

# A study of how stroke can impact how we think and feel in the long term. How common is it to have problems with processing information and feelings after stroke and what are the underlying causes?

<b>Submission date</b> 16/06/2021	<b>Recruitment status</b> No longer recruiting	<input type="checkbox"/> Prospectively registered <input checked="" type="checkbox"/> Protocol
<b>Registration date</b> 16/06/2021	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
<b>Last Edited</b> 05/12/2023	<b>Condition category</b> Mental and Behavioural Disorders	<input checked="" type="checkbox"/> Individual participant data

## Plain English summary of protocol

### Background and study aims

A stroke can affect the way your brain understands, organises, and stores information. This project aims to determine the nature of cognitive problems at more than two years after stroke. We hope to gain understanding in how memory and thinking problems of varying severities impact on people's daily life and recognize which information is important for identifying individuals who are at risk of developing declining cognition, such as dementia. In general, this study aims to improve how we look for and care for emotional, thinking and memory problems in long-term stroke survivors by assisting clinical teams, policy-makers, and future treatment research studies.

### Who can participate?

Only individuals who have previously been recruited to the Oxford Cognitive Screen Study can participate in this study.

### What does the study involve?

The study involves participating in paper-based assessments that will be carried out remotely over the telephone – voice call or video call. Assessment packs will be participants, and the researcher will go through them with them during the pre-arranged telephone call appointment (s). Participants may be voice-recorded in order to facilitate scoring of certain tasks (for example naming and reading tasks, where more detailed scoring can take place if there are some problems with speech)

The first assessment period consists of a series of relatively short assessments that will be completed over multiple telephone call appointments, each lasting approximately 30 – 45 minutes (1 hour maximum) and up to a maximum of 4 hours in total.

The second assessment period will be carried out remotely over the telephone, in the same way as the first assessment period. This will be done one year after the first assessment period.

The study will involve a series of short questionnaires and tests that will assess functional abilities in activities of daily living, how the stroke impacted participants' quality of life, as well as language, memory, sight and problem-solving abilities. All of the questionnaires and assessments are relatively short, completed in a matter of minutes with opportunities for breaks at any time, if necessary.

We will also ask participants are happy to wear an activity tracker for a maximum of 1 week, which is completely optional. The sensor is the size of a watch and will be worn on the wrist to monitor physical activity. It records activity level continuously, such as movement/how many steps taken over a 7-day period, but it doesn't track the type of activity. It records the amount of hours slept indirectly in the absence of movement for longer periods at night. The sensor does not record location (No GPS data). Monitors will be removed after 7 days and returned via a prepaid envelope.

In addition to phone assessments, we will look at participants' medical records to check information relevant to the study. We would also like to look at any brain scans that have been taken as part of routine care. All data collected will be de-identified and names will be kept separately from any research data.

What are the possible benefits and risks of participating?

There are no evident risks involved in carrying out the tests. Since the tests are simple paper-based assessments carried out remotely over the telephone, there is nothing invasive involved and therefore this research is low risk. If participants do experience any anxiety or distress during the assessment, they may stop at any time and/or pause to ask questions.

Where is the study run from?

University of Oxford (UK)

When is the study starting and how long is it expected to run for?

April 2019 to October 2022

Who is funding the study?

Stroke Association (UK)

Who is the main contact?

Prof Nele Demeyere, [nele.demeyere@psy.ox.ac.uk](mailto:nele.demeyere@psy.ox.ac.uk)

## Contact information

### Type(s)

Scientific

### Contact name

Prof Nele Demeyere

### ORCID ID

<http://orcid.org/0000-0003-0416-5147>

### Contact details

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## Additional identifiers

### EudraCT/CTIS number

Nil known

### IRAS number

259478

### ClinicalTrials.gov number

Nil known

### Secondary identifying numbers

IRAS 259478

## Study information

### Scientific Title

Long term psychological consequences of stroke: prevalence, mechanisms, trajectories and impact

### Acronym

OX-CHRONIC

### Study objectives

The aim of this project is to determine the prevalence, nature, trajectories and wider impact of cognitive impairment in long term stroke survivors, in relation with mood, fatigue, and quality of life.

### Ethics approval required

Old ethics approval format

### Ethics approval(s)

Approved 08/11/2019, Health Research Authority, (Skipton House, 80 London Road, London, SE1 6LH, UK; +44 (0)20 7972 2545; hra.approval@nhs.net), ref: 19/SC/0530

### Study design

Single centre prospective cohort study

### Primary study design

Observational

### Secondary study design

Cohort study

### Study setting(s)

[Home](#)

## **Study type(s)**

Screening

## **Participant information sheet**

[See additional files](#)

## **Health condition(s) or problem(s) studied**

Prevalence of psychological consequences of stroke

## **Interventions**

The purpose of the long-term follow-up assessments is to provide in-depth neuropsychological profiling using clinical screening tools in combination with more detailed cognitive testing batteries. Tests and questionnaires will be identical between both waves. Assessment tools were selected based on extensive use in research with stroke survivors in which acceptable levels of reliability and validity have been reported. Furthermore, the overall package of assessment tools was designed to limit the burden on participants. We achieved this by piloting assessments with stroke survivor representatives from our Study Management Team and Steering Committee. As a result, the test battery should provide in-depth assessments that will accurately capture the psychological consequences of stroke in a way that the results can be related back to existing literature.

The study involves participating in paper-based assessments that will be carried out remotely over the telephone – voice call or video call. Assessment packs will be participants, and the researcher will go through them with them during the pre-arranged telephone call appointment (s). Participants may be voice-recorded in order to facilitate scoring of certain tasks (for example naming and reading tasks, where more detailed scoring can take place if there are some problems with speech)

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## **Intervention Type**

Other

## **Primary outcome measure**

1. Dementia status using DSM-5 criteria and based on medical records, cognitive testing and impairment in function of activities of daily living assessed by two trained physicians at wave 1 and wave 2
2. Domain specific impairment is measured using the Oxford Cognitive Screen (OCS) at wave 1 and wave 2.
3. Global cognitive impairment is measured using the Montreal Cognitive Assessment (MoCA) at wave 1 and 2.
4. Activities of daily living is assessed using Nottingham Extended ADL at wave 1 and 2.

## **Secondary outcome measures**

1. Language abilities measured using the Boston Naming Test at wave 1 and 2.
2. Verbal Fluency measured using the Letter Fluency and Categories fluency tests at wave 1 and 2.
3. Executive function measured using the Hayling Test, Trails Making Tests A and B, and OCS-Plus Trails at wave 1 and 2.
4. Working Memory measured using the Digit Span Forwards and Backwards test at wave 1 and 2.
5. Episodic Memory measured using the Logical Memory Test Part 1 and 2, and the Picture Memory Test at wave 1 and 2.
6. Visual Spatial Ability measured using the OCS-Plus Figure Copy test and the Rey Complex Figure Copy Test at wave 1 and 2.
7. Spatial Attention measured using the Star Cancellation test at wave 1 and 2.
8. Mood disorders measured using the Hospital Anxiety and Depression Scale, Geriatric Depression Scale, and the Apathy Evaluation Scale at wave 1 and 2.
9. Fatigue measured using the Fatigue Severity Scale at wave 1 and 2.
10. Sleep Quality measured using the Sleep Condition Indicator at wave 1 and 2.
11. Cognitive Reserve measured using the Cognitive Reserve Index at wave 1 and 2.
12. Quality of life measured using the Stroke Impact Scale, and the EQ-5D-5L at wave 1 and 2.
13. Care-giver perspectives measured using the Informant Questionnaire on Cognitive Decline in the Elderly, Caregiver Strain Index, and Informant Assessed Geriatric Depression Scale at wave 1 and 2.

## **Overall study start date**

01/04/2019

## **Completion date**

25/10/2022

# **Eligibility**

## **Key inclusion criteria**

OX-CHRONIC directly leverages existing data. A cognitive screening programme based within the acute stroke unit, capturing the Oxfordshire area has been ongoing since 2012. Participants

in this study have been assessed for stroke specific cognitive impairments during acute recovery and at six-month follow-up. Participants agree to be followed up 6 months later with a home visit to assess psychological consequences of stroke and quality of life. Participants who completed the follow-up and gave explicit opt-in consent for re-contacting for further research will be contacted to take part in this two-year follow-up study. Importantly, there is a minimum two-year interval between stroke and the first new assessment for OX-CHRONIC.

**Participant type(s)**

Patient

**Age group**

Adult

**Sex**

Both

**Target number of participants**

120

**Total final enrolment**

105

**Key exclusion criteria**

1. The participant is too unwell to be able to stay awake or concentrate for 30 minutes
2. The participant or consultee/proxy has insufficient English comprehension to complete assessments,

**Date of first enrolment**

05/02/2020

**Date of final enrolment**

30/09/2022

**Locations****Countries of recruitment**

England

United Kingdom

**Study participating centre****University of Oxford**

Translational Neuropsychology Group  
Department of Experimental Psychology  
Radcliffe Observatory Quarter  
Oxford  
United Kingdom  
OX2 6GG

# Sponsor information

## Organisation

University of Oxford

## Sponsor details

Clinical Trials and Research Governance

Boundary Brook House

Joint Research Office

Headington

Oxford

England

United Kingdom

OX2 6GG

+44 (0)1865289885

ctrng@admin.ox.ac.uk

## Sponsor type

University/education

## Website

<https://researchsupport.admin.ox.ac.uk/ctrng#/>

## ROR

<https://ror.org/052gg0110>

# Funder(s)

## Funder type

Charity

## Funder Name

Stroke Association

## Alternative Name(s)

## Funding Body Type

Private sector organisation

## Funding Body Subtype

Associations and societies (private and public)

## Location

United Kingdom

# Results and Publications

## Publication and dissemination plan

Current publication and dissemination plan as of 05/12/2023:  
planned publications in high-impact journals

Previous publication and dissemination plan:

The studies will be written up and published in high impact specialized peer reviewed journals such as Stroke, Cortex and Neuropsychologia. A general overview of the longitudinal study will be suitable for an even wider audience, and will be submitted to the British Medical Journal. Aside from paper publications, we will present this work at conferences such as the European Stroke Organisation Conference, as well as at subject specific conferences such as the British (BNS), European (FESN) and International Neuropsychological Society meetings - INS).

We recognise that dissemination of science should not be exclusive to the academic community and for each paper we will create a plain language summary and look to publish these online for example through the blogs of stroke societies or key journals. Stroke survivors and their families will be informed through lay reports and knowledge exchange via the Stroke Association, Stroke Assembly and Stroke Forum outlets.

The work will also be summarized in the regular lay newsletters from the BRC, and a final lay report with a closing presentation and reception for all participants at the end of the project.

To improve clinical professionals' understanding of the complexities and interrelations of psychological consequences we will present and lead workshops at Stroke Forum and other training opportunities, such as the masterclasses, in-house Trust training and professional membership CPD events.

## Intention to publish date

30/09/2023

## Individual participant data (IPD) sharing plan

The current data sharing plans for this study are unknown and will be available at a later date

## IPD sharing plan summary

Data sharing statement to be made available at a later date

## Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Participant information sheet</a>	version v2	15/09/2020	08/07/2021	No	Yes
<a href="#">Dataset</a>	OX-Chronic results dataset	27/03/2023	28/03/2023	No	No
<a href="#">Protocol article</a>		26/10/2021	28/03/2023	Yes	No
<a href="#">HRA research summary</a>			28/06/2023	No	No
<a href="#">Results article</a>		30/11/2023	05/12/2023	Yes	No