Can Patients Perform a Home-Based High-Intensity Interval Training Program Before Undergoing (Revision) Arthroplasty? A Pilot Study to Assess Feasibility

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Main Objectives: 1) Are patients with ASA III score undergoing primary or revision arthroplasty of the knee or hip, able to safely participate in a home-based preoperative High Intensity Interval Training (HIIT) program? 2) Does average daily...

Ethical review	Approved WMO
Status	Recruiting
Health condition type	Joint disorders
Study type	Interventional

Summary

ID

NL-OMON53599

Source
ToetsingOnline

Brief title
Prehabilitation study

Condition

- Joint disorders

Synonym
Prehabilitation, preoperative exercise

Research involving
Human

Sponsors and support

Primary sponsor: Reinier Haga Orthopedisch Centrum
Source(s) of monetary or material Support: Reinier Haga Orthopedisch Centrum

Intervention

Keyword: High-intensity interval training, Home-based exercise program, Prehabilitation, Revision arthroplasty

Outcome measures

Primary outcome

Primary parameters are study compliance and level of physical activity during 4

weeks prior to surgery

Secondary outcome

Secondary parameters are complications within 30 days after surgery,

independence during functional activities as measured by the modified Iowa

Level of Assistance Scale (mILAS), length of hospital stay and discharge

destination

Study description

Background summary

Preoperative exercise training has shown to reduce complication rates and length of hospital stay after cardiac and abdominal surgery. One of the rationales is that preoperative exercise training induces mild cardiac ischemia, which adapts the heart*s physiology resulting in fewer complications. In the literature, the effects of preoperative exercise training remain inconclusive after arthroplasty. It has been suggested that those studied patients are generally too fit to accomplish large benefits from preoperative exercise. Patients who are more frail, deconditioned and who undergo more elaborate procedures may be more susceptible to benefits from preoperative exercise. In addition, more studies on home-based preoperative exercise programs are needed, since in-hospital programs are more likely to have participants that are more able-bodied and motivated, while the patients who

would need it most are the hardest to reach in these programs.
Although we think it will be challenging to mobilize this patient population, we hypothesize that they will benefit from the effects of a home-based preoperative exercise training program.

Study objective

Main Objectives: 1) Are patients with ASA III score undergoing primary or revision arthroplasty of the knee or hip, able to safely participate in a home-based preoperative High Intensity Interval Training (HIIT) program? 2) Does average daily physical activity increase when patients participate in a home-based preoperative HIIT program compared to standard care, when measured with an activity tracker? Secondary Objectives: 1) Does a preoperative training program decrease postoperative complications (< 30 days) after revision arthroplasty of the knee or hip? 2) Does a preoperative training program shorten length of hospital stay after revision arthroplasty? 3) Does a preoperative training program alter discharge destination after revision arthroplasty?

Study design

prospective single-blind pilot trial

Intervention

A preoperative home-based high-intensity interval training program 4 weeks prior to surgery.

Study burden and risks

The burden of participation in this study consists watching an informational video, completing a daily diary, wearing the GENEActiv wrist device and, perform in a high-intensity interval training program. The risks of participating in the training program are minimized by having a licensed physiotherapist tailor the training program to each individual*s abilities. The expected benefits from performing the training program are better fitness levels, fewer complications, shorter length of stay and more often discharge to the own home environment.

Contacts

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Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Adults (18-64 years)
Elderly (65 years and older)

Inclusion criteria

- On waiting list or planned for primary or revision arthroplasty of the hip or knee at the Reinier Haga Orthopedisch Center (RHOC)
- Classified with an ASA score of III
- As long as a joint infection is ruled out or not suspected, we will also include patients that have a Girdlestone or spacer in situ in any joint

Exclusion criteria

- ASA I score, ASA II score, IV and ASA V score
- Revision surgery for isolated cup revision or suspected or confirmed joint infection
- Periprosthetic fracture
- Patient is declared unfit to safely perform the prehabilitation program in an at-home setting by orthopaedic surgeon, physical therapist, researcher, anesthesiologist, cardiologist or other relevant health professional
- Patient-reported allergies to medical grade plastic, PU resin and/or nickel

free stainless steel

Study design

Design

Study type: Interventional

Masking:	Open (masking not used)
Control:	Uncontrolled
Primary purpose:	Treatment

Recruitment

NL

Recruitment status:	Recruiting
Start date (anticipated):	16-09-2024
Enrollment:	20
Type:	Actual

Ethics review

Approved WMO

Date:	13-09-2023
Application type:	First submission
Review commission:	METC Leiden-Den Haag-Delft (Leiden) metc-ldd@lumc.nl

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register	ID
CCMO	NL82800.058.23