

powered by



GERMAN
CANCER RESEARCH CENTER
IN THE HELMHOLTZ ASSOCIATION

Contribution ID: 339

Type: 3 - Talk

Effect of a Personalized Perioperative Exercise Program on Physical Function, Fatigue, and Quality of Life in Lung Cancer Surgery: Results of the PEP Phase III Randomized Trial

Wednesday 22 July 2026 11:00 (15 minutes)

Background: Exercise interventions benefit surgical lung cancer patients, but many are resource intensive and follow a one-size-fits-all design. The Precision-Exercise-Prescription (PEP) trial is a clinic-aligned, personalized perioperative exercise program with remote monitoring that previously showed improved physical function in women and reduced fatigue across groups at 2 months post-surgery. This longitudinal analysis evaluates effects of the PEP program on physical function, fatigue, and quality of life at 6 months post-surgery.

Methods: The PEP Study enrolled adults with primary (stages I–IIIa) or oligometastatic lung cancer undergoing surgery. Participants were randomized to the PEP exercise intervention or standard care between November 2017 and 2021, with follow-up through November 2022. The personalized intervention, tailored to Activity Measure for Post-Acute Care (AMPAC) mobility scores, was prescribed and remotely monitored by a physical therapist starting approximately two weeks before surgery and continuing postoperatively. Standard care consisted of spirometer use and general exercise encouragement without a structured program. Physical function (6-minute walk test), fatigue (FACIT-F), and overall quality of life (Functional Assessment of Cancer Therapy–Lung) were assessed at baseline and 6 months, and within- and between-group changes were analyzed.

Results: A total of 182 patients (exercise: $n=92$; standard care: $n=90$) were included. Patients in the exercise group showed a modest, non-significant increase in 6MW distance from baseline to 6 months ($467\pm 12\text{m}$ to $476\pm 19\text{m}$, $p=0.51$), whereas the standard care group demonstrated a marginally significant decline ($481\pm 11\text{m}$ to $450\pm 20\text{m}$, $p=0.06$). However, the between-group difference in change was not statistically significant ($p=0.09$). No significant differences in changes in fatigue or overall quality of life were observed from baseline to 6 months ($p>0.05$).

Conclusions: The PEP exercise program yielded modest within-group improvements in physical function from baseline to 6 months post-surgery, but did not produce significant between-group benefits compared with standard care for fatigue and quality of life.

Keywords

Exercise oncology, physical function, quality of life, lung cancer

Conflict of Interest & Ethical Approval

yes

Abstract submitters declaration

yes

Author: HIMBERT, Caroline (Huntsman Cancer Institute)

Co-authors: BANDERA, Victoria (University of Utah Huntsman Cancer Institute); YANAGIHARA, Andy (Huntsman Cancer Institute); BARNES, Christopher (University of Utah Huntsman Cancer Institute); DANIELS, Bailee (Huntsman Cancer Institute); BOUCHER, Kenneth (University of Utah, Huntsman Cancer Institute); ZHAO, Yuxin (Huntsman Cancer Institute); MITZMAN, Brian (University of Utah Huntsman Cancer Institute); WETTER, David (University of Utah Huntsman Cancer Institute); HESS, Rachel (University of Utah); KIM, Jaewhan (University of Utah Huntsman Cancer Institute); LUNDBERG, Kelly (University of Utah); LIGIBEL, Jennifer (Dana-Farber Cancer Institute and Harvard Medical School); MARCUS, Robin (University of Utah); FINLAYSON, Samuel (Huntsman Cancer Institute); LASTAYO, Paul (University of Utah); VARGHESE JR, Thomas (University of Utah Huntsman Cancer Institute); ULRICH, Cornelia (University of Utah Huntsman Cancer Institute)

Presenter: HIMBERT, Caroline (Huntsman Cancer Institute)

Session Classification: Oral Session