Northumbria University NEWCASTLE

Study and practice with the human brain in x-ray laboratory

Dec 02, 2021 13:58 GMT

Northumbria's vision for improving treatments for Parkinson's disease

Northumbria University is leading research on the effects of technological visual training as a potential rehabilitation tool for people affected by Parkinson's disease.

Dr Sam Stuart, a senior researcher in the Department of Sport, Exercise and Rehabilitation at Northumbria, is working with American company, Senaptec, an industry leader in the design and production of sensory performance assessment.

Using Senaptec's technology, Dr Stuart is working in collaboration with Northumbria Healthcare NHS Foundation Trust, carrying out clinical trials on 40 people suffering with the symptoms of Parkinson's disease.

The Senaptec technology consists of a sensory performance assessment station, eyewear and a mobile tablet application that have pre-set modes that can be customised. The eyewear has been manufactured to look like a pair of glasses, these 'smart' glasses are designed to help elite athletes process vision faster and more efficiently. This provides a unique edge for athletes to perform at a higher level more consistently and with better decision making.

The eyewear lenses flicker on and off, making it harder to process information, which helps the brain focus on visual tasks. The resulting heightened vision capability can improve people's eye-hand coordination, movement, balance, and reaction time.

Dr Stuart is combining the brain training techniques of the Sensory Station and tablet application with the eyewear to help improve mobility and balance in people with Parkinson's.

"This study aims to explore whether vision and balance can be improved with visual training for people with Parkinson's," said Dr Stuart. "Research has shown that people with Parkinson's rely more heavily on their vision for day-to-day activities. Visual and cognitive problems combined with balance issues increase the risk of falls among people with Parkinson's. This risk can of course lead to decreased physical activity and a reduced quality of life.

"Working with Senaptec and Northumbria Healthcare NHS Foundation Trust, our aim is to find out what effect visual training has on participants' visual abilities and whether this has any impact on their balance and walking."

Parkinson's is the largest growing neurological disorder in the world, with one in 37 people at risk of developing the disease in their lifetime.

This project compliments the growing body of research at Northumbria University on rehabilitation for people with Parkinson's disease. Dr Stuart is also working on an international research project funded by the Parkinson's Foundation (USA) looking at walking interventions for people with Parkinson's disease in collaboration with Northumbria Healthcare NHS and

Oregon Health and Science University.

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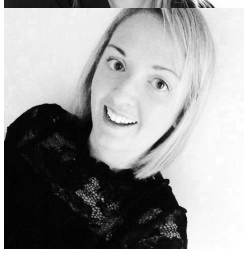

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