

STRESS AND THE MIND

Some outdoor emergencies are recognized immediately, such as a downed airplane in the wilderness, or the sudden realization that you are completely lost or disoriented. Other problems develop insidiously, often without being recognized until it is too late. It is these problems which possess the hidden dangers to life.

Strong desires carried into the outdoors by the hiker often override good judgment, and adversely affect mental attitude and the will to live. These factors may even create emergency situations or precipitate accidents.

Determination: A state of mind which allows long-sought desires to overrule good judgment. This can push a person to use every ounce of energy to attain the goal, leaving none to sustain life during the return journey.

Get-home-itis: This nagging pressure may be caused by obligations, promises, or even responsibilities that he feels must be honored at all costs. In an attempt to honor them he often foregoes good judgment in his decisions in hopes he will be lucky and make it home.

Outdoorsmen must at times consider the worse of the two evils: being late and safely returning home, or pressing on in the face of a storm (instead of finding shelter) and never getting home.

When man is forced to adjust quickly from a civilized environment, with all its comforts, to an existence much like that of a caveman, he often develops psychological problems.

Realizing that you will have fears and that these are normal emotions in unfamiliar situations, you will be aware of them and better able to cope with them as they appear. Fears can be expected in any outdoor problem situation.

Fear of the UNKNOWN and the fear of your ability to cope with the situation will be foremost, along with a fear of:

- **Being alone - no companions, voices or help.**
- **Animals - Imagination of attacks.**
- **Darkness - Inability to see - Imagination.**
- **Suffering - No relief from hunger or pain.**
- **Death - Family implications.**
- **Society - Losing face, admitting failure.**

"Anxiety can overrule confidence"

Fear is usually based on lack of self confidence. Knowledge and experience instill confidence and help to control fear.

Doctors agree that basic fears do exist, and that under stress man is at the mercy of the mind. Fears may well be responsible for more deaths than exposure, hunger, or any other danger. **FEAR and IMAGINATION** plague almost every person who is face-to-face with crisis. Fearfulness that can turn to blind panic may cause an experienced, knowledgeable person to injure or even kill himself in the intensity of his terror.

Fear or unexpected stress causes physiological reactions: Adrenalin is released—muscles tense—abdominal blood vessels contract to drive extra blood to the muscles. In an instant the liver releases stores of glucose as fuel. This internal reaction is physically exhausting and uses great quantities of the body's limited supply of available energy.



WATER NEEDS IN THE BODY

The human body is approximately 80% liquids. Intake and output of liquids are necessary to the processes of life and the normal functions of the vital organs. When water loss exceeds intake dehydration takes place. Dehydration of 6% to 8% of the body weight will result in decreased body efficiency; uncorrected it will end in complete collapse.

Humans lose water three ways: perspiration, breathing and urination. Excess body heat must be dissipated by evaporation of perspiration on the skin. Sweating uses salt; salt deficiency causes disruption of body chemistry (muscle cramps, headaches, nausea). Adequate salt intake will also help retain moisture in the system. When hiking it is wise to drink 3 to 4 quarts of water or juice per day to prevent dehydration.

For a person whose water supply is limited, the problem is to ration water losses rather than intake of water. Conserve the water in the body by reducing the body's basic needs for water. Drink available water until your thirst is satisfied, instead of attempting to stretch the supply.

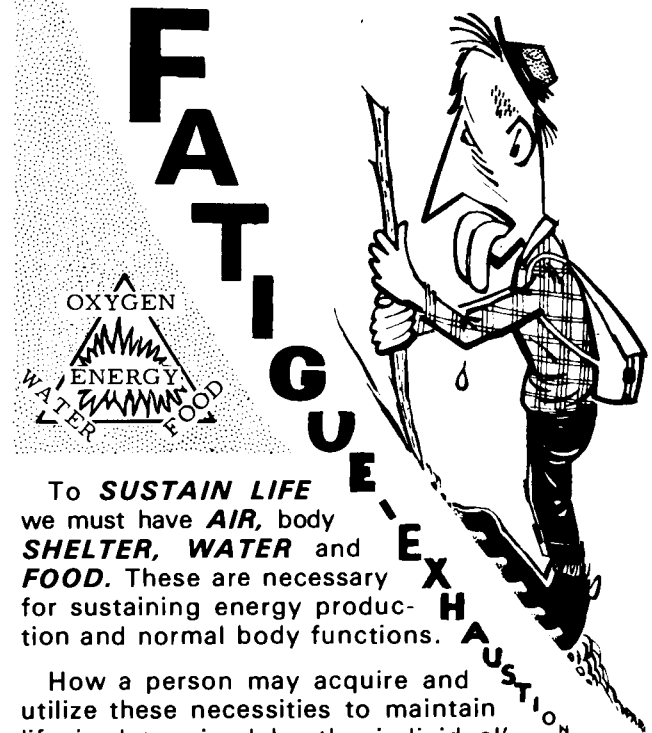
■ Ration your sweat, not your water.

**BODY ENERGY & BODY COOLANT ARE LIMITED
THEY WILL TAKE YOU SO FAR - SO FAST.
So conserve what you have while you can.**

Remember - You - alone - must stay alive long enough for assistance to reach your location - wherever it is.

WHERE DID THE ENERGY GO ??

"CARELESSLY"



To **SUSTAIN LIFE** we must have **AIR**, body **SHELTER**, **WATER** and **FOOD**. These are necessary for sustaining energy production and normal body functions.

How a person may acquire and utilize these necessities to maintain life is determined by the individual's brain. The thinking man will survive because he recognizes the immediate and most important problem. He also knows that he must exercise absolute control over all thoughts, imaginations and physical movements.

Every person has responsibilities to himself and to others. However, in outdoor travel away from civilization, a person's first and prime responsibility and obligation is to his body—its warmth, its coolant, energy, and its protection. Your brain controls all actions and knowledge which may foresee problems before the body deteriorates into inability for self help.

Protect the brain and the brain will take care of the body.

Compiled in the interest of Survival Education by Gene Fear
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NATIONAL PARK SERVICE



USABLE ENERGY IS LIMITED

Strange as it may seem, outdoorsmen can perish in a very short period of time (as little as 6 hours) from hiking in wind and cold, hostile environments. A person away from civilization is wholly dependent upon a limited supply of usable energy and the insulation qualities of the body shelter he wears or carries. Often by understanding the real problems his body will encounter he can see practical solutions.

As long as a hiker's complex mass of living tissue remains quiet in a still air, room temperature-like environment, it requires little special body shelter or energy in maintaining a nearly constant internal temperature of 99.

When muscle energy is used, it produces body heat as a by-product. Too much production of heat and the thermostat nerves trigger a message to the heat control system to open the sweat glands and cool the body down through water evaporation. Likewise, if the body gets too cool, the cold sensors call for the muscles to move (shiver) and produce body heat.

The use of muscle power for travel burns available energy, producing heat and some detrimental by-products. This energy is derived from food and water, and through a complex process is converted into glycogen, part of which is stored as reserve in the liver. Some is converted to sugar, which is stored in the muscles for quick use.

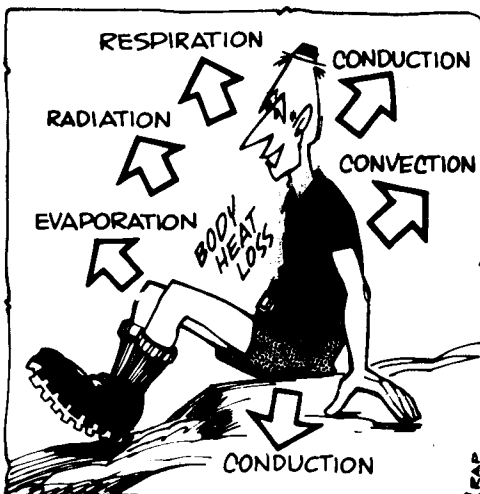
Outdoorsmen travel primarily on the sugars stored in the muscles. As the muscles burn this they produce heat, lactic acid and carbon dioxide. The carbon dioxide is dissipated from the body by the lungs, and the lactic acid and other detrimental products are dissipated throughout the whole body. The body can flush these detrimental by-products out of the muscle tissue only so fast.

When strenuous muscle activity produces these by-products faster than the body can dissipate them, the body can become oversaturated, causing muscle failure or exhaustion. Exhaustion will remain until the body is given time to automatically flush out the lactic acid buildup and disperse the carbon dioxide.

When you rest you can get rid of about 30% of the lactic acid buildup in the first 5 to 7 minutes of the rest stop. But in the next 15 minutes you get rid of only about 5% more. The best method of preventing a buildup of by-products is to travel slower.

The amount of available energy will be determined by what and when you eat. Foods eaten at night furnish tomorrow morning's energy. Those eaten in the morning give afternoon energy; and lunch at noon helps put up camp at night. Sugary foods offer the best ready energy on the trail.

To sustain life for 24 hours it takes 1700 calories with the body at rest at a comfortable temperature. Hiking can expend 4000 to 6000 calories, depending upon the weather and terrain. Calories, however used, must be replaced or your reserve supply will become depleted, not leaving enough to maintain the optimum temperature 98.6. When body temperature falls to 96-92 shivering becomes intense and the brain numb; 91-86, violent shivering; 86-78, unconsciousness.



5 Ways to lose body heat

- **Radiation** is the leading cause of heat loss. An unprotected head may lose up to 50% of the body's total heat production at 40 F.
 - **If your feet are cold, put on a hat.**
- **Conduction**—Contact with anything cooler than skin temperature contributes to heat loss.
 - **Don't sit or lie on the ground.**
- **Convection**—The primary function of clothing is to retain a layer of radiated warm air close to the body. Any cooler air passing the body tends to remove this warm air. The faster the wind (exchange of air), the greater the body heat loss.
 - **Always carry instant Body Shelter for protection from wind and wetness.**
- **Evaporation** of sweat from the skin and respiratory moisture also contribute to heat loss.
 - **Slow down—Don't sweat.**

In panic a man - can run two hours - walk two hours - crawl an hour - then lie down from exhaustion for eternity.

■ **Respiration**—Inhaling cool air and exhaling warm air account for a significant heat loss.

- **Preheat air—Breath thru a scarf.**

■ **Wind Chill**—When the wind increases, even moderate temperatures become intolerable for body heat maintenance without body shelter.

- **Put on some type of body shelter.**

■ **Water Chill**—Wet clothing can extract heat from your body **240 times** as fast as dry clothing.

- **Wear wool—warm even when wet.**

★ HOW FAR YOU CAN HIKE ★

Supporting life in the storm-ridden outdoors is the responsibility of the individual. When the inner body cools below the normal temperature, vital organs do not function properly; judgment is impaired, and negative psychological factors increase.

When muscle energy loss is compounded by loss of body heat through wetness and wind chill, body heat is often lost faster than it can be produced. The result will be first fatigue, then exhaustion; and when a person is so exhausted that he can no longer move his muscles, his body cools—possibly beyond the recovery point.

This often happens so quickly that a person in the shivering stage can perish before a shelter of natural materials or a fire can be assembled.

109°	- PROBABLE DEATH
104°	- PROBLEMS
99°	- NORMAL
94°	- PROBLEMS
89°	- PROBABLE DEATH

INDICATIONS OF A PROBLEM

The first visible symptoms of **exhaustion** are poor reflex actions (recurring stumbling, poor control of arms and legs), need for frequent and prolonged rest stops, and a dazed, careless attitude with decreasing attention span.

Visible symptoms of **exposure** (Hypothermia): Uncontrollable shivering, drowsy, confused, weak, unable to maintain muscle movement. The exhausted person does not have mental capacity to recognize these symptoms. Be alert for them.

Lack of precaution leads to fatigue—Fatigue leads to exhaustion—Exhaustion leads to exposure. Exposure makes you unconscious quickly.