CHANGES IN EVERYDAY ACTIVITY INDUCED BY AN OBESITY INTERVENTION PROGRAM

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Introduction

In professional soldiers of the German Armed Forces the development of obesity is comparable to the general population in Germany leading to a serious loss of physical fitness [1]. Therefore, an obesity intervention program was established at the Institute of Sports Medicine of the German Armed Forces in Warendorf that is based on a two-week course with instructional and practical issues in nutrition and sports.

This study was carried out in order to assess the outcome of the program in relation to the everyday activity of the subjects.

Methods

24 male subjects (mean age 43 ± 7, mean BMI 33.1 ± 3.4) recruited from two obesity intervention courses conducted in April and October 2005 were measured with the Step Activity Monitor (SAM) for one year. Measurements were only interrupted for data transfer and re-programming of the SAM after six weeks. Additionally, sports and injuries reports were recorded with a diary. The following measurements were carried out at the beginning and follow-up: weight, BMI, waist measurement, physical ergometer performance (watt/kg), bioimpedance (percentage of muscle and body fat), HDL and LDL blood cholesterol level.

Results

One subject dropped out of the study due to knee surgery. Across the remaining 23 subjects, an average of 263 ± 16 days with at least 10 hours of measurement duration was included in the results. The subjects of the two courses achieved 13940 and 13344 steps/day, respectively. Compared to their mean values, both groups showed a higher activity in the summer (approx. 14600 steps/day in July) and a lower activity during winter time (approx. 12600 steps/day in January). Several parameters revealed a significant improvement, e.g. percentage of muscle and body fat. Correlations between outcome parameters and the number of steps were low to moderate (e.g. r=0.4 for weight loss and steps/day). 22 injuries such as back pain, knee pain as well as colds were reported during the observation period.

Discussion

Although the subjects were trained to perform a large amount physical activity, the mean values of the number of steps/day are similar to the mean values of 13200 steps per day measured in normal subjects [2, 3]. The individual steps suggest that the subjects were not able to keep a higher level of physical activity throughout the whole year, even though the subject with the highest weight loss performed the second highest number of steps per year. Moreover, the variation of the steps/day throughout the year indicates that physical activity decreases during the winter and increases in the summer and is not related to the date of the intervention program. Thus, obesity intervention programs should address possibilities to maintain a higher activity level during the winter season e.g. by promoting indoor activities.

References


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