

## SAFETY OF THE MOUNTAIN

### Health and safety at high altitude

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You're only as safe as your guide's ability to anticipate the onset of your succumbing to a critical altitude-related condition once the early warning symptoms start to manifest, and his decisiveness in implementing a rapid evacuation plan if necessary, or in ensuring that you descend from that point with an assistant guide to a lower elevation if acceptable. Our guides are all extremely attentive and astute. We are grateful never to have lost a climber to date. Being involved with the media you probably noticed a group in the news recently who had a death at only 4400 m despite carrying all sorts of fancy totally unnecessary equipment, which is deployed by certain companies that believe the fear-factor achieved in denigrating companies that don't carry this unnecessary stuff achieves a marketing advantage for them.

*High Altitude Sickness*: do not fear, it can be managed/avoided!

Altitude is defined on the following scale:

- High (8,000-12,000 feet [2,438-3,658 meters]),
- Very High (12,000-18,000 feet [3,658-5,487 meters]),
- Extremely High (18,000+ feet [5,500+ meters]).

But most people can go up to 8,000 feet (2,438 meters) with minimal effect.

As a point of reference, Arusha is at 4,500-5,000 feet [1,300-1,500 meters] and Moshi at 3,000-3,300 feet [900-1,000 meters]

*What are the symptoms of Altitude Sickness or AMS?*

The symptoms of Mild AMS (Acute Mountain Sickness) are headache, dizziness, and fatigue, shortness of breath, loss of appetite, nausea, disturbed sleep and a general feeling of malaise. Symptoms usually start 12-24 hours after arrival at altitude and begin to decrease in severity about the third day.

***What causes altitude Sickness or AMS happen***

The concentration of oxygen at sea level is about 21% and the barometric pressure averages 760 mmHg. As altitude increases, the concentration remains the same but the number of oxygen molecules per breath taken is reduced. At 12,000 feet (3,658 meters) the barometric pressure is only 483 mmHg, so there are roughly 40% fewer oxygen molecules per breath. In order to properly oxygenate the body, your breathing rate (even while at rest) has to increase. This extra ventilation increases the oxygen content in the blood, but not to sea level concentrations. Since the amount of oxygen required for activity is the same, the body must adjust to having less oxygen. In addition, for reasons not entirely understood, high altitude and lower air pressure causes fluid to leak from the capillaries which can cause fluid build-up in both the lungs and the brain. Continuing to higher altitudes without proper acclimatization can lead to potentially serious, even life-threatening illnesses.

### *Prevention of Altitude Illnesses:*

- Basically, there are two ways of dealing with AMS, proper acclimatization and preventive medications.

1. Proper acclimatization

2. Preventive medications:

#### *1. Proper acclimatization*

- Exercises and stay healthy before coming to Kilimanjaro. A cardio training program is highly recommended to condition your heart for the strain of a high-altitude trek. Many regimens are available and can be found for free on the internet. However, if pressed for time, training to run a 10K or a half-marathon may prove to be efficient conditioning methods.

- Avoid catching a cold

- Take it easy during the first few days in Tanzania. Avoid assertion.

- Drink a lot of water. A minimum of 2 litres per day is recommended, and more if you choose to take Diamox, which is a diuretic.

- Climb high and sleep low.

- Ascend to higher altitude gradually

#### *2. Preventive medications:*

- Diamox (Acetazolamide)

Acetazolamides acidify the blood to allow you to breathe faster so that you metabolize more oxygen, thereby minimizing the symptoms caused by poor oxygenation. This is especially helpful at night when respiratory drive is decreased. Since it takes a while for Diamox to have an effect, it is recommended to begin taking it 24 hours before you begin climbing to high altitude and continue for at least five days at higher altitude. The most sources recommend taking 125 mg twice a day (morning and night). Most tablets come in 250 mg doses, so you may have to cut them in-half. Since Diamox is a sulphonamide drug, people who are allergic to sulpha drugs should not take Diamox. Diamox has also been known to cause severe allergic reactions to people with no previous history of Diamox or sulpha allergies, tingling are most common. My advice is you to take 125 ml a week before arrival just to check allergy if you are not sure about. And of course, consult with your physician prior to taking the drug. Based on my personal experience, it better to avoid taking medication as a prophylactic and instead save it for emergency use, when you reach the altitude where your body begins to fail to acclimate.

- Dexamethasone (a steroid)

It is a prescription drug that decreases brain and other soft tissue swelling which frequently accompanies acute AMS. Dosage is typically 4 mg twice a day throughout the ascent. It tends to prevent most symptoms of altitude illness. It should be used with caution and only on the advice of a physician because of possible serious side effects. It may be combined with Diamox.

- Anti-malaria tablets are ineffective when used in combination with high altitude tablets; however, based on my experience, there are few if any mosquitoes at high altitude. My advice is that if your tablets prescribed to be taken daily, you can stop taking them when you start the trek and resume taking them on the last day.

**NOTE:** - The above information is meant as a guide only, based on personal experience and common knowledge. We urge you to consult a medical professional and discuss health-related issues prior to the climb. There will be an additional pre-climbing briefing upon your arrival.