

Exercise Training in Patients with Malignant Melanoma Undergoing Neoadjuvant Checkpoint Inhibitor Therapy - NEO-MEL TRAIN

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BACKGROUND

Neoadjuvant immune checkpoint inhibitor (ICI) therapy has improved outcomes and is now an established treatment strategy for melanoma

Exercise training (ET) improves cardiorespiratory fitness, health-related quality of life and treatment tolerance in patients with cancer, but evidence is largely derived from chemotherapy settings

Preclinical studies suggest that exercise may enhance anti-tumor immunity during ICI therapy

 **Aim:** To investigate the clinical and translational effects of supervised exercise training during neoadjuvant ICI therapy

METHODS



STUDY DESIGN

- Phase II randomized study
- Multi-center
- 1:1 allocation
- 4 study visits
- Study start: **August 2026**



POPULATION

- 60 patients with resectable stage III melanoma scheduled for neoadjuvant ICI
- Adults ≥ 18 years of age
- ECOG PS ≤ 2



STUDY GROUPS

CONTROL GROUP

- Neoadjuvant ICI alone
- n=30

INTERVENTION GROUP

- Neoadjuvant ICI + supervised exercise
- n=30



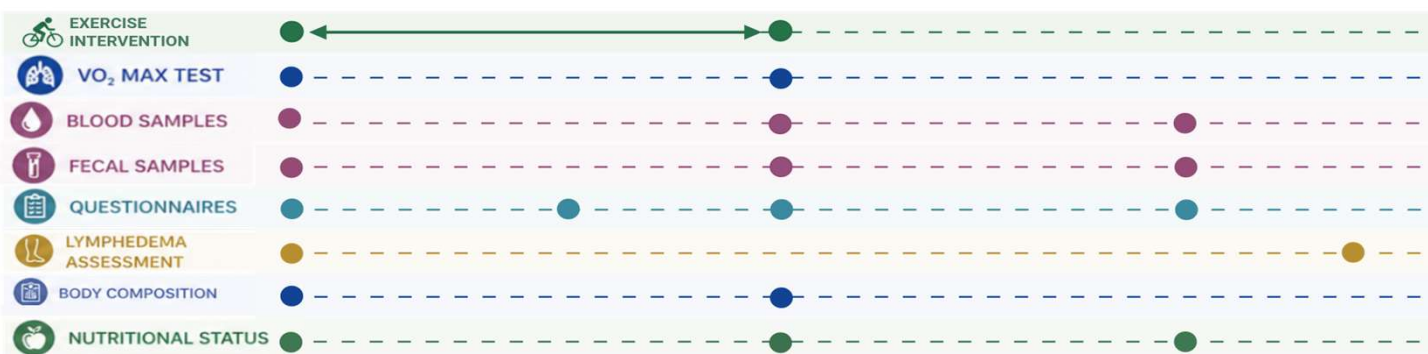
INTERVENTION

- 8-week cycling-based high-intensity interval program
- 3 sessions per week
- Supervised

STUDY TIMELINE



ASSESSMENTS



OUTCOMES

Primary outcome :
- Feasibility

Clinical
- Incidence of lymphedema
- Pathological response rates
- Body Composition
- Survival (RFS, OS)

Translational
- Immune profiling
- Tumor micro-environment
- Gut microbiome

Change in cardiorespiratory fitness:
- Maximal Oxygen Consumption

Patient-reported:
- HRQoL, HADS, IPAQ

STUDY PERSPECTIVE

Generate prospective clinical and translational evidence on exercise during neoadjuvant ICI therapy

Support the development of evidence-based exercise recommendations and future clinical implementation in cancer immunotherapy

CONTACT



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