



Outdoor Safety

Heat Protection

Applicability

This presentation has
been prepared for
those who will work
outdoors in the heat

Heat Balance & Exchange

The body has to deal with metabolic heat and heat gained from the environment - it works to maintain a core body temperature of about 98.6°F ($\pm 1.8^{\circ}\text{F}$)

Some factors affecting heat exchange with the environment include:

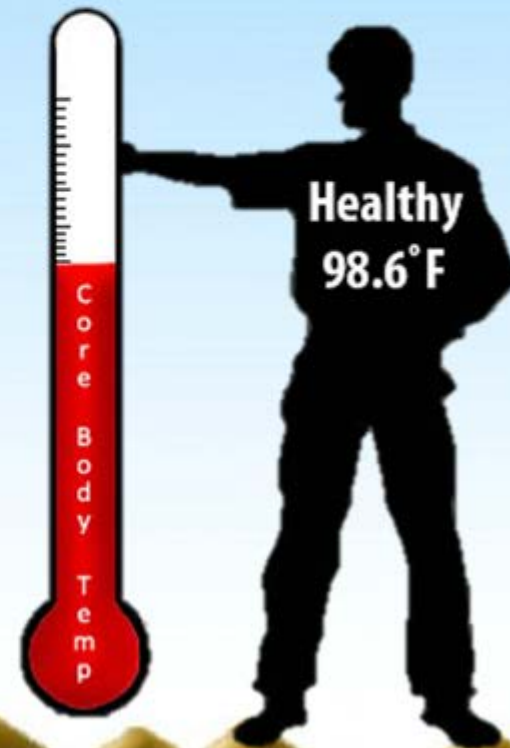
- Air temperature
- Humidity
- Skin temperature
- Air velocity
- Sweating
- Radiant Temperature
- Clothing

Protective Mechanisms

The body dissipates heat by sweating

When sweating is insufficient, heat related disorders can develop, like:

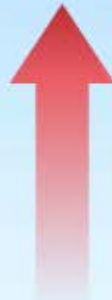
- Heat stress & rash
- Heat exhaustion
- Heat stroke



Acute Heat Disorders

Some heat related disorders are more severe than others:

Severity



Heat Stroke

Heat Exhaustion

Heat Stress & Rash

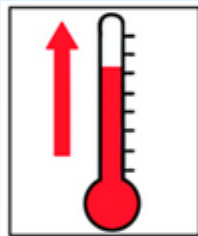
A person will die once their core body temperature reaches about 109° F

Heat Stroke

Heat stroke is the most serious acute heat disorder, which always requires medical attention. Treat victims with first-aid while seeking medical help. Signs and symptoms of heat stroke include:



Confusion



High temperature



Red, hot, dry skin

(skin could be moist & mottled or pale blue-gray)



Fainting



Convulsions

- Breathing may be fast and deep

First Aid

- Remove from heat source
- Cool as rapidly as possible in a gentle way
- Administer 1/2 cup of cold water every 15 min
- Treat for shock (lay victim down and elevate their head and feet)

Victims of heat stroke need **IMMEDIATE MEDICAL ATTENTION!**

Heat Exhaustion & Cramps

The signs and symptoms of heat exhaustion & cramps include:



Dizziness



Headache



Sweaty Skin



Weakness

Treatment

Sit or lie down in cooler air, hydrate well, and observe closely for signs and symptoms of heat stroke



Cramps



Nausea,
vomiting



Fast heart
beat

- Pale skin

Heat Rash & Other Problems

The signs and symptoms of heat rash include:

- Reduced ability to cool off
- Clogged sweat glands
- Discomfort

Treatment

Victim should sit or lie down in cooler air, hydrate well & clean their skin

Protection

Do the following to protect against acute heat disorders:

- Stay well hydrated (drink a small amount of water every 15 minutes)
- Wear the proper clothing
- Replace electrolytes if sweating
- Become acclimatized to the hot environment
- If needed, select and use proper medication

Utilize

Water

Rest

Shade

Proper Clothing

Clothing you wear in a hot environment needs to be designed to keep you cool (e.g. light color) and wick moisture away, which helps remove heat from your body



**Make sure
clothing offers
UV protection**

About Acclimatization

A person who is acclimatized can deal with heat better than they would otherwise because the body alters the volume of blood flow and improves the ability to maintain arterial pressure

Over a narrow range of environmental conditions, people generally in good health will acclimatize in about a week after working periodically in a hot environment

Note: Once a person ceases working in a hot environment almost all acclimatization is lost in about a week

-End-