

ALTITUDE SICKNESS

Patient Information Fact Sheet

Acute mountain sickness (AMS) is a condition that affects many travelers to high altitudes. It is caused by a lack of oxygen and is especially common at heights above 8,000 feet. The main symptoms are headache, loss of appetite, nausea, vomiting and lethargy. People of any age, gender or fitness level can be affected, and the elevation and rate of ascent are factors as well.

The main danger with AMS is that it may progress to life-threatening forms of altitude illness called high-altitude pulmonary edema (HAPE) or high-altitude cerebral edema (HACE). In HAPE, fluid accumulates in the lungs and symptoms include shortness of breath (even at rest), cough (sometimes with blood-stained sputum), and excessive tiredness. In HACE, excessive fluid causes the brain to swell, leading to symptoms such as worsening headache, unsteadiness on the feet, altered behavior, hallucinations, disorientation, confusion, and final progression into a coma.

How is altitude sickness prevented?

AMS is best prevented by ascending gradually. If possible, do not drive or fly to elevations over 10,000 feet, but instead walk up. If you do drive or fly, do not exert yourself for the first 24 hours. The usual recommendation is to stop for a day or two of rest every 2,000 feet above 8,000 feet. Also, if you are traveling above 9,840 feet, you should carry enough oxygen for several days.

A drug called **acetazolamide** has been shown to reduce the incidence and severity of AMS, although it is not routinely recommended. Acetazolamide can make you pass urine more than usual, can cause “pins and needles” in the fingers and toes, and can make fizzy drinks taste flat. When acetazolamide is taken, it should be continued until you descend from the high altitude.

How is altitude sickness treated?

The principles of treatment of AMS are as follows:

- Stop further ascent.
- Descend if there is no improvement or if the condition worsens.
- Descend immediately if there are symptoms or signs of HAPE or HACE.
- Do not leave anyone with AMS on their own.

The best treatment for all forms of altitude illness is descent. However in mild forms of AMS, rest alone may be sufficient. Anyone with symptoms of AMS must not ascend any



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further until symptoms have disappeared. People with fluid in their lungs (pulmonary edema), may be treated with oxygen, a high blood pressure medication called **nifedipine** (Procardia XL), a phosphodiesterase inhibitor called **sildenafil** (Revatio), lung inhaler beta agonists, and a breathing machine in severe cases. **Dexamethasone** may also be used to reduce the swelling in the brain. Painkillers such as **acetaminophen** (Tylenol) may be given for headache.

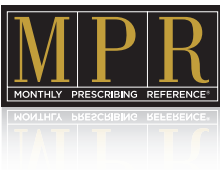
Further Information:

Pollard, A.J; Murdoch, D.R., (2003). *The High Altitude Medicine Handbook*.

Centers for Disease Control and Prevention: <http://wwwnc.cdc.gov/travel/yellowbook/2012/chapter-2-the-pre-travel-consultation/altitude-illness.htm>

Medline Plus: <http://www.nlm.nih.gov/medlineplus/ency/article/000133.htm>

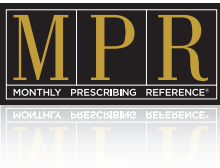
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