**Accidental Hypothermia & Avalanche Victims**

**Grand Rounds**  
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Summarized by Dr. Weersink, PGY1

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**Hypothermia = core body temp < 35C**

- Gold standard = esophageal temperature probe
- Second best = rectal probe

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**Pre-hospital**

- Careful handling! (fragile myocardium)
- Start rewarming
- ACLS/BLS - check pulse x 60sec
- Transport to appropriate center

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**Swiss Staging System of HT**

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MILD: conscious, shivering</td>
</tr>
<tr>
<td>2</td>
<td>MODERATE: altered LOC, no shivering</td>
</tr>
<tr>
<td>3</td>
<td>SEVERE: unconscious, no shivering</td>
</tr>
<tr>
<td>4</td>
<td>PROFOUND: no vital signs</td>
</tr>
</tbody>
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**Treatment depends on stage of HT!**

**HT 1**
- "Warm them, feed them, walk them"

**HT 2**
- Active external + min invasive rewarming
- Physiologic bradycardia - NO TV pacing
- Cautious use of vasopressors

**HT 3**
- Active rewarming + transport to ECMO capable center
- Atrial irritability is common + resolves with warming
- Defib + 3x Epi
- AHA 2010 - no changes
- Brown et al. 2012 - up to 3x

**HT 4**
- "Not dead until warm + dead"
- ACLS algorithm*
- + transport to ECMO/CPB capable center
- >35°C

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**Invasive rewarming**

- 1. ECMO/CPB is the most effective!  
- 2. Thoracic lavage if no ECMO

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**Avalanche Victims**

- Die from trauma, hypoxia, and/or hypothermia

<table>
<thead>
<tr>
<th>Core Temp</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;32.5°C</td>
<td>ACLS/CPR</td>
</tr>
<tr>
<td>32-34°C</td>
<td>invasive rewarming + transport to ECMO capable center</td>
</tr>
<tr>
<td>&gt;34°C</td>
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**References**


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*ACLS algorithm refers to the Advanced Cardiovascular Life Support algorithm, a set of guidelines for the management of patients with cardiac arrest. ACLS is a part of basic life support (BLS) and advanced life support (ALS) training, providing advanced life support care in situations where the patient's condition is critical. ACLS is intended for use by trained healthcare professionals who have a basic understanding of resuscitation and life support techniques. The algorithm includes specific interventions for specific conditions, such as cardiac arrest, cardiac arrest due to hypothermia, and other cardiac arrest causes. ACLS is often used in conjunction with BLS and ALS training, and is an essential part of the management of patients with cardiac arrest.*