

# Mountain Accident Manual

## 1. First Aid Responder Duties and Patient Transport in Mountain Accidents

- **Level 1 EMT (Advanced):** Can perform advanced airway management such as insertion of airway devices, endotracheal intubation, and laryngeal mask airway insertion. They can secure intravenous (IV) access, maintain breathing using a ventilator, and administer medications: glucose infusion for hypoglycemic coma, sublingual nitroglycerin for chest pain, IV fluids for shock, and bronchodilators for asthma attacks.
- **Level 2 EMT (Basic):** Removes foreign objects from the mouth, maintains airway using basic devices, and performs Basic Life Support (BLS) and oxygen administration. They immobilize limbs and spine using splints, spinal boards, or pneumatic splints; control external bleeding and provide wound care. They monitor heart rate, body temperature, and blood pressure, and if needed, apply pneumatic anti-shock garments (PASG) to support blood pressure. They can use an Automated External Defibrillator (AED) to convert rhythm. If patients carry their own medications, EMT-B may assist with sublingual nitroglycerin for chest pain and inhaled bronchodilators for asthma attacks.

## 2. Heat Exhaustion and Heatstroke

- **Heat Exhaustion:** Caused by prolonged exposure to direct sunlight, raising body temperature to 39–40°C. Severe cases may have a 25% mortality rate. Move the patient to a shaded, cool area, place a cold wet towel or ice pack on the forehead, and gradually lower body temperature. Repeat cooling if fever returns.
- **Heatstroke:** Caused by poor ventilation or prolonged sun exposure leading to excessive salt loss through sweating. Symptoms include pale complexion, cold sweats, weak pulse, shallow breathing, and decreased consciousness, which can be life-threatening. Place the patient in a well-ventilated area, lay them down with the head flat and legs elevated, keep them warm, and provide salt water (1 cup water + 1 spoon of salt), tea, or cool water.

### 3. First Aid for Bleeding

- **Severe Bleeding:** Stop bleeding first. Cover the wound with a clean dressing, firmly bandage, apply direct pressure to the wound, and if necessary, apply pressure to arterial points. Elevate the injured area above heart level and keep the patient stable.
- **Minor Bleeding:** Infection prevention is key. Do not touch the wound unnecessarily, do not remove clotted blood, and if dirt or debris is present, wash with clean water and dress with sterile gauze. If **fever or red streaks (signs of spreading infection)** appear, seek immediate medical help.

### 4. First Aid for Shock

Rescue breathing is required when normal breathing is absent or insufficient, risking brain hypoxia within 4–6 minutes.

1. Ensure scene safety and call 119 (or the Korea Forest Aviation Rescue Team).
2. Check patient response.
3. While maintaining patient position, place your face close to check breathing for 10 seconds.
4. Correct position to facilitate breathing and open the airway.
5. Maintain airway and check breathing again for 10 seconds by **looking, listening, and feeling**.
6. If no breathing, provide two rescue breaths (2 seconds each), ensuring chest rise and air release.
7. Check carotid pulse while keeping head tilted back. If pulse is present but breathing is absent, start rescue breathing immediately.
8. Provide one breath every 5 seconds (12 breaths per minute), each lasting 2 seconds. Observe chest rise and signs of spontaneous breathing.
9. After 1 minute, reassess airway, breathing, and pulse for 10 seconds, then repeat: **“Rescue breathing for 1 minute → Reassessment”**.

## 5. Snow Climbing Accidents – Fractures or Medical Emergencies

Accidents can result from slips (fractures, contusions), falls onto rocks/trees, or worsening of pre-existing conditions such as stroke, heart issues, or hypothermia.

- **Victim:** Immediately alert others (voice, phone, whistle). For fractures or sprains, dress wounds, apply ointment, and immobilize with splints. Move to a sheltered place away from wind/snow to preserve body heat.
- **Rescuer:** First check consciousness and calm the victim. Move them to a safe area, assess injury location/severity, and decide on evacuation method. If patient cannot walk, use a stretcher or carry them. When using a stretcher, ensure warmth. If evacuation is impossible due to terrain/weather, request helicopter rescue from 119 or Forest Aviation Rescue.

## 5.Snow Climbing Accidents – Lost in Snow

- Heavy snowfall may cover trails, causing disorientation.
- Stay calm, check location using map, compass, GPS, or phone. If there is a last known safe point, return there to reorient.
- Look for signs of passage (trail markers, footprints, litter).
- If it is too dark, avoid unnecessary movement to conserve energy.
- Alert others using voice, phone, or whistle.
- If overnight stay is necessary, find a sheltered spot, stay warm, and request rescue via 119 or mountain rescue.
- Prevent frostbite/hypothermia by wearing warm clothing, stretching regularly, and drinking warm liquids if possible. If snow is abundant, build a snow cave for insulation.
- **Rescuers:** Begin search from reported location or last known point. Use whistles, flashlights, searchlights, dogs, or helicopters, always prioritizing rescuer safety. Once found, assess victim condition, prioritize warmth, provide first aid, and transport appropriately.

## 6. First Aid for Frostbite

- First restore **core body temperature** by moving victim to a warm shelter.
- Rewarming methods:
  - **Rapid rewarming:** Immerse frostbitten area in 40–42°C warm water for 30 minutes.
  - **Gradual rewarming:** Warm progressively (starting from 5°C upward) and provide warm drinks (coffee, soup).
- Apply antibiotic ointment and sterile dressings to prevent infection.
- Remove constrictive items (rings, watches) in case of swelling.
- For hands/feet: warm in rescuer's armpits.
- Elevate affected limb to reduce pain/swelling.
- Do **not** burst blisters. Wrap gently and transport to hospital.
- Do **not** allow victim to walk on frostbitten feet.

## 7. First Aid for Burns

- **Cooling:** Immediately cool the burn. Use running water (light burns: several minutes; severe burns: 30+ minutes). For head, chest, or abdomen, use ice packs or cold wet towels.
- If hot liquid spilled over clothing, cool over the clothes first, then carefully cut away garments.
- After cooling, cover with sterile gauze to prevent infection and heat loss. Do not burst blisters.
- Leave the fire site promptly; cut off scorched clothing instead of pulling it.
- For severe burns, immerse in cold water or cover with wet bandages (except 3rd-degree burns—do not immerse).

### Special cases:

- **Chemical burns in eyes:** Flush with water continuously for 20 minutes with eyelids open.
- **Clothes on fire:** Stop, Drop, and Roll immediately.
- **Sunburn:** Apply cold wet towels or bathe in cool water. Seek medical attention if blistering occurs; do not burst blisters.

## 8. First Aid for Leg Cramps

- Stretch the muscle gently in the opposite direction of contraction and massage slowly.
- **Calf cramps:** Pull foot strongly upward toward the body (toe pointing upward).
- **Front thigh (quadriceps) cramps:** Bend lower leg backward deeply.
- **Back thigh (hamstring) cramps:** Keep leg straight and push ankle forward.
- Apply warm compresses to relax muscles if warm water is available.

## 9. Asphyxiation Inside a Tent

- Move the victim outside into fresh air immediately. Ventilate the tent and extinguish any burners.
- Do not let the patient walk or exert themselves, even if conscious.
- Do not use matches or lighters in poorly ventilated areas.
- Open airway, loosen clothing, and keep the patient warm.
- If breathing is weak or absent, start artificial respiration immediately.

## 10. Fire During Cooking

- Attempt to extinguish the fire only if safe.
- Fires spread rapidly in synthetic-fiber tents; if uncontrollable, evacuate immediately, taking only essential equipment.
- Prevent fire from spreading into the forest if possible.
- If fire is unmanageable or dangerous, report to the forest service or fire department immediately.