

Smartphone-Based Fall Prevention Therapy and Monitoring for Older Adults

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JH AITC Aging Focus Pilot Core

Background

- Falls are among the greatest threats to healthy aging.
- Fall-prevention physical therapy can be effective, but suffers from:
 - Limited Accessibility
 - Low adherence to at-home programs – only 30%
 - Lack of personalization and feedback
- Individualized remote therapeutic monitoring approaches

Objective

This work will result in a functional platform for remote fall risk assessment and fall prevention program delivery.

Future work will evaluate the platform for adherence, acceptability, and clinical and financial outcomes.

Pilot Project Highlights

Aim 1: Develop and validate balance assessments and fall-prevention exercises on the Brightway PT platform

- Balance Assessments - standing balance, functional reach, 5-times sit-to-stand
- Balance Exercises: sit-to-stand, bridges, weight shifting, hip abduction, standing movement
- Collect data in 10 older adults at risk of falls – Brightway application and laboratory-based motion analysis.

Aim 2: Participatory Design of fall-prevention application with stakeholders to improve engagement

- Conduct interviews to explore participation barriers and effective engagement
- 10 rural older adults, AITC Stakeholder council, and physical therapists.

Aim 3: User testing of preliminary fall prevention solution

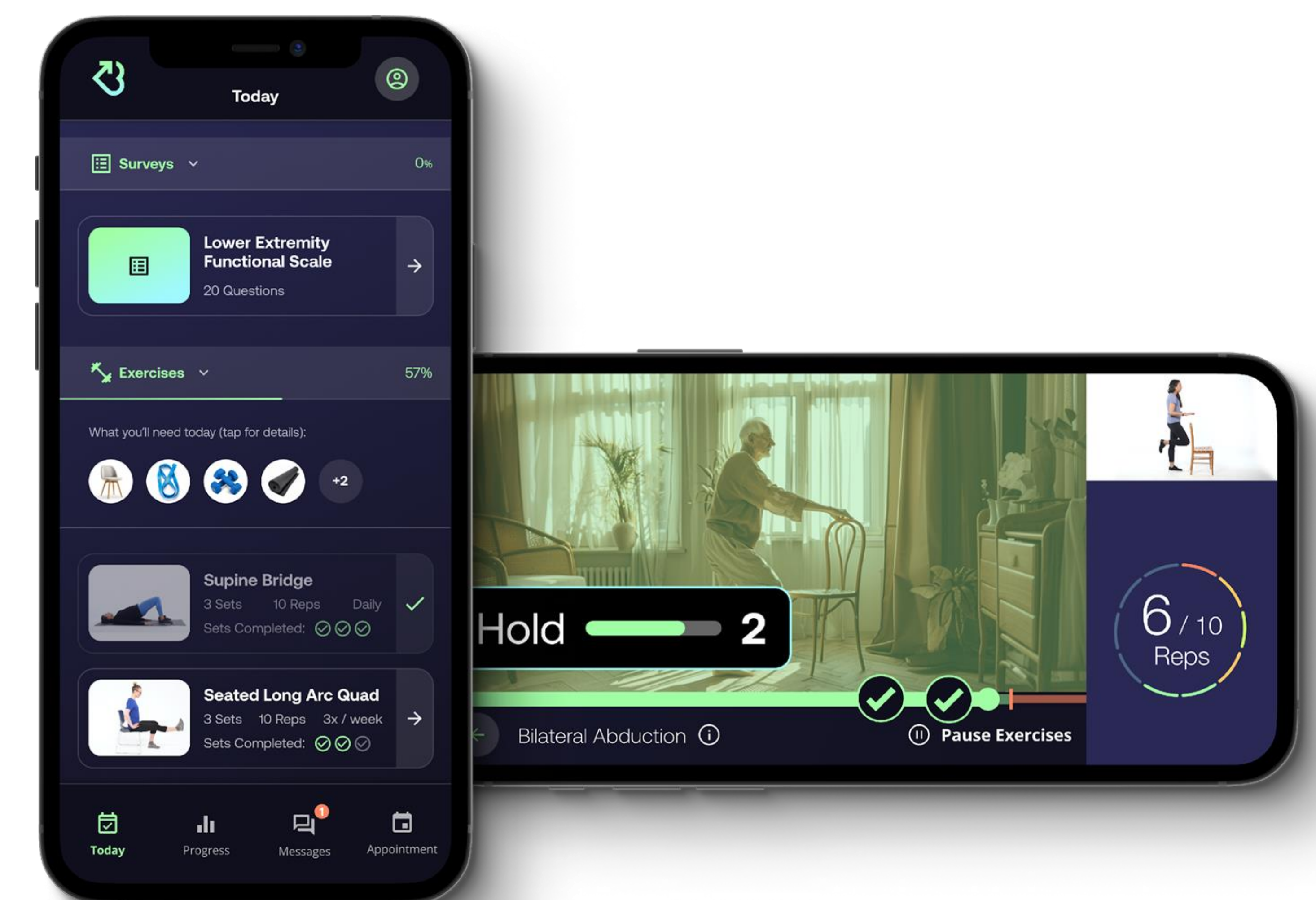
- 10 older adults at risk of falls – will observe application use in laboratory
- Post-testing interviews on ease of use, acceptability, and potential improvements.

Expected Milestones:

- Development / Validation / Design (October 2025)
- User testing (December 2025)

Product: Brightway Physical Therapy

- Remote therapeutic monitoring platform
- Uses computer vision on smart devices to provide real-time feedback to patients during exercises at home
- Helps address limitations in access and engagement
- Reimbursed by Medicare and many commercial insurers



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