High altitude activities: beware of altitude sickness

by
Chris Carlson, PT, MPT

Winter is here and with it comes many activities and sports. Snow skiing is among the most popular. According to the National Ski Areas Association, 15 million people in the U.S. hit the slopes annually. Although skiers may make plans to visit their favorite resort for the slopes and amenities, many won't give much thought about participating in activities at high altitudes and what precautions they need to take to prevent injury and illness.

Altitude sickness has been reported at elevations as low as 800 feet above sea level. Chicago sits about 577 feet above sea level, but has seven buildings taller than 900 feet. The important thing to remember about exercising in a high altitude location is the higher you ascend, the more the barometric air pressure decreases and the amount of oxygen available to your body makes it more difficult to breathe. The top of Mount Everest, for example, is 29,199 feet tall and only has 30 percent atmospheric pressure, therefore a decreased oxygen availability as compared to seal level.

Altitude sickness is the reaction your body has to a lower oxygen availability while at increased elevations. It requires you to breath more heavily and frequently to obtain sufficient oxygen. When you breath more, you breath out more carbon dioxide (CO_2) creating what is called a respiratory alkalosis and it takes time for our kidneys and bodies to metabolically adjust. This can have a physiological effect on a multitude of body organs and systems such as the cardiopulmonary system and nervous system. Not everyone has the same reaction and research is inconclusive why some people are more susceptible to altitude sickness than others. Therefore, it is important to monitor your own symptoms and adjust your activities accordingly.

Some of the more common mild signs and symptoms of altitude sickness include, but not limited to:

- Throbbing headache
- Decreased appetite
- Nausea and/or vomiting
- Weakness and fatigue
- Disturbed sleep and/or poor sleep
- Dizziness
- Confusion, disorientation
- Blue/gray lips or fingernails

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Symptoms of severe altitude sickness can include:

- Bubbling sound in the chest
- Worsening breathlessness
- Coughing up pink, frothy liquid
- Clumsiness and/or difficulty walking
- Confusion leading to unconsciousness

In rare cases, altitude sickness can cause fluid in your lungs or swelling of the brain. These are very serious conditions and require immediate medical attention.

Treatment

If you experience any of the previously mentioned symptoms, you should descend to an altitude of at least 1,640–3,280 feet, or lower than your present altitude. You can take acetaminophen (Tylenol) to help the headache, but DO NOT take sleeping pills or other central nervous system depressants for insomnia because they suppress breathing. If your symptoms don't subside, or continue to worsen, descend another 1,000 to 2,000 feet immediately and contact a medical professional for evaluation and treatment. Physicians may prescribe Acetazolamide (Diamox) to speed acclimatization, prochlorperazine (Compazine) for nausea, supplemental oxygen and even time in a hyperbaric chamber for significant cases of altitude sickness.

Prevention

Altitude sickness is preventable. Physical conditioning has no bearing on whether you can be affected. Your body needs time to adjust to high altitude and low oxygen. Avoiding intense physical exercise the first 24 hours is advisable. Other recommendations include:

- Check with your physician before traveling to make sure your heart and lungs can tolerate the altitude change. If you've experienced problems in the past, ask your physician for strategies to prevent or treat symptoms.
- Drink plenty of water and avoid alcoholic beverages and consume a high-carbohydrate diet.
- Consider carrying supplemental oxygen in case of an emergency, or for use if symptoms develop.
- If mountain climbing or hiking, ascend gradually with adequate stops to acclimate once you are higher than 8,000 feet above sea level.
- If altitude sickness develops, descend to a lower altitude.

If you engage in high elevation activities this winter, use common sense, monitor your body for signs or symptoms of altitude sickness and maintain good hydration. Don't ignore symptoms and seek medical attention early. Using good judgment and taking proper precautions will help ensure you and your traveling companions enjoy your winter activities.