

RendeverFit™

Social and Physical Wellbeing for Older Adults

RendeverFit can be an integral part of mobility and depression risk reduction via physically and socially engaging movement activities. A four-week pilot highlighted a decrease in concerns of falling (48%), walking speed improvements (9%), and multiple reports of **fun**.

Introduction

RendeverFit is a virtual reality (VR) based social experience framed around physical and cognitive activities designed for seniors. Based on the Rendever VR toolkit, the three core modules (cycle, paddle, and paint) engage participants via visual experiences that create measurable movement and mentally stimulating challenges while in a social environment. This three-pronged approach aims to deliver increased mobility and physical ability, along with the social elements, aims to reduce social isolation and improved mental condition. The pilot focused on the use of the cycle module that included wireless hand controllers. The game enabled residents to compete with each other for the highest score of most balloons popped, and created healthy competition amongst residents and kept them engaged.

The Pilot

FPCIW launched the **RendeverFit** pilot in February 2023 at Front Porch communities San Francisco Towers (SFT) and Villa Gardens (VG). Pilot data were based on surveys, focus group discussions, and interviews with residents and staff. We also conducted TUG tests and surveys before and after the pilot to assess change in mobility and various areas of wellbeing. This report summarizes our 30-day pilot data information and experience with RendeverFit involving 18 older adult volunteers.

Survey data analyzed by Dr. Stacey Schepens Niemiec and Carly Martinez at the USC Chan Division of Occupational Science and Occupational Therapy.

The referenced report included analysis of pre- and post- surveys and mobility test data from the **RendeverFit** four week pilot. Four survey question results stood out suggesting that the **RendeverFit** tool has potential to improve the lives of older adults, providing improvements to cognitive ability along with physical and mental health. The research questions we asked included:

	Change from Pre to Post pilot
Did participants' loneliness decrease?	Decrease 33%
Did participants' worry of falling decrease?	Decrease 48%
Did pain interfere with their life less than before the pilot?	Decrease 44%
Did participants rate their level of trust with other residents higher than before?	Increased 36%

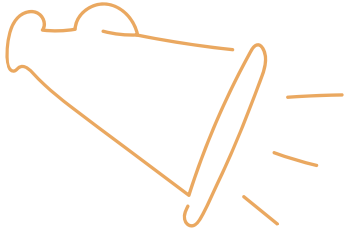
One question that deserves more understanding as the negative result may have root causes that need to be researched and be used to make changes to process, equipment or approach:

	Change from Pre to Post pilot
Did exercising become pleasant for participants?	Decrease 16%

In addition to the survey results, we analyzed results from standardized TUG tests that noted a 9% improvement in walking speed. As this is a clear indication of a critical physical improvement over a short time period, this further suggests the potential positive value of **RendeverFit** for mobility.

Mobility Measured Via Fall Risk

The pilot involved testing and surveying before and after deployment, utilizing a physical measurement known as the TUG test, as well as a set of survey questions that included an inquiry about concerns related to falling. Both methods successfully captured improvements in physical outcomes and reported satisfaction with the overall experience.¹



Measured

- TUG test
- Survey

Improvement

- 9% faster movement
- 48% fall worry reduction

A **TUG** test is a simple assessment that is used to determine how long it takes a person to walk three meters and is used to estimate a person's risk of falling. A participant starts in a seated position in a chair and is timed to stand up, walk three meters, walk back, and sit back down. This assessment was used because it is easy to conduct and can be a valuable metric to compare before and after results. A significant decrease in post TUG test times could indicate that the intervention lowered participants risk for falling.

Does **RendeverFit** effectively address these key factors?

Based on a limited four-week pilot held at two Front Porch locations, the results are impressive with measurably favorable results in mobility and enjoyable social interaction. Converting pilot results to habit formation could take up to 70 days on average.²

Pain Reduction

Did pain interfere with their life less than before the pilot?

43% reported improvement

Exciting results after only four weeks! Studies show that chronic pain can be reduced through regular exercise.³ Creating an avenue for regular exercise that is tailored for the older adult increases engagement and results in improved health, longevity and ability to handle daily living activities.⁴

Social Interaction

"It was fun and challenging."

"More motivated because it is more pleasant to exercise with the nice visual aspect/environment."

Fun
Motivated
Exercise
Improved
Physical
Health
Mental
Goals

"I always felt good after using RendeveFit and I looked forward to doing it each time."

"It renewed my desire to be in a more regular program for exercise."

"Improved my feeling of having accomplished something physical and mental by participating."

A Community-Building Opportunity

RendeverFit brings new and engaging activities to their communities. Virtual travel experiences and exercise content are continuously updated. The community benefits from a shared experience that can be a source of conversation and comradery while improving overall health and mobility.



The pilot experience surveys captured evidence of teamwork amongst the participants. The use of embedded measurements highlighted results encouraging individual's improvement and social engagement at the community. One promising indicator from survey results in support of teamwork and social interaction was that participants reported higher levels of trust with their peers.

Conclusion

We believe the most exciting and encouraging result of the pilot were self-reported and measurable benefits to the participants that can be directly linked to depression risk factors. While the pilot was limited in time period, the results captured strong support around the continued use of **RendeverFit** as a tool to significantly enhance the lives of older adults both physically and mentally. Our pilot results show that there is potentially positive evidence of improved health or wellbeing outcomes and a future, larger-scale study is warranted.

1 RendeverFit Survey Results report completed by USC – Dr. Stacy Schepens Niemiec and Carly Martinez

2 <https://bpspsychub.onlinelibrary.wiley.com/doi/full/10.1111/bjhp.12504>

3 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8797193/>

4 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3870597/>