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## Acute Effects of Exercise on Fatigue in Patients with Advanced Cancer

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**PURPOSE:** Cancer related fatigue (CRF) is highly prevalent among individuals living with advanced cancer. Although cancer rehabilitation programs can reduce CRF over time (e.g., 8-12 weeks), the immediate or “acute” effect of exercise sessions on CRF is unclear. This study compared CRF from immediately before to after exercise sessions among individuals living with advanced cancer who were participating in an outpatient cancer rehabilitation program. **METHODS:** Observational, longitudinal cohort study. CRF was assessed using a visual analog scale (0=no fatigue–10=worst fatigue) before and immediately after one exercise session per week over 12-weeks. Exercise sessions included aerobic and resistance exercise, prescribed at a light to moderate intensity (Rating of Perceived Exertion (RPE) 11-14, Heart Rate Reserve (HRR) 40-59%). A mixed-effects model accounting for within effects (time) examined change in CRF from before to immediately after exercise sessions. **RESULTS:** Participants (N=12) were M= 63(range:34-75) years old, and 83% female. Participants were diagnosed with either stage III (n=1, 8%) or stage IV (n=11,92%) cancer. Diagnoses were colorectal (n=3), endometrial (n=2), or other (n=7) cancers. CRF was measured before and after N=84 exercise sessions (M=2.8±2.2 sessions per participant, range=1-10). Average exercise session intensity was M=12.14±4.51 RPE (range =10-13), and M=32%(19.22) HRR (Range=30-42%). Average CRF was M=2.7±2.6 before exercise sessions, and M=2.8±2.4 immediately after. This difference (i.e.,  $\Delta$ ) was not statistically significant ( $\beta = -0.08$ ,  $p=0.80$ ) **CONCLUSION:** For individuals living with advanced cancer there was no improvement in CRF from immediately before to after exercise sessions, but fatigue was not exacerbated. Further research should explore potential study limitations, including sensitivity of CRF measurement tool, and the potential ceiling effects due to the low pre-exercise CRF.

### Keywords

Cancer-related fatigue, exercise, advanced cancer, single bout.

### Conflict of Interest & Ethical Approval

yes

### Abstract submitters declaration

yes

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