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# IMPACT OF PHYSICAL ACTIVITY ON PHYSICAL FITNESS AND BODY COMPOSITION OF WOMEN AFTER BREAST CANCER TREATMENT

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**Introduction:** Much has been discussed about benefits of physical exercise in women who have ended breast cancer treatment, which includes not only the improvement of their quality of life but also a remarkable decreased risk of recurrence. To achieve these benefits, it is important that the parameters for prescribing and monitoring physical activity for this population are well defined, as well as the evaluation of factors that may interfere with the results and the adherence to physical exercises. **Objectives:** To assess the impact of physical exercise on physical fitness and body composition in women who have ended breast cancer curative treatment and to evaluate the impact of physical exercise on women with binge eating disorder. **Methods:** This prospective study included 107 women between 18 and 60 years of age shortly after the end of their curative treatment for breast cancer (surgery and/or chemotherapy and/or radiotherapy). The participants, after signing the informed consent form, were motivated to do aerobic exercises, localized muscular strength/resistance, and flexibility exercises. Intervention consisted of sets of physical exercises prescribed to all participants by a physical educator in progressive intensities and volumes over the months, according to their adaptive responses, considering individual capabilities and limitations. All participants were evaluated at entrance for cardiovascular morbidities and oriented how to exercise by their own at their homes. Evaluations including body composition,  $VO_{2max}$ , and localized muscle resistance were performed at pre-intervention (basal), after 6 and 9 months of intervention. **Results:** A total of 78 (72.8%) women adhered to the training program, and 29 (27.2%) chose not to adhere. After 9 months of regular and individualized intervention, adherent women showed significantly better results in all variables of body composition and physical fitness: body mass ( $-4.38 \pm 3.67$  kg;  $p < 0.0001$ ), BMI ( $-1.62 \pm 1.53$  kg/m<sup>2</sup>;  $p < 0.0001$ ), fat percentage ( $-3.41 \pm 3.17\%$ ;  $p < 0.0001$ ), while in non-adherent women, the parameters did not change much or became ever worse: total mass ( $+2.83 \pm 3.21$  kg;  $p = 0.8277$ ), BMI ( $+1.16 \pm 1.24$  kg/m<sup>2</sup>;  $p = 0.8897$ ), fat percentage ( $+1.77 \pm 2.73\%$ ;  $p = 0.05$ ). Women with binge eating disorder, who had the worst parameters at baseline (pre-intervention), were the ones who obtained more prominent results in reducing their body mass, BMI, and fat percentage ( $p < 0.05$ ). This favorable impact of exercise extended to all age groups and does not correlate with former physical activity ( $p > 0.05$ ), as well as it was not influenced by breast cancer characteristics (e.g., histology, stage, and molecular subtypes) or treatment (i.e., mastectomy, axillary surgery, chemotherapy, or radiotherapy;  $p > 0.05$ ). **Conclusion:** Our study shows that individualized programs of self-training sets of physical exercises, remotely guided by a physical education professional, could improve the body composition and physical fitness of women in surveillance after breast cancer, regardless of the history of breast cancer or treatment, showing that it is possible to reduce risk factors associated with breast cancer recurrence and to contribute to a better quality of life for these women.

**Keywords:** Breast Cancer; Physical Exercise; BMI;  $VO_2$ ; Muscular Endurance; Surveillance.