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## An Exploratory Analysis of 24-Hour Movement Behaviors in Individuals with Cancer Completing a 12-Week Resistance Exercise Intervention

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**Background/Purpose:** Individuals with cancer often experience disrupted sleep, sedentary behavior, and reduced physical activity. This exploratory analysis examined the feasibility of continuous 24-hour monitoring using wrist-worn accelerometers and characterized movement behaviors during a 12-week supervised resistance training program in individuals with cancer. We additionally aimed to evaluate whether daily movement behaviors (moderate-to-vigorous physical activity (MVPA), light physical activity (LPA), sedentary time, and sleep) differed between exercise and non-exercise days.

**Methods:** Thirty individuals with cancer wore Axivity accelerometers continuously while participating in supervised resistance training (2–3 sessions/week). Feasibility was assessed via wear-time compliance. Movement behaviors were analyzed descriptively across exercise and non-exercise days throughout the intervention. Multilevel models with person-mean centering were used to predict 24-hour movement behaviors on days with exercise sessions compared to days without exercise sessions.

**Results:** Participants demonstrated high adherence to continuous monitoring, with valid wear data on 70% of all days of the intervention. Within-person comparisons revealed significantly higher MVPA (+3.8 minutes) and LPA (+13 minutes) on exercise days. No significant changes were observed in sleep duration or sedentary time across the intervention or between exercise and non-exercise days.

**Conclusions:** Continuous wrist-worn accelerometry is a feasible method for long-term behavioral monitoring in individuals with cancer. Supervised resistance training produced modest acute increases in physical activity but did not impact sleep or sedentary time. Integrating wearable monitoring into survivorship care may support personalized exercise prescriptions and behavioral feedback. However, targeted strategies beyond exercise may be needed to produce broader changes in 24-hour movement behaviors.

### Keywords

Cancer; Exercise; Accelerometer; Movement Behaviors

### Conflict of Interest & Ethical Approval

yes

### Abstract submitters declaration

yes

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