

# Multiple sclerosis and therapeutic climbing: an interventional long term pilot study indicates beneficial effects

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## Introduction

Multiple sclerosis (MS) is a neurological disease of the central nervous system that often affects young individuals. It is characterised by various debilitating symptoms (Kesselring et al., 2005). So far most advices for patients with MS include only limited physical activity since fatigue and overexertion or activated immune cells (Peters<sup>3</sup> et al., 1997). The aim of this study was to investigate if climbing might be an appropriate physical activity for patients with MS and has a positive effect on their mental state.

## Methods

This pilot study consisted of ten patients (7 female, 3 male), with a mean age of 38 (+-6) years. Scales on the EDSS-scale ranged between 0 and 7 (mean = 3,9), mean age at diagnosis for MS was 26 years (+-6). All of the patients were interested in sports before their diagnosis, only 5 of them were actually doing sports (swimming, fitness, cross country skiing) at the beginning of the study. The study was undertaken on six 2,5h climbing sessions on consecutive Saturdays. Controlled top rope climbing and safety-standards were ensured. Questionnaires (perceived physical and psychological state, Kleinert<sup>1</sup>, 2001), scientific observation and interviews (group reflection and individual interviews) were used to detect alterations of their comfort, physical and mental condition.

## Results

All participants describe an improvement of their physical and mental conditions significantly and enhanced their sense of balance and quality of life.

The perceived physical flexibility before/after increased significantly from session 3 to 6. Regarding the psychological state the same significant differences were found for the dimension self assurance. While the fatigue in the first session was higher after climbing, it changed for the remaining 5 sessions.

Results from the observation papers, reflections and answers on the questionnaires and interviews revealed that all of the patients with MS felt "better" after climbing. The patients felt "more powerful" and "clearer in mind". Furthermore all of them reported to handle their problems of everyday life more easily. One patient stated to overcome the anxiety of altitude during the six times of climbing completely. A strengthening of self assurance and a reduce of anxiety were registered.

## Conclusions

In summary our climbing intervention improved physical and psychological functions in MS patients. Therefore, it might be appropriate to advise participation in regular exercise programs such as a climbing training. To prove long term effects we will do a follow-up-survey after a year and we are now engaged to

extend the evaluation of mental and physical effects of climbing with MS-patients and incorporate further details on motor control.

### **References**

<sup>1</sup>Kleinert J., Liesenfeld M. in: *Denken, Sprechen, Bewegen. Köln*, p 283-289, 2001

<sup>2</sup>Kesselring J., Beer S. in *Lancet Neurol.*, 4(10), p 643-652, 2005

<sup>3</sup>Peters C., Raabe-Oetker A.: *Neurologie und Sport. Köln*, p 61-90, 1997