

Boosting Parkinson's Exercise Program Outcomes Through Gamification

CardioWall® Case Study: Evergreen Commons Senior Centre

STUDY OVERVIEW

The 12-Week CardioWall Parkinson's Study at Evergreen Commons Senior Centre has shown that integrating regular CardioWall use into the Parkinson's Exercise Program can have a range of benefits for Parkinson's users' physical health and well-being.



Regular use of the CardioWall as part of a Parkinson's Exercise Program can...



Improve balance



Build all-round fitness



Reduce fall risk



Reduce all-cause mortality



Boost functional mobility

This Study compared a CardioWall Group, which used the CardioWall regularly as part of their exercise program, and a Control Group, which had limited use of the CardioWall.



ABOUT EVERGREEN COMMONS

Evergreen Commons is a community-based Wellness Centre in Michigan, USA, offering exercise facilities and fitness classes for older adults with varying levels of mobility and fitness.

They purchased the **CardioWall Landscape** in May 2023 to be used in their fitness centre to support their mission of promoting active aging.

As Evergreen Commons runs an extensive Parkinson's Exercise Program, this offered a great opportunity to **integrate the CardioWall into the program for a 12-week Study period.**

STUDY METHOD & OBJECTIVES

This Study included 18 participants already taking part in the Parkinson's Exercise Program at Evergreen Commons. Participants were split into two groups:



CardioWall Group (9 Participants) - CardioWall used regularly, 2-3 times a week for 10-20 minutes



Control Group (9 Participants) - CardioWall used once every 4 weeks, when Study data was taken

Our objectives were to:

- ✓ Measure the benefits of the CardioWall on Parkinson's users' physical health and well-being
- ✓ Reflect on the effectiveness of integrating the CardioWall into the Parkinson's Programme
- ✓ Gather feedback on perceived benefits to mood, social engagement, and physical goals

STUDY OUTCOME MEASURES

Stand-Floor-Stand (Sitting Rising Test)²

The time it takes to transition from standing, to sitting with crossed legs, and back to standing.



Demonstrates balance and can predict all-cause mortality risk in Parkinson's users

Timed Supine to Stand Test³

The time it takes for the participant to lie flat on their back from standing, to standing again.



Indicates ability to take part in the circuit class compared to chair-based activity, and demonstrates confidence in daily mobility

CardioWall Scores

ClearOut, Chaser, ClusterShot, CardioBeat - speed, reaction, and coordination games.



Builds all-round fitness, cardiovascular health, and reaction time in Parkinson's users

WHAT IS PARKINSON'S?

Parkinson's ¹ is a progressive condition which affects the nervous system. When nerve cells in the substantia nigra, the part of the brain that controls movement, deteriorate or die, they lose the ability to produce dopamine, a chemical which helps to control body movements.

Parkinson's symptoms vary but predominantly include shaking (tremors), stiffness, and slow movement. Parkinson's gets worse over time and has no cure, but treatment can reduce symptoms and offer a better quality of life. Therapies include medication, physiotherapy, exercise, surgery, and speech therapy.

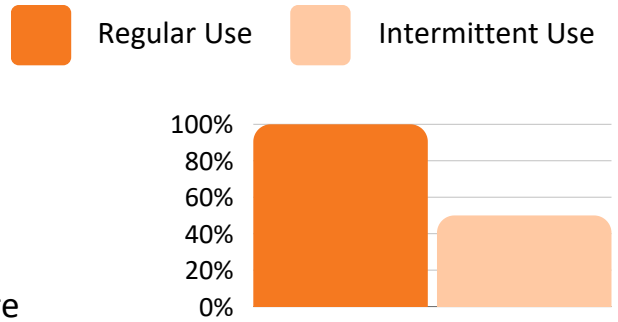
Improvement Doubles in Parkinson's Outcome Measures with Regular CardioWall Use

For people with Parkinson's, **improving and maintaining functional mobility and balance** is fundamental for **independence and confidence** in everyday life.

This Parkinson's CardioWall Study has shown that regular use of the CardioWall can improve results in the following outcome measures.

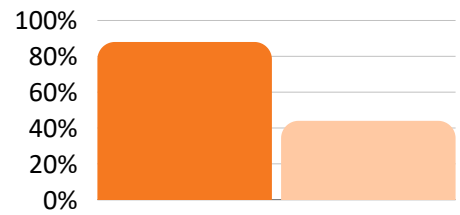
Sitting-Rising Test

- 100%** of regular CardioWall users improved their score
- 50%** of intermittent CardioWall users improved their score



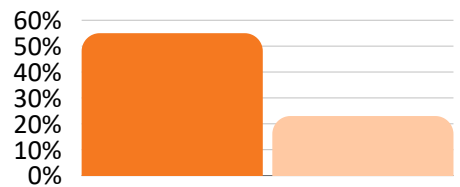
Timed Supine to Stand Test

- 88%** of regular CardioWall users reduced their supine to stand time
- 44%** of intermittent CardioWall users reduced their time



CardioWall Scores

- 55%** of regular CardioWall users improved their scores on all games
- 23%** of intermittent CardioWall users improved their scores



“Clearly, using the CardioWall regularly improved their **speed, range of motion, physical fitness and cardio fitness, processing speeds** and all of that, so that’s a win for me. Visitors would make comments that they felt like their **speed of movement** and their **fluidity of movement** was getting better, just in their daily lives.”

AMY VANDE POEL

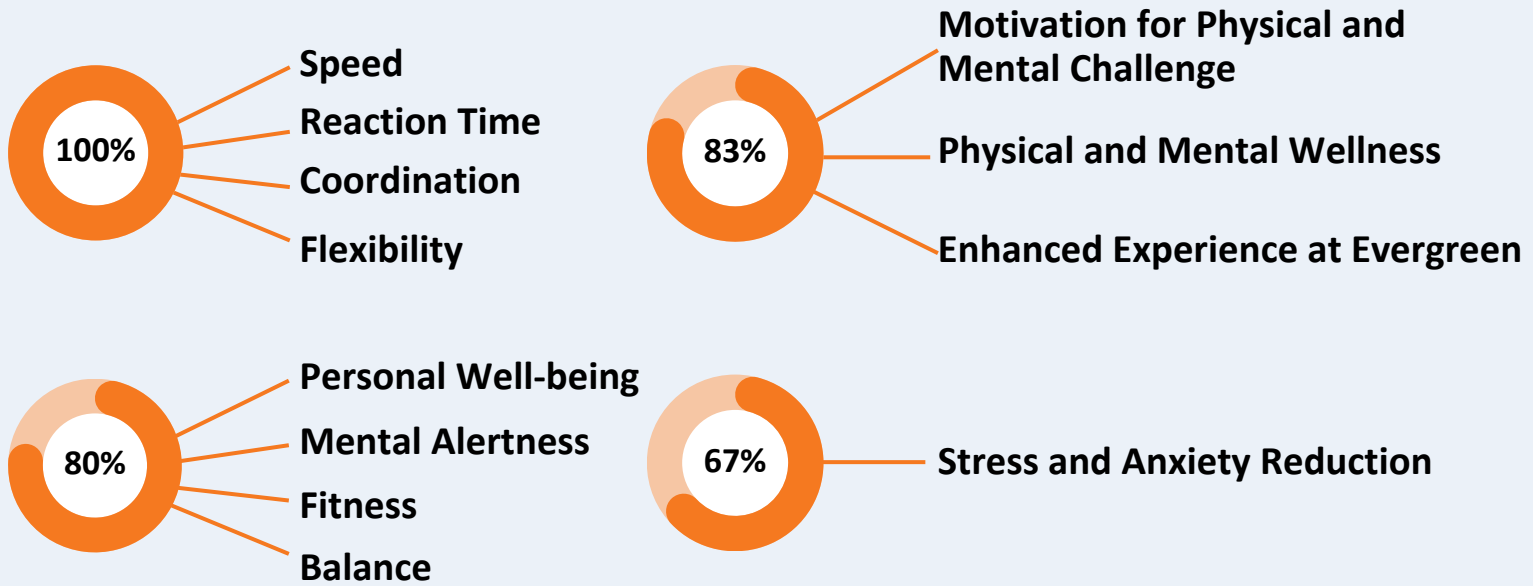
Physical Wellness Director at Evergreen Commons



Using the CardioWall regularly improves health and well-being goals for people with Parkinson's

At the end of the 12-week CardioWall Parkinson's Study, Participants gave feedback on their experience and overall enjoyment of the CardioWall during the Study.

Study Participants who used the CardioWall regularly reported the following health and well-being benefits...



HEAR FROM THE STUDY PARTICIPANTS

“The CardioWall helped my reaction time a lot, it helped with driving and also my dizziness. I really enjoyed using it.”


“[The CardioWall was] something to look forward to.”

“[The CardioWall improved my] confidence, strength and balance.”



Alongside benefitting members at Evergreen Commons, the CardioWall has offered staff a piece of exercise equipment that supports them in **engaging members** in their fitness program through **gamification, competition, and fun.**

The Parkinson's Exercise Program can be challenging, but the CardioWall **"improved attendance to classes throughout the week"**, and staff saw improvements in Participants...

-  **Mental Alertness**
-  **Flexibility**
-  **Reaction Time**
-  **Balance**

CARDIOWALL ENJOYMENT

Feedback on the CardioWall from Evergreen staff and members alike has been outstanding, with the highlight being that it **makes exercise fun through gamification.**

To measure the impact that regular CardioWall use had on Participants, we compared their scores with a control group who only used it during the testing week, much to their disappointment... ↘

“The control group also really wanted to be able to use the wall, so we had to kind of stave them off. They just had to look at it when it was in class and be like “I want to do that!”. It's fun, it's a game, it makes exercise a little more enjoyable because they have to do some pretty hard drills that are challenging. The CardioWall is challenging, but in a fun way.”

AMY VANDE POEL

Physical Wellness Director at Evergreen Commons

HEAR FROM THE EVERGREEN TEAM

Staff at Evergreen Commons also commented on the following improvements in members from regular CardioWall use:

*"Improved shoulder **range of movement.**"*

*"Improvement on **gameplay strategy.**"*

"Memory client - had to explain the rules less and less each week."

*"**Improved attendance** to classes throughout the week."*

*"The CardioWall complemented our other exercise and rehab equipment well. We don't have anything else that **helps cognitively, especially with strategy.**"*



CARDIOWALL PARKINSON'S STUDY SUMMARY

CARDIOWALL CASE STUDY

The Benefits of Regular
CardioWall® Use for
People with Parkinson's

The CardioWall has shown to be an excellent exercise tool for Parkinson's patients, and this Study has demonstrated that regular CardioWall use can:



Improve balance and reduce all-cause mortality risk in Parkinson's users



Build all-round fitness in Parkinson's users



Boost functional mobility and reduce fall risk in Parkinson's users

We're so excited to have captured the range of benefits people with Parkinson's can gain from using the CardioWall regularly alongside their Parkinson's Exercise Program. On top of that, they're enjoying it too!



PLANS FOR THE CARDIOWALL AT EVERGREEN

Evergreen Commons continues to use the CardioWall within several of its services. Many of the Study Participants continue to use the CardioWall, personal trainers use it with their clients, and it remains available for anyone with a fitness membership to use, too.

Following the success of this Study, Evergreen's Parkinson's Exercise instructors now **incorporate the CardioWall in their PWR! Moves classes.**

CONTACT US

To find out how the CardioWall can support your members and residents to stay active, **fill in our contact form here**, or give us a call on **+44 1726 981 123**.

REFERENCES

¹ <https://www.nia.nih.gov/health/parkinsons-disease/parkinsons-disease-causes-symptoms-and-treatments>

² <https://www.escardio.org/The-ESC/Press-Office/Press-releases/Ability-to-sit-and-rise-from-the-floor-is-closely-correlated-with-all-cause-mort>

³ <https://www.pwr4life.org/falling-with-parkinsons-rising-from-the-floor/>