

PEOPLE WITH PRE-EXISTING CONDITIONS GOING TO THE MOUNTAINS

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Introduction

This paper is intended for doctors and interested non-medical persons but was not originally written for mountain medicine experts.

As more and more people are taking holidays at altitude, many of them are elderly, there are going to be a number suffering from chronic medical conditions. How should they be advised?

Effect of altitude and the mountain environment.

At altitude the low barometric pressure means that the oxygen inhaled is at a lower pressure than at sea level. This in turn means that the oxygen transport system of the body is operating under difficulties and any chronic condition which affects this system will make matters worse. Thus diseases of the cardio-respiratory system are especially likely to interfere with performance at altitude.

Apart from the effect of altitude itself, the mountain environment poses other hazards. The great ranges are situated mostly in under-developed countries and in wilderness areas where gastro-intestinal problems are common and medical help uncertain. Altitude holidays usually involve quite strenuous exercise and put a strain on the joints, especially knees, hips and backs. Finally the different culture and life style of such a holiday may impose psychological stresses which may be too much for some people unused to the difficulties and privations of such a trip.

There is also the consideration that on an expedition or trek the aphorism, "No man is an island" applies with greater force than in normal urban life. One member's illness affects the whole team and may even imperil the safety of other members. Therefore it is ethically imperative that if a person knows he/she has some pre-existing condition which might affect his performance, he should make it known, at least to the leader or medical officer if there is one.

Specific conditions.

A few of the commonest conditions are discussed here. Further reading is suggested at the end of the paper.

Respiratory

Conditions such as **chronic bronchitis, emphysema (COPD)** and other lung conditions which cause breathlessness at sea level are obviously going to cause even more shortness of breath at altitude. However **asthma** sufferers usually find they have less trouble at altitude. Although they may be breathing cold dry air, which can be a cause of bronchospasm, because of the absence of the allergens in the air at altitude, in the majority of cases, they have less wheeze. The increased sympathetic drive and adrenal steroid output may also help. They should, of course, take a good

supply of their usual medication.

Cardiac conditions

Clearly patients with symptomatic heart conditions (e.g. **unstable angina, heart failure** etc.) should not go to high altitude, but patients with **systemic hypertension** controlled by medication seem not to be at increased risk nor do patients following successful **coronary bypass surgery** or **angioplasty** who have good performance at sea level. Patients with **angina** controlled by drugs should certainly consult their cardiologist before considering an altitude trip. The question of whether altitude is a risk factor in the aetiology of **coronary occlusion** in previously asymptomatic people, is unknown but the best evidence is that it is not a significant factor.

Blood disorders

Patients with **anaemia** will be more short of breath at altitude and some women may have low iron stores so would benefit from taking iron tablets when going to altitude. But for the majority of people these and vitamins are unnecessary. Patients with **bleeding or clotting problems** should not go to altitude. Although the effect of altitude on the clotting system is debated the remoteness from medical help is reason enough to advise caution. Similarly patients on **anti-coagulation therapy** for any reason should probably be advised to choose a holiday where medical help is readily available. Patients with **sickle cell disease** also should not go to altitude. Even with **sickle cell trait** there is a 20-30% chance that altitudes above 2000 m may trigger a crisis. **Aspirin** is taken by a number of people going to high altitude with the idea of reducing any risk of thrombotic problems due to the high haematocrit of altitude. We have no evidence either way for this practice but the usual precautions in taking aspirin (or any NSAIDs) must be stressed.

Endocrine disorders

Diabetes mellitus

Altitude itself probably does not have any effect of diabetes and many diabetics have enjoyed holidays in the mountains. However the increased exercise is likely to reduce the insulin requirements and, if this is not allowed for, hypoglycemia is a risk. Both the patient and companions need to be aware of the risks of hypo- and hyperglycemia and know how to recognize and treat these problems in the absence of medical help.

Steroid therapy.

Patients who have been on steroid replacement therapy for adrenal failure, should increase their steroids on going to altitude to cover the increased requirement due to the stress of altitude.

Gastro-intestinal disorders

The commonest medical problems amongst trekkers are usually diarrhoeal disorders and anyone with a chronic pre-existing condition of this sort, e.g. **Crohn's or ulcerative colitis** should probably not plan this sort of holiday. Peptic ulcer should be treated before going into the high mountains. Similarly conditions such as **hemorrhoids, fissure in ano** etc. considered trivial at sea level can cause real problems in the mountains and need to be dealt with before the trip.

Neurological conditions

Migraine. Many migraine sufferers find that ascent to altitude triggers an attack, often a severe one with neurological symptoms. It can be difficult to distinguish this from AMS or even HAPE although the headache of AMS is not usually unilateral, as it is typically in migraine. Migraineurs should take a supply of the drugs that usually help them and use the drugs at the first sign of an attack. If in doubt about the diagnosis, especially if symptoms persist after using drugs which normally relieve symptoms, the patient should be treated as for AMS or HACE.

Cerebro-vascular disorders

Patients with known or suspected cerebro-vascular problems such as TIAs, previous strokes or carotid artery stenosis should probably be advised against altitude travel because of the risk of thrombosis with the high haematocrit.

Epilepsy

Contrary to what might be expected, there is no evidence that altitude increases the risk of an epileptic seizure, so patients whose epilepsy is well controlled can enjoy holidays at altitude with the same confidence as would apply to hill walking at low altitude.

Joints and ligaments

A trek, particularly long down-hill sections, will reveal even slight weaknesses in weight bearing joints. Again this is not due to altitude itself and would-be trekkers can test themselves out at low altitude. Non-steroidal anti-inflammatory agents are valuable in this area and a good supply of various drugs should be taken. They should be started early (taken on a full stomach) and in adequate dosage rather than being heroic about the pain.

ENT and dental problems

Nasal polyps which interfere with breathing should be dealt with prior to the trip as should any outstanding dental problems. Dental abscesses seem to be very common at altitude, possibly as a reflection of reduced immune function. They can usually be kept under control by antibiotics until return home.

Mental outlook

For the majority of people venturing into the high mountains is a wonderful experience even if, at times, the conditions are harsh and uncomfortable. Most have graduated via family trips into the hills, short camping trips near home, hill walking etc. But some suddenly get the idea that they want to make some big trip with no previous experience and have quite unrealistic ideas of their own performance. Sometimes all works out well and they adapt to what is a very different life style with no problem but others are clearly psychologically quite unsuited to it and become psychiatric casualties, to the distress of themselves and their companions.

Summary

An account of this sort inevitably focuses on the gloomy side. Many people with chronic conditions can nevertheless enjoy holidays in the mountains. The important thing is to assess the situation realistically, take advice, be honest with oneself and

one's companions and tailor the trip to one's abilities.

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