

ALTITUDE SICKNESS

Date: Wed, 24 Jan 1996 18:07:33 EST  
From: MR MARK

SUBJECT: Re: High altitude sickness  
(RICHARD wrote:

Does anyone have any info on how to treat this sickness thanks

Richard,

There are three concerns when one is exposed to high altitudes: Acute Mountain Sickness (AMS), High Altitude Pulmonary Edema (HAPE) and Cerebral Edema (HACE). Of these three illnesses, Acute Mountain Sickness, generally referred to as altitude sickness, is the most common and least life threatening, but it can ruin a trip.

High Altitude Pulmonary Edema is a true life threatening emergency and kills people every year in the higher elevations of Colorado. High Altitude Cerebral Edema is by far the least common, however is by far the most dangerous.

AMS is generally experienced by people coming up for sea level or very low elevations to elevations above 7,000 feet. When you ascend rapidly to this elevation, such as is common when either driving or flying to a ski resort or mountain town, the body must begin an adjustment to the reduced availability of oxygen.

Generally the most common symptoms are more rapid breathing, shortness of breath, mild loss of appetite, and increased thirst.

Some people more sensitive to the change may experience headaches, nausea,

dizziness, weakness, apathy and insomnia.

As the body begins to adjust, taking it easy for the first few days, consuming a simple diet high in carbohydrates and drinking lots of non-alcoholic fluids will alleviate symptoms for most people in a couple of days.

The natural adaptations include increasing respiration and the red blood cell count to assist in transporting oxygen more effectively to the brain and other organs.

Forced deep breathing during rests is said to help also. Dehydration can be an enemy to adjusting, so avoiding alcohol for the first couple of days is strongly recommended in most books. A physically fit person is less likely to suffer the more severe effects of coming to altitude because their bodies are already more efficient at delivering oxygen to cells and tissues.

However, even the most fit person should expect reduced performance from their bodies until they fully adjust. Physicians may prescribe two drugs to aid in reducing the side effects: Diamox and Dexamethasone.

Both should be started before the person is to depart on their trip. Generally these drugs increase the rate of respiration but don't replace common sense and proper adjustment to a higher altitude.

HAPE is a very real threat to life and should be taken very seriously.

HAPE is the leakage of fluid, mostly blood, into the lungs, thus restricting the free exchange of CO<sub>2</sub> and O<sub>2</sub>. This is literally having someone drown in their own fluids, internally.

In my time in Summit County, assisting in death investigations, the victims would generally complain of flu like symptoms and a cough, frequently accompanied by wheezing. Victims are often lethargic, short of

breath, tachycardic (pulse above 120), and begin to take on a bluish color in nail beds and lips.

Often victims would lie down because they did not feel well, complaining of fatigue, the friends would go skiing for the day and return to a companion who was unconscious, perhaps bubbling at the mouth & nose with pinkish mucous.

The onset of HAPE is rapid, beginning to show noticeable effects within the first day at altitude. Although it is most commonly experienced at altitudes over 12,000 feet, cases around 9,000 feet are not rare, even in younger victims who appeared to have been in good health and fitness.

The exact reason it effects certain individuals and not others in the same families or groups is unknown, however, once one has experienced HAPE, they are more likely to succumb more easily in the future.

Early recognition and treatment of HAPE is CRITICAL for the survival of the victim, their brain may be starving for oxygen.

The most effective treatment is a rapid decent in elevation of at least 3,000 feet or treatment in a decompression chamber, if such facilities are available. I have seen 17 year old high school students die while skiing of this, it is not a disease for the old and weak alone. Signs to look for early include: fatigue or lethargy, flu like symptoms in the absence of a fever or only a very low grade fever and crackling breath sounds.

HACE is generally rare at elevations less than 14,000 feet, but may occur in sensitive individuals at lower elevations. HACE is the swelling of the brain and accumulation of fluid on the brain.

The most obvious symptom is a severe headache which fails to respond to any normal treatment. As the brain swells, it may actually strangle off the blood flow to certain sensory areas, resulting in the

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noticeable symptoms of slurred speech, loss of decision making skills, loss of coordination and vision may be effected.

Failure to take immediate action upon observing outward signs of HACE can result in permanent brain damage and death. Once again, dropping 3,000 feet rapidly may stabilize the victim, in many cases the trip should be aborted to allow full recovery from the edema.

The general rules for high altitude mountaineering include: average 1,000 feet of elevation gain per day, rest for a day after difficult stretches, sleep as low as possible (give your body a chance to recharge), drink lots of fluids, snack often, and pace yourself.

A friend of mine who does extensive mountaineering went to a base camp for Kilimonjaro to become familiar with camp living. There were two teams which were scheduled to summit over the next couple of weeks, the first one was a group of retired Japanese businessmen, all over age 60, the second was a group of young robust Germans who were eager to summit before the weather turned bad.

The Japanese group did frequent day hikes onto the mountain, but returned to the lower camp every night to rest and recover. The German group decided to depart immediately. After three attempts in four days, the German group was thwarted and forced to retreat due to health and injury problems.

Only a group of three ever reached the summit. By the end of the two week stint, all but one member of the Japanese team successfully summited the mountain in small groups. The key was not fitness, nor preparedness, it was strictly acclimatization. Allowing their bodies to increase their red blood cell count and lungs to adjust to the lower pressure gave the Japanese team the advantage they needed to conquer Kilimonjaro.

Strong leader who can harness a team that is chomping at the bit to climb

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on is vital for a high altitude trips success. A leader and all the teams members need to be on the outlook for signs and symptoms of altitude and cold related illnesses both in themselves and in other members.

Failure to take heed of the early warning signs could be a DEADLY mistake.

Richard, I hope this article helps. Mark