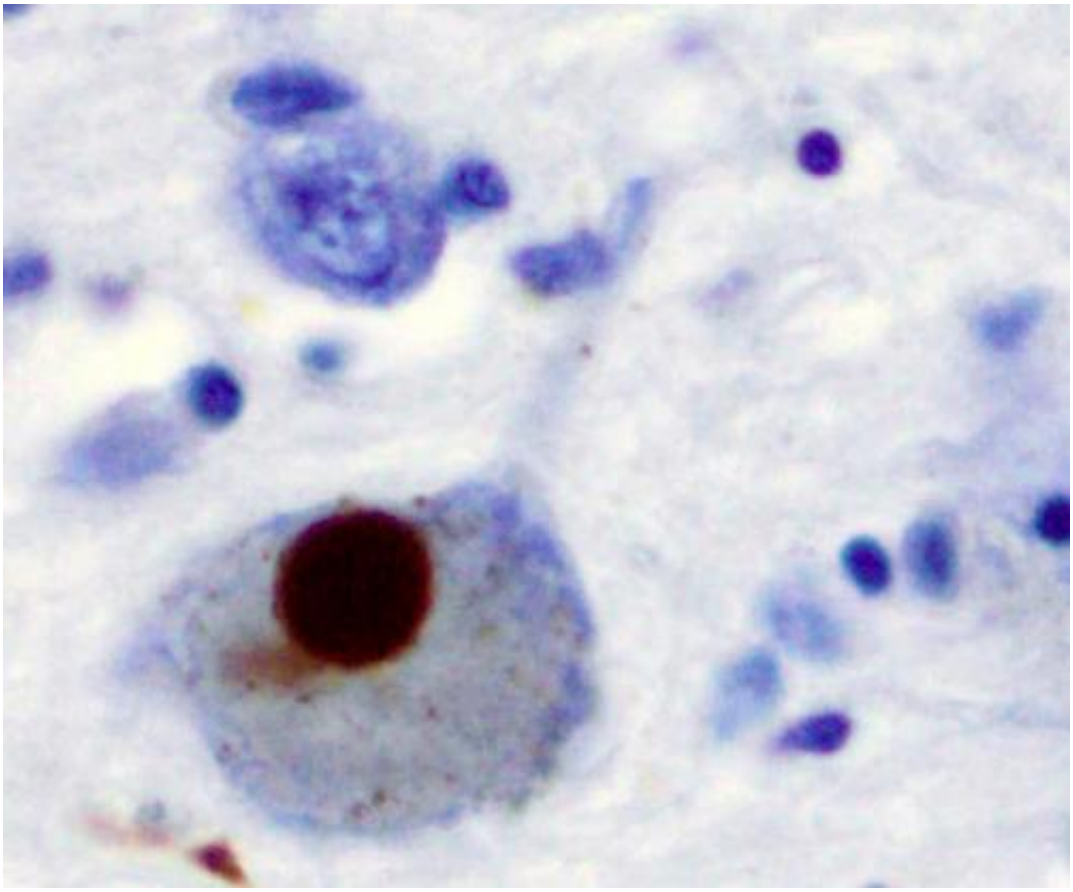
Game-changer for Parkinson's disease outcomes

July 10 2018, by Robyn Mills



Immunohistochemistry for alpha-synuclein showing positive staining (brown) of an intraneural Lewy-body in the Substantia nigra in Parkinson's disease. Credit: Wikipedia

A unique gaming system called 'OrbIT' will play a lead role in the fight

to improve life for individuals living with Parkinson's disease, thanks to funding from the Estate of the late Olga Mabel Woolger.

In a three-year $90,000 study, Flinders University Rehabilitation Engineer, Mr David Hobbs and University of Adelaide neuroscientist Dr. Lyndsey Collins-Praino will partner with Parkinson's South Australia to trial OrbIT as a cognitive training device to improve outcomes and delay dementia onset for people with Parkinson's disease.

The OrbIT gaming system is an accessible, fun, stand-alone computer gaming system that features a novel and easy to use controller. OrbIT engages the player in a targeted, cognitively challenging activity (playing specially designed computer games), while the unique design of the controller facilitates intuitive control without the need for grip and fine motor control. This is particularly important for individuals living with Parkinson's disease, who may often struggle to use traditional gaming controllers.

"Cognitive decline is one of the most significant predicators of quality of life both for individuals living with Parkinson's disease and their caregivers, and currently there are no effective treatments for it," says Dr. Collins-Praino. "We hope that the OrbIT system may be able to help individuals maintain, or even improve, their cognitive function by allowing us to target the areas that are most vulnerable in Parkinson's disease."

Parkinson's disease affects more than 110,000 Australians, with 38 new cases diagnosed every day.

While many people think of Parkinson's disease as a motor disease, it can also be associated with a variety of non-motor impairments, including declines in cognitive function and memory. Within 20 years of diagnosis over 80% of individuals living with Parkinson's disease go on

to develop dementia.

"We believe the OrbIT gaming system, which was originally developed for children with cerebral palsy and has also been trialled with people undergoing stroke rehabilitation, has huge potential in other health areas because of the way it was designed," said Mr Hobbs, the lead developer of OrbIT.

"We are really excited to partner with Parkinson's SA and to uncover new applications for this technology to improve the lives of many people with this condition."

The funding will enable the gaming system to be trialled through Parkinson's SA's new Brain x Body Fitness Studio, a studio designed to encourage neuroplasticity. The trial will include both short-term and long-term follow up with individuals, in order to evaluate any lasting benefits of game play.

Chief Executive Officer of Parkinson's SA, Olivia Nassaris said this project is a true example of collaboration.

"Parkinson's South Australia is expanding our research portfolio in partnership with the talented minds from our South Australian universities," Ms Nassaris says.

"David Hobbs at Flinders University at Tonsley created something for one purpose, and Dr. Lyndsey Collins-Praino at the University of Adelaide saw the potential for use and positive impact in another area.

"Together with Parkinson's SA and the generosity of the Estate of the late Olga Mabel Woolger, we have a project that potentially can improve the wellbeing of people living with Parkinson's," said Ms Nassaris.