

Nerve contributions to muscle strength- Information sheet

Aim

Everyone loses muscle strength as they age. Previously scientists have examined the muscles as the source of these problems, but now we are starting to look at the nerves that control those muscles.

This study aims to measure the effect of different nerves on strength, and will help inform why some individuals lose muscle mass as they age. It is hoped that this could inform treatments to prevent or treat this problem.

What will I be asked to do?

This experiment uses Transcranial Magnetic Stimulation (TMS), a safe and comfortable way of measuring the pathways from brain to muscle. This involves a very strong, brief, magnetic field, which causes part of your brain to activate, producing a muscle twitch in your arms. This is completely painless. Wires will then be connected to stickers on your arms to measure this muscle twitch.

You will be asked to make a specific movement with your arms. During this movement, a TMS pulse will be applied. This experiment involves getting a lot of the same movement, so you should expect it to last around an hour.

Volunteer criteria

You should be aged 18-40, or 50-90 to take part. Any level of fitness is acceptable, and we will tailor the task to your ability.

For the vast majority of people, TMS is completely safe and comfortable. For a minority of people, TMS is not appropriate and individuals with any of the following should not take part:

- Epilepsy
- Cochlear implants
- Metal implants
- Implanted medical devices e.g. neurostimulators, pacemakers, infusion devices
- Anyone who has been told they cannot undergo MRI

When and where?

We will arrange appointments with each individual participant. The experiment will take place at the Institute of Neuroscience Henry Wellcome Building, Newcastle University Medical School, Framlington Place, NE2 4HH (building 60 on attached map). Enter the main medical school entrance, turn left, and continue down the corridor for ~50m. The entrance is on the left and clearly marked.

Will I get anything for taking part?

Participants will receive a £10 Amazon voucher for their time, along with reimbursements for all reasonable travel expenses.

We will endeavour to share results and discoveries arising from this experiment with all participants.

What if I don't want to take part anymore?

If you have any discomfort, the experiment can be paused at any time. If you decide that you no longer want to take part, you can stop at any time. Any data collected up to this point may still be used, if you are happy for us to do this.

What data will be collected?

Your personal data including name, address and telephone number will be recorded in order to contact you to arrange appointments. Other data collected, including your medical questionnaire, measurements of muscle function, and TMS data, will be anonymised from your personal information for the purposes of analysis.

Who will have access to the data?

The data controller is Stuart Maitland. Please see contact details at the end of this information sheet. Researchers from the study team will have access to the data. No other individuals will be permitted to access the data, and no data will be transmitted outside of the European Economic Area (EEA)

How will you use this data?

As a university, we use personally-identifiable information to conduct research. When we use personally-identifiable information from people who have agreed to take part in research, we ensure that it is in the public interest. This means that when you agree to take part in a research study, we will use your data in the ways needed to conduct and analyse the research study. Your right to access, change or move your information are limited, as we need to manage your information in specific ways in order for the research to be reliable and accurate. If you withdraw from the study, we will keep the information about you that we have already obtained. To safeguard your rights, we will use the minimum personally-identifiable information possible.

If you wish to raise a complaint on how we have handled your personal data, you can contact our Data Protection Officer who will investigate the matter. If you are not satisfied with our response or believe we are processing your personal data in a way that is not lawful, you can complain to the Information Commissioner's Office (ICO).

Our Data Protection Officer is Maureen Wilkinson and you can contact them at rec-man@ncl.ac.uk.

How to contact us

You can contact us for help and information at any point:

Principle Investigator: Dr Stuart Maitland
Institute of Neuroscience