

Name of research institute or organization:

Pneumologie, Medizinische Klinik Innenstadt, University of Munich

Title of project:

Comparison of lung volumes and impulse oscillometric lung function before and after short term high altitude exposure

Project leader and team

Dr. med. Rainald Fischer

Project description:

It is unclear whether short term high altitude exposure induces a subclinical lung edema. Impulse oscillometric (IOS) lung function measurements offer the possibility to detect very small changes in peripheral lung volume. Therefore, we exposed 24 subjects to 6 and 18 h of high altitude (starting from altitudes below 500 m) at the Jungfraujoch. Baseline measurement of IOS and standard lung function including pulse oxymetry were performed directly before ascent at Grindelwald and after 6 and 18 h of altitude exposure. All subjects tolerated the altitude exposure well, after 6 and 18 h no symptoms of high altitude pulmonary edema were detected. However, 2/24 subjects showed mild acute mountain sickness. According to the data assessed at Grindelwald and the high altitude laboratory, IOS results were unchanged in the majority of the subjects. Unfortunately after the conclusion of the experiment our laptop containing all the lung function data was stolen, and we are therefore not able to provide reliable lung function data. Some subjects with mild obstructive lung disease showed improvement of bronchial obstruction, probably due to the reduced air density.

Key words:

Lung function, pulmonary edema, impulse oscillometry

Internet data bases:

www.bexmed.de

Collaborating partners/networks:

German society of mountain and expedition medicine, Austrian society for high altitude medicine

Scientific publications and public outreach 2003:

Refereed journal articles

Fischer R., Dizzy heights. How the heart and lungs react to hypoxic states high up in the mountains, *MMW Fortschr Med.* **145**(8), 31-32, 2003.

Fischer R., Toleration of high altitudes by patients with heart and pulmonary diseases, *MMW Fortschr Med.* **145**(8), 36-38, 2003.

Thesis

Steiner U., Variation of lung function during short and long term stay at an altitude of 3454 m. MD Thesis, Universität Munich, 2003.

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