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**Edited by:**

Meeusen, R., Duchateau, J., Roelands, B., Klass, M., De Geus, B., Baudry, S., Tsolakidis, E.

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## DO BODY MASS INDEX, SEX, TREATMENT AND AGE INFLUENCE THE BODY WEIGHT LOSS?

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**Introduction** Most studies have described how the weight loss is when different treatments are compared (1-3), while others have also compared the weight loss by sex (4), or have taken into account psychosocial (5) and lifestyle (6, 7) variables. The aim of this study was to compare the body weight (BW) loss slope between overweight (OW) and obese (OB) people, taking into account the sex, treatment and age influences. **Methods** One hundred eighty people (84 OW and 96 OB, with BMI: 25-29.9 and 30-34.9 kg•m<sup>-2</sup>, respectively), aged from 18 to 50 years, participated in the study (36 and 49 males, and 48 and 50 females, respectively) during 6 months. Four types of treatments were randomly assigned: strength training (S, n=19 and 24), endurance training (E, n=25 and 26), combined S and E training (SE, n=22 and 24), and diet and physical recommendations (C, n=18 and 22). All participants followed a 25% calorie restriction diet. Slopes of the dynamics of weight loss were obtained through a linear equation, when initial and final BW was plotted on a graphic. A MANOVA was used to determine differences between slopes. Probability level for statistical significance was set at  $\alpha=0.05$ . **Results** The slope of OB (-0.804±0.041) was higher than OW (-0.555±0.044) ( $F_{1,134}=17.143$ ;  $p<0.001$ ). When the slope was compared between groups, only S and E had higher slope in OB (-0.781±0.076 and -0.897±0.077, respectively) than in OW (-0.426±0.094 and -0.566±0.08, respectively) ( $p<0.05$ ). When the slope was compared between sexes, men and women from OB had higher values (-0.825±0.058 and -0.783±0.057, respectively) than OW (-0.627±0.069 and -0.482±0.057) ( $p<0.05$ ). When the slope was compared between age ranges, only the ranges 18 to 30 and 41 to 50 years of OB (-0.829±0.09 and -0.865±0.051, respectively) had higher values than OW (-0.491±0.095 and -0.622±0.062, respectively) ( $p<0.05$ ). **Discussion** The slope of BW loss is higher for OB than OW. By groups, S and E in OB have higher slope than in OW. By age, 18 to 30 and 41 to 50 of OB have higher values than OW. Both sexes have higher slope in OB than in OW. **References** 1. Brochu M, et al. J Clin Endocrinol Metab. 2009 Sep;94(9):3226-33. 2. Del Corral P, et al. J Clin Endocrinol Metab. 2009 May;94(5):1602-7. 3. Larson-Meyer DE, et al. Med Sci Sports Exerc. 2010;42(1):152-9. 4. Hagan RD, et al. Med Sci Sports Exerc. 1986;18(1):87-94. 5. Teixeira PJ, et al. Obesity (Silver Spring). 2010 Apr;18(4):725-35. 6. Bautista-Castano I, et al. Int J Obes Relat Metab Disord. 2004 May;28(5):697-705. 7. Worthy SL, et al. Health Education Journal. 2010;69(4):372-80.