

I. General Considerations

- A. No one is dead until warm and dead.
- B. Hypothermia is generally considered in two large categories:
 - 1. Local hypothermia - frost bite, cold nip.
 - 2. Generalized hypothermia.
- C. Regarding local cold injury:
 - 1. Thawing should be done under controlled conditions (generally in-hospital) and is painful.
 - 2. Complete rewarming requires prolonged active heating and is seldom possible in the field. Partial rewarming is worse than none.
- D. Regarding generalized hypothermia:
 - 1. Hypothermia may be a sign of hypoglycemia.
 - 2. Generalized hypothermia can occur whenever the surrounding temperature is less than body temperature if the body is not capable of maintaining its temperature.
 - 3. The very young, elderly and debilitated patients are at most risk of hypothermia.
 - 4. Heat loss occurs more rapidly in cold water and is increased 5 times for patients wearing wet, cold clothing.
 - 5. Removing cold, wet clothing and protecting the patient from wind will greatly help preserve body temperature.
 - 6. Give the patient nothing by mouth unless ordered to do otherwise by medical direction.
 - 7. Most thermometers do not register below 96 degrees Fahrenheit (35 degrees Celsius) and may therefore give a false sense of the patient's temperature.
 - 8. Shivering ceases below 90 degrees Fahrenheit (32 degrees Celsius).
 - 9. Hypothermic patients must be gently handled.
 - 10. Respiratory support with 100% oxygen should be done gently. Since insertion of an endotracheal tube may cause ventricular fibrillation, the procedure on hypothermic patients must be individualized and, if ordered by medical direction, must be done gently.
 - 11. The pulse rate should be determined for one full minute since profound bradycardia is common.
 - 12. Only if the patient is truly pulseless should CPR be initiated since hypothermia may be protective of body tissues and the patient's own cardiac activity, if present, is likely to be better than CPR perfusion.
 - 13. Since defibrillation of ventricular fibrillation will rarely be beneficial if the patient's temperature is less than 88 degrees Fahrenheit (31 degrees Celsius), the decision to defibrillate should be made in conjunction with medical direction input.

II. History

Perform a focused history and physical exam with particular attention to:

- A. What is the length of exposure?
- B. Was there immersion/submersion in water?
- C. Was there unconsciousness?
- D. Was there trauma?
- E. Determine the patient's past medical history.
 - 1. Has the patient had high blood pressure, diabetes, strokes, angina, peripheral vascular disease?
 - 2. Does the patient have respiratory diseases such as chronic bronchitis, pneumonia, emphysema, asthma?
 - 3. Has the patient had any surgeries in the past, especially coronary bypass surgery,

- surgery of the blood vessels?
- F. What medications has the patient been, or is the patient supposed to be, taking including over the counter medications?
 - G. Did an affected limb thaw and refreeze?

III. Physical Exam

- A. Perform an initial assessment.
- B. Perform a focused history and physical exam.

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- C. Assess the cardiac rhythm.
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IV. Treatment

Basic

- A. Localized cold injury:
 - 1. Protect the affected areas from injury:
 - a. Avoid pressure, trauma, friction.
 - b. Uncover affected parts from clothing, etc.
 - c. Do not rub.
 - d. Do not break blisters
 - 2. Do not induce a burn by using local heat in excess of 100 - 110 degrees Fahrenheit (38 - 43 degrees Celsius).
 - 3. Maintain core body temperature by keeping the patient warm and dry.
 - 4. Transport as soon as possible.
- B. Generalized hypothermia:
 - 1. Establish an airway, maintain as indicated, suction as needed.
 - 2. Administer high concentration oxygen.
 - 3. If there is no pulse after a one-minute pulse check, *consult medical direction regarding whether to initiate CPR and transport*. Medical direction will likely inquire about things like: when the patient was last seen or known to be alive; environmental clues that might suggest why the patient is hypothermic; information regarding why the patient may have arrested (e.g., pill bottles, trauma) and what the patient's general state of health was before this incident.
 - 4. Remove cold, wet clothing.
 - 5. Transport with gentle handling.

Intermediate

- 6. Secure IV access.
- 7. *If the patient is in respiratory arrest, secure advanced airway.*

Paramedic

- 8. Assess and monitor the cardiac rhythm; treat arrhythmias/dysrhythmias per applicable protocols.
- 9. *If appropriate, secure advanced airway.*