

Postural instability of extremely obese individuals improves after a body weight reduction program entailing specific balance training

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The purposes of this study were to compare postural stability between obese and lean subjects and to investigate the effect of a 3-week body weight reduction (BWR) program entailing specific balance training on postural stability of extremely obese patients. Time of balance maintenance and mean error on the medial-lateral direction at the trunk and lower limb level were assessed during a single limb stance on a movable platform in 19 non-obese and in 20 extremely obese individuals (age range: 20-40 yr). Time of balance maintenance was shorter (obese: 21.1 ± 7.7 vs lean: 27.3 ± 3.1 sec) and medial-lateral sway of the trunk was larger in obese ($5.4 \pm 3.2^\circ$) than in lean ($3.2 \pm 1.1^\circ$) subjects ($p < 0.05$). Two subgroups of obese subjects were also tested after a BWR program (energy-restricted diet, moderate physical exercise, nutritional education and psychological counselling) combined with or without 6 sessions of specific balance training on a movable platform. BWR plus specific balance training enhanced time of balance maintenance (pre: 23.8 ± 7.2 vs post: 30.0 ± 0.0 sec) and reduced the trunk sway ($5.2 \pm 2.8^\circ$ vs $2.6 \pm 0.9^\circ$) more than BWR alone ($p < 0.05$). The present findings indicate that extremely obese individuals have inadequate postural stability (compared to their lean counterparts) that could however be improved by few sessions of specific balance training incorporated into a multidisciplinary BWR program. It was concluded that balance improvement is an important goal of rehabilitation, that would probably reduce the propensity of overweight individuals to fall while performing everyday activities.

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