

Altitude Sickness Guide for Himalayan Expeditions

Introduction

Altitude sickness—also called Acute Mountain Sickness (AMS)—is a condition caused by reduced oxygen levels at high elevations, typically above 2,500 m (8,200 ft). It can affect anyone, regardless of age, gender, or fitness level. If not recognized and treated early, it can progress to life-threatening conditions such as HAPE (High-Altitude Pulmonary Edema) and HACE (High-Altitude Cerebral Edema).

Why the Himalayas Pose Higher Risk

- Rapid altitude gain due to steep terrain or short itineraries
- Extreme elevations (many Himalayan passes & peaks exceed 5,000 m / 16,400 ft)
- Cold temperatures increasing stress on the body
- Remote locations with delayed access to medical help

Common Risk Zones in the Himalayas

2,500 – 3,500 m: Low–Moderate risk (Manali, Leh, Pheriche, Namche Bazaar)

3,500 – 4,500 m: Moderate–High risk (Pangong Lake, Khardung La, Goechala, Stok Base Camp)

4,500 – 5,500 m: High risk (Everest Base Camp, Rohtang to Spiti high passes, Kanchenjunga Base)

5,500 m+: Very High risk (Summit climbs, Ladakh & Spiti high passes, technical expeditions)

Types of Altitude Illness

Acute Mountain Sickness (AMS): Headache, nausea, fatigue, dizziness, loss of appetite, disturbed sleep.

HAPE: Shortness of breath at rest, cough (sometimes frothy or pink), chest tightness, extreme fatigue, blue lips or fingernails.

HACE: Severe headache, loss of coordination, confusion, hallucinations, seizures, coma.

Prevention Strategies

1. Ascend Gradually: Avoid gaining more than 300–500 m sleeping altitude per day after 3,000 m, with rest days every 2–3 days.

2. Hydration & Nutrition: Drink 3–4 liters of water per day, eat high-carb diet, avoid alcohol and excess caffeine.

3. Acclimatization: Climb high, sleep low; avoid sleeping at highest point reached during the day.

4. Medical Support: Preventive medication (e.g., Acetazolamide) under doctor's advice; carry portable oxygen and pulse oximeter.

Field Diagnosis Checklist

Suspect AMS if: At least one symptom appears within 6–24 hours of altitude gain.

Headache + 1 or more symptoms = mild AMS.

Headache + 3 or more symptoms, with severe fatigue = moderate AMS.

Treatment Protocols

Mild AMS: Stop ascent; rest, hydrate, pain relief; descend if no improvement in 24 hrs.

Moderate/Severe AMS: Descend 500–1,000 m; oxygen; Acetazolamide; Dexamethasone for cerebral symptoms.

HAPE: Descend; oxygen; Nifedipine.

HACE: Descend; oxygen; Dexamethasone; evacuation.

Emergency Equipment

- Portable oxygen cylinders or concentrator
- Pulse oximeter
- Portable hyperbaric chamber (Gamow bag)
- Medical kit with Acetazolamide, Dexamethasone, Nifedipine, Ibuprofen/Paracetamol, ORS

Evacuation Guidelines

- Do not wait for symptoms to go away at altitude
- Descend immediately if worsening
- Coordinate with ITBP, BRO, or local rescue
- Use satellite devices in no-network zones

Golden Rules of Altitude Safety

1. If you feel unwell at altitude, it's AMS until proven otherwise.
2. Never ascend with symptoms of AMS.

3. Descend if symptoms worsen despite rest.

Quick Reference Table

AMS: Headache, nausea, fatigue → Stop ascent, hydrate, rest.

HAPE: Breathlessness at rest, cough → Descend, oxygen, Nifedipine.

HACE: Confusion, ataxia → Descend, oxygen, Dexamethasone.

Expedition Leader's Responsibilities

- Monitor team daily for AMS signs
- Allow acclimatization time
- Carry medical & rescue gear
- Maintain a symptom log for each participant