Exercise Induced Collapse: Hypothermia
See also Hypothermia (Accidental)

Pathophysiology
1. More prevalent in winter sports
2. Defined as core body temperature <35 °C (<95 °F)
   - Mild = 32-35 °C (90-95 °F)
   - Moderate = 28-32 °C (82-90 °F)
   - Severe ≤28 °C (<82 °F)
3. Mild symptoms
   - Usually conscious
   - Shivering
   - May have some confusion/disorientation
4. Moderate symptoms
   - Decreased metabolism
   - Low BP/heart rate/respiratory rate
   - Severe delirium/confusion
     - Occasionally combative
5. Severe
   - Usually comatose
   - Muscles are rigid/areflexic

Diagnostics
1. Measuring core body temperature:
   - Use low register thermometer
     - Standard body thermometers do not read in hypothermic range
2. Feel for pulse
   - Performing CPR in hypothermic patient WITH pulse may precipitate fatal arrhythmia
     - Myocardium extremely sensitive
3. Many ACLS protocols ineffective on profoundly hypothermic patient until core temperature increased

Therapeutics
1. Rewarm as soon as possible:
   - Remove all wet clothes
   - Move athlete to a warm, sheltered location
   - Cover with dry blankets
   - Use warm, humidified oxygen
   - IVF NS at 40 °C (105 °F)
   - DO NOT warm too rapidly-can cause rewarming shock
     - Increased blood flow to periphery
     - Causes return of cold peripheral blood to core
     - Causes drop in temperature and blood pressure
Prevention
1. Multilayered clothing with linings
   o Keep moisture away from skin
2. Also cover head, neck, legs, hands

References
3. Camargo, C, Simmons, FE. Anaphylaxis: Rapid recognition and treatment. UpToDate Online 16.3 Topic last update 10/10/08

Author: Tony Chang, MD, University of Nevada Reno FPRP

Editor: Carol Scott, MD, University of Nevada Reno FPRP