

# Newsletter

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## Choosing the Correct Pair of Running Shoes

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I'm often asked for my opinion on which pair of running shoes will best suit a patient's needs. There is no easy answer, because shoe selection has a lot to do with comfort and that's a personal decision. However, it's important that you choose a design of shoe that will support your foot in the way that it needs, and then from there you can make a final choice based on comfort or price.

In order to choose the right show for your foot, you first have to understand a bit about foot mechanics.

Without getting into too much detail, the foot has 2 arches - a longitudinal arch which runs the length of the inside of the foot (the one we are most familiar with) and a transverse arch, which runs across the width of the forefoot. People with 'flat feet' or 'fallen arches' have a problem with the longitudinal arch of the foot, and most if not all shoe manufacturers make shoes to correct for these problems.

There are basically 3 types of training shoe categories - **Motion Control**, **Stability** and **Cushioned** - and these are designed around your particular type of foot. So lets look at foot types first:



A foot with an arch that tends to collapse or roll inward when someone walks or runs is said to **Pronate**. Most feet show some degree of pronation with standing and walking and to a degree it's normal because when you sit and your feet dangle (non-weight bearing) your arch will be at it's highest. When you stand on the foot the arch flattens a bit (pronation) and when you walk or run further pronation can occur. So a bit is normal. Excessive pronation, though, can lead to problems such as plantar fasciitis, shin splints, knee pain, low back pain, etc. One way to tell if you pronate a lot is to look at your footprint. If you walk barefoot over concrete or some other similar surface when your feet are wet, you can check how flat a foot you have. If you leave a footprint that doesn't show much arch, like a duck had stepped there, then you are probably pronating (or you may just have a flat foot, which is not always a biomechanical problem).

People who **Pronate** excessively should be wearing **Motion Control** shoes.

The opposite of pronation is called **Supination**, and for our discussion here we'll call it a high arch. Basically, the arch doesn't collapse much as you stand or walk and your footprint will be very high in the arch area. This will show up as a thin line along the outside of the footprint, between the heel and forefoot. An excessively high arch may not even show this line, you may just get a heel print and a forefoot print. A high arch generally equates with a stiff arch because mild collapsing of the arch helps to dampen road shock, thereby acting as a shock absorber.

People who **Supinate** should be wearing **Cushioned** shoes because their arches aren't providing much natural shock absorption.

In between Pronation and Supination we have what we call a **Neutral** foot. A Neutral foot doesn't collapse and it isn't too terribly stiff, so it's just right.

A **Neutral** foot should be in a **Stability** shoe.

Now let's look at the difference between these shoes so you can go into your local shoe emporium and select for yourself based on your needs. But before we do, we need to define a few terms. Actually, we only need to define one term, but it's used two different ways just to confuse everyone. The word is LAST. It is used to define the shape of the sole of the shoe and the way the inside is constructed. A **Straight Lasted** sole is shaped sort of like a rectangular oval. Maybe a little peanut shaped, but still quite close to the shape of the footprint of a flat foot. **Curve Lasted** soles have less material to the inside of the footprint, in the arch area. If you look at the sole of the shoe the shape of the rubber that touches the road will be very similar to the shape of the footprint of a person who supinates. Now for the inside of the shoe. We have 2 basic types of lasts for the inside - **Slip Lasted** and **Combination Lasted**. This is very easy to determine in a running shoe. Simply remove the insole and look at the floor of the shoe. A **Slip Lasted** shoe will have cloth-like material running the entire floor of the shoe, under the insole. There will often be a line of stitching running down the middle as well. These shoes are said to be constructed like a moccasin, where the edges are sewn together down the middle. A shoe with **Combination Lasting** will have a piece of cardboard-like material sitting on the floor of the shoe. This 'board' will run from the heel to approximately where the shoe bends. From that point on there is no board and the floor of the shoe resembles a slip lasted shoe. There used to be pure Board Lasted shoes on the market but they were too stiff in the area where the shoe bends so most shoes of that nature have now gone to a Combination Last.

Board Lasting or Combination Lasting is there for a very good reason - it makes the shoe more stable. It is therefore found in most if not all Motion Control shoes.

So, let's look at the construction of all three types of shoes and tie this together with the type of feet that they're designed for:

**Motion Control** - Can often be spotted from afar because they will usually have a stiff plastic wedge on the inside of the heel towards the arch. This adds extra support and helps counter pronation. Take the insole out and you will most likely notice some type of board lasting running from the heel to about the halfway point of the floor of the shoe. Grab the heel and try bending it side to side. It should be stiff because Motion Control shoes use stiff heel counters to help prevent pronation. Turn the shoe over and look at the shape of the sole. It should be a rectangular oval or slightly peanut shape, but there's lots of rubber on the inside of the arch. These shoes are typically a bit heavier due to their design and they are suitable for **Over-Pronators**.

**Cushioned Shoes** - Take the insole out and look for slip lasting. Look at the sole of the shoe. You should see a shape that resembles a high arched footprint with little or no rubber in the area of the arch. Grab the heel area and wiggle it side to side. It should be less stiff than a Motion control shoe because these shoes don't require as stable a heel counter. Generally lighter than other designs and suitable for **Supinators** or those with high arches.

**Stability or Neutral Shoes** - These fit in between the above two. May or may not have combination lasting. Many will use slip lasting inside but they stiffen up the medial (inside) edge of the outsole to counter pronation. Expect some degree of heel counter. These shoes are suitable to **Neutral** runners; in other words, those who don't need extra cushioning or extra pronation control.

One word on running shoes and orthotics. I have found a lot of my patients can benefit from orthotics (custom made arch support inserts for shoes) in their dress shoes or casual shoes but they often don't need them in running shoes because they should be able to find a pair of shoes that supports their feet well enough without the need for orthotics. There is no need to use orthotics if you don't actually need them. BUT, there are going to be those runners out there who insist on running in orthotics and those who have a legitimate need to do so. For those runners I recommend that you pay particular attention to the type of shoe you buy. Motion Control shoes are often advertised as being suitable for orthotic wearers because the combination last will support an orthotic well. But, if you are already getting all the support you need from your orthotics you may not need the extra support in your shoe. It may actually OVER support your foot which can lead to it's own set of problems. My advice is to try and find a good, supportive shoe that you can run in without the orthotics. You may even find it more comfortable. Good luck with your next shoe purchase!