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ALTITUDE SICKNESS IS NOT A HIGH

By Terry Brenner
University Relations

Lots of things give people headaches. Wine, stress, loss of sleep, high blood pressure, influenza and sinusitis are a few. And here's one more: altitude or acute mountain sickness.

If you're hiking above 8,000 feet and your head is splitting, don't automatically blame it on what you drank the night before. Chances are you have AMS. It hits about one in four people at that altitude, and a bad headache may be one of the first signs, along with nausea and other flu-like symptoms.

Being fit as a fiddle won't grant you immunity, either. Let's say you work out with weights, jog, swim and play soccer. If you've done all that at a relatively low altitude, you're not necessarily protected at higher elevations, says Vince Colucci, a pharmacy adjunct assistant professor at The University of Montana.

"The body still has to adapt to less oxygen," he says. Actually, the amount of oxygen in the atmosphere is constant from sea level to very high altitudes, he says. But the barometric pressure and partial pressures of oxygen decrease with altitude, so with every breath you take, you get less oxygen.

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"Aerobically well-trained athletes -- but trained at low elevations -- may adapt sooner, but being physically fit does not minimize chances of getting altitude sickness," Colucci says. "No one is immune." Hill running, stair climbing or bicycling may help because they better simulate hiking and climbing, he says. Stretching and weight-resistance training also are important. If you're super-fit, though, you may have to rein yourself in so that you don't climb too fast for your own good.

So, Rule No. 1: Acclimate. The most effective AMS preventative is slow and gradual ascent, to allow the body to adapt or acclimate to the decreased availability of oxygen, Colucci says. A common rule of thumb is to gain no more than 1,000 feet a day once you're above 10,000 feet. Without first acclimating, you can't maintain normal levels of oxygen. When your blood doesn't carry enough oxygen to the body tissues, hypoxemia sets in, and you feel awful.

Rule No. 2: If you feel AMS coming on, rest before going to a higher elevation. Wait out your symptoms even if they're mild. Colucci says if you rest at the same altitude, the symptoms usually will ease off or go away in 24 to 48 hours. Because ventilation may decrease even further during sleep, it may be wise to descend to a lower elevation at night to help your body can recover.

Rule No. 3: Keep your body well hydrated by drinking nonalcoholic fluids.. This not only will help alleviate AMS symptoms, but also may help prevent them.

Rule No. 4: Medicate. You may need nothing more than acetaminophen, aspirin or ibuprofen to treat your headache and sick feeling. If you take a diuretic to reduce swelling -- edema -- in your hands and feet, continue drinking fluids to prevent dehydration, Colucci says.

Taking the prescription drug Diamox for 24-48 hours before the climb can help prevent

AMS, or at least lessen its severity, Colucci says. Diamox is the brand name for the carbonic anhydrase inhibitor acetazolamide, and it has some side effects. They include numbness and tingling of the lips, toes and fingers. Diamox also has a diuretic effect, so be sure to keep hydrated if you take it. And, Colucci cautions, don't take it if you are allergic to sulfa.

Rule No. 5. Steer clear of central nervous system and respiratory depressants because they diminish the body's ability to use oxygen. These include alcohol, benzodiazepines like valium and librium and barbiturates such as phenobarbital. Smoking also decreases ventilation because it increases carbon monoxide in the blood.

Rule No. 6. If your symptoms get worse, don't fool around. Descend immediately. When hypoxemia worsens, the veins and capillaries begin to leak fluid into the tissue between the cells and vessels, particularly in the lungs and brain, and you could end up with high-altitude pulmonary edema or high-altitude cerebral edema, two conditions that require emergency medical attention. The symptoms of this aren't pretty. They include staggering and disorientation, vomiting, white or bloody sputum, rapid pulse and bluish skin color.

Even in the contiguous United States, where the highest peak is less than 15,000 feet, cases of cerebral and pulmonary edemas are fairly common. More common, though, are cases of uncomplicated AMS involving weekend recreationists, seasonal big-game hunters or others who come from low elevations. Anyone going from a low to a high elevation should take a rest day before starting the hike or hunt. Age, fitness, pre-existing medical conditions and medications may play a role in AMS, but the person most at risk is the person who climbs too high too fast.

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