

## Abstract

**Title:** Modification of body composition in spinal cord injury subjects undergoing six months intervention.

**Objectives:** To determine the impact of six months intervention covering nutritional adjustments and exercise program on body composition in spinal cord injury subjects.

**Methods:** Twenty-seven spinal cord injury subjects with the lesion level T4 – T12 (10 females, 17 males) mean age  $41.9 \pm 10.3$  years and initial BMI  $27.02 \pm 5.0$  kg/m participated in the present study. Body composition was measured using the multi-frequency bioelectrical impedance analysis device Bodystat QuadScan 4000. Statistical analysis was carried out in the statistical program IBM SPSS statistics 22. Intervention lasting six months consisted of 2 weeks intensive program, followed by 5 months home based program and 2 weeks of intensive program. The initial assessment was made before the intervention and follow-up right after.

**Results:** Although a body mass decreased ( $p < 0.001$ ), body fat percentage and FM increased ( $p = 0.193$ ). Furthermore, muscle mass (MM) ( $p = 0.002$ ), total body water (TBW) ( $p = 0.002$ ), intracellular fluid (ICW) ( $p = 0.016$ ), and extracellular fluid (ECW) ( $p = 0.001$ ) decreased. Decrease of ECW / TBW ( $p < 0.001$ ) suggests reduction of edema.

**Conclusion:** Even though generally a change of eating habits and exercise intervention leads to body weight reduction and lowers obesity-related health risks, this study suggests insufficiency of a mainly/mostly/largely home-based intervention for spinal cord injury subjects. Despite the altered body mass, other body mass values were not significantly lowered.

**Key words:** physical activity, wheelchair, overweight, weight reduction, nutrition