

UMD OUTDOOR PROGRAM

COLD RELATED INJURIES

Winter is a great time to get outside and enjoy outdoor activities. An understanding of cold related injuries can increase your comfort during outdoor activities as well as help you to appropriately deal with and situation that may arise Here are the symptoms and treatment for these Cold Injuries.

The best treatment is prevention. When participating in cold weather activities;

- Dress in layers: wool, polypropylene, polar fleece, and thermax are examples of fabrics that will “wick” moisture away from your body or keep you warm if wet.
- Regulate your temperature with removal or addition of clothing.
- Remember **Cotton Kills!** It traps moisture against skin promoting loss of heat
- Hydrate! Our bodies need at least two quarts a day of water for metabolism during winter outdoor activities.
- When on outings eat foods with high fat and carbohydrate content, they provide the high energy that we need to keep us warm.

I. Frostbite

Prevent the frostbite in the first place - be aware of the cold for yourself and others that you are with.

Symptoms

- * Painful, red skin (frostnip)
- * Skin feels cold and numb
- * Whitish / grayish / or yellowish skin color
- * Pain disappears
- * Skin begins to blister

Treatment

- Swing arms and raise level of activity
- Place skin next to areas of warmth:
 - wrist against facial area to warm cheeks
 - hands in under-arms or groin
 - bare feet on bare stomach
- Give person warm drinks.
- Dry, gradual warmth is preferred over immersion in warm water.

Remember:

- The most susceptible body parts: nose, ears, fingers, and toes
- If not treated promptly, the tissue may be permanently damaged and sensitive thereafter

DO NOT:

- √ rub with snow
- √ rub frostbitten area at all
- √ rewarm frozen area unless you are sure it will remain unfrozen. (Better to walk out of an area on frozen feet than thawed because of disabling effect - this applies to severe frostbite situations).
- √ allow smoking - this causes a decreased blood flow to the effected parts.

II. Hypothermia

The body is losing heat faster than it can generate it, resulting in hypothermia.

Causes :

- poor health (poor physical conditioning.)
- inadequate nutrition. Fats and carbohydrates provide the most warmth
- weather (0 - 40 F temperature range where most commonly occurs).
- wind - causes convective heat loss
- water - causes evaporative cooling - very dangerous
- conduction - i.e. sitting on a cold rock, etc.
- chemical abuse
- exhaustion

Symptoms

* Shivering, cold feeling, withdrawal

Core temp: 96.0-92.

- * Uncontrollable shivering
- * Mentally slow - slurred speech
- * Physically slow - stumbling

Core temp. 92.0-88.0

- * Decreased shivering
- * Poor coordination
- * Poor comprehension
- * Hallucinating

Core temp. 88.0-80.

- * Collapse
- * Unconsciousness

Core temp 80.0-78.0

- * Ventricular Fibrillation

(Death)

Core temp. 76.0

Treatment

- Get out of cold and wind
- Remove wet clothing
- Keep person moving, exercise.
- If unable to exercise get them in warm sleeping bag
- Give warm sweet liquids
- Get out of cold and wind
- Remove wet clothing
- Give warm sweet liquids
- Exercise if possible
- Passive rewarming may be required.
- Get person in warm sleeping bag with another warm person, skin to skin contact is best. Do not let the rewarming person become hypothermic themselves.

- Passive rewarming is required.

- Put person in warm sleeping bag with another warm person.
- If possible give warm sweet (not Hot) liquids.
- Do not rewarm to rapidly. Rapid rewarming causes afterdrop "Afterdrop" is a condition in which the cool blood in the extremities is circulated too rapidly to the heart. This causes a shock to the heart which can lead to cardiac failure (Ventricular fibrillation.), death. Afterdrop can occur even after the person appears to be recovered, so be alert to it
- If person has lost consciousness, warm them externally, maintain their airway, **Do not** give fluids. You must seek help. Treat their body carefully. Do not jostle or move roughly.
- Observe vitals very closely - Be prepared to give C.P.R.
- C.P.R.
- Remember the adage: "NO ONE IS DEAD UNTIL THEY ARE WARM AND DEAD."

DO NOT:

- ✓ Place victim in hot shower or bath - can cause "aftershock"
- ✓ Give alcohol - this increases heat loss
- ✓ Rub or massage extremities

III. Dehydration

- A person needs a minimum of 2 quarts of water per day.
- Hydration allows your metabolism to work which in turn helps your body to regulate its temperature. That is, staying hydrated keeps you warmer in cold and cooler in heat.
- If this is not obtained, susceptibility to other problems increases.
- In cold weather thirst is usually suppressed, so drink fluids even if you are not thirsty.
- Eating snow requires energy to melt the snow. Much precious body heat can be lost from this. Liquids are best.

Symptoms

- Headache, dark urine
- Dizzy, loss of rationality, stumbling
- Inability to swallow, blurred vision

Treatment

- Ensure that you are drinking constantly. Remember, 2 liters are minimum!
- One tip is to only drink out of your own water bottle (do not share with others). Then you can keep track of how much water you have been drinking throughout the day. Strive to have 1 liter down by noon, another by dinner, then drink plenty during and after dinner.
- Give water, gatorade, or other fluids with high water content.
- In extreme cases, intravenous intake of water is necessary