

Participant Information Booklet

Project Title: An investigation into the effects of a novel form of electrical stimulation on motor plasticity.

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The ability of the brain to adapt, learn and reorganise is termed plasticity. Currently this is predominantly achieved by the repetition of the skill for a number of days, months or possibly years. However, it is believed that applying an electrical current to the skin can shortcut this process by placing the brain in an optimal state to learn.

What does the study involve?

This study shall establish the effectiveness of an innovative form of electrical stimulation in inducing motor plasticity, pain free. You shall receive a three different stimulation patterns to one forearm, over three sessions (1x2.5 hour, 2x2 hour), preferably a week apart, at the same time of day. The study shall use transcranial magnetic stimulation to determine motor threshold at baseline, immediately post stimulation and then repeated at 15 min intervals for an hour.

What do I have to do?

Each session will require you to be seated with your arms rested in a large cushion, placed on your lap - that is it, nice & easy! Your participation in this study is entirely voluntary; it is up to you whether or not to take part. Also you have the right to withdraw at any point without explanation, at any point throughout study.

What are the benefits of participating?

This study, although based on previous investigations, shall implement an innovative new method of stimulation. Thus it would be an opportunity for you to engage within revolutionary research. Furthermore the study utilises a number of pieces of modern technology that would be of substantial interest to those with a curiosity in this topic.

What are the risks?

As with all research, there are risks associated with these procedures. However, due to low intensities used in both peripheral and transcranial magnetic stimulation, such risk is minimal. Furthermore, all procedures have been granted ethical approval.

Furthermore, to help us determine if you are suitable to participate you will be asked to complete a detailed screening form. However it is important you are aware of the associated risks.

Potential adverse effects of transcranial magnetic stimulation include twitching of the scalp tissue, neck or face muscles. In very rare instances transcranial magnetic stimulation has induced a seizure. To minimise this risk we shall administer transcranial magnetic stimulation according to strict safety guidelines, and utilise a substantially lower frequency and intensity than detailed in the guidelines. The primary risk of peripheral electrical stimulation is an altered sensation in the target area and electric shock. However, the current used shall be below that required to induce cardiac fibrillation.

Am I suitable?

Participants within this study should be

- Recreationally active.
- Ages 18 - 50.
- Able to meet the testing day requirement:
 - Not consumed alcohol in 24h
 - Not consumed any caffeinated drinks in 12 h.
- No pre-existing sleeping disorders or irregular sleep patterns.

When will the study take place?

All testing shall be conducted through May, June and July 2013. Although each session must be separated by a week, this is a minimal time period, and session may be conducted with multiple weeks in-between. Each session must be conducted in the afternoon. Thus we have 2 slots per day; 13:30 - 16:00 & 16:30 - 19:00.

What happens to my data & information?

All data shall be made anonymous upon collection, ensuring anonymity throughout. Additionally your name shall not appear in any academic papers that result from the research. All data will be stored in compliance with the Data Protection Act (1998).

What should I do before each session?

Before each testing session YOU MUST:

- abstain from drinking alcohol 24 hours prior to every testing session,
- abstain from drinking ANY caffeinated drinks 12hours prior to every testing session.

Furthermore please ensure you are fully rested before each session, and maintain a normal sleep pattern throughout the forthcoming weeks.

What should I to bring & wear?

You do not need to bring anything special to the testing sessions. There is no particular clothing you must wear, however preferably something you are comfortable in. We do ask that any earrings or facial piercing are removed prior to each session.

Are there any facilities for reimbursement?

Unfortunately, there is no facility for participants to claim reimbursement for travel or accommodation expenses.

Where will the testing take place?

All testing sessions will conducted at:
The Centre for Sports Engineering Research
Sheffield Hallam University
Collegiate Hall
Collegiate Crescent
Sheffield
S10 2BP

Upon arrival please make your way to Room A129 .

Travel directions and a campus map can be obtained from:

<http://www.shu.ac.uk/university/visit/find-us/collegiate.html>

Parking is available, but please request a permit in advance as otherwise it is Pay & Display only.

What next?

Once you have read this information, please complete the recruitment screening form and return it to: a.bullas@shu.ac.uk. After the form has been returned, we shall check your suitability for participation and contact you regarding suitable testing dates.

If you have any queries, comments or questions, please do not hesitate to get in contact: a.bullas@shu.ac.uk or +44 (0)7536044310.