MOUNTAIN HYPOTHERMIA

Definition, causes, symptoms, avoidance, treatments…
DEFINITION

« Hypothermia occurs when the body loses heat faster than it can produce heat, causing a dangerously low body temperature. Normal body temperature is around 37°C. We speak about hypothermia when the body temperature drops -2°C to 35°C.»
CAUSES

• **CONVECTION**: when wind removes the warm air layer next to the skin, increases evaporation of water from wet clothing and thus increases the cooling effect.

• **IMMERSION**: Falling into water/ getting wet. When clothing are wet, the evaporation process takes a lot of heat away from the body.

• **CONDUCTION**: When sitting on cold surfaces like rocks or the ground, heat is drawn away from the body.

• **EXHAUSTION**: The body heat is maintained by fuel (food) into energy. If there isn't enough energy, the body won't be able to metabolise the food into sufficient heat to maintain the body temperature.
CORE AND SHELL

• **Core:** The body’s core temperature is the internal temperature of the body. Normal body’s core temperature is 37°C.

• **Shell:** The body’s shell refers to those outer parts of the body (skin, subcutaneous tissue that change temperature at cold exposure.

• Core temperature stays constant whereas shell temperature can oscillate between under 30°C (deep hypothermia) and 40°C (hyperthermia)

• When the shell is cold, heat is transfered from the core thanks to the blood.
When the body temperature is below 35°C, we can say that someone is in hypothermia. However, there are different degrees of severity based on the core temperature. Symptoms and signs depend on these degrees of hypothermia.
SIGNS & SYMPTOMS

1. MILD HYPOTHERMIA
   - Umbles*
   - Shivering
   - Slight confusion
   - Lack of coordination
   - Hunger and nausea
   - Faster breathing and increased heart rate
   - Fatigue

2. MODERATE HYPOTHERMIA
   - Heightened signs of the « umbles* »
   - Uncontrollable shivering
   - Confused
   - Trying to remove layers of clothing
   - Heart and respiratory rate increasing

3. DEEP HYPOTHERMIA
   - Shivering stops
   - Fixed dilated pupils
   - Very low energy
   - Progressive loss of consciousness
   - Weak pulse and slow breathing

*UMBLES: stumbles, mumbles, fumbles, grumbles

www.mountainskills.ie    Phone +353 83 8000452 / +353 1 4100700
PREVENTION

As in a lot of situations, « Prevention is better than cure. »

- **SHELL & LAYERS:** To stay warm, wear wool, silk or polypropylene inner layers as they are better at insulation than cotton. Warm midlayers, windproof jackets and over trousers. Wear a hat or other protective covering to prevent body heat loss from the head, face and neck (30% of heat loss). Cover the hands with mittens instead of gloves (mittens keep fingers in closer contact) and make sure the footwear is waterproof.

- **DRY:** It is important to stay as dry as possible and to get out of wet clothing as soon as possible.

- **FOOD & DRINKS:** Eat and take with you sufficient energy producing food to last you the day + 10% extra food in case you are delayed.

- **ADAPTATION:** Be ready to plan and eventually to change your route according the weather conditions, and do it only if you know that you’re able to do it.
TREATMENT

• **FOOD + MOVEMENTS = HEAT.** With early stage hypothermia, get energy producing food & drink into the casualty. Add all of their extra layers at the same time. Then get them to gently walk and move to generate heat.

• **WARM & DRY LOCATION:** Try to move the person out of the harsh environment, and if it’s not possible try to get them to lower sheltered ground as soon as possible.

• **REMOVE WET CLOTHING:** In case of wet clothing, remove it, and cut away if you can replace with dry clothes quickly before the person gets any worse. If not, just get the person off the hill or to shelter as soon as possible. Then replace clothing.

• **CALL EMERGENCY SERVICES:** if the person has gone to 2\textsuperscript{nd} stage of hypothermia, stopped shivering, become disorientated and unresponsive.

* Do not move them at this stage*
AFTER TREATMENT

• If someone suffers hypothermia, find the safest route to leave the hills and don’t try to finish the walk. In case of severe hypothermia, send for help instead of trying to evacuate off the mountain.

• Once off the mountain, continue to eat and stay warm because someone who had hypothermia has more chances to become hypothermic again.