
Hypo & Hyperthermia

Prevention, Signs & Symptoms, Treatment

Jeff Burdison - March 13, 2019



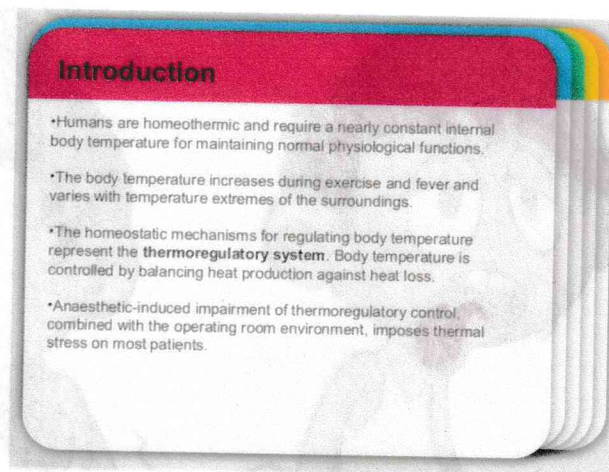
Introduction

Exposure to both excessive heat and excessive cooling can have serious effects on the human body. The two extreme temperatures of heat and cold are referred to as:

- hyperthermia
- hypothermia

With both hypothermia and hyperthermia **prevention** is key.

Hydration is very important to avoid both conditions.



The body needs hydration to properly thermoregulate itself!!!

Thermoregulation- how the body maintains core temperature.

Hypothalamus- part of the brain that controls the blood flow by either dilating or constricting the blood vessels which either directs more blood to the periphery or maintains it in the core depending on the bodies need for heating or cooling.

Hypothermia

Symptoms for Hypothermia

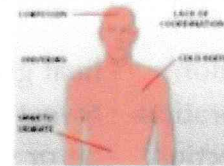
Body temperature is
average is Hypothermia



Shivering

Dizziness

Hunger



How does the body cope with this?

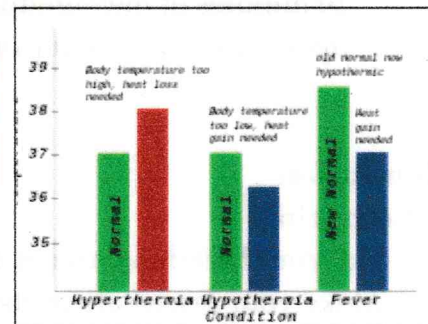
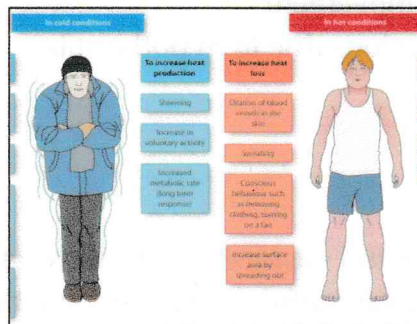
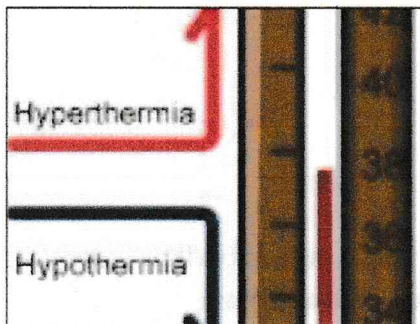
Person indoors or somewhere
soon as possible. Once the
in a warm environment, carefully
ly wet clothing and dry them.
in warm blankets, towels, or
tecting their head and torso first.

Faster breathing

Trouble speaking

Slight confusion

Increased heart rate



Easy Visuals

Hypothermia

- Signs and symptoms:

Hunger

Fatigue

Confusion

Slurred speech

Weak pulse

Shallow breathing

Clumsiness

Pale skin

Loss of consciousness

Shivering (creates heat)

Mechanisms of heat loss

- Radiation - heat given off to surrounding area
- Evaporation - Sweat
- Convection - air or water moving past our body removing heat.
 - Staying still in the water will limit this.
- Conduction - water conducts heat away 25 times faster than air
- Respiration - air is warmed then exhaled, resulting in heat loss

Cold Water Immersion - Dr. Gordon Giesbrecht (Cold Water Bootcamp)

1-10-1 Rule:

- 1 min to get breathing under control
- 10 minutes of meaningful movement
- up to 1 hour before unconscious due to hypothermia.

Conclusion

On capsizing:

- Get your breathing under control - aspiration of salt water into lungs is bad!
- Make your rescue attempts meaningful- you have some time so don't panic but try to make the first one successful.

Treatment

- If someone has stopped shivering then they have lost the ability to rewarm themselves.
- Remove wet clothes and get them out of the elements.
- Wrap them in a sleeping bag and place hot water bottles in crotch, armpits and neck area.
- Place toque on head and thick socks on feet.
- Using a tarp and rope to make a burrito wrap around them will keep the heat in.
- If victim is conscious then give them warm sweet drink.
- If victim is unresponsive check ABC's and record vitals but never give liquids or food.
- Evacuation necessary for anyone who has been unconscious.

Prevention

- dress for the water temperature not the air temperature.
- Remember: even in a dry suit you should be dressed properly underneath.
- Layers are best with a wicking layer next to skin.
- Always wear a hat!!!

Hyperthermia

- heat exhaustion, heat stroke.

Prevention:

- proper dress, hydration, limit exposure to sun.

Signs and symptoms of hyperthermia:

- Muscle cramps, headache, fever, fainting, elevated heart rate, dizziness, confusion and coma.

- Sweating is a good sign that the body is thermoregulating itself.

- When sweating stops it becomes serious.

At this stage it is imperative to remove subject to a cool area, lay them down, remove clothing, pour cool water on them or spray a mist on them. Fanning to create some convection. If alert provide cool drinks. If unconscious- ABC's and monitor and record vitals.

Evacuation is necessary.

Open for discussion. Try to keep the first aid at groups level of expertise. Time for topic 1-1.5 hours. Setting: around campfire after dinner.

Maybe throw in a scenario if time allows.

