EDITORS' NOTE

Hypoxia – high, low, and far

Having just returned from the International Society for Mountain Medicine conference in Bolzano, Italy, the Editors are reminded of the international nature of wilderness and mountain medicine. Researchers across the globe are working to understand the needs and improve the care of patients in wilderness and mountain environments. Meetings such as this foster a sense of collaboration and cooperation across oceans and cultures. Learning from the best in the field might mean traveling to the European Alps to study avalanche and crevasse rescue, to Asia to investigate native populations and their unique adaptations to altitude, or to Nepal to collaborate with those who are advancing excellent medical care at remote clinics. Our current *Wilderness & Environmental Medicine* issue highlights work from the dusty streets of Kathmandu, to the pastured peaks of the Austrian Alps, to the forests of New York State.

One of the core topics of *Wilderness & Environmental Medicine* is dive injuries and the effects of water and hyperbaric pressure on the human body. The study by Lemaitre et al in this issue teaches us about breath-hold, or “free” divers, and their susceptibility to developing bubbles in the blood stream that contribute to decompression sickness. The sport of free diving has gained popularity over the past number of years with dive records well exceeding 100m on a single breath, without the use of sleds or weights to descend or ascend. Along with the increase in the sport’s popularity and participants pushing the limits of depth, fatalities have increased as well.

Shallow water blackouts are responsible for the majority of these deaths, as divers have nearly completed their dive when overwhelming hypoxemia causes unconsciousness. William Trubridge, a champion free diver, lost consciousness at 12m below the surface while ascending from a dive in 2006. He survived the incident and still teaches free-diving today, but reportedly has lost his sense of taste, which has never returned. Much is to be learned about free-diving, and *Wilderness & Environmental Medicine* seeks research and submissions that

will help reveal the physiology of these unique sportsmen and to improve their safety, both during competition and recreation.

On the other side of the spectrum, high altitude climbers are trying to *make* themselves hypoxic to prepare for high peaks. Hypoxic tents have been an intriguing option for those attempting to “pre-acclimatize” to high altitudes. They work by enhancing the nitrogen content into ambient air, thereby decreasing the available pressure of oxygen. In this issue, Dehnert et al showed a decrease in acute mountain sickness after sleeping in a hypoxic tent for two weeks. Few other quality studies on the effects of hypoxic tents have been completed to date, even though many high altitude expeditions and coaches of low altitude athletes are recommending that clients sleep in these tents prior to their trip or competition. Some guide services are purporting to decrease the total time of an 8000m peak ascent to under 4 weeks using hypoxic tents for training. This is intriguing and attractive to those who have restricted time in their schedule. However, the expense and sparse evidence of hypoxic tents has limited their universal acceptance. We hope that more research will shed light on their applicability in the future.

Whether diving or climbing, cold or hot, high or low, the wilderness and austere environments are what keep us playing in the outdoors as well as attentive to its risks. The field of wilderness medicine stands only to benefit from international collaboration, research, and the sharing of information – including publications such as *Wilderness & Environmental Medicine*.

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