

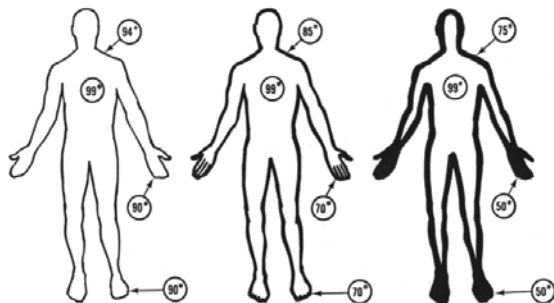
# HYPOTHERMIA: KILLER OF THE UNPREPARED



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\* **Hypothermia** = low (hypo-) temperature (-therm-) condition (-ia)

\* Hypothermia is when the body gets chilled -- not just the skin and muscles, but **deep inside**.

\* **Heat Balance:**

\* The body produces heat continuously; this production of heat must be balanced by an equal heat loss to keep the body temperature from going up or down.

\* The body temperature must be kept within a narrow range for vital chemical processes to work.

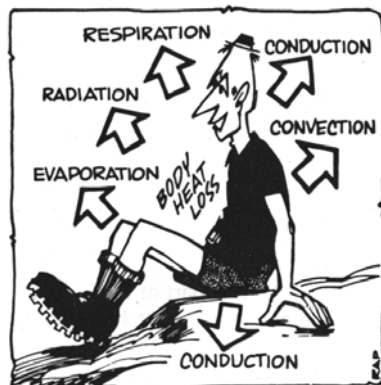
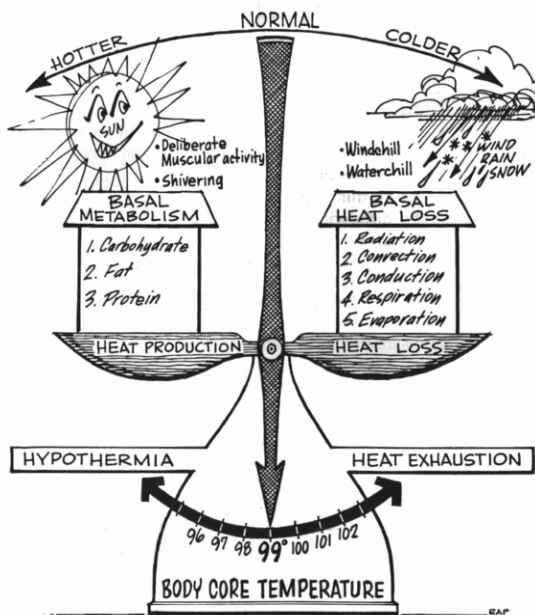
\* use clothing and knowledge to keep your body core near 99°F, even in hypothermia weather.

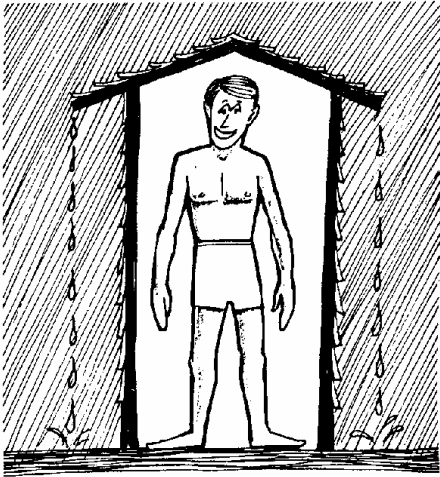
\* Heat is lost from the body several ways

\* **Cold Temperature: radiation** (like you feel heat radiating from a hot stove) and **conduction** (like when you sit down on a cold rock).

\* **Windchill: convection**, as the air your body warms is blown away.

\* **Wetchill:** you lose heat when you are wet. By **conduction** into and through the cold water in your clothes, and by **evaporation**. (Like



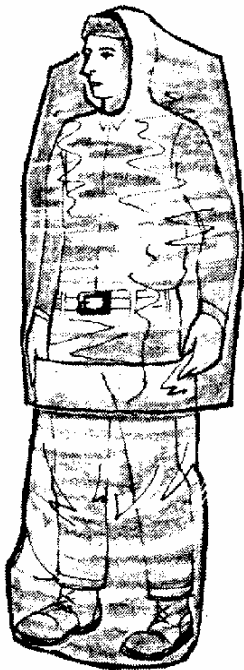


## The Three W's:

**Waterproof  
Clothing**

**Warm-When-Wet  
Clothing**

**Windproof  
Clothing**



In wet and cold,  
**Cotton Kills!**

when you rub alcohol on your arm and it cools by evaporating).

- \* Hypothermia is a particular problem at temperatures around freezing (32°F) with wind and rain: **cold temperature, windchill, and wetchill combined**. This is called **hypothermia weather**, because so many underestimate it. Even in the summer, sudden storms with the combination of wind and rain may cause hypothermia at temperatures as warm as 60°F.
- \* In bad weather, proper clothing is your life-support system.
- \* **Waterproof** raingear protects you (somewhat) from wetchill.
- \* But even in truly waterproof raingear you will get wet. We all perspire, and clothes get wet from condensation.
- \* Most clothing, when it's wet, conducts heat like water. How many times faster does water conduct heat than dry air? **240x!** Therefore your clothes must be **warm when wet!**
  - \* And, as nice as down parkas may be, they are flat and cold when wet; and cotton clothes (such as blue jeans and flannel shirts) are even worse; not only are they useless as insulation when wet, but they wick water; only **wool** and some **synthetics (polypropylene, etc.)** retain some warmth when wet.
- \* So, when going out, remember the **Three W's**.
- \* We suggest that you always carry with you **two large plastic leaf bags**. These are light, cheap, and provide quick and simple protection against wind and rain. Just stick them in your pocket.
- \* With what you have learned here, and with some simple and inexpensive clothing, you can be comfortable even in hypothermia weather.

