



HIGH ALTITUDE ILLNESS

How to avoid it and how to treat it

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The information included here provides a general overview on this topic and may not apply to everyone. Please check with your doctor prior to going trekking for the latest information and to discuss your personal circumstances.

What causes High Altitude Illness?

The low amount of oxygen in the air at high altitudes causes High Altitude Illness. The amount of oxygen in the air goes down as you climb higher above sea level and becomes very low at altitudes above 8000ft/2500m. If you travel to a high altitude, you may feel ill because the air has less oxygen in it. If you stay at a high altitude for a long time, your body gets used to the low oxygen level, and you don't get sick from it.

There are three main types of High Altitude Illness

- Acute Mountain Sickness (AMS)
- High Altitude Pulmonary Edema (HAPE) which affects the lungs
- High Altitude Cerebral Edema (HACE) which affects the brain

These illnesses can be serious, but they can also be prevented.

How can I prevent High Altitude Illness?

You can do two important things:

- Take your time when travelling to higher altitude.
- Sleep at an altitude that is lower than the altitude you were in during the day. For example, if you trek at an elevation of 10,000ft/3,000m during the day, sleep the night before and the night after at an elevation of 8,500ft/2,500m.

When you travel to a high altitude your body will begin adjusting right away to the amount of oxygen in the air, but it takes several days for your body to adjust completely. If you're a healthy adult, you can probably go safely from sea level to an altitude of 8,000ft/2,500m in a few days, But when you reach an altitude above 8,000ft/2,500m, don't go up faster than 1,000 ft/300m per day.

The closer you live to sea level, the more time your body will need to get used to a high altitude. Plan your trip so that your body has time to get used to high-altitude before you start your physical activity.

Guidelines for acclimatisation

- Above 8,000ft/2,500m: Ascend a maximum of 1,000ft/300m per day with a rest day every third or fourth day
- Above 11,500ft/3,500m: Ascend a maximum of 500ft/150m per day with a rest day every third or fourth day
- Above 11,500ft/3,500m: Spend two nights at the same altitude for every 2,000ft/600m gained

The daily ascent recommended is based on the difference between two sleeping locations – you may go higher during the day.

How do I know if I am getting High Altitude Illness?

Some of the first signs of High Altitude Illness are headaches, light-headedness, feeling weak, trouble sleeping and an upset stomach. If you have any of these symptoms be cautious (don't blame other factors) and immediately stop going to a higher altitude, or go back to a lower altitude until your symptoms go away.

More severe symptoms include difficulty breathing while you are resting, coughing, confusion and inability to walk in a straight line. **If you get any of these symptoms go to a lower altitude straight away and get help from a doctor.**

What should I do if I get High Altitude Illness?

The best treatment for any of the three High Altitude Illnesses is to go down to a lower altitude right away. If you only have mild symptoms you may be able to stay at your current altitude and let your body adjust. If you do this, don't do any exercise at all – just rest until you feel better.

If you have severe symptoms go down 1500-2000ft/400 – 600m right away to see if your symptoms get better. Keep going down until your symptoms go away completely.

A medicine called Acetazolamide (brand name Diamox) can be used to treat High Altitude Illness. When you talk with your doctor about your upcoming trip, ask about getting a prescription to take with you. If you start to show symptoms of High Altitude Illness, you can take 125mg to 250mg of the medicine by mouth twice a day.

Drugs used to treat High Altitude Illness

1. Acetazolamide tablets (Diamox)

- Prevention of AMS – 125mg every 12 hours
- Mild AMS – 250mg every 12 hours
- HAPE and HACE – 250mg every 6 hours

Side effects: Can produce a feeling of tingling in your fingers, lips and toes (pins and needles). This is not serious. It may also cause dehydration so drink plenty of fluid while taking this medicine. Avoid Acetazolamide if you have a sulphur drug allergy.

2. Dexamethasone tablets (Dexona)

Used in HACE. Start with a 8mg first dose and then take 4mg every 6 hours.

3. Nifedipine tablets

Used in HAPE. 10mg to 20mg every 6 to 8 hours.

Side effects: Nifedipine can have serious side effects including a sudden fall in blood pressure, dizziness, flushing and headaches.

Is it safe to go to high altitude if I have a chronic illness like heart or lung disease?

It might be safe - it depends on the type of chronic illness you have and how severe it is. Most people with chronic illnesses such as heart or lung disease can safely spend time at altitude if their disease is under control. People with coronary artery disease, mild emphysema, or high blood pressures aren't at greater risk of High Altitude Illness than people without these diseases. They also don't risk making their disease worse by travelling to a high altitude. Being overweight does not increase the risk of getting High Altitude Illness.

Some diseases do make going to a high altitude very dangerous. People with sickle cell anaemia shouldn't go to high altitude. High altitude is also dangerous for people with severe heart and lung diseases such as chronic obstructive pulmonary disease (COPD) and severe emphysema, and in people with severe heart disease. If you have a chronic disease, ask your doctor for advice before you travel to high altitude.

Is going to high altitude dangerous during pregnancy?

There isn't much information about the risk of High Altitude Illness during pregnancy, so it's hard to say if going to a high altitude is safe for pregnant women. Some experts recommend that pregnant women not travel to an altitude above 8,000 ft/2,500m. If you're pregnant, ask your doctor for advice before you travel to a high altitude.

What about children and high altitudes?

It's usually safe for children to go to high altitudes, but they're more likely to get High Altitude Illness because their bodies have a hard time adjusting to the low oxygen in the air. A child may not be able to recognize the symptoms of High Altitude Illness, so parents and other adults must carefully watch for any signs of High Altitude Illness in children.

Remember: Don't ignore the signs.

High Altitude Illness can cause death if you don't recognise the signs or don't believe they are caused by high altitude. When you have any of the symptoms associated with High Altitude Illness, don't go to a higher altitude until you feel better and your symptoms have completely disappeared.