Information on Altitude Sickness

TRAVEL FACT

Dramatic changes take place in the body's chemistry and fluid balance during an ascent to high altitudes. As you climb through the atmosphere, barometric pressure decreases and every breath contains fewer and fewer molecules of oxygen. You must work harder to breath. This is particularly noticeable with exertion, such as walking uphill. As the amount of oxygen in the lungs decreases, the blood becomes less and less efficient at acquiring and transporting oxygen. This means that no matter how fast you breath, attaining normal blood levels of oxygen is not possible at high altitudes.

What is meant by high altitude?

Practically speaking, elevations below about 2500 m (8000 ft) are not of great concern since altitude sickness rarely occurs at these elevations.

- High Altitude: 2500 - 3500 m (5000 - 11500 ft)
- Very High Altitude: 3500 - 5500 m (11500 - 18000 ft)
- Extreme Altitude: above 5500 m

How does altitude sickness occur?

Acclimatization is the process during which the body adjusts to the decreasing availability of oxygen. Certain normal physiologic changes occur in every person who goes to high altitudes. These include (1) Hyperventilation (breathing fast); (2) Shortness of breath during exertion; (3) Increased urination; (4) Changed breathing pattern and frequent awakening at night.

When acclimatization lags significantly behind ascent, various symptoms occur. Altitude sickness represents the body's intolerance of the hypoxic (low oxygen) environment at one's current elevation. Anyone who goes to high altitudes can become ill. It is primarily related to rate of ascent. No way has been found to predict who is likely to get sick. Altitude sickness is a spectrum of illness, from mild to life threatening. At the "severely ill" end of this spectrum is High Altitude Cerebral Edema (HACE). This is when the brain swells and ceases to function properly. Obviously, this is a bad thing to have happen to you.

Recognizing Altitude Sickness

If you can recognize the symptoms, you should be able to avoid severe, potentially life-threatening illness. Dehydration is a common cause of headache at high altitudes. However, if a headache persists after drinking plenty of fluids and taking an analgesic (acetaminophen [paracetamol], aspirin, or ibuprofen), it is critical to consider altitude illness. In the context of a recent ascent, a headache with any one or more of the following symptoms above 2500 meters (8000 feet) qualifies you for altitude sickness:

- Loss of appetite, nausea, or vomiting
- Fatigue or weakness
- Dizziness or light-headedness
- Difficulty sleeping
- Confusion
- Staggering gait

DO NOT ASCEND ANY HIGHER. This is extremely important - even a day hike to a higher elevation is a risk. Descend at once, at least to the elevation where you last felt well when you woke up.

Never leave someone with altitude sickness alone. They could need help descending or may not recognize that they are getting sicker. The mainstay of treatment for altitude sickness is rest, fluids, and mild analgesics. Respiratory depression (the slowing down of breathing) can be caused by various medications, and may be a problem at high altitudes. Alcohol, sleeping pills, or narcotic pain medications can do this and should never be used by someone who has symptoms of altitude illness. Descent is always an option, and recovery will be quite rapid.

Avoiding Altitude Sickness

The key to avoiding altitude sickness is a rational ascent that gives your body time to acclimatize. People acclimatize at different rates, but in general, at altitudes above 3000 meters (10,000 feet) your sleeping elevation should not increase more than 300 meters (1000 feet) per night, and every 1000 meters (3000 feet) you should spend a second night at the same elevation. It is a slow process, taking place over a period of days. Finally, it's important to remember that it's always possible to descend; you'll start feeling better faster. Check with your Health Care Provider for more information prior to your trip to higher elevations.

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