# Denver Safety Newsletter

August 2012

*The Safety Letter for Denver Leaders of the Colorado Mountain Club*


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## Acute Mountain Sickness Can Happen to Anyone

***By Scott Houchin***

*I was a medic on one of those multi-day bike tours again this year and, unfortunately, we had a very sad situation. While staying in the gym in Leadville, a rider died from what looked like HAPE or High Altitude Pulmonary Edema. We found him in the early morning hours and did CPR but the he did not make it.*

*I usually associate HAPE with mountain climbing in the Himalayas or Peru. It is not an illness I expected to see on a bike ride in Colorado. The fact that it happened in Leadville, a town I often visit on DBTC (Denver Bicycle Touring Club) trips, was an eye-opener. For the record, he was from Colorado; younger than me; and it happened at an altitude below the Leadville Hostel, a place many of us routinely stay. HAPE is a deadly illness directly due to altitude. I am bringing this to everyone's attention because accidents happen.*

*Although HAPE is a killer, it is also VERY treatable. It is basically Acute Mountain Sickness (AMS) going to the next level. The illness usually builds over a couple of days of sleeping at high altitude and most deaths from HAPE occur during sleep or shortly after waking. The most obvious treatment of HAPE is to go to a lower altitude. Other treatments are oxygen and first aid to AMS. The person mentioned above did NOT seek medical help. If he had gone to the AID tent, we could have treated him, but if you don't COME FORWARD WITH THE SYMPTOMS there is nothing we can do.*

*Always let the trip leader know if you are not feeling well. Also, do NOT assume you are going to just get better. Trip leaders: take your bikers/hikers/skiers' medical issues seriously and DO NOT be afraid to call 911. Assume the worst and hope for the best. Most conditions can be treated but the first step is to find out if the person is sick. If you don't feel well, do not be embarrassed to tell the leader or other riders.*

*The reality is if a person admits he is in trouble, there is probably a reason the person does not feel well. Do NOT let them continue to exercise and get them to modern medicine! REMEMBER, this is a bike ride, not a law suit! Have fun and take it easy. If you are feeling bad – your body is trying to tell you something – so, LISTEN TO YOUR BODY and take it easy – stop exercising for the day and call your doctor.*

*Modern medicine is amazing but YOU HAVE TO GET TO THE MODERN MEDICINE in order for the system to work. So, please take it easy out there, have fun, and don't be afraid to let others know if you are not feeling well.*

*Scott Houchin is a longtime DBTC member, an EMT, and a medic on bicycle rides all over the country. He is also a CPR/AED/1st Aid Instructor for the Red Cross and the American Heart Association*

**In a related story**, a 31 year old Chicago man went missing in the Holy Cross Wilderness in 2010. His remains were found almost 2 years later near Holy Cross City. Part of his backpacking plan was to go over Fancy Pass and down the Cross Creek trail. A journal and notebook indicated that he may have been suffering from altitude sickness. Holy Cross City is at 11,335 ft. Fancy Pass tops out at 12,408 ft.

Most of us have hiked there without the slightest of headaches, but let's exam how this can happen and how it relates to the average CMC-er or Denverite. Someone from Chicago may be 3-5 times more likely to develop AMS. What about the cyclist from Colorado? No one is immune to AMS, including the fittest of the fit. Around 2% of people traveling above 9,000 ft will develop symptoms of HAPE. It is safest to assume that any illness at altitudes above 6,000 ft. can be related to AMS.

**Let's examine the symptoms of AMS:**

- **MILD** symptoms: headache, dizziness, shortness of breath, fatigue, nausea, and sleep disturbances.
- **MODERATE** symptoms: severe headache not relieved by medication, nausea and vomiting, increased weakness and fatigue, and decreased coordination.
- **SEVERE** symptoms: Shortness of breath at rest, inability to walk, diminished mental status, fluid buildup in the lungs.

The following is a table from the Wilderness First Aid Book:

**Characteristics of Altitude Sickness**

| | AMS | HAPE | HACE |
|---|---|---|---|
| **Elevation** | Above 6,000 ft | Usually above 10,000 ft | Above 12,000 ft |
| **Time after ascent** | 1-2 days | 3-4 days, possibly later | 4-7 days |
| **Symptoms** | Result from hypoxia (lack of oxygen) and include headache, sleep disturbance, fatigue, shortness of breath, dizziness, loss of appetite, vomiting. | Caused by pulmonary fluid and includes shortness of breath, dry cough, mild chest pain, weakness, insomnia, rapid pulse, cyanosis, rales (crackles in the lungs, or gurgling sounds). | Caused by swelling of the brain and includes severe headache (unrelieved), vomiting, irregular breathing patterns, staggering gait, inability to balance, unconsciousness |
| **First Aid** | • Stop ascending or go down<br>• Drink fluids<br>• Rest<br>• Give the victim aspirin or ibuprofen<br>• Give the victim acetazolamide (Diamox) * | • Descend at least 2,000 ft<br>• Seek medical care immediately | • Descend as soon as possible; 1,000 ft minimum, 3,000 ft if possible or until symptoms disappear.<br>• Seek medical care immediately. |
| **Notes: AMS= acute mountain sickness; HAPE = high altitude pulmonary edema; HACE = high altitude cerebral edema. HAPE & HACE occur when reduced oxygen causes capillary leakage and body-tissue swelling. Both conditions are life threatening.** | | | |

**Note:** HAPE & HACE are serious emergencies. ACTION MUST BE TAKEN QUICKLY

If someone is developing **HAPE**, you can put your ear next to their chest and listen for the gurgling or crackling sounds. Their shortness of breath will occur with minimal exertion or at rest. They will probably be cyanotic (blue in the lips, face, and nails).
In **HACE**, pay attention to their mental status. They may appear to be mentally foggy, confused, or unable to make clear and rational decisions. Their headache may be severe, constant, and throbbing. They may not be able to walk a straight line.
*Diamox. It's debatable whether you should give a drug to someone else. Diamox is a serious drug with possible serious side effects. Its administration is best left to a professional or a life-threatening situation.

### How about prevention and treatments?

- The first and most important step should be to descend.
- Anyone suffering from symptoms of AMS should not be left alone.
- Make sure your hikers are hydrated. Each should be drinking at least 2-4 liters of water. Best indicator of good hydration? Clear, light colored pee. Dehydration symptoms are similar to AMS. Start hydrating the day before.
- Suggest ibuprofen for headache. If that doesn't relieve it, descend, but not alone.
- Educate yourself and your hikers on the progressive symptoms from AMS to HAPE & HACE.
- Climb high, sleep low. If you want an edge on summiting a 14er, camp at 10,000 ft the night before.
- Eat well. Take time for snacks and water breaks.
- Instruct your hikers on pressure breathing by pursing your lips and exhaling forcefully and fully.
- Pay close attention to people that have recently been at sea level. We all know how that feels on our first hike back at altitude.

### Did you know?

- The risk of altitude problems increases with the stresses of cold weather and other low pressure systems. A low-pressure front can make you feel like you're 600 ft. higher than you actually are.
- Because atmospheric pressure is greatest at the equator, the further north a mountain is, the higher it will seem. This along with the cold temperatures is why Denali is so difficult.
- Men & women have the same incidence of AMS. Fitness has little or no effect.
- A recent study published in the Annuls of Emergency Medicine concluded that ibuprofen was effective in reducing the incidence of AMS. http://www.annemergmed.com/article/S0196-0644(12)00090-X/abstract
- For every 1,000 feet of elevation you lose 3% of oxygen. The air at 14,000 ft has 43% less oxygen.
- Above 6,000 ft. the body loses twice as much water through perspiration and exhaling.

For additional information, an excellent article on Altitude Sickness can be found in the NOLS WFA: http://dwb4.unl.edu/Chem/CHEM869V/CHEM869VLinks/www.nols.edu/Publications/FirstAid/AltitudeIllness.html

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## Tales from the Trail: Medical Issues

By Ilona Fried

I imagine that every leader's nightmare is to be confronted with an unexpected medical issue during a trip. Yet, on some hikes the subject is not raised in a timely fashion, if at all. And, there's the flip side, when someone who has candidly shared an issue might be better off staying home.

Recently I climbed a thirteener on a "C" hike. En route to the summit we basically stayed on the trail. For the immediate descent from the peak, the leader decided to go off trail, over a mixture of tundra and boulder field. Some of the group negotiated the rugged terrain quickly but, not being a mountain goat, I stepped carefully from rock to rock. Behind me, a gentleman struggled. It turned out he had poor depth perception, a condition that's not an impediment on a packed trail. The leader grumbled that this hiker should have said something about it. But, at the start of our outing, the leader did not invite people to alert him to health issues. It's possible that the hiker, believing we'd be on a trail, didn't feel it was necessary to say anything. Luckily, the weather was clear and the somewhat slower pace didn't create any problems.

Now the flip side.
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A leader for a moderate B hike (2,500'gain) in Boulder allowed a participant who was recovering from surgery. It was generous of the leader to support this man's rehabilitation, and I admired this hiker's perseverance. But the hike proved to be too challenging for him at the group's natural pace and, even though we were on a marked and popular trail, the leader had us maintain a frustratingly sluggish gait in order to stay together. Eventually, after some negotiation, the leader allowed the group to split so that some could hike at a more comfortable speed.

It's true that leaders make judgment calls that won't work out for everyone all the time. Each hike is more of an improvisation than a guarantee of a seamless experience. But, given that sharing medical information with strangers is sensitive, and many people may not be comfortable announcing even minor conditions in front of a group, perhaps leaders could encourage participants to notify them confidentially in advance. This could mean sending out a pre-trip e-mail confirming the details (e.g. meeting place, time, special equipment required) and soliciting medical issues ahead of the trip. And if a leader doesn't send out a pre-trip message, perhaps hikers with known medical concerns could take the initiative and notify leaders in advance; they can discuss whether the issue is a deal breaker or not. Such communication helps ensure that if there are surprises on the trail, they will more likely be of the happy variety, such as wildlife sightings.

*Ilona Fried has been a member of the Denver Group since 2008. She writes about hiking and life on her blog, www.alacartespirit.com*

# Announcements

**HUNTING SEASON IS HERE**

Be certain to wear orange on your pack or sport an orange cap during hunting season when in those areas which allow hunting:

ARCHERY SEASON August 25 – December 31

MUZZLE LOADING RIFLE SEASON September 8 – October 29

RIFLE SEASON October 1 – November 18

Remember that some state parks allow hunting in specific areas, so it is a good idea to call the park in advance and determine which trails are closed for hunting season before scheduling your hike. For more information go to: http://wildlife.state.co.us/Hunting/SeasonDatesAndFees/Pages/SeasonDatesandFees.aspx

**AIARE LEVEL 1 SCHOLARSHIPS AVAILABLE FOR 2013 CLASSES**

Tom Creighton, Director of AIARE Level 1 School, has scheduled two sessions for 2013,, one in February and a second in March. Scholarships for 50% of the tuition rate of $195 are available to leaders and instructors through Denver Safety & Leadership Committee. Appilcations will be available online under the Trip Leader tab on www.hikingdenver.net Sept.1. For additional information contact Linda Lawson at lkl14er@comcast.net

**WILDERNESS FIRST AID FALL CLASS**

August 21 & 28, and September 4 lectures with field scenarios on September 8th

Resister online or contact Linda Wacht at try.athlete@gmail.com