

# Fly Me to the Moon, But Hold the Altitude Sickness



By *Jamie Wells, M.D.* — December 6, 2016



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Welcome to the conclusion of my two part series where I delve further into high altitude illnesses, prevention and management.

In Part I, [At High Altitude with Buzz Aldrin](#) [2], I addressed the 86 year old American hero-moon-walking icon's recent medical evacuation from the South Pole, my prior personal experience with him in Vail, Colorado and discussed my own bout with altitude sickness which mainly manifested as an intolerable headache.

As Dr. Aldrin recuperates in New Zealand, he issued this statement about his clinical course after arrival to Antarctica: "I started to feel a bit short of breath so the staff decided to check my vitals. After some examination they noticed congestion in my lungs and that my oxygen levels were low which indicated symptoms of altitude sickness." He departed on the next flight, "Once I was at sea level I began to feel much better. My visit was cut short and I had to leave after a couple hours. I really enjoyed my short time in Antarctica and seeing what life could be like on Mars."

Let's start by debunking a few myths about altitude sickness:

**Myth #1:** I won't get altitude sickness if I didn't get it in the past.

Not exactly—though prior absence of mountain sickness can reduce risk, other factors can influence and exacerbate it. Rapid ascent to 8,000 feet or higher (sometimes lower) and degree of exertion can impede your ability to adjust sufficiently to the lower oxygen state. Alcohol on night one won't do you any favors either, for instance, nor will underlying heart or lung diseases and diabetes so getting the advice of a physician, in advance, is generally advisable especially with pre-

existing conditions.

We can reference my own experience here. Since I never had it before and had been to Colorado a number of times, even I suspended disbelief that I was susceptible. When my friend I was visiting suggested our big hike be on day three so I could acclimate, I was adamant I do really well with elevations like these. Thankfully, I listened to her as rigorous exercise shouldn't be initiated in the first couple days.

**Myth #2:** I am young, healthy and fit, so I am not at risk.

Actually, the risk of altitude sickness diminishes over age 50 and level of fitness is often irrelevant. Since symptoms arise due to rapid ascent often combined with over-exertion, the risk for someone fit who may take on more intense activity, in general, is likely similar to that of someone less active. Allowing yourself to acclimate to the escalating altitude is the best means to prevent onset of acute illness. As per the Centers for Disease Control and Prevention (CDC), this means gradual ascent with avoidance of going from low altitude to more than 9,000 ft sleeping altitude in one day. They further advise moving sleep altitude (which generates the greatest hypoxia) no higher than 1,600 ft per day planning an extra day for each 3,300 ft progressed. (1)

Dr. Aldrin has been to the moon, the Titanic and the North Pole. He was a fighter pilot. His adventurous endeavors defying gravity and varying elevations are endless and, yet, even he was not immune to adverse effects on his recent excursion.

This can happen to anyone at any age especially if precautions aren't taken or care is hampered. Medicine can be given prophylactically if controlled ascent is improbable.

**Myth #3:** If I do get it, then I can just push through it.

This is a dangerous notion since fatality can result depending on disease severity, elevation, lack of access to and delay of urgent medical care. No one should die of altitude sickness today. It is essential to emphasize prevention since that is much more convenient and manageable as opposed to evacuation atop Mount Kilimanjaro.

With the earliest signs, typically moving to lower altitude prompts significant improvement— as reinforced by Dr. Aldrin's own words regarding his condition. Additionally, it is Antarctica's Spring which made emergency operations more effortless. This is not always the case at the South Pole depending on the season. Prompt identification of symptoms and exiting the environment are crucial to outcome.

**Acute Altitude Sickness impairs the lungs, the brain and sense of well-being...**

In those living in lower levels or non-acclimatized, the syndromes that result are a consequence of rapid ascent. People get sick due to lack of oxygen (or lower levels).

**Acute Mountain Sickness (AMS)** occurs within a few hours at the higher elevation and presents

with headache as its key feature. There can be accompanying gastrointestinal discomfort (e.g. vomiting), loss of appetite, tiredness or dizziness. Along with the previously listed susceptibilities genetic make-up can play a role. As you continue to climb, mentation and sleep can become impaired.

Once symptoms are present, advancing would be to do so at your own peril and rest is beneficial. The issue is usually self-limiting and warrants descending if not improving. It is a non-negotiable in derailing the progression to life-threatening high-altitude cerebral edema (HACE) and high-altitude pulmonary edema (HAPE) when they declare themselves. The prevalence increases the higher one goes as does the declining exercise capacity. (2)

**HACE** can be deadly if not quickly identified and managed. It is considered on the progressing spectrum of AMS. You can be confused, walk clumsily, with an impaired mentation. Those afflicted should immediately descend and be accompanied.

**HAPE** can also be lethal involving shortness of breath that progresses from exertion to rest. Debilitating exhaustion. This can happen without AMS.

HACE and HAPE are medical emergencies. Supplemental oxygen and medicines can expedite the healing.

### **Bottom Line...**

- Gradual, planned ascent to higher altitudes is the best plan
- Participating in strenuous activity should not be the immediate agenda
- Seeking medical care early, not advancing and descending is essential to avoiding dangerous conditions
- Prevention is preferable to developing altitude illnesses, so discuss with your doctor

### SOURCES:

(1) <http://wwwnc.cdc.gov/travel/yellowbook/2016/the-pre-travel-consultation/...> [3]

(2) Taylor, Andrew T. High-Altitude Illnesses: Physiology, Risk Factors, Prevention, and Treatment. *Rambam Maimonides Medical Journal*. Vol 2. Issue 1. January 2011.

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