

# Playing video games helps stroke recovery

September 30 2020, by Hayley Jarvis

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Credit: Neurofenix

A genius game controller helping stroke patients get back hand and arm movement by playing on the computer is set to start tests in a stroke unit.

1.5 million Brits have a stroke and 70 percent of them get weakness in their hands and arms, leaving many unable to even make a cup of tea or get dressed.

The NeuroBall is shown to help people regain strength and movement in their arms and hands after a stroke by making dull daily rehab exercises more fun.

Now makers Brunel University London and UK firm Neurofenix have won £60,000 from The Stoke Association and MedCity to take development to the next level.

"Neurofenix and Brunel University London will explore how this new hand-held console and app could improve the recovery of hand and [arm movement](#) at vital, earlier stages of recovery," said Dr. Richard Francis, Head of Research Awards at the Stroke Association.

"They will also look at whether the new technology can be cost-effective for the NHS."

The only route to recovery is through rehab and key to that is practice. It can take months to get back enough movement and control to do everyday tasks, said Brunel's Dr. Cherry Kilbride: "Doing repetitive exercise is boring and engaging the person in enough practice to make a difference is a challenge given NHS resources."

Stroke survivors can play nine themed video games holding the Neuroball console, which uses AI to track arm and hand movements and send feedback to an app. Developed by the team at Brunel along with Neurofenix and [stroke survivors](#), it's designed to motivate users to do hundreds of physio reps in the comfort of their home without even realizing it.

"Our vision is to enable stroke survivors and patients suffering neurological conditions to regain their independence. Brunel University London helped us validate how our technology can aid stroke survivors," said Neurofenix's Dimitris Athanasiou.



Credit: Neurofenix

Hospital stroke rehab patients move their arm and [hand](#) an average 32 times in a session. But survivors who played videogames with the Neuroball practiced an average 17 hours a week, notching up 15,000 reps over seven weeks, an earlier study showed.

"These latest findings demonstrate the need and importance of stroke research," said Dr. Francis. "However, the pandemic has heavily impacted research funding and it's vital that breakthroughs like this continue to be funded, so that stroke survivors get the support they need to rebuild their lives."



Credit: Neurofenix

Starting in January, the new study will track [stroke patients](#) who are in an earlier stage of recovery, first at Hillingdon stroke unit and then their first weeks at home.

"We know from an earlier study that the NeuroBall and appis safe, feasible and acceptable to stroke survivors living at home more than sixmonths post stroke," said Dr. Kilbride. "But we do not yet know about using the intervention in the earlier [stroke](#) pathway."

**More information:** The new study is called RHOMBUS II: Rehabilitation using Virtual Gaming for Hospital and HOME-Based Upper-limb exercise post Stroke (RHOMBUS): a feasibility randomised controlled trial.

Provided by Brunel University

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