

# Chapter 23

## Altitude Acclimatization

To minimize the risk of developing altitude sickness, field parties intending to work at altitudes greater 8200 ft (2500 m) must plan acclimatization time into their schedule prior to going above 8200 ft (2500m). In situations where the field team is climbing or using vehicles to move higher, individuals must spend a restful 24 hour period at each 1000-1500 ft (300-450 m) increment above 8200 ft (2500 m) to acclimatize before proceeding higher. Field groups who plan to ascend above 13,125 ft (4000 m) must plan several restful 48 hour acclimatization stops at intermediate altitudes above 8200 ft (2500 m).

Anyone who experiences altitude-related problems must go no higher and should descend to a lower altitude until the symptoms resolve. If symptoms persist or increase in severity, the person should return to a lower altitude and have medical attention.

Field teams that are deploying directly from sea level to an altitude of 9,900 ft (3000 m) or greater by aircraft must plan to acclimate at an intermediate altitude for a minimum of 48 hours prior to the drop-off at a higher altitude. Anyone deploying directly to altitudes in excess of 12,200 ft (3750 m) must acclimatize for a minimum of 72 hours at 8,200-10,900 ft (2500-3300 m).

Because there is medical support available at

Amundsen-Scott South Pole Station (elevation: 9,200 ft /2800 m ), no intermediate acclimatization stop is required for personnel traveling there by aircraft from a sea-level location. Short periods at altitude, no more than 8 hours, to high altitudes no greater than 13,125 ft (4000 m) do not require acclimatization.

Individuals who have experienced prior episodes of High Altitude Pulmonary Edema (HAPE) will not be allowed to ascend to altitudes in excess of 9,900 ft (3000 m) without approval by a competent medical authority. Individuals who have experienced a prior episode of High Altitude Cerebral Edema will not be allowed to ascend to altitudes in excess of 9,900 ft (3000 m).

## **23.1 Treatment and Training**

McMurdo Station and Amundsen-Scott South Pole Station have physicians on duty who are familiar with and are equipped to treat altitude-related problems. Chemoprophylaxis (e.g., acetazolamide [Diamox]) for Acute Mountain Sickness is available from either clinic. Chemoprophylaxis (nifedipine) for HAPE may be made available to individuals who have suffered prior HAPE episodes and are seeking approval to ascend to a high-altitude site. South Pole has a portable hyperbaric chamber (a Gamow bag) to increase the effective atmospheric pressure for individuals suffering from altitude-related problems.

All field personnel deploying to field sites that are greater than 8,200 ft (2500 m) must attend a High-

Altitude Lecture from the Field Safety Training Program in McMurdo and be equipped with a Gamow bag. Gamow bags and bottled oxygen are issued by the BFC.

**Selected References:**

- Cymerman, A. and P.B. Rock. 1994. *Medical Problems in High Mountain Environments*. Technical Note #94-2. U.S. Army Research Institute of Environmental Medicine. Natick, MA
- Houston, C.C.. 1992 Mountain Sickness. *Scientific American*, Oct 1992.
- Hackett, P.H., R.C. Roach, and J.R. Sutton. 1989. *High Altitude Medicine in Management of Wilderness and Environmental Emergencies*, 2nd ed.. Edited by P.S. Auerbach and E.C. Geehr. C.V. Mosby Co., St. Louis, MO.