Background: there is no consensus about the modifications in oxygen consumption (and therefore in energetic expenditure) after a weight loss program in obese individuals. Objectives: to evaluate changes in oxygen consumption after a physical activity program in obese women. Methods: 32 women (25 to 50 years old) were recruited by local media. After an overnight fasting, the resting oxygen consumption (VO2resting) was evaluated by indirect calorimetry (VO20000- Inbrasport). Also, the women were submitted to an ergoespirometric test in a cycle ergometer, using a ramp protocol; aerobic power (VO2max) and aerobic capacity (VO2 max- VO2resting) were analyzed. Body composition was analysed by DEXA. The women were submitted to 4 months of exercise training (aerobic and resistance exercises, 1 hour per day, three days per week), and nutritional education program (aimed to behavioral changes) after which the evaluations were repeated. The average data were compared by t-test, and some parameters were submitted to multiple linear regression. Results: VO2max and the aerobic capacity were improved (from 20,12+-3,48 to 23,61+-3,90mL.Kg-1.min-1; p=0,00; from 17,86+-3,33 to 20,44+/-7,07 mL.Kg-1.min-1; p=0,049 respectively), but there are no significant alterations in VO2 resting at the final of the program. The lean mass was reduced from 47,55+/−5,87 to 46,62+/-6,32Kg (p=0,017). Conclusion: despite of lean mass loss, physical exercise training was able to improve aerobic power and capacity, without modifications on VO2 resting.

Keywords: Energy Metabolism, Obesity, Physical Activity