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NHS
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# PROVERB:
## PREHABILITATION AND RECOVERY FROM SURGERY FOR BREAST CANCER
### Feasibility and Outcomes from a Multi-Phasic, Multi-Modal Exercise Intervention in Breast Cancer

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Breast cancer treatment leaves persistent impairments in physical function, QoL, psychological wellbeing



Exercise may restore or preserve physical function bit evidence comes predominantly from cancer survivors post-treatment



Prehabilitation (pre-surgery exercise) is biologically plausible and patient-desired but remains underexplored

Prehabilitation may improve functional capacity and physiological reserve ahead of surgery



Diagnosis represents a "teachable moment“ when patients may be most receptive to health behaviour change



Early intervention may improve patient engagement and adherence in postoperative rehabilitation and exercise programmes

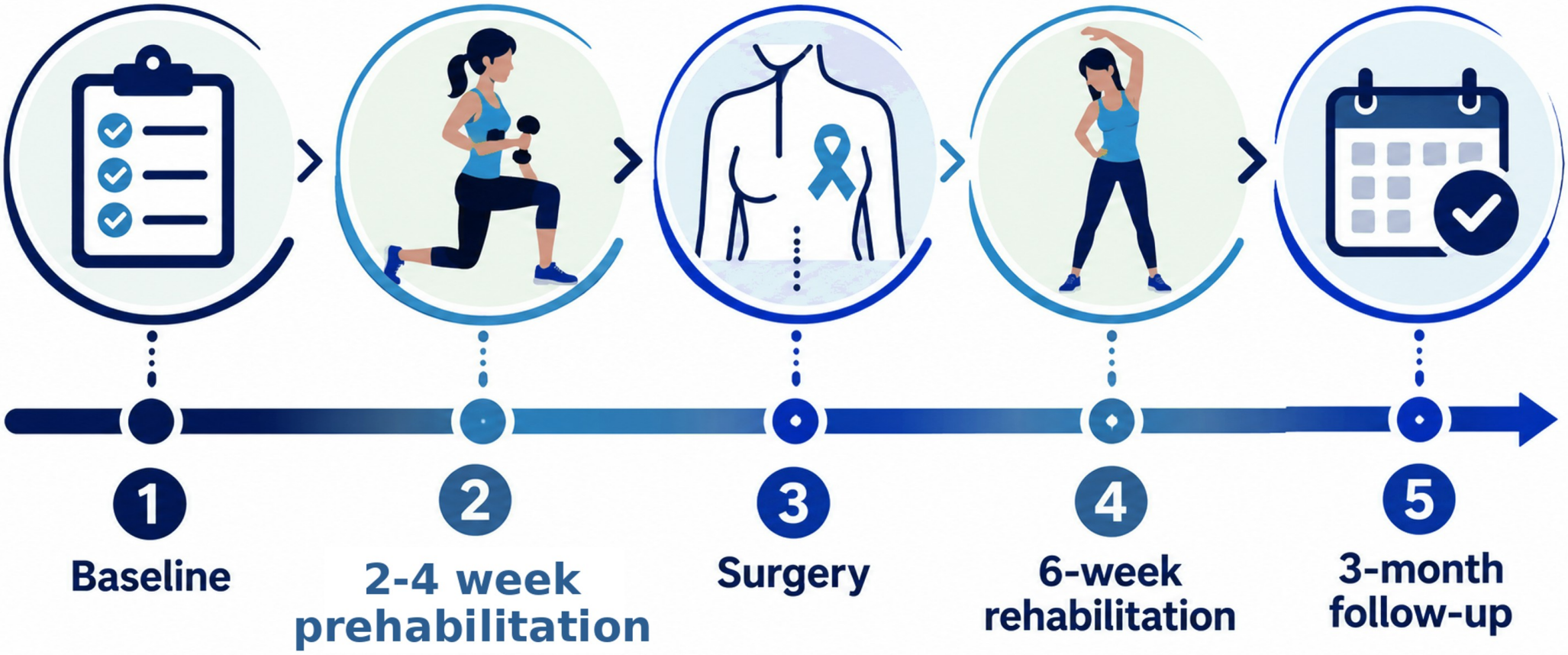


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Can we actually deliver it, safely, across a fragmented, time-pressured surgical pathway?

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## DESIGN

Single-site, pre-post feasibility trial

## PARTICIPANTS

Women awaiting breast surgery

## INTERVENTION

Multi-phasic (before and after surgery)
Multi-modal (aerobic, resistance, targeted therapy)
Remote supervised (NHS attend anywhere)
Behaviour change (Health Action Process Approach)

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# PRIMARY

**Recruitment rate**
Target: 34 participants in 36 weeks (4/month)

**3/month**
34 in 48 weeks

Not met

**Study completion**
Target: ≥ 75% complete the study

**76%**
observed

Met

**Supervised adherence**
Target: ≥ 70%

**87%**
observed

Met

**Unsupervised adherence**
Target: ≥ 60%

**89%***
observed

Met

**Combined adherence**
Target: ≥ 80%

**88%***
observed

Met

**Serious adverse events**
Target: fewer than 4

**2**
observed

Met

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# SECONDARY

**6-minute walk distance**
MCID target: 14 to 30.5m improvement

**56m**
baseline to post-intervention

Met

**Sit-to-stand repetitions**
MCID target: ≥ 2 reps improvement

**3 reps**
baseline to post-intervention

Met

**Grip strength, surgical arm**
MCID target: 3.5 to 6.5kg improvement

**0.2kg**
baseline to post-intervention

Not met

**Shoulder flexion, surgical arm**
MCID target: ≥ 12° recovery

**14°**
postop to post-intervention

Met

**Shoulder abduction, surgical arm**
MCID target: ≥ 7° recovery

**23°**
postop to post-intervention

Met

**Arm circumference (lymphoedema)**
Threshold: under 2cm change at any site

**~0cm**
no meaningful change

Met

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# SECONDARY

**Global health status, QLQ-C30**
MCID target: ≥ 5pt improvement
**+9.0pt**
postop to post-intervention
Met

**Physical functioning, QLQ-C30**
MCID target: ≥ 4pt improvement
**+12.1pt**
postop to post-intervention
Met

**Pain, QLQ-C30**
MCID target: ≥ 4-5pt reduction
**−25.0pt**
postop to post-intervention
Met

**Disability, WHODAS 2.0**
MCID target: ≥ 4.87pt reduction
**−8.8pt**
postop to post-intervention
Met

**Shoulder pain and disability, SPADI**
MCID target: ≥ 8pt reduction
**−12.3pt**
postop to post-intervention
Met

**Total dyadic coping, DCI**
MCID target: ≥ 8.2pt improvement
**+8.1pt**
baseline to post-intervention
Not met

**Physical wellbeing, BREAST-Q**
MCID target: ≥ 3pt improvement
**−53.1pt**
postop to post-intervention
Not met

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# Focus Groups

## Drivers & Deterrents

A greater sense of control and accountability were strong motivators but timing soon after diagnosis was a barrier for some

## Exercise Suitability

Harder than expected, but modifications developed trust



## Accessibility & Connection

Remote delivery valued for its convenience/privacy, but some missed group social support

## Wearables

Mostly motivating (real-time feedback, gamification), some frustration with reliability/interpretability

## Sustaining Change

Mixed: some kept exercising, others "slipped back" once structure removed

## Personalisation & Timing

Greater baseline-tailored starting points and continued support after programme end

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Remote exercise before and after breast cancer surgery was **feasible, safe,** and achieved **88% adherence**

# THANK YOU

## Collaborators

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