

"HOT RACES" REITERATE PRECAUTIONS FOR MARATHON RUNNERS

Experts Examine Ill Effects of Running in High Temperatures

INDIANAPOLIS— Healthcare professionals have found more direct correlations between hot temperatures and higher numbers of marathon casualties, according to information presented today during a session at the [American College of Sports Medicine's](#) 55th Annual Meeting (ACSM).

William Roberts, M.D., FACSM, session chair and ACSM past-president; George Chiampas, D.O.; and Craig Young, M.D., FACSM, presented outcomes from multiple hot marathons in 2006 and 2007, and found the same conclusions for each: the hotter the temperature, the more runners in the medical tent.

During a 2006 race in Rochester, Minn., where the temperature reached 80 degrees Fahrenheit by the start of the race, 20 percent of those able to finish the race required IV fluids, and four were hospitalized. At a race in Amsterdam in 2007, 3,600 of 7,800 participants were unable to finish because of heat illness or the decision to stop early because of the heat.

"When weather reports are calling for hot temperatures, race directors either need to start the race earlier, before the heat really hits, or not run the race at all," Roberts said. "It's equally important for runners themselves to recognize their limits and not be afraid of walking or stopping a race early if they are feeling symptoms of heat illness."

These symptoms include nausea, dizziness, and vomiting. Roberts says the best method for predicting risk of heat stress is through wet bulb globe temperature, a composite temperature measurement that uses a specific formula to calculate athletes' risk in hot weather. An ACSM Position Stand on "[Exertional Heat Illness](#)" printed in *Medicine and Science in Sports and Exercise*®, ACSM's official scientific journal, says runners can be at risk for heat illness in temperatures as low as 65 degrees. The study recommends canceling races when the temperature reaches 82 to 86 degrees.

Roberts says it can be difficult to determine the exact "do not start" temperature for races because of multiple factors, including cloud cover, runners' acclimatization to hot temperatures, number of runners in the race, medical support availability, and percentage of elite runners in the race. Elite runners are less likely to suffer adverse effects from heat than non-elite runners. For non-elite marathon participants in "unexpectedly hot" marathons, the recommended ACSM cancellation temperature may be too high, and for fall marathons in the northern U.S., the do-not-start level appears to be under 70 degrees wet bulb globe temperature.

"It's a known fact that there are going to be some casualties at every race, from the heat or injuries or a host of other causes," Roberts says. "The key is determining an acceptable casualty rate, and from current data, it's difficult to tell at what temperature that rate becomes unacceptable."

Races with wet bulb globe temperatures in the 70s and 80s typically have high casualty rates. The Position Stand says that exertional hyperthermia, or heat illness, occurs when an athlete's body temperature reaches 104 degrees. The Position Stand points out, however, that some runners experience hyperthermia without early symptoms or warning signs.

The [American College of Sports Medicine](#) is the largest sports medicine and exercise science organization in the world. More than 20,000 international, national, and regional members are dedicated to advancing and integrating scientific research to provide educational and practical applications of exercise science and sports medicine.