

High Altitude Facts

The many changes that occur in the human body are mostly caused by the change in air pressure. Picture a snow globe that hasn't been shaken in awhile. All of the snow rests at the bottom. This is how oxygen molecules at sea level are like: very dense near the ground.

Now picture a snow globe that has recently been shaken. The snow in the air is roughly like what oxygen molecules are at high altitudes: spread apart and less dense.

What this means is that a breath at sea level contains more oxygen particles than at higher altitudes.

The body reacts to the lack of oxygen in amazing ways.

- To draw more oxygen from the atmosphere around it, breathing rate increases.
- Urine production increases.
- Due to the increased breathing rate there is less carbon dioxide in the body. As a result, the human body becomes more alkaline.
- Heart rate increases and more red blood cells are formed, allowing more oxygen to be distributed throughout the body.
- The nose frequently clogs, which adds to the difficulties placed on the lungs. The nose wets and warms the air climbers breathe in.
- Acute mountain sickness (AMS) is common among high altitude climbers. Symptoms include headaches, insomnia and dizziness. AMS could be early symptoms of more serious health worries.
- Plasma may seep into the lungs, causing chest pain, coughing and shortness of breath. This is called high-altitude pulmonary edema. (HAPE)
- The increased blood flow to the brain may result in the brain swelling. High-altitude cerebral edema. (HACE) Symptoms include confusion and hallucinations. The climber may fall into a coma.
- It is possible to have AMS, HAPE and HACE at the same time.
- Increased pressure in the intestines may result in high-altitude flatulence expulsion (HAFE). Symptoms include pretty much every single joke from any modern teen movie.

Other interesting facts about high-altitudes:

- The oxygen content in the air remains constant at 21 per cent, regardless of altitude.
- The boiling point for water is lower at high altitudes.
- For every 300 meters a climber ascends, their exposure to UV light increases by four per cent.
- The Gamow bag was invented by Dr. Igor Gamow. A climber suffering from the effects of AMS, HAPE or HACE enters into the bag, which is then inflated. The increased air pressure within the bag simulates a descent.

