STAYING HEALTHY

Athletic Shoes

Wearing the appropriate athletic shoe for specific sports activities can improve comfort and performance and, most importantly, prevent injuries. Sports can place tremendous pressure on the feet, ankles, and legs. Running and jumping, for example, generate an impact force through the legs that is three to five times a person's body weight.

Today's athletic shoes are designed with specific activities in mind. If you participate in a single sport more than two times a week, you should purchase a shoe specifically designed for that sport — a running shoe, court shoe, cleats, or hiking shoe. If you are active in many different forms of exercise each week, a cross-training shoe may be the best choice.

Tips for Finding the Right Athletic Shoe

- When possible, shop at a store that caters to the sport in which you participate. If you are a runner, go to a running store; if you are a tennis player, purchase your shoes at a tennis shop. If this is not possible, do some research before shopping to find out what type of shoe is most appropriate for your favorite sport.
- Because your feet swell throughout the day, try on shoes at the end of the day or after a workout.
- To ensure a proper fit, wear the same type of sock that you typically wear when you are participating in the sport for which you are buying the shoes.
- Make sure the heel counter — the back of the shoe that holds the heel in place —

adequately grips your heel to ensure stability.

- There should be at least a 1/2 inch space between your longest toe and the tip of your shoes.
- The toe box — the front area of the shoe — should have ample room so that you can wiggle your toes. Your toes should never feel cramped in an athletic shoe.
- When you try on shoes, walk around the store on different surfaces (carpet and tile, for example) to ensure that they are comfortable.
- Always tighten the laces of the shoes that you are trying on so that your feet are secure in the shoe. There are many different types of lacing patterns that can be applied to the shoe to adapt to the structure of the foot.
- Try on both the right and the left shoes to make sure that they fit. Also, inspect the shoes on a level surface to ensure that they are straight, even, and without defects.
- Make sure that the shoes have not been sitting on the shelf for an extended period of time. While the materials of an athletic shoe are designed to accommodate a lot of stress, the cushioning may become less effective over time, even without use.

Types of Athletic Shoes

Running Shoes

Much of the recent research in athletic shoes has focused on the development and improvement of running shoes. Running shoes are grouped into three categories:

- **Cushioned** or "neutral" shoes are designed for runners with high arched, rigid feet. A runner with this type of foot is classified as a "supinator." The midsole of a cushioned running shoe will generally have a single color of soft foam material, ethylene vinyl acetate (EVA), in the arch and heel. A moldable synthetic material, EVA has varying density properties to provide more or less cushion in the shoe.
- **Stability** shoes provide light to moderate stability for individuals with an arch that may collapse while running. This type of runner, classified as a "pronator,"

needs to maintain his or her arch while running. Stability shoes may have two to three different shades of gray polyurethane material in the arch, and possibly the heel, each with a different density to provide more support for the pronated (flat) foot type. The polyurethane material will make the shoe feel heavier than a shoe made only with EVA. The manufacturer may also add other components to the shoe to help add stability.

- **Motion control** shoes are designed for runners who are "severe pronators." This type of shoe provides the most stability and is the choice for runners with flat feet, and those with a heavier body weight. A motion control shoe may have an extra stabilizer added to the inside edge of the heel counter to provide maximum control. The outer sole of the running shoe will be made of carbon rubber or blown rubber, which is made with injected air. A carbon rubber sole is made from a heavier material, is somewhat stiffer, and provides more durability to the shoe. Blown rubber soles are flexible and lighter in weight providing more cushion than stability.

The best way to determine if you are a supinator or pronator runner is to have a professional evaluate your foot. To determine your foot type on your own, view your footprint when you step out of the pool or shower. If you leave a wide, flat footprint, you have a pronated foot. If the footprint is missing the inside of the foot, where your arch did not touch the ground, you have a supinated foot type.

While knowing what type of foot you have is a first step toward buying the correct shoe, the pronation/supination component may be magnified during running. A professional can perform a gait analysis to definitely determine how your foot functions while you are running.

A running shoe professional can analyze your gait to help determine the best type of shoe for you.

Running shoes need to be replaced on a regular basis. The EVA starts to show structural damage after 120 miles. At 500 miles, the shoe has lost 45% of its initial shock absorption capabilities. A general rule of thumb is to take 75,000 and divide it by your weight to determine the number of miles that you can run before you need a new shoe. For example, if you weigh 150 pounds, your shoes should be replaced every 500 miles.

Barefoot Running / Minimalist Shoes

Running without shoes, or "barefoot running," has become popular in the last decade. The concept behind this technique is that it promotes a “forefoot” or “midfoot” strike versus a heel strike. This change in how your foot strikes the ground reduces the compressive loads through your lower limb and can help to reduce the risk of injury.

A professional trainer can tell you if this type of running is a good choice for you and, if so, provide you with tips and exercises to help you safely and slowly transition from running in shoes to running barefoot. You can purchase shoes specifically designed for barefoot running that offer no support or cushion, but do provide some protection from sharp objects and uncomfortable surfaces.

Shoe companies have also designed “minimalist” shoes that are similar to barefoot running. A typical running shoe has a 10-12 mm heel to toe drop due to extra cushion in the heel. This cushion reduces the compressive load at heel strike. A minimalist shoe has less cushion and, therefore, a lower heel to toe drop (less than 8 mm). This causes the runner to strike with the front of the foot, rather than the heel.

Trail Shoes

A trail shoe is designed for those who prefer to run off road. This type of shoe has a deeper tread pattern for solid traction and offers more stability across the shoe than a normal running shoe.

Cross Trainers

A cross-training shoe is designed to take you from sport to sport with one pair of shoes. This type of shoe is not appropriate for someone who plans on running more than four to five miles a day. A cross trainer is usually made of a combination of mesh materials and strips of leather in the fabric. If the shoe has a "running" tread on the sole, it may be difficult to wear the shoe on a court for an exercise class or game.

Walking Shoes

Walking shoes provide stability through the arch, good shock absorption, and a smooth tread. Walking involves a heel-toe gait pattern, so you want to make sure that the shoe, and particularly the counter, is stable. If you have arthritis or pain in the arch of your foot, you may benefit from a rocker sole that encourages a natural roll of the foot while walking.

Court Shoes

Court shoes include those designed for basketball, tennis, and volleyball. Court shoes have a solid tread and typically are made of soft leathers. They are designed to provide stability in all directions. They may have the traditional low upper cut below the ankle, or a high cut. The higher upper is commonly found on basketball shoes to offer increased stability to the ankle during jumping and landing.

Cleats

Many sports, such as soccer, lacrosse, football and baseball, require the athlete to wear a cleat shoe. Shoes with cleats (also called "spikes" or "studs") have multiple protrusions made of steel or hard plastic that provide additional traction on grass or soft turf.

There are different types of cleats for different sports, so it is important to consult with a coach or professional before purchasing a new cleat shoe. Cleats tend to run narrow — so if you wear an orthotic (a shoe insertion to provide added support), or plan on putting an extra insole in the cleat, you may want to purchase a brand that is known to have a wider cut.

Soccer cleats do not have a toe cleat so there is no drag on the ground when the player kicks the ball. Soccer cleats tend to be more form fitting and have a tighter feel, providing more control to the player as he or she kicks the ball. A cleat that has a lower profile is designed to form to the foot so that the player feels like his or her foot is one with the ball. Soccer cleats may be made out of kangaroo leather or different types of microfibers. A cleat made from kangaroo leather should fit snug at first because it will stretch over time.

Lacrosse cleats often have a high upper around the ankle for added stability since much of the game involves running quickly, changing directions, and performing start/stop maneuvers on grass or turf. They are designed like a football cleat in that they have a center front toe cleat to provide traction when moving forward. Lacrosse cleats have a more supportive midsole than a football cleat. A lacrosse cleat is most often molded onto the outer edge of the sole versus under the ball of the foot.

Football cleats are different from soccer cleats in that they have a center toe cleat that improves traction during quick starts. Football cleats typically have a stiffer outsole than lacrosse cleats. A football cleat will have spikes or studs that can be removed from the outer sole, or those that are molded to the shoe.

Spikes are usually preferred on a grass or field turf surface, allowing a player to dig into the surface and resist forces that may stop forward movement. Removable cleats are advantageous because they can be switched out for different surfaces. They come in 1/2, 5/8, 3/4, and 1 inch sizes. Molded cleats are preferred on turf surfaces to provide more traction. A lineman may benefit from a high top cleat above his ankle, which provides more stability during lateral movements. A running back or wide receiver may prefer a low cut cleat providing greater agility on the field while performing cutting maneuvers.

Baseball cleats have longer/narrower cleats that are attached to the sole of the shoe. Baseball cleats also have a toe spike to provide traction when taking off from a base and running in dirt. These spikes are often made of steel versus the molded plastic studs in other cleats. If the baseball field includes artificial turf, only the pitcher and catcher will wear spikes.

Hiking Shoes

A hiking shoe needs to provide stability as you walk across uneven surfaces, as well as comfort and cushion in the insole to absorb the shock from various impacts. Hiking shoes also should have a good tread on the sole to keep your foot firmly planted on the surfaces that you encounter. Most hiking shoes have a higher upper, providing added ankle stability.

Other Sports Shoes

There are shoes designed for virtually every sport, including golf, ballet, skating, hockey, cycling, and skiing. As always, a professional can help you to purchase the shoe that is best for you and the sport you enjoy.

Skates and ski boots can be custom molded to fit your feet, providing extra stability. Golf shoes need to provide stability in the arch of the shoe as the game requires players to walk long distances on changing surfaces. If possible, it is best to purchase a golf shoe with a removable insole so that you can add an orthotic if necessary.

Cycling shoes are fit snuggly, without additional room for inserts. A cycling shoe with some cushion under the ball of the foot will help reduce any compression while you repetitively push the foot as it is securely attached to the pedal.

Lacing Technique

Watch the video below to learn about how different lacing techniques can help alleviate foot pain and prevent injuries.

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