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# Exercise Activity Patterns Among Patients with Breast Cancer During and After Chemotherapy: A URCC NCORP Nationwide Prospective Longitudinal Cohort Study

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**Introduction:** Exercise improves both quality and quantity of life for patients with cancer. We previously reported overall physical activity (PA) patterns in a cohort of patients with breast cancer, yet limited data exists on how patients' structure exercise behavior from pre- to post-chemotherapy.

**Methods:** 580 female patients with stage I-III breast cancer were recruited from community oncology clinics across the USA, affiliated with the URCC NCI Community Oncology Research Program (NCORP) Research Base. Participants reported their PA (Aerobic Center Longitudinal Survey), including structured exercise (e.g., weightlifting, treadmill use, aerobic dance/calisthenics, jogging, bicycling, swimming, and moderate- to vigorous-intensity sports) over the past three months at pre-chemotherapy, post-chemotherapy (reflecting the final three months during chemotherapy), and six months post-chemotherapy.

**Results:** Participants (mean age = 53.4 years; 76% stage I/II) reported walking, a non-structured exercise, as the most common exercise activity. Average walking time was  $81.8 \pm 111.0$  minutes/week pre-chemotherapy, declined to  $59.9 \pm 93.3$  during chemotherapy, and rose to  $80.8 \pm 111.0$  post-chemotherapy. The proportion reporting any walking participation dropped during chemotherapy (57% to 48%) and increased to 60% post-chemotherapy. Structured exercise showed a similar pattern, decreasing from  $68.0 \pm 141.8$  to  $45.1 \pm 99.7$  minutes/week during chemotherapy, rising to  $84.8 \pm 144.6$  afterward; participation shifted from 65% to 56% and then to 73%. The most frequently reported structured activities were weightlifting (11% pre-chemotherapy, 7% during chemotherapy, 16% post-chemotherapy), treadmill use (11%, 9%, 14%), and aerobic dance/calisthenics (12%, 7%, 14%). Vigorous-intensity sports were rare (<1% at all time points).

**Conclusion:** Patients engaged in some exercise, mainly walking, during and after chemotherapy. However exercise levels, particularly in resistance training, fell far short of evidence-based recommendations for reducing side effects and toxicities. These findings underscore the need to identify effective strategies for referring patients with trained exercise-oncology professionals who can deliver evidence-based exercise prescriptions.

## Keywords

Exercise; Breast Cancer; Chemotherapy; Physical Activity

## Conflict of Interest & Ethical Approval

yes

## Abstract submitters declaration

yes

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