

NOTES ON ACETAZOLAMIDE (DIAMOX™)

Notes for doctors and trek/expedition leaders (Dr Jim Duff, 31/07/2007)

Acetazolamide speeds up acclimatization to high altitude by helping the kidneys re-adjust the acid/base balance. It also drives the breathing rate, which can slow down at altitude. A dose takes 12 hours to become fully effective.

Acetazolamide does NOT mask the onset of AMS, HACE or HAPE, but taking acetazolamide does not guarantee that altitude illness will not develop.

USING ACETAZOLAMIDE AT ALTITUDE

There are three situations where acetazolamide is useful:

1. Prevention of Acute Mountain Sickness (AMS)

Acetazolamide reduces the incidence of AMS. However its routine use is NOT recommended.

Acetazolamide should be considered when:

- A person has a history of recurrent altitude illness
- A rapid height gain is unavoidable, such as:
 - Any ascent of 1000m or more in one day (e.g. rescue missions, or when terrain prevents intermediate camps, or climbing Mt Kilimanjaro - 5896m - without at least 7 nights acclimatizing on the mountain). In this case consider using 125 mg 12-hourly (double the dose if AMS symptoms appear) from the start of the ascent until back below 3000m
 - Flying or driving rapidly to altitude (e.g. Lhasa 3660m, Leh 3500m, Cuzco 3470m, La Paz 3880m). In this case consider using 125 mg 12-hourly (double the dose if AMS symptoms appear), starting 24 hours before flying and continue for 3 days after arrival or the rest of the time at altitude. This becomes more important if the traveller's itinerary does not allow for 2 or 3 rest days at the same or lower altitude before further ascent is undertaken

2. Treatment of altitude illness

If a person develops AMS and has a flexible schedule, the best approach is to rest at the same altitude until symptoms disappear. However this ideal approach is not always possible due time, weather and geographical considerations. So, given that no one should ascend with symptoms of altitude illness, a person with persistent

symptoms of mild AMS (despite non-medical treatment such as rest, re-hydration, etc) should consider starting acetazolamide (125 to 250 mg 12-hourly) as this offers the best chance to safely continue their trek. This situation is often the plight of slow acclimatisers on a tight schedule.

Note: see separate handout *Altitude Illness: AMS, HAPE and HACE* for the comprehensive treatment of altitude illness.

3. Poor sleep, disturbed sleep or periodic breathing at altitude

Poor sleep is common at altitude. Before considering giving acetazolamide ('the high altitude sleeping pill'), do check the person is warm in their sleeping bag (especially their feet), improve ground insulation, advise to avoid caffeine, check peeing arrangement and offer reassurance to the anxious. Having dealt with these factors a trial of acetazolamide is indicated, especially if the insomnia is associated with **periodic breathing** (this is recognized by repeated cycles of normal or fast breathing followed by a long pause, then several gasping breaths. The sufferer may wake up feeling like they are suffocating. In the morning they feel exhausted and weak. Periodic breathing can disturb the sufferer's tent 'buddy' who should report it). The dose of acetazolamide is 125 mg one hour before going to bed. If the problem persists, increase the dose to 250 mg.

ACETAZOLAMIDE: ALLERGY AND SIDE EFFECTS

Avoid acetazolamide if there is a history of a severe allergic reaction to acetazolamide or sulfa containing medications (mainly the sulphonamide-type antibiotics such as co-trimoxazole, Septrin™, Bactrim™). If the sulfa allergy is mild (rash, diarrhoea, etc), test doses of acetazolamide (125 mg 12-hourly for 2 days) may be tried well before departure (but do not attempt this if the sulfa allergy is severe!). Most people with mild sulfa allergy can take acetazolamide.

Common side effects of acetazolamide include:

- **Paraesthesiae** (tingling) in lips, fingers, toes or other body parts and a metallic taste when drinking carbonated drinks are the most obvious. Both side effects are milder with lower doses and disappear on stopping the medication
- Acetazolamide can cause **photosensitivity** (sunburn more easily) so use hats, gloves, sunscreen
- Extra urine output. The effect of acetazolamide to increase urine output is mild (people pee more as part of the normal acclimatization process as they ascend)
- Rarer side effects include: flushing, headache, dizziness, nausea, diarrhoea, tiredness