

CeraSport® Hydration

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Hydration and the Mountaineer

by guest author
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Owner of Ursus Films in Seattle, Washington. An acquaintance told Dave that CeraSport saved him from dehydration while on a shoot in Haiti, so he contacted CeraSport for support during an expedition to K2. On the trip he encountered high temperatures down low and extremely low humidity up high, both making hydration challenging.

As a climber and videographer I often find myself in the high mountains of the Himalayas and Karakorums. Last Summer I found myself in Pakistan climbing and filming on K2. At 8,611 meters (28,251 ft) it's the world's second highest mountain and the hardest of the fourteen 8,000 meter peaks, with an extremely low success rate and a frightening number of fatalities. Our basecamp was at 5200 meters (17,050ft.).

Mountaineers experience many of



Photo by Dave Ohlson

the same problems that other athletes do. High altitude is an environment inhospitable to the human body and there are special problems encountered: Dehydration and poor nutrition are primary. Air at higher altitudes has very little moisture and a climber can lose a staggering amount of water through respiration alone. Four liters a day was a minimum requirement, just resting at basecamp. Another effect is

a lack of appetite. At these altitudes the body releases more leptin, a hormone that signals to the brain that it has had enough to eat. Along with general hypoxia and fatigue this means that it's pretty difficult to work up an appetite above 7000 meters. Throughout the day and at rest in my tent, CeraSport was a very important part of my nutritional regimen. I would usually carry two liters and drink it constantly as I was

climbing. The contribution of complex carbohydrates helped keep my blood sugar stable and was extremely helpful in keeping energy levels up. On big climbs it's very easy to neglect eating because of the precarious positions, general stress of being in dangerous situations and the desire to move fast. I have learned time and again that neglecting nutrition can lead to a sudden drop in energy. CeraSport provides sugars that are immediately utilized by the body during exertion and also helps keep energy levels consistent (and the climber more attentive and safer). Once in my tent I would melt snow and drink a liter or two of CeraSport (it's a great hot drink!) before moving on to soup and then forcing myself to eat food and drink even more.

The most common problem people encounter at altitude is Acute Mountain Sickness (AMS). Symptoms include headache, nausea, lack of

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appetite and dizziness and is a common problem even as low as 2400 meters (8000 ft.). The real cause is often dehydration, especially among inexperienced people. AMS can lead to more severe problems such as High Altitude Pulmonary and Cerebral Edema (HAPE and HACE). Maintaining proper hydration keeps this chain of events from starting. As the partial pressure of oxygen in the atmosphere drops, the body compensates through Pulmonary Arterial Vasoconstriction (PAV.) Arteries in the lungs constrict to force blood to more oxygen saturated areas (similar to what happens in patients with Pneumonia or other lung diseases that cause low oxygen saturation in parts of the lungs). At a high altitude, especially when someone has ascended too quickly, the increase in pulmonary arterial

blood pressure can start to cause fluid to leak from the blood vessels into the interstitial spaces of the lungs and eventually into the lungs themselves. Patients suffering from HAPE are literally drowning in their own fluids and typically present with weakness, difficulty breathing and loud rasping or crackles audible even without a stethoscope. As symptoms progress patients may start to look blue and begin coughing up pink, frothy sputum. In HACE fluid begins to leak from arteries in the brain causing swelling of the tissues. Classic symptoms begin with headache, nausea and weakness but can quickly escalate to loss of coordination, confusion, collapse and coma. These conditions are fatal without descent to lower altitude, although medical interventions can help make evacuation easier. Bottled oxygen is one crucial intervention. On our expedition we had a staff member who developed HAPE and HACE and

we treated with all of the above and a Gamow bag, a portable hyperbaric chamber that allowed us to effectively lower his elevation for an hour before I evacuated him to an actual low elevation where he recovered fully.

At 17,000 feet there is about half the amount of oxygen as there is at sea level. To compensate, the body produces more red blood cells to increase the oxygen carrying capacity of the blood. The time tested method of achieving acclimation to altitude is summed up by the maxim, "climb high, sleep low." On any large mountain climbers go to high camps, stock them and then return to a lower elevation to recover in a place with relatively higher oxygen content.

The problem with the increase in red blood cells is that the blood becomes thicker and more viscous. If one is stuck sitting in a tent during a storm, this can lead to Deep Vein Thrombosis (DVT), or blood clotting along the walls of a vein,

and if a clot breaks loose, the situation can quickly turn life threatening.

CeraSport hydration drinks are important to prevent dehydration which contributes to blood thickening.

In the mountains hydration is key, especially at high altitude. Another great maxim of climbing, "the happy mountaineer pees clear" means proper fluid intake is critical to avoiding AMS and other more serious conditions.

CeraSport has the additional benefits of being absorbed quickly, being palatable to a suppressed appetite and providing carbohydrates to maintain stable blood glucose levels during exertion. Plain water does not replace electrolytes, gives no energy and, above 7000 meters, becomes very boring to drink. CeraSport was an important part of my daily routine on K2 and I will continue to use it in the future. ■

