

## Effect of Long-term Exercise training on some anthropometric Measurements as Breast Cancer Risk factors in Postmenopausal Women: a Randomized Controlled Trial

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### Abstract

**Introduction:** Obesity is a major risk factor in postmenopausal breast cancer risk. On the other hand, aerobic training without diet restriction can decrease the obesity indexes. We conducted a comprehensive search and found that there is not any long-term study in this area in Iran on postmenopausal women. So we aimed at investigating the effect of 6 months aerobic training on anthropometric measures in postmenopausal women.

**Methods:** This study was a randomized clinical trial. The study Participants were 50 to 74 year-old, sedentary and postmenopausal women that randomly allocated to exercise or control group. Participants in intervention group engaged in aerobic exercise for 3 days per week for 6 months, at 70-80% of maximum heart rate. A sub maximal exercise test and anthropometric measures (including body fat percentage, height, weight, and BMI) were performed at baseline and after 6-months. To assess the mean differences we used independent-sample T test.

**Results:** We had 41 women (19 in control and 22 in exercise group) at baseline and 27 women at 6 months (14 in control group and 13 in exercise group). Average age of participants was  $54.5 \pm 5.8$  and average BMI of them was  $27.9 \pm 3.2$ . Average adherence level of participant to exercise intervention was 66.4%. There were no significant differences between Intervention and control group at baseline characteristics. Maximal oxygen consumption increased 17.1% in intervention group and decreased 4.6% in control group from baseline to 6 months and the difference between them was statistically significant ( $p$  value=0.001). Percent of body fat decreased 2.1% and 0.4% in intervention and control group respectively ( $p$  value=0.08). BMI decreased 1.2% in intervention group and increased 1.4% in control group and the difference was statistically significant ( $p$  value=0.004).

**Conclusion:** long-term moderate aerobic training was associated with decreased body fat percentage and body mass index and improved cardio respiratory fitness. So, aerobic exercise training could reduce the breast cancer risk in postmenopausal women through decreased body fat indexes.

**Keywords:** Aerobic Exercise, Anthropometric Measures, Postmenopausal Women, Breast Cancer.