Hypothermia

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Introduction

Hypothermia, frequently called the “silent killer” in the backcountry, is responsible for the vast majority of deaths in the NH White Mountains. The insidious nature of it can cause a slow cognitive decline in its victim. Along with the extremities the decision center of the brain is affected early on thus leading to behaviors that can accelerate the decline of a person.

Hypothermia is defined as the lowering of the body core temperature as a result of losing heat faster than it can be produced. Humans require a relatively constant internal or core temperature to survive which averages 98.6 degrees F. (37 degrees C.).

Influencing Factors

Heat production and heat loss play an important role. Heat production is affected by physical activity and food/fluid intake. Heat loss can occur in a number of ways:

- radiation - transfer of heat to a colder environment
- conduction - direct transfer of heat such as sitting on cold ground or touching cold objects
- convection - movement of air (wind) or water over a warm body
- evaporation - means by which the body rids itself of excess heat

Causes

Hypothermia can be caused by one or more factors including exhaustion, exposure to severe weather conditions, and accidental immersion in water. Factors causing increased heat loss include wet or inadequate clothing, alcohol or drug ingestion, and wind. Factors causing decreased heat production include exhaustion, poor food and water intake, poor physical condition, illness, and psychological factors such as fear, isolation and withdrawal.

Prevention

Hypothermia can be avoided by being prepared for adverse conditions, keeping your clothing dry, carrying extra warm clothing, using a layering system, putting on rain gear before it rains, eating food and taking fluids OFTEN. Last, but not least, it is important for every group member to watch other members for symptoms. Watch for the signs: slurred speech, shivering, the ‘hypothermic shuffle’ (walking with their feet apart to keep their balance.), poor decisions. Finally, know your limitations - turn back if need be.

Symptoms

Body Temperature	Symptoms
98.6 to 95.0 ºF	Intense, uncontrollable shivering
95.0 to 91.4 ºF	Violent shivering, difficulty speaking
91.4 to 87.8 ºF	Comprehension dulled
87.8 to 85.2 ºF	Irrational. Stuporous state
85.2 to 78.8 ºF	Unconscious
Below 78.8 ºF	Pulse absent

Treatment

Here are the steps to follow if you encounter someone in the outdoors exhibiting any of the signs of hypothermia: (*from Thomas Trimarco, MD. He is an emergency physician, an EMS medical director, and a faculty member of the Wilderness and Austere Medicine Fellowship at Dartmouth-Hitchcock Medical Center in Lebanon, N.H.)*

1) Treat and stabilize other injuries first

2) Insulate as best as possible the patient from the environment
   a. **Remove wet clothing** and layer the patient with thick insulating clothing & a hat
   b. If possible wrap in a dry sleeping bag or blankets.
   c. Wrap in a vapor barrier, such as a reflective blanket or tarp
   d. Insulate from the cold ground by placing them on a sleeping pad or backpack

3) Administer digestible calories to fuel the body. If the patient is alert enough to swallow give them warm, sweet drinks like hot chocolate, energy gels, or maple syrup.

4) Administer warm water bottles or chemical heat packs placing them near the patient's armpits and torso but not directly on the skin (critical for moderate or severe hypothermia)

5) Handle advanced hypothermia patients gently as their hearts are quite irritable, and jarring movements can cause fatal heart rhythms.

6) If the patient can walk when you first encounter them, they may be able to be insulated, fed, and walked to safety. If not, keep the patient horizontal and contact local emergency response resources to aid in evacuation while sheltering the patient to the best of your ability.