lateral or side-to-side stability.
- **Upper:** The uppermost part of the shoe. This part encompasses your foot and has the laces.



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- **Midsole:** The portion between the upper and the outer-sole. This is the area whose major contribution to the shoe is shock absorption. It is also usually quite important that the midsole be stable from the heel until the distal third of the shoe where it should be flexible at the point where your toes attach to the foot and bend.
- **Sockliner:** This is the liner inside the shoe that has a bit of an arch and usually some shock absorbing material incorporated into it.
- **Counter:** A rigid piece surrounding the heel that provides some stability.

### Check Out Your Old Shoes

Examine the soles of your shoes. Note where wear has occurred. Most people seem to be amazed that their shoes wear at the rear outer corner. Most rearfoot strikers will wear at this part of the shoe. The reason for this, which someday, somewhere a funded study will prove, is that for most heel strikers it is the point of first contact of the shoe with the ground. Most people walk and run with their feet slightly rotated from center. Runners, however, also have what is called a narrow base of gait. A narrow base of gait means that the feet contact close to the midline of your body. This creates additional varus (tilting in) of the limb. This results, for the rearfoot striker, in the first point hitting the ground being the outer corner of your shoe. Forefoot wear may point to an individual who is a sprinter, runs fast, contacts the ground with the forefoot first or all of the above. Uneven forefoot wear may show where one metatarsal is plantarflexed relative to the others or where one metatarsal may be longer than the others. In the presence of significant forefoot wear, you are at risk of stress fractures.

Next put your shoes on the table and look from the back of the shoe to the heel. If your the counter of your shoe is tilted in or bulges over the inner part of your shoe, you might be one who excessively pronates. If this is so, you may want to look for a shoe with more stability or replace your shoe a bit sooner next time.

If your shoe tilts to the outside, you may have a high arched foot. This in some cases can lead to ankle sprains and also increased transmission of forces to the leg and back. Sometimes individuals with this type of foot may have lateral knee pain, low back pain and outer leg pain. It will probably be important to make sure that your shoe has a fair amount of shock absorption and is not excessively controlling.

Looking at the top of your shoe, you should note if you can see the outline of your toes in the upper or either your large or small toe on either side. If you do and have discomfort in these areas or have had "black toe" you should consider wider or longer shoes or both wider and longer.

If you have a flexible and pronated foot, you might do better with a board lasted shoe. But looking for a good counter and a sole that is rigid until the point where your toes attach is an easier empirical way to find a good shoe. This offers resistance to torsion and inhibits pronation. Slip lasted shoes are frequently good for high arched feet. Combination lasted shoes are supposed to offer the best of both worlds: stability in the rearfoot and flexibility in the forefoot.



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### Trying On The Shoe

Go to a running shoe store that has a good reputation. Make sure you try on both shoes. Most good stores will allow you to run up and down the block, outside a few times. This is the only way to experience what running will feel like. You should also keep the shoe on your foot for about 10 minutes to make sure that it remains comfortable. Make sure that nothing pinches and that you like the feel of the shoe and your stride.

Once you have purchased a new and comfortable shoe, don't put them to the test with a 12 mile long run or decide it is time for 7 miles of speed work around a track. Probably an easy 3 mile run will be sufficient. Run easily in the shoe and for only a short distance during the first 100 miles you spend in the shoe. Do not ever wear a brand new shoe in a marathon. You'll be doomed to sore feet, blisters and perhaps worse. It is amazing how many people make this mistake every year, no matter how many times this simple fact is stated. ***Just don't do it!***

After your careful and wise selection of your brand new running shoe. Bring it home, put it on and enjoy your run! Don't forget to stop and change your shoe, before you've gone too far though.