

EDITORIAL

HIGH ALTITUDE, HYPOXIA AND HUMAN PERFORMANCE

Dear Reader,

the editors have decided to focus on aspects of high altitude and human performance in this issue. Most papers were presented at the meeting at Bohinjka Bela in September 2009 and show the broad spectrum of the interaction between humans and a hypoxic environment. There are aspects of performance, of occupational health and safety, of procedures of correct measurement of several factors in such environment – e.g. SaO₂ – and many others. Some studies struggle with genes and molecules while others deal with prevention of altitude disease or aspects of aviation medicine. Or in other, less formal words: hypoxia and human physiology covers anything from the molecules and genes to the summit of Mt. Everest.

The perfect organized symposium gave the chance to meet students, advanced researchers and “professionals” (whatever that might be...). There was enough time for intensive discussion in a relaxed atmosphere. Experiences in hypoxia training were discussed and several protocols compared as it was done for the effects of dynamic load and exercise. One session focused helicopter rescue in the mountains. Here tactical, medical and safety considerations were presented as well as occupational medicine and safety in hypoxia. Another interesting paper focused the risk of hearing loss by helicopter noise in a hypoxic environment: hearing is an active, ATP consuming process, but the inner ear is powered exclusively by ATP diffusion and therefore a situation of “energetic exhaustion” may cause higher risk for noise-induced ear damage by hypoxia.

The list of interesting topics could be much longer. Summarized it was an amazing meeting at a wonderful place. As German member of the Medical Com-

mission of the Union Internationale des Associations d'Alpinisme (UIAA MedCom) and as president of the newly founded German Society for Travel Medicine, Migration Medicine and Tourism Medicine (GSTMT, www.gstmt, homepage in progress) I appreciate very much both, a good meeting and the support which was given to our younger colleagues who enthusiastically presented their results. We are proud to present some of the lectures in this issue. As you will see there was much done on hypoxia and performance recently but there is also even more to be investigated. Keep on doing research! We invite scientists and all the readers to join the next meeting in 2011 at the Watzmann in the Bavarian Alps (detailed information in later issues).

But there are some other interesting topics: Heggie reports about two deaths at Mt. Rainier. It is interesting to see the differences between mountaineering in Europe – where most safety procedures follow UIAA recommendations – and North America. Nevertheless, in both regions some discipline and some brain is necessary to enjoy mountaineering for a life-time. Waanders discusses a new approach in the pathophysiology of acute mountain sickness (AMS) as a stress situation of the right frontal lobe. Some readers who follow more “traditional” interpretations of this syndrome may initially think that this approach is strange, but there are good arguments which should be carefully considered. This is sports medicine with all its facets and flashlights: an interesting, fascinating and multidisciplinary field of research and medicine!

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