

Improving the quality of high altitude medicine

For the very first time high altitude physicians from Eurac Research, working with an international team of experts, have drawn up a set of guidelines for research in high mountain regions

Study location, exact altitude and a detailed profile of the study participants are just three of altogether 42 factors which are to be included in any future study, project description or publication related to high altitude medicine. A select group of experts, including high altitude physicians from all over the world, were invited to define which factors were most pertinent for inclusion in the guidelines by forming a consensus through multiple rounds of discussion. The aim of these guidelines is to standardise data capture in this area of research and thereby guarantee, and indeed improve the quality of clinical research. Scientists from Eurac Research led the evaluation and coordinated the group of experts.

“Up until now it was frequently the case that data was not collected in a consistent manner or that key data was missing from study reports. Consequently this made it very difficult for researchers to replicate studies or to make comparisons between studies. These new guidelines will provide scientists and physicians alike with a more structured approach, informing both their study design and publication content relating to high altitude research,” says Monika Brodmann Maeder, High Altitude Physician at Eurac Research.

The factors considered fundamental to high altitude research by the expert group range from information relating to prevailing local conditions, to the personal characteristics of the study participants. Thus, in line with the guidelines researchers should indicate the altitude of the starting point, maximum altitude reached, and the altitude where night camps are set up. Using these collective data, researchers will be able to establish specific altitude profiles and ascent rates, in a bid to better ascertain *inter alia* why high altitude diseases occur more frequently in one scenario rather than another. Additionally, along with the age and gender of the study participants, information should be logged as to whether they should be considered altitude native or naïve. Equally, considered crucial was the medical history of each of the study participants, i.e. record of incidence and medical treatment received for serious high altitude pathologies such as: high altitude cerebral oedema, high altitude pulmonary oedema, and acute mountain sickness.

In future, scientists should also record data on whether study participants received additional oxygen and to what extent. The guidelines also contain a series of definitions which should ensure that researchers all over the world have a common understanding of each term commonly used to describe high altitude pathologies.

“Using these guidelines will standardise data collection and enable study results to be readily used and compared in this new era of open science. We expect this to increase the validity of research in high altitude medicine,” Monika Brodmann Maeder continues.

These new guidelines will play a significant role in shaping high altitude research protocols inside the heavily anticipated terraXcube climate simulator, due to open in Bolzano (Italy) in autumn 2018. Equally, these guidelines provide the necessary structure and emphasis to standardise data collection worldwide, enabling scientists to even compare data taken from field studies with those data obtained under simulated chamber conditions.

The guidelines are freely available from: <http://online.liebertpub.com/doi/pdfplus/10.1089/ham.2017.0160>



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