

Robot research gives hope to stroke patients

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A major new research programme using robot assisted training to help stroke patients regain movement in their affected arm has been launched.

Researchers at Newcastle University will work with stroke specialists at Northumbria Healthcare NHS Foundation Trust and other UK institutions, as part of the £3 million project.

Each year 110,000 people in the UK have a stroke and many have long-term problems moving or feeling their affected arm. Rehabilitation with physiotherapy and occupational therapy starting as soon as possible after a stroke is currently the best way to maximise the amount of movement people eventually regain.

During robot assisted training, the person who has had a stroke sits at a table facing a computer screen and places their arm onto the device. The therapist then asks the patient to undertake some arm exercises such as moving between targets on the computer screen. If the person is unable to move their arm then the robot moves the patient's arm to complete the task. If the patient initiates movement, the robot provides adjustable levels of assistance to facilitate the person's [arm movement](#) – all of which helps the brain and arm to learn to work together again.

Restoring arm movement

Funded by the National Institute for Health Research (NIHR), the project will see NHS patients take part in the first ever and largest study of its kind in the UK.

Helen Rodgers, Professor of Stroke Care at the Institute for Ageing and Health at Newcastle University and Consultant Stroke Physician at Northumbria Healthcare NHS Foundation Trust is leading the research.

She said: "Announcing the start of this clinical trial is a really exciting step forward for [stroke rehabilitation](#) research in the UK. We have been looking at the research undertaken in the USA and we are working closely with colleagues at the Massachusetts Institute of Technology to see if robot assisted training is an effective treatment. If shown to be effective, robot assisted training has the potential to change how we provide NHS rehabilitation for people with arm weakness due to stroke."

The five-year clinical trial will involve up to 16 stroke services across the NHS focussed around four major study centres: North Tyneside General Hospital in North East England, Queen's Hospital in Romford, Addenbrooke's Hospital in Cambridge and the Western Infirmary in Glasgow. Each of the four study centres will work with neighbouring local hospitals, community rehabilitation services, stroke clubs and GP practices to enable over 700 [stroke patients](#) to participate in the research project.

Stroke trial

From April 2014, researchers began to recruit patients with first ever stroke to participate in the clinical trial. To be eligible to take part in the study, participants should be between one week and five years since their [stroke](#) and have moderate or severe difficulty moving their [arm](#).

Participants will be randomly allocated into one of three groups – one will receive the robot assisted training over a three-month period, one will receive equivalent intensive therapy carried out by a therapist and the final group will receive usual therapy treatment from the NHS.

More information: Further information about the [robot assisted stroke trial](#) from the website or by contacting the study coordinating centre at Newcastle University on 0191 208 6322 or email ratuls@ncl.ac.uk.

Provided by Newcastle University

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