

Function of Running Shoes

There are two primary functions of running shoes:

1. The reduction and distribution of the forces of impact upon footstrike. This function encompasses the common descriptions of cushioning and shock absorption.
2. To assist the foot in operating in a mechanically efficient fashion, i.e., support, stability, and motion control.

A good running shoe will have a combination of features that will address the runner's needs in these areas. However, runners vary significantly in how much assistance they need in each function. The shoes will also vary in the degree they address the two functions. In other words, some shoes emphasize cushioning and some emphasize stability with many styles lying somewhere in-between.

The not-so-simple task of the consumer is to determine what their most important needs are so they can narrow their choices down to the proper category. Then, they can further explore which shoes fit most properly and work best for their feet.

Pronation

One of the most obvious considerations for injury prevention to runners is foot pronation. Almost all runners pronate to some extent. Pronation is the term for foot motion when the foot lands on the outside of the heel, then as body weight comes forward, the foot rolls over to the inside as far as the joints and soft tissue will allow. This position absorbs some of the shock and puts the foot in a better position for the push-off phase of the running.

Overpronation

The foot of most runners pronates until the heel is a little more than perpendicular to the ground, but some runners have too much heel rolling and overpronate. Overpronation causes stretching of the ligaments, tendons, and muscles causing injuries, such as chondromalacia, shin splints, plantar fasciitis, Achilles tendinitis, and even some low back problems. Very often overpronation is associated with flat flexible arches (flatfoot).

Runners who overpronate require shoes that emphasize motion control and stability. These shoes have good rear foot control with dual or multi-density midsoles, rigid heel counter, and probably have a straighter last. Thus the shoe should have a well cushioned midsole on the outside (lateral) border beneath the heel and a harder material on the inside (medial) border of the heel extending into the arch. The ideal heel counter support should have a rigid material extending up and into the heel counter. The heel counter should hug the heel well.

To examine a shoe, hold the heel in one hand and put the other hand inside the heel counter. By exerting force, see if you can compress the midsole on the medial side or force the heel counter out over the edge of the midsole. If either happens, this shoe will not provide rear foot stability.

Supination (under pronation)

Foot supination occurs when the foot does not pronate enough. This can also lead to some potential problems. This condition is often associated with feet that have rigid high arches. These feet tend not to absorb shock well and are subject to conditions such as plantar fasciitis, shin splints, stress fractures (foot and lower leg), and back problems. Since the foot is already rigid, these runners usually need a more flexible shoe that emphasizes shock absorption and cushioning. This shoe generally will have a more curved last (shape) to match the shape of that kind of foot. A strong motion control shoe can cause this type of runner to roll outward excessively and cause injuries.

General Tips

Of course, the majority of runners do not require the highest degree of motion-control or flexibility and cushioning. They fall somewhere between the extremes and many shoes can be appropriate. Each individual needs to determine their own tendencies and pick their shoes accordingly. There are many technologically advanced shoes on the market. Finding the right one can be confusing. Below are a few tips to help narrow the choices:

1. Try to identify the runner's foot type and biochemical tendencies to determine the correct category of shoes.
2. Try on several from that category.
3. Wear socks similar to the ones ordinarily used.
4. Run in them. Ideally have someone watch your foot strike to look for anything out of the ordinary (pronation, supination, etc).
5. Avoid being too brand conscious and close-minded.
6. Pick a shoe that doesn't feel like it needs very much breaking in.
7. Arch supports and flex points should feel like they match the foot.
8. The lower priorities should be color, style, and price. The most expensive isn't always the best for each individual, but don't be too frugal.