WELLNESS UPDATE 1999, #2

CHOOSING THE RIGHT RUNNING SHOE

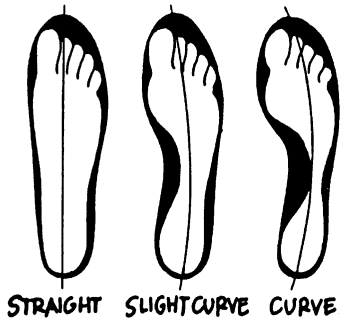
Overuse injuries are caused by the body's inability to handle the stresses of training. Selecting the correct shoes can greatly reduce stress on the entire body. For runners, selecting the correct shoes is very important because **each foot strikes the running surface approximately 600 times a mile and each time the foot lands it absorbs three- to five-times the runner's body weight**.

BASIC SHOE FITTING

Shoes should be fit depending on foot type, and the amount of shock absorption and motion control required. Determining the correct shoe size is probably the most important aspect in selecting running shoes. When fitting shoes, take into account **one foot is generally slightly larger than the other and feet swell during warm weather**. Three things are important in determining correct shoe size. First, there should be a thumbnail width of space between the longest toe and the end of the shoe. Second, the widest part of the foot should fit into the shoe without hanging over the edge. Third, there should be very little or no heel slippage.

FOOT TYPES

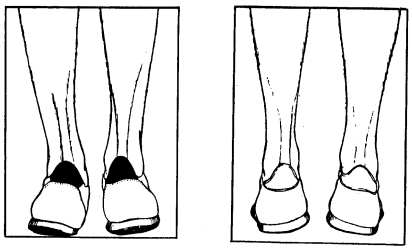
Feet are commonly classified into three different types: high-arched, also called curved; normal, also called semi-curved; and flat, also called straight. **A simple test to determine foot type is to get a foot wet and step on any flat surface that will leave a footprint (a piece of cardboard or brown paper bag works well).** A flat (straight) foot will leave nearly the entire bottom of the footprint on the floor. A high-arched (curved) foot will leave the heel and forefoot print with only a small portion of the outer arch visible. The arch may appear as an inverted letter "C". The normal (semi-curved) foot will be somewhere in-between.



PRONATION

To determine if foot pronation (inward tilt, toward the big toe side of the foot) or supination (outward tilt, toward the little toe side of the foot) is a concern, place the current running shoes on a flat surface and view them from the back. An excessive amount of pronation (over pronation) means the foot is rolling too far inward when striking the ground. People whose feet pronate excessively typically have low arches, large bunions, large calluses under their first, second, and third toes, and feet that tilt inward, especially as the foot flattens on the running surface. **The soles of their shoes will have extensive wear on**

the outer edge of the heel and the inner edge of the forefoot. These people need shoes with firm midsoles (the inner portion of the shoe from the heel to the ball of the foot) to provide motion control. Failure to control this over pronation can result in shin splints, patellar tendinitis or "jumper's knee", and iliotibial band syndrome.



OVERPRONATION OVERSUPINATION

SUPINATION

An excessive amount of supination (over supination) means the foot does not roll inward far enough to absorb shock. People whose feet supinate excessively typically have high arches, are "pigeon-toed, get calluses along the outer edge of the foot, and have feet and heels that tilt outward. **The soles of their shoes will have extensive wear on the entire outside edge. These people need shoes with soft midsoles for shock absorption.** Failure to control over supination can result in stress fractures of the lower leg and anterior knee pain.

OTHER FACTORS TO CONSIDER

A well built pair of running shoes will usually last about 300 to 500 miles. If one runs 30 miles a week, a pair of shoes can be expected to last about three months or more. **Signs of worn shoes include excessive wear on the soles, stretched out uppers, and heels that tilt one way or the other.**

Many runners believe lighter shoes are more energy efficient than heavier shoes. **Studies have shown slightly heavier shoes do not require one to expend a great deal more energy while running, but they can aid greatly in controlling excessive foot motion. Negotiating uneven terrain, the slope of a roadway, or the curve of a track may require a slightly heavier shoe to gain additional motion control.** Many runners choose to train in a slightly heavier shoe than they race in to reduce stress on the foot during training.

Questions and/or comments about areas dealing with student-athlete's wellness are welcome and encouraged. They should be directed to Alan Beste, Administrative Assistant, Iowa High School Athletic Association, PO Box 10, Boone, IA 50036. (515) 432-2011.

Sources: Brunick, Thomas. "Choosing the Right Shoe" The Physician and Sports Medicine, July 1990; Brunick, Thomas. "The Systems Approach to Athletic Footwear"; Cuddy, Steve, MPT, ATC. "The Right Running Shoe", Sports Medicine Update, date unknown; Durkin, John, DPM. "If the Shoe Fits", Runners World: Buyers Guide, April 1990, pp. 46-48; Hamill, Joseph, MD. "Choosing the Correct Running Shoe", Gatorade Sports Science Exchange, December 1989; Hlavac, Harry, M.Ed., DPM. The Foot Book: Advice for Athletes, World Publications, pp. 330-331; Wilk, Bruce, PT, OCS. "Where the Foot Meets the Shoe", Training and Conditioning, June 1998.