

# **Title of Study: Investigating the role of prefrontal cortex in protection of working memory information using transcranial magnetic stimulation**

## **Information Sheet**

Supervisor: Dr Eva Feredoes                      Email: [e.a.feredoes@reading.ac.uk](mailto:e.a.feredoes@reading.ac.uk)

Experimenters: Olga Leticevscaia                      [olga.leticevscaia@pgr.reading.ac.uk](mailto:olga.leticevscaia@pgr.reading.ac.uk)

### **What is the aim of the study?**

We would be grateful to you if you could assist us by participating in our study exploring how parts of the brain (frontal cortex) can help people to hold visual information in mind for a short time when irrelevant information is presented.

### **Can anyone take part in the study?**

We want to study 30 participants, between the ages of 18 and 45 years.

People who have metal in their upper body, body implants (cochlear implant, an implanted neurostimulator), medication infusion devices, cardiac pacemakers or intracardiac lines, people who has epilepsy or has ever had a convulsion or seizure, people who has vascular, traumatic, tumoral, infectious or metabolic lesions of the brain, people who had more than 3 units of alcohol or recreational drugs 24 hours or less prior to the study be able to take part in the study. Females who are pregnant, lactating or, if of reproductive age and not using a reliable form of contraception (including abstinence) will not be able to take part in the study. Females taking the contraceptive pill or hormone replacement therapy (HRT) can take part.

Suitable volunteers should get enough sleep, eat and drink normally on the day you undertake the study. Volunteers experiencing significantly increased levels of stress or fatigue, having a recent fainting spell or syncope will not be able to take part in the study on that day and will be rescheduled (if still interested in participation on another day).

### **What will happen to me if I take part?**

Your participation will include two visits, each taking approximately 90 minutes, during which time you will first undergo the session of transcranial magnetic stimulation (TMS; see TMS information sheet for further information) lasting for 40 seconds. After the stimulation you will perform a task on a computer testing your short-term memory for pictures of objects (tools or animals), while you are also seeing distracting pictures at the same time: static images or dynamic clips of abstract geometric shapes. We will then look at how accurate your memory was and how quickly you could respond to the memory test, when there were

distractors compared to when there were none. Prior to undertaking the experiment, we will give you a short practice on the task. Your participation will also include attending a short scanning session for 15 minutes for acquiring a structural image of your brain. If you have attended a scanning session in the CINN before, you will be asked for your permission to use your data (structural image of your brain) for this study.

### **How will my data be stored?**

Your data will be assigned an anonymous number. Information linking that number to your name will be stored securely and separately from the data you provide us. Consent forms will be kept for 2 years after the study and all data will be destroyed when no longer needed.

Data collected from this study (your responses on the memory task) will be preserved and made available in anonymised form, so that they can be consulted and re-used by others.

### **What if I want to withdraw/ I don't want to participate?**

Taking part in this study is completely voluntary; you may withdraw at any time without having to give any reason. Please feel free to ask any questions that you may have about this study at any point.

### **What if there is a problem?**

If you have a concern about any aspect of this study, you should ask to speak to the investigators who will do their best to answer your questions (see contact details at the front of this Information Sheet). If you remain unhappy and wish to complain formally, you can do this through the Project Supervisor (Dr Eva Feredoes) and the CINN Director (Professor Anastasia Christakou: a.christakou@reading.ac.uk).

### **Why is this study conducted and how is it funded?**

This project is funded by the Magdalen Vernon Studentship received by Olga Leticevscaia and is being conducted in partial fulfilment towards a Ph.D.

*This application has been reviewed by the University Research Ethics Committee and has been given a favourable ethical opinion for conduct.*