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Title: Comparison of respiratory muscle strength in obese and nonobese women

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Body: INTRODUCTION: Previous studies indicate that the impaired chest mechanics caused by obesity, leads to respiratory muscle weakness. However, the real behavior of respiratory muscle strength in obese women remains unclear. OBJECTIVE: To compare respiratory muscle strength in obese and nonobese women. METHODS: It was evaluated 64 women aged between 20 to 50 years, sedentary, nonsmokers without respiratory disease, and of these, 34 were morbidly obese (BMI> 40 kg/m2) and other 30 were non-obese (BMI between 18, 5 to 24.99 kg/m2). It was recorded age, weight, height and waist and hip circumference. Respiratory muscle strength was evaluated by measuring the maximal static respiratory pressures - maximal inspiratory pressure (MIP) and maximal expiratory pressure (MEP) - expressed by absolute values and percentage of predicted values. RESULTS: Obese women (BMI = 43.72 ± 3.79 kg/m2) and nonobese (BMI = 22.26 ± 1.86 kg/m2) were similar to age (32.35 ± 7.49 and 30.46 ± 5.25 years, respectively). Respiratory muscle strength, represented by the MIP and MEP, was higher in the obese group, for absolute values (MIP = 81.47 ± 20.76 vs 72.01 ± 15.23 cmH2O and MEP = 100.14 ± 31.24 vs 82.51 ± 19.85 cm H2O, $p < 0.05$), and for the percentage of predicted values (MIP = 86.42 ± 22.84 vs 75.35 ± 15.42 and MEP = 105.10 ± 34.71 vs 71.55 ± 17.21, $p < 0.05$). CONCLUSION: According to the results, obese women have respiratory muscle strength, MIP and MEP, higher than non-obese women. Suggesting that changes in chest mechanics caused by obesity may have a training effect on the respiratory muscles.