



## CAPE COD SPORTS MEDICINE INC.

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### ORTHOPEDIC SURGEON

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## Running & Jogging Injuries (Part 1)

Running & jogging have become one of the most popular forms of aerobic exercises for endurance training in the United States. It is estimated that 15% of Americans run or jog regularly. It is well proven that aerobic conditioning improves the functioning of the cardiovascular system. Strictly defined, cardiovascular aerobic conditioning should achieve 75% of your maximum heart rate and be sustained for 25 minutes. It is not imperative that this aerobic exercise occurs daily, in fact maximum benefit is seen if done three to four times per week. Benefits of aerobic conditioning include the prevention or postponement of coronary artery disease, low cost exercise, personal gratification and enjoyment.

An unfortunate by-product of this increased interest in running is the growing incidence of runner's injuries. The primary causes seem to be initial poor conditioning which leads to overuse injuries, wearing improper footwear and the lack of adherence to proper training techniques. A small number of recurring factors tend to cause most running injuries including environmental factors, training errors and shoe problems. Rarely an anatomic abnormality can predispose an athlete to certain injuries. It is estimated that runners can prevent 70% of all running & jogging injuries.

Environmental factors include weather, running surface, location and time of day. Runners have the option of exercising in the sun or rain (or snowstorm for Ken Gartner), in the heat or coolness of the day, on asphalt, track or dirt, running with traffic or on trails, and exercising day or night. Multifactorial causes can adversely impact on a run. The experienced runner will recognize potential problems with different mixes of environmental conditions and adjust accordingly. Using reflective clothing, choosing flat terrain in the rain or increasing fluid intake on a hot day are some environmental adjustments to prevent injuries. The best surface to run on is flat, smooth, and reasonably soft with a non-slippery surface. Asphalt is better than concrete. Finished roads are superior to rough road surfaces or unfinished road edges. Running & biking trails are the safest to prevent injuries. Hills place increased joint reactive forces across your joints & muscles. Running down-hill is much more dangerous than uphill for causing hip, knee and lower leg problems. After fighting to get to the top of a tough hill, most runners let their guard down once over the top, at a time increased vigilance to running style and cadence should be observed.

Greediness or the rules of "too"; too far, too fast, too soon, too much, apply to training errors. The biggest training error is trying to exceed your physiologic limit. When runners enter the zone beyond their physiologic limit, injuries are commonplace. How many people do you know injured themselves at the beginning vs. the end of a run? "Just one more mile" is a prescription for disaster. Runners should gradually increase or decrease the mileage they run on an individual basis. An adequate stretching exercise regimen prior to a run is important. Over distancing and interval training are frequently associated with overuse injuries such as ITB (ileotibial band) tendonitis. Rest, a time for muscle fibers to rebuild and strengthen themselves is important between workouts. Insufficient rest between running sessions can lead to early muscle fatigue and crossover injuries such as meniscal tears in the knee.

The running shoe has evolved over the past 20 years as an important item in preventing running injuries. A good running shoe should provide shock absorption to the heel, motion control of up and down movements and stability against inversion and eversion of the ankle. Most major brands now provide these features. A comfortable fit is important. Consider what type of socks will be worn. You may need ½ size bigger shoes for winter running with a thicker sock. Cut the end of the shoe box off and tack it to your wall, then when you buy your next pair, adjust the

size or width according to how the previous pair felt. A new pair of running shoes in the store trail should feel firm but allow enough room to wiggle the toes. 50% of the shock absorption capability of a running shoe will be lost by 300 miles. Therefore if you run 20 miles a week you should consider getting a new pair every 15 weeks. A shoe with more than 500 miles on it has lost its protective ability and should not be used for running. If an injury does occur, you should bring your running shoe to the Orthopedic Surgeon or Podiatrist to help analyze your running pattern.