

School of Psychology
Information Sheet



**The University of
Nottingham**

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Investigating the efficiency of different MNS protocols in reducing tremor

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Thank you for your interest in our study. Before you decide if you wish to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully.

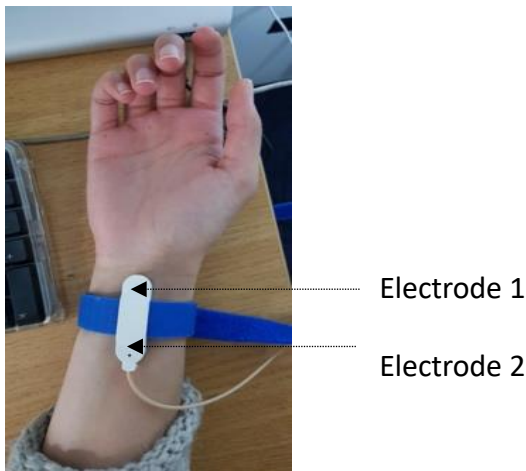
Why is this research being carried out?

It has been shown that stimulation of the wrist can be used to reduce tics in Tourette Syndrome. We now want to investigate whether stimulation of the wrist can be used to reduce symptoms of Parkinson's Disease (PD) and induce any cortical activity changes. To do this, we are using the wrist stimulation (aka median nerve stimulation) together with electroencephalography (EEG) to investigate the differences in tremor and in the cortical activity in response to a range of median nerve frequencies. Hence, we would be able to determine the optimum stimulation frequency to reduce the PD symptoms.

We are asking our participants to take part in a 3-session study at least 2 days apart between the sessions. In each session, different frequency will be tested.

What is median nerve stimulation (MNS)?

Median nerve stimulation is a non-invasive brain stimulation technique that targets a peripheral nerve. Peripheral nerves can send signals to the brain, so by stimulating them it is possible to safely and indirectly influence brain activity. This study involves using electrical stimulation applied to the nerve through small electrodes placed over the wrist. We will test



This picture shows the position of the two electrodes used to deliver the stimulation.

We will stimulate at safe parameters so that there are no risks. Wrist stimulation is not painful, but if you find the procedure uncomfortable, we will terminate the study immediately. We will do some tests before the study so that you can see how the stimulation feels like and if you still want to proceed with the study or not.

Electroencephalography (EEG)

To record the activity in your brain, we will use electroencephalography (EEG). For the EEG scan, you will be asked to wear a cap with electrodes attached (picture 2). Each electrode will be filled with gel with a blunt syringe. If necessary, hair will be rubbed to ensure gel is applied on the scalp and not only on the hair.

What will happen if I decide to take part in the study?

On the day of the study, we will first have to find the stimulation intensity which produces a twitch in your thumb. Then, we'll place the EEG cap to your head, and we will then attach an accelerometer to your arm to monitor your movements while you are receiving stimulation on the other wrist. During the first and last 5 minutes of the study we will monitor your movements and brain signals whilst you do not receive stimulation. For the 10 minutes in between, you will receive stimulation continuously to your wrist.

Expenses and payments

We will be able to assist you with a small travel allowance if you are coming from outside

Nottinghamshire.

Note: The technology used in this study is in the development phase and not currently available outside of the study.

Participation in this study is totally voluntary and you are under no obligation to take part. You are free to withdraw at any point before or during the study. All data collected will be kept confidential and used for research purposes only. It will be stored in compliance with the General Data Protection Regulation and Data Protection Act (2018). The researchers involved in this study are employed through the University of Nottingham and will process your personal data in order to carry out this research. The legal basis for this processing is Article 6(1e) - processing is necessary for the performance of a task carried out in the public interest. Details such as how to contact the University's Data Protection Officer and your rights as a data subject can be found at <https://www.nottingham.ac.uk/utilities/privacy/privacy.aspx>.

If you have any questions or concerns, please don't hesitate to ask now. We can also be contacted after your participation at the above address.



Fig 2: EEG System

If you have any complaints about the trial, please contact:
Stephen Jackson (Chair of Ethics Committee)
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