# Neurolab Newsletter

**Autumn Issue, November 2022**

## In this issue



## Thank you from all of us at the UEA Neurolab!

Welcome to the autumn issue of our Neuropsychology lab (Neurolab) newsletter. We hope you are keeping well. We are excited to share with you updates on our progress on several research projects, publications, and work that you are kindly supporting. Our progress would not be possible without your contribution! Thank you for all the support you have given us by taking part. I hope you enjoy our newsletter!

*Dr. Stéphanie Rossit,*
*Associate Professor*


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# Current research

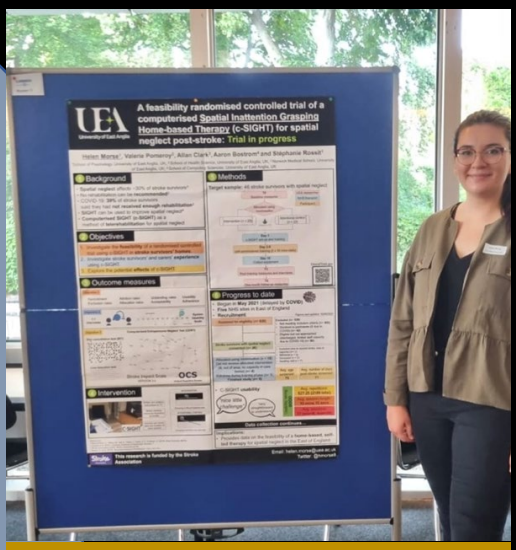
## Updates on the c-SIGHT trial from Stroke Association Fellow!

Our clinical trial funded by The Stroke Association continues! My research is looking at whether we can use a home-based, computerised therapy (called c-SIGHT) to help with attention problems after stroke. I am also looking at using a new computer-based test to detect problems with attention.

Over the last 18 months I have visited 69 stroke survivors around East Anglia. I am so grateful for all our participants, who have completed our new computer-based test, and some who have used c-SIGHT at home for 10 days. This has involved a lot of time on the road (driving around 5,000 miles) around Norfolk, Suffolk, and Cambridgeshire.

This summer my travels extended to Berlin where I attended a Neuropsychology Summer School. Here I met fellow researchers, psychologists, and neuropsychologists from Europe, and got to share my progress on the trial so far!

As the year comes to an end, I will begin analysing all the data I have collected so far and write up the results. I am aiming to submit my final report and finish my PhD in Spring 2023. Meanwhile, the research is expected to keep running until August 2023.




**Helen Morse**

Stroke Association

# Testimonial from NHS staff running the c-SIGHT trial

"Taking part in the C-sight research study has been a good opportunity to work together across physiotherapy and occupational therapy in the stroke pathway and to broaden our knowledge and skills in clinical research.

The project itself is exploring an intervention with participants which is both rewarding and working towards the future of therapy after stroke. We have been lucky to involve two members of our clinical team who are supporting delivering the intervention in people's homes, this has given opportunities to increase research knowledge and skills in everyday practice."

*Louise Gilbert and Nicky Sweeting*
*Norfolk Community Health and Care NHS Trust*

**Louise Gilbert & Nicky Sweeting**

NHS
Norfolk Community Health and Care
NHS Trust

## Testimonial from one of our participants!

"After suffering a stroke in November 2021, the main lasting physical effect is still fatigue, so I consider myself to be luckier than some. I also initially had a visual problem with my left eye and experienced missing letters on my left side during exercise sessions with the occupational therapy staff visiting me.

Working with the OTs helped to ameliorate the problem, but the hospital ophthalmologist said that my peripheral vision was not good enough to drive, even though the equipment that she was using was faulty. The buzzer on the machine used did not work and I had to bang the end of a toilet chain on a desk when I saw a dot come out at the side of the screen, which I found to be very distracting.

The ophthalmologist said that I would never be able to drive again, notified this to the DVLA and then referred me to a DVLA approved driving assessment centre. I passed the DVLA assessment, but they insisted that I would also have to be passed by their approved optician before my driving licence could be renewed. This made me even more determined to pass.

At this time, I was offered the chance to work with Helen and Kat, students of Professor Stephanie Rossit, on more sophisticated tests that involved computers and screens and I jumped at the opportunity. Helen and Kat set up their systems at my house and ensured that they were working. The systems were easy to use, and the tasks were enjoyable. The work had to be done each morning and afternoon and this encouraged me back into a working routine.

"Working with Helen and Kat helped to improve my peripheral vision and my confidence to such a degree that I passed the peripheral vision test performed by my own optician. After a couple of months of doing the training exercises, I felt confident to take and pass the visual test with the DVLA's approved optician and my licence was renewed.

I cannot over-emphasise the professionalism and assistance shown by Professor Rossit and her students which, in addition to the work undertaken by the occupational therapists, have helped me to rebuild my life.

*James Waters, Kenninghall*

**James Waters**

# Updates from our EyeFocus study!

**Thomas Hunter** (top) and **Ava Redston** (bottom) Undergraduate students in the final year of Psychology BSc. working on EyeFocus

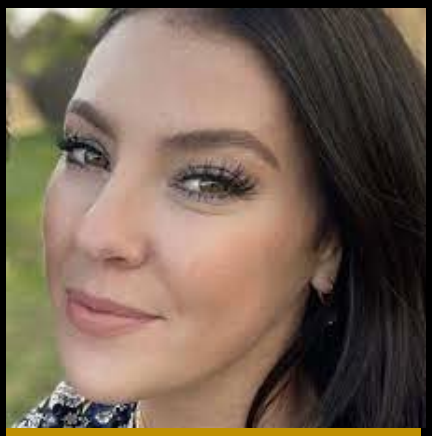
The Neurolab team has been working collaboratively with the Animorph Co-op team to develop an app (EyeFocus) which may help stroke survivors who experience attention problems post-stroke. Additionally, with support from the National Institute of Health Research (NIHR), we were able to co-produce the EyeFocus app with stroke survivors, carers, and clinicians.

This innovative tele-rehabilitation is a prototype based on existing successful interventions, which works by encouraging eye movements which aims to improve attention difficulties. Namely, The EyeFocus app is downloaded onto a mobile tablet which is set up in stroke survivors' homes for people to use independently. We hope the Eyefocus app will address current barriers (e.g., long sessions, large clinician involvement, & transport to medical facilities), for stroke survivors who would benefit from attention rehabilitation interventions. Presently, we want to give stroke survivors the chance to try the EyeFocus app to see whether it is usable and to make any refinements.

Over the summer, we were able to give three stroke survivors the opportunity to trial the EyeFocus app. We are extremely grateful for their participation and already have some promising data. Currently, the Neurolab team is looking to give three more stroke survivors the opportunity to trial the EyeFocus app. From this, we hope to further test the app's usability and so we can make any additional refinements to ensure the app reaches its full potential.

animorph

# Hello from Hannah Browning!



**Hannah Browning**
PhD candidate

During my undergraduate degrees my research focused on attention and body representation in people who have had a stroke. We found that stroke survivors with a larger motor deficit because of their stroke, show larger distortions when drawing bodies. This could suggest that motor impairment or reduced movement after a stroke could change how we represent our own and other people's bodies in our minds. Data collection is still ongoing, but I am hoping to present some of this data at the Vision Sciences Society annual meeting in 2023 (USA).

My PhD research looks at perception and action in people with one hand. Some key questions I am hoping to answer are – How are prosthetic arms perceived, as body parts or tools? Is there a difference between 2 handed individuals and limb difference individuals brains when perceiving body parts, tools, and prosthetics? How does brain activation change in people with one hand when wearing a prosthetic or when reaching to touch a tool? To answer these questions, I will be using a range of methods, such as eye tracking and brain imaging. I am in the process of designing my first study which I hope to pilot during 2023.

Left: Drawing task. Right: Some of the drawings of our participants

# Take part in our online survey!

Hi there! My name is Alice Watson, I am a 3rd year undergraduate psychology student here at the University of East Anglia.

As part of my research project, I am looking for research volunteers to take part in a short online survey!
The research is exploring what apps are used to help with problems post stroke such as vision and attention and what people think about these apps. You can take part if you are a stroke survivor with vision and attention problems, a close friend, family member or carer or stroke rehabilitation healthcare professional working with patients post stroke. The survey will involve online questions and will take around 15 minutes. It asks questions around you and the apps used for visual and attentional problems. All survey responses are anonymous.

If you have any questions, please do not hesitate to get in Touch via our email: neurolab@uea.ac.uk

**Alice Watson**
Undergraduate student in the final year of Psychology BSc.

To take part follow these links or scan the QR codes below:
Stroke Survivor: https://ueapsych.eu.qualtrics.com/jfe/form/SV_eQDHVQVWRom1c9g
Family Member/Carer: https://ueapsych.eu.qualtrics.com/jfe/form/SV_3soJR4uKV2a1vZI
Healthcare professional: https://ueapsych.eu.qualtrics.com/jfe/form/SV_0ixwGweIIuxUmJU

**Stroke survivor survey**

**Carer survey**

**Healthcare professional survey**

# Hello from Emily Mason!

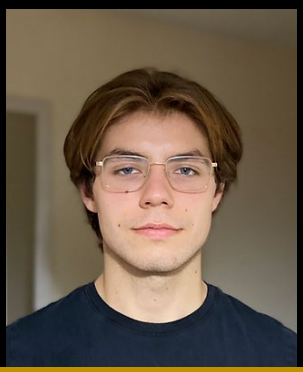
Visual inattention occurs commonly after stroke and affects people's ability to pay attention to one side of space. Earlier research has shown that object graspability can reduce inattention, with participants with neglect being able to locate graspable objects, like mugs, on their affected side. However, it is uncertain whether healthy adults demonstrate similar effects, or if this enhanced attention towards graspable objects is unique to stroke survivors.

For my MSc research project, with Dr Stephanie Rossit, I aimed to investigate this. While having their eye movements monitored by the eye-tracker, participants located a single object amongst a range of several objects. It was found that the graspability of an object did benefit attention, as graspable objects were located faster than non-graspable ones. This similarity between earlier research suggests that this bias towards graspable objects is not unique to stroke survivors. It is hoped that this may help identify means of rehabilitation, which could help those living with neglect.

Alongside my PhD research, there are plans to continue this project, with the help of dissertation student, Piotr Barc, who will complete further data collection as part of his undergraduate project.

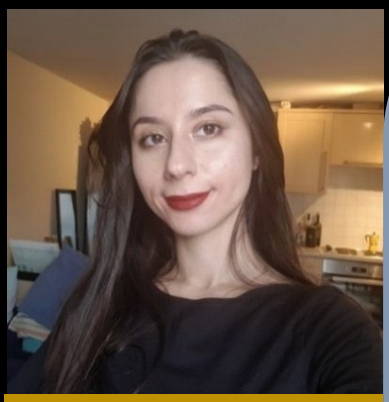
A massive thank you to everyone who participated in this research so far!

**Emily Mason**
PhD candidate



**Piotr Barc**
Undergraduate student
Psychology BSc.

# Neurolab supports study in Clinical Psychology (Medicine)



**Crina Ene**
Clinical Psychology Doctorate

Hi, I am Crina Ene! I am in my final year of training as a Clinical Psychologist at the University of East Anglia, working for the local NHS (Cambridgeshire and Peterborough Foundation Trust) and working clinically on placements in Cambridge. I am interested in how we can make psychological interventions available to as many people as possible after stroke.

For my doctorate research, I am working with Dr Catherine Ford and Dr Fergus Gracey to test how feasible and acceptable it would be to run a research trial of two brief online psychological interventions for stroke survivors across East Anglia.

Both interventions ask stroke survivors to watch one short online video a week in their own time for two weeks and complete a simple task between videos, to build on the skills and information discussed in the videos. We also ask participants to complete several short questionnaires at the beginning and end of the intervention, and then a month later as a follow-up. Like a full research trial, stroke survivors are randomly allocated to receive one of the interventions, but at the end of the study they will be offered the option to have the videos and materials for the other intervention. They will also receive a £5 Amazon voucher as a token of gratitude.

We have recruited 14 stroke survivors up until this point and are grateful to the Neuropsychology Lab at UEA, stroke charities, and local NHS services for helping us get the information about this study out to stroke survivors. We are hoping we will be able to share the results of the study in February 2023.

To find out more about the study e-mail neurolab@uea.ac.uk

# Neurolab supports study in Physiotherapy (Health Sciences)

**Merve Kizilay**
PhD candidate

**Canan Yuksel**
PhD candidate

Stroke is a life-changing event, and it may cause disability by affecting movement ability. In this project, we use the gold standard motion analysis system (Vicon) to analyse how movement quality changes after a stroke and to detect recovery patterns. Secondly, movement recovery after a stroke may be impacted by sleep. Sleep has a vital role in learning new skills and memory consolidation. This theoretical frame brings sleep to the focus of stroke research. Understanding the relationship between sleep and stroke recovery is one of our research aims.

Analysing complex movements (sit-to-walk and reach-to-grasp) via a computer-based motion analysis system enables us to detect even small movement changes. Unfortunately, this system is not portable and requires a long preparation time. In this project, we also investigate the validity and reliability of the state-of-art motion analysis technology named Biokido. With this device, complex motion analysis can be done quickly in rehabilitation and home settings too! In addition, it promises more accurate, detailed measurements of movement recovery, and it may enable physiotherapists to tailor the rehabilitation process according to the specific needs of each stroke survivor.

Thank you very much for supporting stroke research and being part of this exciting project. Now, it is time for us to process and analyse the data we gathered. It is a long process due to the volume of the data we collect. Nevertheless, good things take time! We cannot wait to share the anonymised results with you.

# Other news

## Lab members attend Experimental Psychology Society Meeting, University of Stirling

Annie Warman, Hannah Browning, Helen Morse, and Stephanie Rossit attended the Experimental Psychology Society meeting in Stirling in July. Annie, Helen, and Annie all received travel awards from the society. Annie presented a poster about her MSc. research on a new app task to detect dementia the lab has developed for iPads and Stephanie chaired the Bartlett Prize symposium on Perception and Action and gave a talk on brain imaging work looking at the visual brain areas in action. The conference included a fun ceilidh, and it took place in the lovely University of Stirling campus.

## Research award to Annie Warman!

Annie Warman, PhD candidate at the Neurolab, was awarded a special merit research award by UEA for developing and leading a very successful coding club on data science.
Congratulations Annie!

## Congratulations to Hannah Browning, Emily Mason & Jekaterina Buinicka!

We are extremely proud that our 3 MSc students of 21/22, Hannah, Emily and Kat have successfully completed their MSc in Cognitive Neuroscience at UEA (2 of them with distinction). Hannah and Emily have now began their PhD research and Kat is working as a special needs assistant in a school. Congratulations all and thanks to all the participants who took part in their MSc. research!

## Chair of Organization of Psychological Research Into Stroke, World Federation of NeuroRehabilitation

Dr. Rossit will be taking the Chair role for the Organization of Psychological Research into Stroke, a special interest group of the World Federation of NeuroRehabilitation in 2023. She will be working with Dr. Fergus Gracey and Dr. Catherine Ford (also at the UEA) to deliver the work of this organization.

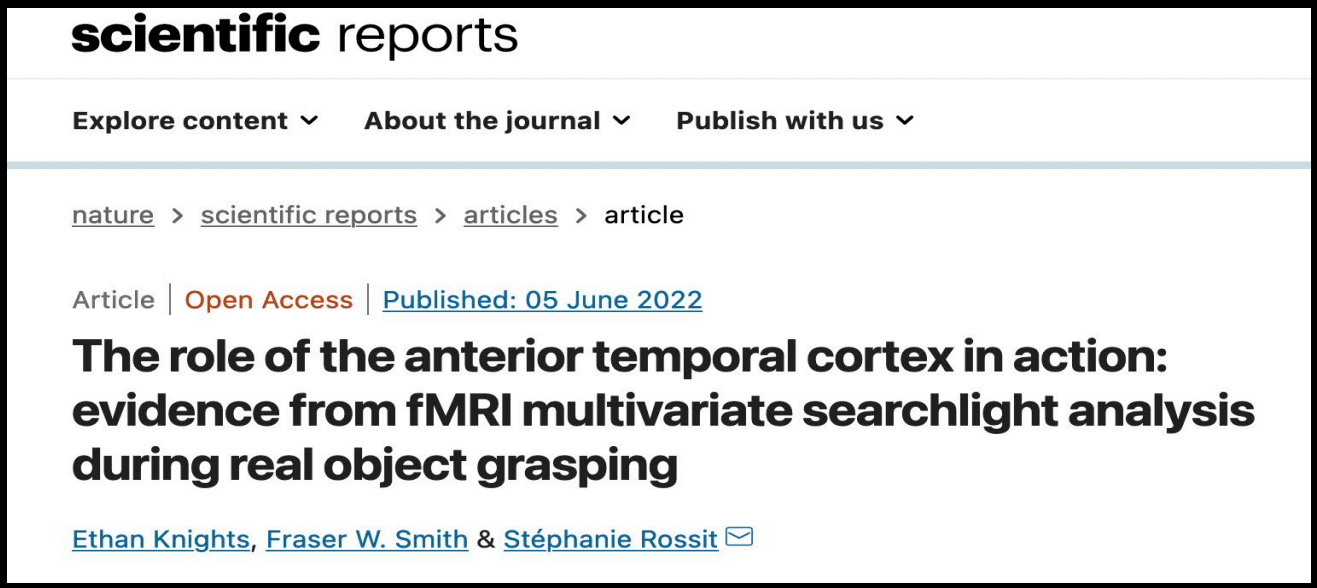
The next OPSYRIS meeting is at the University of Nottingham on 4th July 2023!

OPSYRIS

Organisation for Psychological Research into Stroke

## Paper published in Scientific Reports

Our recent study on brain imaging was published in Scientific Reports. The study shows that brain regions in the temporal cortex (near the ears) are important in the control of our hand movements.




## Our SIGHT stroke therapy has been recommended by the Brazilian practise guidelines for stroke rehabilitation!

Our Spatial Inattention Grasping Home-based Therapy (SIGHT) has been recommended by the Brazilian practise guidelines for stroke rehabilitation, published by the Brazilian Academy of Neurology as a home-based therapy for spatial inattention or neglect.

All materials for the therapy can be downloaded freely here: www.sight.uea.ac.uk

SIGHT

# Mailing list

If you would like to contact us, join or be removed from our mailing list please e-mail: **neurolab@uea.ac.uk**

Feel free to share this newsletter with family and friends and if you know anyone interested in helping our work, please do encourage them to contact us.

We are always looking for volunteers for our research projects and love to receive feedback about our work.

University of East Anglia

Neurolab