

Rocky Mountain High: Avoiding Altitude Sickness

Lisa Ganora, Director Colorado School of Clinical Herbalism

Acute Mountain Sickness (AMS)

At 8,000 feet (the elevation of Granby, CO) the amount of oxygen available is about 3/4 of what you can get at sea level. It's normal to experience some mild fatigue, shortness of breath with exertion, mild increase in the depth and/or speed of breathing, changes in breathing patterns at night, and increased urination as the body works to adapt to the situation and maximize the oxygen-carrying capacity of the blood. These changes generally even out over the course of several days. However, some people (for reasons that aren't completely understood) will begin to get AMS at this altitude. Fortunately, there's a lot you can do to help prevent and resolve altitude sickness.

Prevention

- Ascending slowly is the best way to avoid altitude sickness.
 - If you are flying in to Denver (elevation 5,430 ft. at the airport) from a low-altitude region, consider staying there or in Boulder for a day or two before you head up into the mountains.
- Hydrate, hydrate, hydrate!
 - Starting your extra hydration ahead of time is a good idea.
 - As soon as you arrive, begin drinking water often (every hour or so).
 - Add electrolytes (e.g., trace mineral drops or Emergen-C®) to your water bottle.
 - Add demulcent herbs (e.g., *Althaea*) to your water; these will help you retain moisture.
 - Coconut water, diluted ½ and ½ with mineral water, is fabulous.
 - Colorado has a very drying climate; gain altitude, and dehydration is common.
- Avoid or minimize alcohol.
 - Alcohol is a respiratory depressant and reduces oxygenation.
 - It also contributes to dehydration, which worsens altitude sickness.
 - The symptoms of a hangover are quite similar to those of altitude sickness.
- Go easy on the *Cannabis*.
 - It's a drying herb, and Colorado is dry, dry, dry.
 - If you are familiar with *Cannabis*, realize that it may affect you differently here because of the altitude. Be cautious.
 - If you are new to *Cannabis*, be aware that the effects will vary considerably with dosage, and can be quite individual. Low doses are often more helpful than higher ones. Some people find that *Cannabis* helps relieve altitude sickness, while others report it makes them feel worse. Edibles or vaporizing are generally more helpful than smoking. If you do use edibles, realize that it takes at least an hour for the effects to manifest. Don't make the mistake of overdosing because you haven't waited long enough to feel the effects of your first dose. AMS plus *Cannabis* overdose = absolute misery.

- Avoid strenuous activity for the first day or two after arrival. If you begin feeling ill, lie down and rest. Don't try to tough it out and keep going: this *inevitably* makes you feel worse. AMS strikes people regardless of their state of physical fitness.
- Many people report good results from taking 160 mg of standardized *Ginkgo biloba* extract for several days before arrival. One trial [PMID: 8725471] found that 80 mg of a standardized extract, taken twice daily for five days before ascent, was very effective in preventing altitude sickness. Another study [PMID: 12006162] found some beneficial effects even when the extract was started one day before ascent. Standardized Ginkgo extract has also been known to relieve early symptoms of AMS within an hour (take one or two caps; hydrate; lie down and rest).
- Some people find that using adaptogens during the week before ascent helps prevent AMS. Try moderate doses of *Rhodiola*, *Eleuthero*, and *Schisandra* (together or separately) combined with ChlorOxygen® (chlorophyll extracted from Nettles).

Early Signs of AMS

- Headache (most common)
- Lack of appetite, mild nausea, malaise
- Fatigue, lowered endurance
- Shortness of breath on exertion that doesn't resolve with rest
- Wooziness, light-headedness, tingling in fingers or toes
- Insomnia (AMS often kicks in at night when you are naturally breathing less)

Head 'Em Off at the Pass ...

- If you start feeling the above symptoms, stop what you are doing immediately, lie down, and:
 - Get your friend to put one dropper of ChlorOxygen® in your drinking water and add ...
 - One dropper of *Rhodiola* or *Eleuthero* or *Schisandra* or *Panax quinquefolius*, or
 - One dropper of any combination of the above herbs.
 - If *Rhodiola* is too stimulating or too drying for you, try the other herbs. You may want to avoid large doses of *Rhodiola* in the late afternoon and evening as it can keep some people awake.
 - If *Rhodiola* doesn't work for you, try *Eleuthero* instead.
 - My favorite combination is equal parts of *Rhodiola*, *Eleuthero*, and *Schisandra* (along with the ChlorOxygen®).
 - Down the hatch with this lovely green concoction; and keep lying down for a while ...
- Repeat your doses (one dropper of ChlorOxygen® and one dropper of the adaptogen/s) 20-30 minutes or so after lying down. We use this strategy with our students on higher-altitude field trips and it almost always works. You can repeat this once or twice more if needed, but cut the adaptogens down to 10 drops or so to avoid overstimulation.
- Alternatively, you can take a cap or two of Ginkgo standardized extract, hydrate with your emerald green ChlorOxygen® water, and lie down for a while.

Now What?

- If you get full-blown AMS, with vomiting and headache, it's imperative to lie down and have somebody take care of you with the above therapeutics. Above all, stay hydrated. *Zingiber* or *Mentha* infusions can help settle the stomach while adding extra hydration. Some people can go to sleep for several hours and wake up feeling much better.
- If you're not feeling better in a day or so, consider descending to a lower altitude and give yourself another day to adapt. Supplemental oxygen (which you can buy over-the-counter at many places here) can help. There's also an oxygen bar at 10th & Pearl in Boulder called Tonic.
- Take heart from the fact that most people naturally adapt and will get over it in 2 or 3 days.
- If you are feeling OK in Granby, but decide to go hiking to 10,000 feet and above, watch for signs of these rare, but serious complications:
 - High-Altitude Pulmonary Edema (HAPE) usually doesn't occur below 10,000 feet, but if you go hiking on the higher trails here you can easily get up to 14,000'. Symptoms include difficulty breathing that doesn't resolve with rest, tightness / congestion in the chest, cough, cyanosis, and increasing weakness/lethargy. These indicate that fluid is accumulating in the lungs. HAPE can kill you, so you must have supplemental oxygen if available, and descend immediately to a lower altitude. Seek medical care.
 - High-Altitude Cerebral Edema (HACE) is a rare but potentially fatal swelling of the brain that can occur at very high elevations. It is a complication of severe AMS and is often accompanied by HAPE. Symptoms include mental confusion, personality changes, ataxia (stumbling gait), profound exhaustion, and severe headache. A person with HACE must descend immediately and should receive emergency medical treatment. If untreated, this condition can kill within 24-48 hours.

Thanks to Mary Barnes, RH AHG, and Paul Bergner for sharing their research on AMS.