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Physical activity (PA) promotion and sedentary behavior reduction among cancer survivors is a national priority and the number of PA-based behavioral interventions has expanded considerably in recent years.

There have been relatively few trials focused on reduction of sedentary time among cancer survivors due in part to past limitations related to precise quantitative measurement of sedentary behaviors.

Many PA interventions rely on clinic-based coaching which is both time-intensive and unrealistic for many clinics.

The purpose of this study was to investigate the feasibility and effects of a home-based 6 week reduced sedentary time intervention (RSTI) in breast cancer survivors who had completed primary treatment.

ClinicalTrials.gov NCT02969291

**BACKGROUND**

**METHODS**

- Phase 1 proof-of-concept/feasibility trial
- One Group Pre/Post-test Design

**ELIGIBILITY CRITERIA**

- Stage I-II breast cancer survivors age 20-80 who have completed primary treatment greater than 6 months but less than 5 years.
- No gain or loss of >10% body weight over prior 6 months.
- No pregnancy
- Known diabetes
- Known coronary artery disease
- Patients may be on adjuvant hormonal therapy.
- BMI >25
- Less than 150 min/week moderate to vigorous exercise
- No gain or loss of >10% body weight over prior 6 months

**EXCLUSION CRITERIA**

- Known diabetes
- Known coronary artery disease
- Pregnancy

**RESULTS**

**CONCLUSION**

Results indicate that similar home-based RSTIs are safe, acceptable to survivors, and feasible to implement by cancer center staff.

Further research with larger samples and possible monitoring of interruptions in total sedentary time may be needed to establish efficacy and effect sizes for the intervention.

A larger dose or addition of behavior-activating components (use of daily activity trackers, text messages, or coaching) may be necessary to realize clinically meaningful changes in sedentarism, daily activity, metabolism and behavior change. These preliminary results suggest provision of educational material/time feedback is likely insufficient to meet PA guidelines & sedentary time.

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> Acknowledgement of UMASS–Amherst nurses L. Carvalho, E. Lammence, and K. Bobalis for their contributions.

**Table 1. Participant Demographics (Total N=16)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Average (SD)</th>
<th>T-Test (P-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
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<tr>
<td>Race</td>
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<tr>
<td>Median Time since diagnosis (range)</td>
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**Table 2. Sedentary & Activity Outcomes**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Average (SD)</th>
<th>T-Test (P-value)</th>
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</thead>
<tbody>
<tr>
<td>Total daily steps</td>
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<tr>
<td>Total energy expenditure (kcal/day)</td>
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<tr>
<td>% of hourly time spent in uninterrupted sedentary behavior (am-8pm)</td>
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**Table 3. Metabolic Outcomes**

<table>
<thead>
<tr>
<th>Metabolic parameter</th>
<th>Pre-intervention</th>
<th>Post-intervention</th>
<th>% Change</th>
<th>P-value</th>
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</thead>
<tbody>
<tr>
<td>Fasting glucose (mg/dl)</td>
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<tr>
<td>Fasting insulin (uU/ml)</td>
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<tr>
<td>Total cholesterol (mg/dl)</td>
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<tr>
<td>HDL cholesterol (mg/dl)</td>
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<tr>
<td>LDL cholesterol (mg/dl)</td>
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