Altitude Sickness Safety Fact Sheet

UMBC

At high elevation, you may experience a potentially life threatening condition called altitude sickness. This is exacerbated if you ascend in elevation quickly. At 8,000 feet, there is only ~75% of the available oxygen at sea level. Oxygen decreases ~3% with each 1000 feet in elevation. Altitude sickness is caused by the body not being able to get enough oxygen. There are three types of altitude sickness: Acute Mountain Sickness, High Altitude Pulmonary Edema, and High Altitude Cerebral Edema.

SYMPTOMS

Acute Mountain Sickness

- Lack of appetite, nausea, or vomiting
- Fatigue
- Dizziness
- Insomnia
- Shortness of breath upon exertion
- Nosebleed
- Persistent rapid pulse
- Swelling of hands, feet, and/or face

High Altitude Pulmonary Edema (HAPE)

- Symptoms similar to bronchitis
- Persistent dry cough
- Fever
- Shortness of breath even at rest

High Altitude Cerebral Edema (HACE)

- Headache that does not respond to medication
- Difficulty walking
- Altered mental state (confusion, changes in alertness, disorientation, irrational behavior)
- Loss of consciousness
- Increased nausea
- Blurred vision or retinal hemorrhage

PREVENTION

- If your hike starts at high elevation, spend a few days adjusting to the altitude prior to any major physical exertion.
- It is best to sleep no more than 1,500 feet (457.2 m) higher than you did the night before. This helps the body adjust gradually to the decreased amount of oxygen.
- Contact your primary care physician for an evaluation prior to travelling to areas with high elevation.

FIRST AID TREATMENT

- If you have any of these symptoms at altitude, assume that it is altitude sickness until proven otherwise. Do not ascend any further with symptoms.
- Acclimatization is possible for mild cases. However, if symptoms worsen, descent is the best option. Descend to the altitude where the victim last woke up symptom free.
- Keep the victim warm and hydrated.
- For HAPE and HACE descend immediately, even if at night, delay could be fatal.
- For HAPE and HACE seek medical attention immediately, even if symptoms subside upon descent.

REFERENCES AND ADDITIONAL RESOURCES

Altitude.org Resources for altitude sickness, an oxygen-altitude calculator, and cautionary tales.
Cox, S., and Fulsaas, K. **Mountaineering: The freedom of the hills.** Hubsta Ltd, 2003.