

## **Running in the Cold – Layering**

**Temperature:** The human body maintains a core temperature of 98.6 degrees. When air temperature is lower than the body temperature, the body loses heat to the environment. The body's heat production is usually sufficient in replacing lost heat and maintaining the 98.6 degree temperature.

**Hypothermia:** If the weather is severe enough, the body's heat production is insufficient and then the core body temperature drops. If the body temperature drops below 97 degrees, hypothermia begins to occur. Muscular weakness, shivering, numbness, glassy stare, indifference and loss of consciousness begin to occur. Shivering that stops without rewarming is a sign of deterioration and the need of immediate medical care. If the body temperature drops below 88 degrees, the situation becomes fatal.

**Frost Bite:** Frostbite is the freezing of body parts exposed to the cold. Severity depends on the air temperature, length of exposure and the wind. Frostbite can cause the loss of fingers, hands, arms, genitals, toes, feet & legs. Signals of frostbite include lack of feeling in the affected area and skin that appears waxy, is cold to the touch or is discolored (flushed, white, yellow or blue).

**Wind Chill:** Wind accelerates the body's heat loss by increasing the degree in which the warmer insulating layer of air around your body is replaced by cooler air. Wind causes significant cooling of your body.

**Layering:** Layering winter running apparel is the best defense against cold weather conditions. There are three basic levels of layering. Depending on the wind chill and temperature, you do not always need all three layers, but it is recommended.

**Base Layer:** is the layer closest to the skin. It should absorb perspiration and transport it to the outside where it evaporates into the air (wicking). It should be lightweight and fit snug against your skin.

**Middle Layer:** serves as the heat insulator by trapping some air to keep you warm. It still releases enough vapor or heat to avoid overheating of the body. In some cases, multiple layers may be needed.

**Outer Layer:** performs in two ways. It needs to be breathable to allow heat to escape and give you protection against the element of rain, wind and snow. Tights are often suggested for temperatures below 40 degrees. Men may want to add an extra layer around their genitals when wind chills are below freezing.

**Head, Hands and Feet:** The highest percentage of body heat escapes through your head, hands & feet, so they are the most important to keep covered. For your head, a breathable hat or headband is recommended. Mittens will keep your hands warmer than gloves, since your fingers will warm each other. One or the other should be worn. Breathable wool socks will help keep your feet warm and dry.

**Face:** On severe cold and/or windy days, it is recommended to put a layer of petroleum jelly over exposed areas of the face to help prevent chapping and frostbite.

The key to running safely in cold weather is to be prepared. Wearing the proper clothes for the current weather conditions is your best defense. The most common mistake of new runners is wearing too much clothing and overheating.

### **Caring for Cold-Related Emergencies**

Hypothermia:

1. Gently move the person to a warm place.
2. Care for shock by laying them down and raising their feet.
3. Remove wet clothing and cover the person with blankets and plastic sheeting to hold in body heat.
4. Carefully monitor use of heating pads and hot water bottles so that the person is not unintentionally burned.
5. Warm the person slowly and handle the person carefully.

Frostbite:

1. Remove wet clothing and jewelry for the affected area.
2. Soak the frostbitten area in warm water.
3. Cover with dry, sterile dressings. Do not rub the frostbitten area.
4. Care for shock.
5. Do not rewarm a frostbitten part if there is a danger of it refreezing.