



Healthy Living

Patient Information from the American Chiropractic Association

Ergonomic Equipment

Early in the 20th century, only the wealthy had the time and money to play sports such as tennis. The fashionably restrictive clothing they wore on the court served as a reminder of their upper-class status. As sports grew more popular at every level of society, athletes opted for clothing that moved with their bodies. Today, ergonomic principles guide the makers of all kinds of athletic clothing and equipment so we can perform at our best.

Athletic Shoes

Those who choose fashion over function when shopping for athletic shoes miss the mark. Stunning but ill-fitting shoes can create pain throughout the body.

No one shoe is right for every foot because all feet are different and comfort is a personal decision. To begin with, determine your arch type.

Determining Arch Types

In wet sand, a normal foot shows the forefoot and heel connected by a broad band. Stability shoes with a slightly curved shape are best for this type of foot.

Flat feet have a low arch. Their imprint looks like the entire sole of the foot. Motion-control shoes or high-stability shoes with firm midsoles are best—shoes that are fairly resistant to twisting or bending. Highly cushioned, highly curved shoes are not for flat feet.

The high-arched foot leaves a print with a very narrow band or no band at all between forefoot and heel. The high-arched-foot is not a good shock absorber so cushioned shoes with plenty of flexibility to encourage foot motion are best. Do not pick motion-control or stability shoes, which reduce foot mobility.

Your doctor of chiropractic can determine your foot type, match it to your gait and suggest the best shoes for you. He or she may also suggest orthotics, or custom-designed shoe inserts intended to correct abnormal or irregular walking patterns.

Selecting the Right Shoes

Shoes should be selected to match the sport or activity. Running shoes absorb shock as the foot strikes



the ground. Tennis shoes, however, offer more side-to-side stability. Walking shoes allow the foot to roll and push off naturally. They usually come with a fairly rigid arch, a well-cushioned sole and stiff heel support for stability.

Shop at a specialty store and late in the day when feet are at their largest. Wear the socks you use for your activity or sport, and if you use orthotics, wear them while trying on shoes. Have your feet measured each time you buy because foot size often changes with age. Choose shoes for their fit, not by the size you've worn in the past. The shoe should fit with an index finger's width between the end of the shoe and the longest toe. The toe box should have adequate room and not feel tight. The heel of your foot should fit snugly against the back of the shoe without sliding up or down as you walk or run. Keep the shoe on for 10 minutes to make sure it remains comfortable.

How Long Should Shoes Last?

Once you have purchased a pair of athletic shoes, don't run them into the ground. While estimates vary, most experts agree that between 300 and 500 miles is optimal. In fact, most shoes should be replaced even before they begin to show signs of moderate wear. Once shoes show wear, especially in the cushioning layer called the midsole, they also begin to lose

their shock absorption. Failure to replace worn shoes is a common cause of injuries like shin splints, heel spurs and plantar fasciitis.

Bicycles

How a bike fits the body is extremely important. Ask the pro at the bike shop to help you select the frame size as well as the saddle height and position. If the frame size is not right, the ride will not be right, either. The frame should be easily straddled with both feet flat on the ground—with an inch or two of clearance. For a road or hybrid bike, you need an inch or two of clearance between your crotch and the top tube of a man's bike. For a mountain bike, clearance should be about four inches.

Frame sizes are not standardized. They may come in centimeters, depending on the manufacturer. A 21-inch frame from one company may fit very differently from the same size made by another manufacturer. Also, frame size is not the same as wheel size, which is commonly used in sizing kids' bikes. Higher handlebars are more comfortable. Lower ones improve aerodynamics.

To set the saddle height, work with the pro to make sure the knee is slightly bent when the pedal is at its lowest position and the ball of the foot is on the pedal. Make adjustments in very small increments. Wear your cycling shoes during the adjustment process.

Sit on the bicycle. Use a friend or a stationary object to stay balanced. Rotate the pedals until they are horizontal (at the 3 o'clock and 9 o'clock positions). If the saddle is positioned properly, your forward knee will be directly over the respective pedal axle (with the ball of your foot on the pedal). If adjustments are needed, loosen the seat post and slide the seat saddle forward or backward, keeping the seat level. A saddle set too high or too low will wear on the body.

Saddles come in gender-specific, comfort and performance models. Women-specific saddles are wider at the back, have a shorter nose, and usually have a soft or cut-out section in the middle. Men's saddles many also have cut-outs. Try several saddles on for size. Use a carpenter's level to get your chosen saddle perfectly horizontal.

Any quality bike shop should make the necessary adjustments to help you fine-tune the fit of your bike, which is crucial to reducing wear and tear on the body and minimizing injuries.

For Active Parents: Baby Joggers, Carriers, and Slings

Parents shopping for ergonomically correct baby joggers should look for handbrakes and a locking mechanism, a good shoulder harness, large bicycle-style tires and a screen that can be let down to protect baby's face. For baby's safety, they should be used only on smooth surfaces.

A backpack-style carrier will not do for young infants. The baby's head may bob while the parent walks, endangering the cervical spine. Wide straps on a front-style carrier will help distribute the baby's weight evenly on the parent's body while a good harness keeps the infant stable. And remember: Never jog with a baby carrier. You could harm the baby's neck, spine or brain.

Baby slings are increasing in popularity, but only the very young should be carried this way. Make sure the temperature in the sling remains comfortable for the baby—the combination of heavy fabric plus the warmth of the parent's body can easily overheat an infant. Make sure, too, that the fabric is not interfering with the baby's breathing. Again, don't run. Running with a baby in a sling could damage the infant's brain, neck or spine. ■



For more information on prevention and wellness, or to find a doctor of chiropractic near you, visit ACA's public education website at www.ChiroHealthy.com

Carol Marleigh Kline, Writer