

# Prehabilitation for patients with cancer in Aotearoa New Zealand

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Cancer is the leading cause of death in Aotearoa New Zealand.<sup>1</sup> New Zealand has the second-highest age-standardised cancer incidence rate in the world (422.9 per 100,000 people). As a result, most people in Aotearoa New Zealand will encounter a cancer diagnosis within their lifetime, either directly or through whānau.<sup>2</sup> Māori, who make up 16% of the Aotearoa New Zealand population, have a disproportionately high cancer related mortality.<sup>3,4</sup>

Historically, rest and outright inactivity were recommended for patients with cancer. However, over the last two decades research has highlighted the benefits of physical activity during the cancer continuum, so much so that the American College of Sports Medicine is running an 'Exercise Is Medicine' initiative.<sup>5</sup> This cancer continuum is divided into four phases: 1) post-diagnosis to first treatment, 2) active treatment with chemotherapy, radiotherapy, hormonal, and/or immunotherapy, 3) survivorship, after cessation of treatment, and 4) the palliative phase. To date, most rehabilitation related studies have focused on the phases of active treatment and/or cancer survivorship. These have shown that physical activity can mitigate, or even prevent, the short and long-term side effects patients experience due to cancer and its treatment.<sup>6</sup> Exercise during adjuvant chemotherapy is associated with improved chemotherapy completion rates.<sup>7,8</sup> This, in turn, can influence disease free and overall survival.<sup>9</sup>

Far less research has been done into the initial phase of the cancer continuum before surgery, which is dubbed prehabilitation. Prehabilitation in its simplest form is treatment that prepares a patient for an upcoming physiological stress.<sup>10</sup> As a concept, prehabilitation is not new. It is an established part of Enhanced Recovery after Surgery (ERAS) protocols that are currently operating in Aotearoa New Zealand hospitals. It can encompass exercise (strength and cardiovascular), nutrition optimisation, smoking cessation, and stress reduction interventions.<sup>11</sup> Prehabilitation in cancer can have multiple goals: 1) maintaining pre-operative baseline measurements of function, instead of having a degraded 'baseline' after

treatment (surgery, and/or adjuvant treatment), 2) improving a pre-existing health problem to better prepare for cancer surgery and/or treatment, and/or 3) improving overall functioning, including psychological health and resilience, to better withstand upcoming treatments.

Prehabilitation programmes for patients with cancer have been shown to be safe and feasible even in a very short interval between diagnosis and treatment.<sup>12,13</sup> Potential benefits include improved physical function, quality of life, and psychological health.<sup>14-16</sup> These improvements can in turn influence length of hospital stay and reduce post-surgical complications.<sup>16</sup> Exercise may even influence tumorigenicity directly via molecular pathways.<sup>17</sup>

To date, research into prehabilitation in cancer has been heterogenous in its focus. Small sample sizes across various cancer populations and setting and modes of prehabilitation delivery show benefits, but are incongruous in their generalisability.<sup>18,19</sup> Little research has been done on prehabilitation in Aotearoa New Zealand. Patient engagement with prescriptive generalised prehabilitation interventions is mixed.<sup>20</sup> It is likely that benefits of prehabilitation are optimised by programmes being tailored to the needs of specific communities.

## Current research

To address these issues, we are running a study in Tāmaki Makaurau Auckland to gain insight into the needs of patients with breast cancer in the period between diagnosis and surgery. This qualitative study aims to compare patients' needs to the perception of prehabilitation held by health-care providers. In doing so, we hope to understand the relationships and differences in existing narratives.

In this ongoing work, patients who have completed their treatment are invited to focus groups to reflect on what kind of supportive care, if any, they wanted during the period between diagnosis and surgery. The study has an *a priori* focus on Māori patients with separate hui run for

patients and whānau identifying as Māori. Semi-structured interviews with health care providers—oncologists, surgeons, anaesthetists, nurse specialists, and physiotherapists—are underway to gain insight into their perception of prehabilitation for patients with cancer. A similar study with patients who have sarcoma is about to start.

Ultimately, identification of patients' needs is the first step in our wider research programme, which will include participatory development and co-design of prehabilitation interventions.<sup>21,22</sup> In the coming year, patients, researchers and clinical team members will co-design a prehabilitation intervention that can be implemented and evaluated in the clinical setting. The hope is that

this co-design process will lead to tailored, and thereby more effective, prehabilitation interventions in Tāmaki Makaurau.<sup>22</sup>

### Special interest group

We have started a special interest group 'Supportive care for people with cancer' within the New Zealand Society for Oncology, in partnership with Te Aka Mātauranga Matepukupuku (Centre for Cancer Research, Waipapa Taumata Rau University of Auckland). Interested researchers from across Aotearoa are welcome to contact us for nationwide collaborations (SIGSupportiveCancerCare@auckland.ac.nz).

**COMPETING INTERESTS**

Nil.

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