

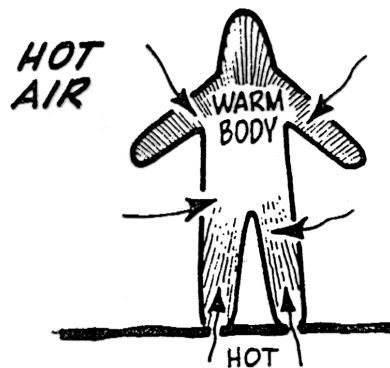
Comfort in the Outdoors

Introduction to Backcountry

Heat flow principle: hot to cold

Hot air to colder body

- 98.6 degrees
- Air temps can exceed.
- Radiant temp transfers from sun higher than air temp



Heat transfer mechanisms

- Radiation
 - ▶ Transfer of heat in form of electromagnetic waves
- Conduction
 - ▶ From molecule to molecule in a solid substance
- Convection
 - ▶ Moving particles of a fluid or gas
- Evaporation
 - ▶ Heat carried away as liquid changes to gas

The fight against the heat

Strategy # 1 - Do something different

- Acclimatize when possible (slow adjustment)
- Maintain adequate hydration
- Limit physical activity (siesta)
- Seek shade
 - ▶ Hats/ tarps/ trees
- Remove insulators
 - ▶ Add wet materials if possible

Temperature (F) versus Relative Humidity (%)						
°F	90%	80%	70%	60%	50%	40%
80	85	84	82	81	80	79
85	101	96	92	90	86	84
90	121	113	105	99	94	90
95		133	122	113	105	98
100			142	129	118	109
105				148	133	121
110						135

HI	Possible Heat Disorder:
80°F - 90°F	Fatigue possible with prolonged exposure and physical activity.
90°F - 105°F	Sunstroke, heat cramps and heat exhaustion possible.
105°F - 130°F	Sunstroke, heat cramps, and heat exhaustion likely, and heat stroke possible.
130°F or greater	Heat stroke highly likely with continued exposure.

Hyperthermia

When you are losing the fight against the heat

- Heat Exhaustion (a problem)
 - ▶ Symptoms: tired/ headache/ sweat/ nausea/ faint
 - ▶ Treatment: shade/ fluids/ rest/ slow down

- Heat Stroke (an big problem/ emergency)
 - ▶ Symptoms: skin hot & dry/ skin flushed/ temp up
 - ▶ Treatment: immediate cooling/hospital transfer

Key questions

- What are the symptoms of hyperthermia and why is this an issue of immediacy?
- What air temperature does the danger of hyperthermia significantly increase?
- What are the responses or treatments for both heat exhaustion and heat stroke?