

## Research Investigates the Direction of Stroke Patients Steps to Recovery

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Researchers at the University of Birmingham are looking for participants to take part in a unique project to assess how well stroke patients recover the physical abilities they need to walk along a busy street or navigate around a fully furnished room.

The project, which is funded by the Stroke Association and involves researchers from the Schools of Health Sciences and Sport and Exercise Sciences, aims to find out why stroke patients are less able to change direction and adjust their stride effectively, skills which are particularly important for independent mobility.

Dr Paulette Van Vliet from the University's School of Health Sciences who is leading the project comments: "Patients who suffer a stroke routinely receive physiotherapy to help them recover the movement in their limbs. But there is a great difference between developing the ability to move and feeling confident walking independently in the community.

We would be very keen for volunteers who are able to walk 10 m independently to join the study. Participation will help us to answer important questions about rehabilitation and will lead onto the design of a new training method to help patients' coordination. We will then use our data to develop a trial of the new physiotherapy treatment which could be beneficial for participants."

Each participant will be asked to walk along a specific pathway up to 40 times. The task will be varied slightly each time by asking the participants to change direction or speed in response to commands.

The researchers will create a full body motion capture of every movement using special cameras in the School of Sport and Exercise Sciences. This data will then be matched against a control group to allow the team to identify precisely which aspects of the movement stroke patients have particular difficulty with.

Dr Mark Hollands who operates the University's Human Movement Laboratories explains: "The camera set up will allow us to build up a detailed picture of whether patients recovering after a stroke experience problems with their gait or co-ordination when they need to perform direction changes such as navigating around obstacles.

We will be able to compare their movements with a control group and to identify any threats to balance which are caused by changes in gait following stroke .

Kristen Hollands from the project team adds: "Following a stroke some muscles become weak or unresponsive and patients will develop their own unique walking pattern to compensate for these difficulties. The experiments used in this program of research are designed to test if the different walking patterns shown by people following a stroke still allow them to safely respond to everyday situations that may cause them to lose balance and then to test if we can improve their ability to respond to these situations, even years after the initial stroke."

### ENDS

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