

## **COLD RELATED INJURIES - UMD OUTDOOR PROGRAM**

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 - ie. sitting on a cold rock
- 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*

### DO NOT:

- ✗ Place victim in hot shower or bath - can cause shock to vital organs
- ✗ Give alcohol - this increases heat loss
- ✗ Rub or massage extremities

### 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 too 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.
- **NO ONE IS DEAD UNTIL THEY ARE WARM AND DEAD.**

### **III. Dehydration**

- A person needs 2 quarts of water per day.
- 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

- Give water, gatorade, or other fluids with high water content.
- In extreme cases, intravenous intake of water is necessary.