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# EFFECTS OF RESISTANCE TRAINING ON MUSCLE STRENGTH, BODY COMPOSITION, AND ANXIETY IN BREAST CANCER SURVIVORS

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**Objective:** The aim of this study is to compare the effects of resistance training (RT) on muscle strength (MS), body composition (BC), and anxiety indicators in eutrophic, overweight, and obese breast cancer survivors (BCS). **Methodology:** Twenty-six BCS women (56.07±6.94 years old; body mass index [BMI]: 68.29±11.18 kg), who were undergoing hormone therapy, performed 8 weeks of RT once a week. The BCS were divided into three groups as follows: eutrophic (BMI ≤ 24.4 [23.72±1.41], n=9), overweight (BMI 25–29.9 [27.21±1.26], n=9), and obese (BMI ≥ 30 [33.37±2.06], n=8). For the MS, the 10-repetition maximum test (normalized 10-RM/BM) on the bench press (BP) and the leg press (LP); for BC, the dual-energy X-ray absorptiometry; and for anxiety, the state-trait anxiety inventory were performed. For overtime analysis, the paired t-test for MS and BC and the Wilcoxon test for anxiety indicators were conducted. For analyses between groups, the mean difference ( $\Delta$  [post-baseline]) was calculated using the one-way analysis of variance for MS and BC and the Kruskal–Wallis test for anxiety indicators. **Results:** There were no differences between the groups. All groups improved on the BP ( $p \leq 0.001$ ) and the LP ( $p < 0.001$ ) overtime (eutrophic [BP,  $\Delta = 0.050 \pm 0.03$ ; LP,  $\Delta = 0.401 \pm 0.10$ ], overweight [BP,  $\Delta = 0.069 \pm 0.03$ ; LP,  $\Delta = 0.406 \pm 0.15$ ], and obese [BP,  $\Delta = 0.037 \pm 0.02$ ; LP,  $\Delta = 0.375 \pm 0.11$ ]). In the BC analyses, it was verified and improved only for the eutrophic BCS in the fat percentage ( $\Delta = -1.122 \pm 1.11$ ,  $p = 0.016$ ) and lean mass ( $\Delta = 0.650 \pm 0.78$ ,  $p = 0.036$ ). There was a significant reduction in the state-trait anxiety in the eutrophic ( $\Delta = -7.444 \pm 8.13$ ,  $p = 0.030$ ) and obese ( $\Delta = -9.125 \pm 9.70$ ,  $p = 0.042$ ) groups. **Conclusions:** All BCS groups improved their MS. The eutrophic BCS may have a better response in BC compared with overweight and obese BCS. With regard to state-trait anxiety, the eutrophic and obese BCS groups showed better response than the overweight BCS group. The results suggest that the eutrophic BCS can present improvements in more components with a weekly session of RT; however, further studies should be performed.

**Keywords:** Oncology; Exercise; Strength Training; Body Composition.