Hypothermia - What Is It?

Hypothermia is when the body's core becomes cold. While the temperature of the environment and the skin can fluctuate widely, the inner body core temperature must remain constant. If the core temperature fluctuates by as little as 10°C, major medical problems can result. In cold air or water a person can feel very cold, however it takes 10-15 minutes before the vital organs are affected.

Shivering adjusts core temperature in mild cases, as does exercise and food. Disorientation and loss of consciousness occur when the core temperature has dropped from the normal 37°C to approximately 30°C-32°C. Death, caused by heart failure, can be the result of core temperature dropping below 30°C.

When in water, hypothermia has a more indirect way of causing death. Long before the core temperature has dropped to below 30°C, loss of consciousness will cause a victim to submerge and drown. Wearing a life jacket will prevent submersion and, in some cases, even provide protection from hypothermia.

Prevention of Hypothermia

Participation in activities in and around water, not just accidental entry into the water, increases the possibility of hypothermia. Be aware of hypothermia when kayaking, canoeing, fishing or swimming outdoors. In all cases of "man overboard," presume hypothermia will be a possibility.

- Wear many layers of suitable clothing, both in and out of the water. The more wind or waterproof clothing, the better
- If setting out in cold, wet windy conditions continually lookout for symptoms of exhaustion or hypothermia in others
- The greatest heat loss is through the head, neck, and the backs of hands. Wear a hat and pair of gloves if cold
- Prevent excessive fatigue as this can contribute to hypothermia
- Eat or drink high energy foods frequently
- If possible keep warm and dry. Avoid the consumption of alcohol. Clothing, such as polypropylene, will keep you warm when wet, and are excellent for kayaking and other outdoor activities.

If you do find yourself in the water.....

KEEP STILL

Although swimming will make you feel warmer; it is a false sensation. Energy spent on moving rather than maintaining warmth will eventually cool the body's core. If you cannot get out of the water use the heat loss prevention swimming position keeping the knees up and arms wrapped around the chest. If there is more than one of you then huddle together to reduce body heat loss.

AIR IS WARMER THAN WATER

Heat loss is greater in water than in air of the same temperature, even though the chill factor may feel greater. If you find yourself in the water with floating objects, eg, the upturned boat, then raise as much of your torso as possible out of the water.
Signs and Symptoms of Hypothermia

The chart below shows the severity of the hypothermia and the likely signs and symptoms.

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>37°</td>
<td>Normal Body Core Temperature</td>
</tr>
<tr>
<td>36°</td>
<td>Feel Cold</td>
</tr>
<tr>
<td>35°</td>
<td>Mild Hypothermia</td>
</tr>
<tr>
<td>34°</td>
<td>Clumsy, irrational, confused. May appear drunk. Slurred speech. Denies problem</td>
</tr>
<tr>
<td>33°</td>
<td>Moderate Hypothermia</td>
</tr>
<tr>
<td>32°</td>
<td>Severe Hypothermia</td>
</tr>
<tr>
<td>31°</td>
<td>Shivering stops. Collapse</td>
</tr>
<tr>
<td>30°</td>
<td>Critical Hypothermia</td>
</tr>
<tr>
<td>30°</td>
<td>Semi-conscious</td>
</tr>
<tr>
<td>29°</td>
<td>Unconscious. No response to pain. Skin cold, may be blue/grey in colour</td>
</tr>
<tr>
<td>28°</td>
<td>Cardiac Arrest</td>
</tr>
<tr>
<td>28°</td>
<td>No obvious pulse or breathing. Pupils dilated. May appear dead</td>
</tr>
</tbody>
</table>

Hypothermia First Aid

Get the victim out of the water, it is important where possible to attempt to keep the victim horizontal, and into a warm sheltered environment. First Aid for hypothermia varies greatly depending upon the severity of the case. In many cases coldness and exhaustion (Cold Shock) are mistaken for mild hypothermia and vice versa. In both instances some warm nourishing food and warm exercise will increase core body temperature.

Mild Cases
- Warm, sweet drinks
- Warm clothes
- Keep moving (75% of body heat comes from muscle activity)
- Mild heat source

Moderate Cases
Same as above. If that does not work or the case is more severe:
- Limit exercise
- Provide warm, sweet drinks only if victim is fully conscious
- Have victim checked by a doctor
Severe Cases
The victim may behave irrationally and fight assistance. Ignore this and do what is necessary.
Send for expert help.
• Time is a key factor. Attempts to rewarm victim may require expert knowledge. **If help is available within an hour do not attempt to rewarm victim yourself.** This can be dangerous. Keep victim stable and treat with extreme gentleness (Rough handling can cause cardiac arrest). Put in recovery position and elevate feet.
• **If help is more than an hour away then you have no choice but to attempt to rewarm victim yourself.** This must be done gently and slowly. Violent heat shocks, such as putting the person in a hot bath, can cause death.
• No food or drink if there is any sign of unconsciousness.
• Apply mild heat to chest only, eg, warm hot water bottles wrapped in towels.
• Do not attempt to rewarm limbs, eg, feet, hands, arms or legs. (This can cause the blood to flow to limbs and away from the core where it is needed).
• Transport to hospital as soon as possible.

Critical Cases
**It is important that rewarming only happen in the field if expert help is more than an hour away.** Critical hypothermia can appear close to death. Do not assume that someone is dead until the person is 'warm and dead'. In other words continue to attempt to rewarm victim even if they appear dead.
• Handle with extreme care.
• Tilt head back to open airway. Look, listen and feel for a pulse and breathing.
• **If there is any pulse, no matter how faint, do not give CPR.** Keep a close watch on the pulse and breathing and be ready to give CPR if necessary.
• Begin rewarming with mild heat, eg, wrapped warm hot water bottles, other people's body heat.
• Do not rewarm limbs.
• Exhale warm breath into victim's airspace or mouth.
• Body core temperature lags behind skin temperature during rewarming. Keep victim protected for an extended period, even after apparent recovery or medical help arrives. It can take hours and even days to return to a normal, stable temperature. Do not re-expose to cold in that time.
• Medical help is imperative and hospitalisation essential.