

High Altitude Illness

Summit Station, Greenland

Introduction

At an elevation of 10,551 ft (3,216 m), Summit Station has 33% less oxygen available than at sea level. This hypoxia leads to the primary physiologic changes and medical conditions associated with high altitude illness. Altitude illness represents a spectrum of disease, ranging from mild fatigue and headache to life-threatening increased pressure (edema) in the brain and lungs.

Susceptibility to altitude illness varies significantly between individuals, as some are more prone than others to suffering the effects. The rate of ascent is the most important factor, and with the rapid ascent necessary to fly in to Summit Station, most people can expect to encounter at least some symptoms.

Acclimatization to altitude begins in hours as your respiratory rate increases. Over days to weeks, your kidneys and blood composition change to help produce additional compensations for the low oxygen levels. In general, people will eventually acclimatize to the altitude at Summit Station, but symptoms of early and advanced illness can occur anytime from hours to days after arrival.

Symptoms

● **Fatigue and Exercise Intolerance**– The earliest symptoms of hypoxia are generalized fatigue, especially with exertion.

● **Headache**– A throbbing headache is common at high-altitude. When more severe and associated with additional symptoms it can be a sign of *Acute Mountain Sickness (AMS)*.

● **Disrupted Sleep**– Abnormal sleeping and breathing patterns occur as the body adjusts to hypoxia. You may notice difficulty falling asleep, increased waking, or feeling less refreshed after sleep.

● **Gastrointestinal Distress**– Loss of appetite and nausea are common effects of *AMS*.

● **Shortness of Breath and Cough**– While increased shortness of breath with exertion is common, SOB at rest can be a sign of a more serious condition, *High Altitude Pulmonary Edema (HAPE)*. Additional symptoms are dry cough and bluish discoloration of lips and skin.

● **Confusion and Difficulty Walking**– When a headache becomes severe or is associated with abnormal mentation and difficulty walking or performing other physical tasks, it may be the other life-threatening condition, *High Altitude Cerebral Edema (HACE)*.

Prevention and Treatment

● **Rest and Sleep**– Mild physical exertion is okay but excessive activity can worsen the progression of altitude illness. Adequate sleep can help the body recover and acclimatize.

● **Hydration and Nutrition**– Maintaining adequate hydration and nutrition can also help the body recover. Excessive hydration (more than needed for adequate urine output and clear color) is not helpful.

● **Avoid Alcohol**– Alcohol disrupts the body's ability to breathe and acclimatize properly. Hangovers can mimic many of the symptoms of *AMS*.

● **NSAIDs**– Common over-the-counter medications such as ibuprofen, acetaminophen, and aspirin are generally safe to use and can help treat high-altitude headaches.

● **Acetazolamide**– This medication helps the kidneys and lungs more quickly adjust to hypoxia. It can be used to treat *AMS* or prevent it in high-risk individuals.

● **Oxygen**– Supplemental oxygen is available through the medic to treat moderate to severe symptoms.

● **Evacuation**– Evacuation and descent may be necessary if you don't respond to standard treatments or start to develop symptoms of *HAPE* or *HACE*.

**Early recognition and treatment of altitude illness is critical to prevent progression!
Be aware of changes in yourself and your peers, and consult with the medic promptly.**



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