



TAILOR-MADE DESTINATIONS

HEALTH NOTES FOR TRAVELLERS TO THE TROPICS

The purpose of the notes is to encourage you to prepare yourself well for your expedition. The potential problems listed below make up a formidable and alarming list. You are most unlikely to suffer from any of the problems if you start your journey well prepared and if you act sensibly throughout your holiday. **"Forewarned is forearmed."**

NB: All travellers should have Sections A & B. High altitude trekkers & climbers should also have Section C.

SECTION A: General Precautions

Visitors to the tropics are prone to **dehydration and heat related conditions**. This is particularly so in the first few days of travel, and more so if the traveller is exerting him or herself. e.g. trekking. Drink a lot more non-alcoholic liquid than normal, and increase your intake of ordinary table salt. About two extra teaspoons of salt per person per day is a rough guide. Simply put more on your food. Do not bother with salt-tablets, they are not easily absorbed by the body. Cover up with light loose fitting clothing and use a good sun block on any exposed skin. Always wear a wide sun hat and ensure your neck is covered.

Drinking water, including water for cleaning your teeth, must be pure. Boil for at least four minutes, filter, or use iodine or chlorine tablets.

Personal hygiene is most important; and you should wash hands thoroughly before eating and after using the toilet. Scrub with a nailbrush and soap for around three minutes. Baby wipes, and antiseptic wipes are very useful; and you should always have some in your daypack.

Avoid petting any **animals**.

Avoid being bitten by insects, particularly the mosquito. Avoid malaria by avoiding being bitten and by taking regularly the tablets prescribed by your GP.

Treat even **small wounds** and scratches urgently. Abrasions in the tropics are most likely to become infected. Clean the wound and dress it. Change the dressing regularly.

Take a simple, purpose built **medical kit**. See our information pack. Also consider taking an AIDS kit.

SECTION B: Bush Trekking & Expeditions

Hot and dusty conditions can lead to fluid loss, salt loss, and overheating of the body. This can cause heat exhaustion or even heat stroke. In **Heat Exhaustion** symptoms are profuse sweating, dizziness, and fatigue. *Treatment consists of removing the patient from the sun, fanning or cool sponging, and oral rehydration.* **Heat Stroke** is a potentially fatal condition and differs from heat exhaustion in that the body temperature rises above 40 degrees centigrade, sweating may cease, the body will be very hot to touch, headache is likely, and mental disturbance. Urgent treatment to remove the patient from the sun, surface cool the body with cool liquid, followed by evacuation to hospital. Other physical conditions likely to occur are sunburn and dust/grit in the eyes. Cover exposed skin, use sun block, and wear sunglasses. If a contact lens wearer it may be advisable to take a spare pair of spectacles.

Ailments such as diarrhoea, which cause dehydration under any circumstances, should be monitored carefully in the bush. Rehydrate thoroughly using Dioralyte, & consider antibiotics in severe cases.

Good footwear and care of the feet is most important. Well-broken in walking boots should be worn. Trainers are too flimsy for wilderness treks. Sandals leave the feet exposed to sunburn, abrasions, thorns, insect and animal bites. Desert or gortex boots are satisfactory. Any soreness of the feet should be treated **immediately** with "second skins" or other dressings. Treating sores early will help avoid crippling problems developing later. It is better to hold up the group for a few moments to apply an initial dressing rather than to handicap the expedition with serious lameness caused by untreated sores.

Bibliography:

"The Traveller's Guide to Health" This helpful booklet is issued free. Call freephone 0800-555-777.

"Travellers' Health" Richard Dawood. Oxford paperbacks.

SECTION C: Impact of High Altitude on the Human Body and Brain

~~As~~ altitude increases barometric pressure (a measure of the "weight" of the air) reduces.

~~At~~ 19000 feet barometric pressure is half that at sea level.

~~As~~ a direct result of this fall in pressure, oxygenation decreases.

~~At~~ the poles, the pressure drops more quickly than at the equator.

~~In~~ July/August atmospheric pressure is universally higher than other times of the year. It is therefore better to be climbing at the equator in mid summer.

Hypoxia (the reduction of oxygen content) may lead to:

~~AMS~~ (Acute Mountain Sickness),

~~HAPE~~ (High Altitude Pulmonary Oedema), and

~~HACE~~ (High Altitude Cerebral Oedema).

To avoid these conditions we need to acclimatise to the increasing altitude by climbing slowly. It is also possible to use a regime of drugs such as Diamox to deter AMS and the more serious HAPE & HACE.

AMS normally develops about 6-12 hours after critical altitude is reached. Serious effects of altitude have been documented as low as 3,000 feet; but in most cases problems will materialise around 12,000 feet. Virtually all climbers will experience some of the symptoms of AMS listed below. In a sense AMS can be thought of as a relatively benign condition that could lead to the more serious developments of HAPE & HACE. AMS symptoms are some or all of the following and likely to be found in the following % of cases; headache (96%), sleep disturbed (70%), loss of appetite (38%), nausea (35%), dizziness & lassitude (27%), vomiting (14%). **It follows that AMS will increasingly affect the ability of the climber to make sound decisions.**

Prevention & reduction of AMS: climb slowly on an itinerary that is designed to give you adequate acclimatisation; and be very fit. Fit climbers are 17% likely to suffer, whereas unfit climbers are 43% likely to suffer. You may want to discuss with your doctor a drug regime such as Diamox. Choosing Diamox is a personal decision. Gane and Marshall climbs are designed with acclimatisation in mind, and you should not need Diamox, although it can help in certain cases. Please see our notes on Diamox.

AMS need not lead to the abandonment of a climb. If the symptoms are mild, a rest day at the same or a lower altitude may be sufficient. However if the symptoms persist the climber must descend. Otherwise there is the real risk that the illness will develop into the more serious and life-threatening HAPE or HACE.

HAPE symptoms (some similar to AMS) demand immediate descent or death may result. They include; breathlessness on exertion, cough, breathlessness at rest, gurgling in the chest, blood in sputum. One of the first symptoms is more than average breathlessness on climbing, followed by breathlessness at rest, often accompanied by a cough. But a dry cough is also common at altitude and in most cases is not due to HAPE. **Immediate descent required; & if possible drug regime of Nifedipine.**

HACE usually occurs only above 12,000 feet and after rapid ascent. The incidence in the Himalayas is 2% of climbers going to above 13,200 feet. This figure includes even mild cases. Symptoms generally but not always seem like those of AMS but the **headache is severe** and not relieved by analgesics. Further symptoms may include; vertigo, ataxia - unsteady movements & balance, and hallucinations. As ataxia is one of the first symptoms usually to appear, it is worth doing a heel to toe walking test. **Treatment is descent and more descent. Drug regime of Dexamethasone may help.**

Further Conditions associated with High Altitude

Eyes: Retinal haemorrhages are possible and, if they appear to enlarge, descent is advised. Snow blindness caused by UV light damaging the cornea.



Sleep may deteriorate with hypoxia (lowering of oxygen content). However you should remember that an 8 hours sleepless night lying at rest is the equivalent of 6 hours sleep, so do not become distressed about lack of sleep.

Gastro-Intestinal System: is affected and weight loss is to be expected. On a 3-6 week expedition to altitudes over 12,000 feet climbers can expect to lose 12 to 17lbs. Climbers lose most weight during the first few days at altitude. We consume more energy at altitude and the fall in temperature demands an increase in diet. Furthermore our basal metabolic rate increases in spite of the good clothing and protective gear. Overall expect to need about 450kcal/day extra. A diet high in carbohydrates (65%) and low in fat is recommended during ascent and periods of maximum exertion. Hygiene is super-important and hands should be thoroughly washed and scrubbed for around 3 minutes before eating, after the toilet etc. in order to reduce the risk of debilitating gastro-enteritis.

Dehydration is highly possible and liquid intake should be kept up. But there is no evidence that lots of liquid prevents AMS. Hypoxia stimulates a urine flow. AMS usually leads to a reduced urine output. The conclusion seems to be: "drink more than usual, but not to the point of nausea."

The Skin at altitude is at risk from the increased UV, the cold and the wind. Symptoms include; ageing, sunburn, cold sores, prickly heat, and UV conjunctivitis. Your kit should contain high factor suncream and lipsalve with sunblock.

Peripheral Oedema or the swelling of hands & feet is sometimes noted at altitude. The symptoms usually diminish after a few days, and they do not necessarily herald HACE or HAPE.

Mild Hypothermia arises when the body core temperature is caused to drop to between 35 & 32 degrees centigrade. Symptoms include shivering, stumbling and poor co-ordination. Treatment includes: warm dry clothes, warm packs, and plenty to drink - preferably warm liquids. Below 32 degrees is considered to be **severe hypothermia** and when the core temp falls below 30 degrees shivering will cease. The patient must be disturbed as little as possible, insulated with warm items such as a sleeping bag; and very gently taken to a lower altitude. This is a very serious condition requiring skilled medical attention.

Heat Exhaustion & Heat Stroke can arise in mountain terrain as well as lowland hot zones. Temperatures at altitudes of over 20,000 feet (6,000metres) can reach 30 degrees centigrade in the sun. Heat Exhaustion is the result of salt and water loss through sweating accompanied by low oral intake of fluids. Symptoms are profuse sweating, dizziness, and fatigue. Treatment consists of removing the patient from the sun, fanning or cool sponging, and oral rehydration. Heat Stroke is a potentially fatal condition and differs from heat exhaustion in that the body temperature rises above 40 degrees centigrade, sweating may cease, the body will be very hot to touch, headache is likely, and mental disturbance. Urgent treatment to remove the patient from the sun, surface cool the body with cool liquid, even snow or ice, followed by evacuation to hospital.

Bibliography for Mountain Health:

"Expedition Medicine" published by the Royal Geographical Society

"High Altitude Medicine Handbook" by Andrew Pollard & David Murdoch. Published by Radcliffe Medical Press.