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Effects of 12 Weeks of an Individualized Exercise Program in Cancer Survivors

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Cancer survivor is defined as any person from the time of initial diagnosis until the end of life. Research in exercise oncology has shown exercise is not only safe for cancer survivors, but also has benefits on certain aspects of health and fitness. **PURPOSE:** To examine the effects of a 12-week individualized exercise program in cancer survivors. **METHODS:** Twelve (Females, n=6; Males, n=6) subjects aged 62.7 ± 8.3 years were assessed at baseline and after 12-weeks. Types of cancer present varied (Breast, n= 3; Prostate, n=1; Colorectal, n=2; Kidney, n=1; Ovarian, n=1; Thyroid, n=1; Neuroendocrine, n=1; Melanoma, n=1; Pancreatic, n=1; Multiple, n=1). Stages I-IV of cancer were present as well as various forms of treatments (Chemotherapy, n=6; Surgery, n=11; Radiation, n=3; Combination, n=6). Exercise sessions included individualized balance, resistance, and aerobic exercises. Assessments included resting HR and BP, Modified Clinical Test of Sensory Interaction in Balance, waist circumference, body fat %, lean body mass, hand grip, 30s Chair Stand (30CS), Timed Up and Go (TUG), peak power output (PO_{peak}) and peak time ($Time_{peak}$) on a ramped cycle ergometer test. Exercise sessions were one to three days per week and lasted 60 minutes each for 12 weeks. Average adherence rate was $76.4 \pm 13.4\%$. **RESULTS:** Paired-samples T tests showed significant increases from pre to post testing in 30CS (12.8 ± 5.8 , 17.1 ± 5.5 reps; $p=0.003$), TUG (9.7 ± 1.8 , 8.2 ± 1.8 mins; $p=0.006$), PO_{peak} (125.9 ± 40.5 , 139.7 ± 44.8 watts; $p=0.024$), and $Time_{peak}$ (10.6 ± 2.5 , 12.4 ± 2.7 mins; $p=0.004$). No statistical significance was observed in any other measure. **CONCLUSION:** Twelve weeks of individualized exercise in cancer survivors showed increases in lower body endurance, mobility and aerobic fitness. Overall, 12 weeks of an individualized exercise program positively affected musculoskeletal and cardiorespiratory health and fitness in cancer survivors.