Helping stroke survivors back on their feet

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Small sensory devices could help to improve walking recovery during stroke rehabilitation in a bid to reduce social isolation.

Health researchers at Manchester Metropolitan University are leading the development of a new haptic device – technology that communicates via vibrations – to aid walking therapy for stroke survivors.

They are working with the Open University and Manchester-based technology firm Lucid Innovation to develop the device.

The technologies are part of a series of technical health projects at the University designed to employ new technologies to cut loneliness and isolation.

Mobility

The device, worn by the individual, would sense the symmetry of walking and provide vibrations, similar to that from a mobile phone, to cue the wearer to improve how they are walking.

In the UK, 150,000 people sustain a stroke each year whilst 1.2 million people in the UK live with the consequences of stroke. The goal is to help these people to maintain their wellbeing and mobility.

The project is led by Dr Rachel C Stockley and Glenis Donaldson, from Department of Health Professions, and Professor Josie Tetley, from the Department of Nursing.

Dr Rachel Stockley said: "Whilst advances in medical treatment mean that many people are more likely to survive stroke and have improved outcomes, walking and specifically walking in the community, continues to be a significant problem for over half of all stroke survivors.

Cutting isolation

"The increased social isolation brought about by reduced community mobility is likely to lead to a loss of sense of self, greater carer burden and can produce many significant health conditions, with associated healthcare costs, secondary to a sedentary lifestyle.

"The project will provide valuable information regarding the practicality, acceptability and feasibility of wearing and using the haptic technology to alter walking and help us take the next steps in producing a commercial and useful device to help stroke survivors be more mobile in the community."

Working with computer engineering colleagues at the Open University and technology firm Lucid Innovation, the team will start to develop a wearable haptic device with funding from Greater Manchester Academic Health Sciences Network's Technology Innovation Challenge.

The project will develop a prototype device with the input of stroke survivors and clinical physiotherapists to ensure it is practical and wearable. The team will then test it in a small group of people who have difficulty walking because of their stroke.

Provided by Manchester Metropolitan University