With an ageing population, the number of people living with these conditions is set to rise. Long term neurological conditions (LTNC) affect individuals and their families in terms of quality of life, mood and independence.

Rehabilitation after stroke and other LTNC can be complex; no two stroke survivors will have the same problems with activities of daily living, societal participation or bodily functions. Consequently, the design, development and conduct of trials to test new therapies can be challenging.

Living with stroke and other long term neurological conditions is a portfolio of research generated by Glasgow Caledonian University (GCU) researchers together with the Nursing, Midwifery and Allied Health Professions Research Unit, a national unit funded by the Scottish Government’s Chief Scientist Office. We have expertise in the development and implementation of complex interventions; national surveys, systematic reviews and the design and successful completion of randomised controlled trials (RCTs) and cluster randomised trials (CRT).

The focus of our research is primarily on living with stroke and other LTNC beyond the acute medical setting. It comprises an interdisciplinary portfolio of research work streams prioritised by health service users and providers. Our work focuses on the following topics: communication, continence, oral health, physical activity and rehabilitation, outcome assessment, non-pharmacological secondary stroke prevention and self-management. People affected by these conditions and their carers are centrally involved in our work plans and activities.

The aim of our research is to improve the lives of people affected by stroke and other LTNC as well as that of their families. Our work has informed national policies and guidelines in the UK and beyond and has contributed to innovation in education and service provision. It has raised awareness of research priorities amongst healthcare professionals, service managers, stroke survivors, carers and the general public.

Our interdisciplinary research on complex interventions for communication problems, visual difficulties, physical impairments and activity limitations, continence care, as well as secondary prevention (i.e. lifestyle risk factor reduction) has made a significant contribution to clinical guidelines and open access education across the world.
Our research portfolio comprises a range of different studies funded by the Chief Scientist Office, the NIHR, the Chartered Society of Physiotherapy and the Stroke Association including work on arm function; physical activity for stroke survivors; communication; continence and secondary prevention.

Music to improve arm function after stroke
A common long-term consequence of stroke is impaired arm function, which affects independence and quality of life in a considerable proportion of stroke survivors. Our research involves the use of musical activities to enhance arm function after stroke. There is a growing need for self-management strategies that enable stroke survivors to continue their recovery after rehabilitation has ceased. Interventions with high-intensity task training and feedback are most likely to improve function. Achieving the required amount of self-practice is challenging, however.

Innovative approaches are required to translate therapies into rewarding activities that can be undertaken more independently. GCU has developed a prototype game that integrates individuals’ preferred music with rhythmic auditory stimulation and game technology in upper limb rehabilitation.

Maximising the use of pre-existing data
The rehabilitation section of the Virtual International Stroke Trials Archive (VISTA-Rehab) was developed by NMAHP researchers as a collaborative stroke trials resource. Practical and financial barriers hinder the pace of stroke rehabilitation research; the design of trials, recruitment of patients, analysis of data, and publication of findings can take years and cost millions of pounds. The end result may not be positive. Data from completed trials often reside unused in industry or academic archives long after their results have been published. However, re-use of these valuable data in the form of exploratory analyses can describe patterns of recovery, answer new research questions and help to determine whether new therapies have the potential to help stroke survivors.

The aim of this project is to collate and provide access to anonymous rehabilitation clinical trial data for new exploratory analyses. Based on contributions from more than 44 trials and 10,000 research participants data, w provide access to this resource (subject to approvals) with researchers, clinicians and trialists to inform the design of future stroke rehabilitation studies.

Exercise for stroke survivors who are unable to walk
One fifth of stroke survivors are unable to walk - a group known as “non-ambulatory” stroke survivors. Due to their sedentary behaviour, they are at considerable risk of further stroke and other conditions, including cardiac conditions and diabetes. While there are now evidence-based interventions to increase physical activity and fitness in people who can walk after their stroke (including programs in local gyms), there is hardly any evidence for improving physical activity in non-ambulatory stroke survivors. The Chief Scientist Office has funded GCU to develop an exercise programme which can help this group in their own homes. The project ‘Physical activity for non-ambulatory stroke survivors living at home: developing a feasible and acceptable intervention’ - will consult stroke survivors, carers, healthcare and exercise professionals on their views regarding physical activity. Stage two will see the development of two different exercises programmes; one for use in the home and the other to be used in a community setting such as a local sports centre or club. The third and final stage will test the programmes and examine how successful they have been in meeting the stroke survivors’ needs.

Living with stroke and other long term neurological conditions

At Glasgow Caledonian University, we work with industry and public sector partners to ensure our expertise responds to the need for real world innovation. GCU’s strategic business development and knowledge transfer teams work with academic experts in our Schools and Research Institutes to support businesses with a problem-solving approach.

Contact us to find out more about building a brighter future with GCU at www.gcu.ac.uk/business.

Further information:
Professor Frederike van Wijck
Professor Marian Brady
School of Health and Life Sciences
Glasgow Caledonian University

frederike.vanjwijk@gcu.ac.uk  0141 331 8967
m.brady@gcu.ac.uk  0141 331 8100

www.gcu.ac.uk/hs