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**College of Medical, Veterinary & Life Sciences Ethics Committee for**

**Non-Clinical Research Involving Human Subjects**

**APPLICATION FORM FOR ETHICAL APPROVAL**

**NOTES:**

**THIS APPLICATION FORM SHOULD BE TYPED NOT HAND WRITTEN.**

**ALL QUESTIONS MUST BE ANSWERED. “NOT APPLICABLE” IS A SATISFACTORY ANSWER WHERE APPROPRIATE.**

 **Project Title:** Standard Functional Magnetic Resonance Imaging (fMRI, at 3 and 7 Tesla) Studies of Cognitive Mechanisms in Normal Adult Volunteers

**Has this application been previously submitted to this or any other ethics committee?** Yes/No

 **If ‘Yes’, please state the title and reference number.**

**Is this project from a commercial source, or funded by a research grant of any kind?**Yes/No

**If ‘Yes’, has it been referred to Research Support Office?**

Has it been allocated a project Number?

Give details, and ensure that this is stated on the Informed Consent Form.

**Insurance Coverage and Restrictions:**

\*\*Please Note: The Insurance restrictions set out below relate to research of a clinical nature. Non clinical research is not subject to restriction and no additional insurance is required\*\*

**The University insurance cover is restricted under specific circumstances, including, but not limited to the following -**

* work conducted outside of the European Union.
* work involving the use of research subjects outside Great Britain, Northern Ireland, the Channel Islands or the Isle of Man.
* the use of hazardous materials.
* number of participants in excess of 5000.
* work involving research subjects known to be pregnant at the time of the project.

**All such projects must be referred to Research Support Office and coverage confirmed before ethical approval is sought. Please contact Dr Debra Stuart in the University’s Research Governance Office:** **debra.stuart@glasgow.ac.uk**

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**Please tick here if this project has been referred to Research Support Office to confirm adequate insurance coverage.**

**Date of submission:**

**Name of all person(s) submitting research proposal:** Prof. Lars Muckli, PhD,

**Position(s) held:** Professor of Visual and Cognitive Neurosciences

**School/Group/Institute/Centre:**

Director of functional MRI, Centre for Cognitive Neuroimaging, Institute of Neuroscience and Psychology, / College of Medical, Veterinary and Life Sciences, University of Glasgow

Co-head of Scientific Strategy Development Workstream, Imaging Centre of Excellence, College of Medical, Veterinary and Life Sciences, University of Glasgow

**Address for correspondence relating to this submission:**

 62 Hillhead Street, Glasgow, G12 8QB, UK

**Email address:**

 Lars.Muckli@glasgow.ac.uk

**Name of Principal Researcher** (if different from above, e.g., Student’s Supervisor):

**Position held:**

**Undergraduate student project:**

Yes/NoIf ‘Yes’, please state degree being undertaken:

**Postgraduate student project:**

Yes/NoIf ‘Yes’, please state degree being undertaken:

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| **1. Describe the purposes of the research proposed. Please include the background and scientific justification for the research. Why is this an area of importance?**This template describes "standard functional Magnetic Resonance Imaging (fMRI) studies" as we propose to conduct them in Imaging Centre of Excellence (ICE), and is based on a template previously approved by the Science and Engineering CCNi Ethics Committee for comparable studies at the Centre for Cognitive Neuroimaging (CCNi).This template provides an ethical approval application for the standard approach of conducting fMRI research. **Each new standard fMRI study requires its own ethical application.** Each new fMRI study should refer to this ‘standard fMRI studies’ template were it applies and describe specifics where necessary. Each new standard fMRI study will need to state its specific motivation, aim and strategy. Any deviation from this ‘standard fMRI study’ template, but which can still be considered a standard procedure, must be described in the relevant section of this form. [Note that non-standard fMRI studies, for example conducted in a clinical group, follow a different ethical approval process].MRI research is done routinely in many centres around the world using 3T, 4T, 7T, and 9.4Tesla. Procedures are comparable across thousands of studies published every year, in healthy volunteers for different cognitive and behavioural tasks. During ‘standard fMRI studies’, measures of brain activity are conducted under various conditions, e.g. while the participants are either resting, or sensorially stimulated, engaged in a cognitive task, or responding with a motor response. ‘Standard fMRI studies’ are performed in healthy adult participants, where healthy refers to the normal distribution of the population. ‘Standard fMRI studies’ may exclude the normal population if volunteers do not meet the specific requirements of the study: e.g. normal vision (for visual studies), bilingualism (in language studies), normal memory (in aging studies).Functional brain scans are repeatedly acquired throughout the experiment and are accompanied by anatomical reference scans, and sometimes diffusion scans. Brain scans are acquired while the volunteer performs cognitive/motor tasks. Standard fMRI uses intrinsic contrast agents dependent on CBV, CBF, and Blood Oxygenation Level Dependent (BOLD) contrast.  |
| **2. Describe the design of the study and methods to be used. Include sample size and the calculation used to determine this. Statistical advice should be obtained if in doubt.** Every standard fMRI study has its own design: for example, a typical study of the visual system comprises retinotopic mapping followed by experimental stimuli. Retinotopic mapping allows individual visual areas to be distinguished. This procedure involves subjects lying in the MRI scanner fixating a central point while high contrast stimuli, usually checkerboards, are flashed at changing positions in the visual field in a cyclical manner. Experimental stimuli might include pictures of faces or objects; the subjects may passively view these images or might be required to engage in a task such as paying attention, remembering or discriminating emotion.In other examples of standard fMRI designs, similarly to retinotopic maps in visual cortex, auditory cortex contains tonotopic (or cochleotopic) maps reflecting the preferred cochlear sound frequency representation. Auditory areas might be localised by presenting short tones varying in frequency, before presenting more complex sounds such as voices or language. Sensorimotor cortex contains somatotopic maps of the body, and can be mapped using tactile stimulation e.g. of fingers. Finger tapping tasks are commonly used to study the human motor system in functional brain imaging studies.Whatever the stimulus, a trial, or stimulus event, varies in duration and frequency depending on the question. On some trials, conditions are only presented, on other trials a specific behaviour (e.g. accuracy, preference) is also recorded during presentation. Trials are allocated to certain conditions, which are a set of task features designed to elicit a mental state (e.g. certain images or sounds). The design should be optimised with control conditions, counterbalanced conditions and sufficient statistical power. For example, especially using event-related designs with multiple conditions, it is advantageous to optimize the timing and sequence of the trials with respect to statistical power. To investigate the brain’s functional architecture, we can use resting state fMRI to measure low frequency, spontaneous BOLD signal fluctuations. During resting-state scans, we measure the interactions between brain regions that occur when the subject is at rest, or not explicitly engaged in a task. The number of subjects depends on the particular study; it may vary from a single participant to several hundred for large-scale studies. A typical number in fMRI studies is around 10-20 subjects for Fixed effect analysis, and 16-40 for Random effect analysis. More subjects might be needed for between group analysis. Typically, previous studies and results can be cited as estimates for expected effect size. |
| **3. Describe the research procedures as they affect the research subject and any other parties involved. It should be clear exactly (i) what will happen to the research participant, (ii) how many times and (iii) in what order.**A "standard fMRI study" unfolds as follows.Volunteers are contacted by an investigator prior to the date of scanning, so they have time to read the Study Information Sheet (cf. attached example), understand the research and what their participation involves, and ask questions if necessary. On the date of the scan, the investigator meets the volunteer and answers potential questions before asking the volunteer to give their written informed consent by filling the Study Consent Form (cf. attached example).The volunteer is interviewed by the MR radiographer, or an "authorized scanning staff member" (cf. attached document "7T MRI LOCAL RULES & OPERATING PROCEDURES [this CRIF document has REC and NHS R&D approval]”, to ensure that the volunteer presents no contra-indication to an MR examination. This is performed by going through a list of questions with the volunteer, detailed in the MRI screening form (cf. attached form). **A screening form must be completed for each scanning session**, even if the volunteer has previously been scanned.Once the Study Consent Form is signed and the MRI screening form completed without having revealed any contra-indication, the volunteer is prepared for the experiment. This includes asking the volunteer to change into an MR-safe garment (minimising the risk of introducing metal into the MRI suite), and explaining the instructions of the particular study (e.g., cognitive or motor task).The volunteer is installed on the bed of the MR scanner and equipped with the necessary stimulation (e.g., goggles for visual stimulation, headphones for auditory stimulation) and/or recording equipment (e.g., respiration, skin conductance). An emergency call button is also given to the volunteer so he/she can alert the experimenters during scanning if necessary. If the subject is unable to use the emergency button, then someone should remain in the Scanning Room with the subject. Once the volunteer is equipped, the scanner bed is entered into the magnet bore and the examination starts.Throughout the examination, visual (through the glass panel of the examination room) and auditory contact (through a microphone in the scanner bore) is kept with the volunteer to ensure normal unfolding of the experimental session. The brain scans are acquired while the volunteer executes the cognitive/motor task as per the instructions.Once the scan acquisition is finished, the volunteer is taken out of the scanner and asked for feedback. The time during which the volunteer is inside the scanner does not exceed two hours (typically 60-90 minutes) during a "standard fMRI study". |

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| **4. How will potential participants in the study be (i) identified, (ii) approached and (iii) recruited? Give details for cases and controls separately if appropriate.**The general public is encouraged to sign up for participation in scientific studies at a webpage of the Institute of Neuroscience and Psychology and School of Psychology at the University of Glasgow. This “subject pool” website allows members of the public to register their details and take part in our studies. The subject pool complies with new 2018 General Data Protection Regulation (GDPR) policies.Researchers who recruit using the subject pool website have access to certain information regarding the people who have registered, for example age, name, gender, nationality and hashcode if they have been scanned before. Researchers also see if a subject failed a screening question of subjects who have booked their studies; for an MRI study this might include previous history of surgery or current medication. If subjects have been scanned before, they might also have a rating out of 5 for subject quality (e.g. based on ability to remain still inside scanner). In addition, Neuroimaging Research Manager and Radiographer at the CCNi, Frances Crabbe, has access to information including date of birth, registration and last login dates, the amount of subject money received, and all their participation requests (when they booked their studies).Researchers who need participants advertise the study listing, including the subjects’ criteria needed (i.e. scanning compatibility) and the type of study under investigation. Once a potential participant contacts the researcher via e-mail, a pre-selection is done based on the experiment criteria and the subjects having had a 3T scan within the last 6 months. An appointment is made based on mutual availability.Subjects can freeze their subject pool account at any time, equivalent to unsubscribing. If a subject freezes their account, they receive an email asking if they want their data removed. If they do, any data that can identify them is deleted by Marc Becirspahic, Computer Officer in the School of Psychology, who maintains the subject pool website.  |

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| **5. What are the ethical considerations involved in this proposal? You may wish, for example, to comment on issues to do with consent, confidentiality, risk to subjects, etc.**Participants are made aware of the contra-indications, by a detailed information form. In addition, with a qualified person, each volunteer reads through and signs a safety questionnaire.Because of the strong magnetic field produced by the scanner, volunteers with medical implants known to contain ferromagnetic metal (Aneurysm Clip, Heart/Vascular Clip, Prosthetic Valve, Metal Prosthesis), pacemakers, metal fragments in body, history of epilepsy, claustrophobia, and/or pregnancy can’t be included in the study (cf. MRI screening form). Volunteers are also asked to change into an MR-safe attire to minimise the risk of ferromagnetic objects being introduced in the MRI suite. (cf. section 2 and document "7T MRI LOCAL RULES & OPERATING PROCEDURES ").The MRI machine generates a loud noise during scanning. Volunteers will be given earplugs to be protected against this noise. For studies involving auditory stimulation, the protection against the scanning noise will be provided by the stimulation headphones.Some tattoo ink contains traces of metal, but most tattoos are safe in an MRI scanner. At 7T, coils are local transmit/receive and no integrated body coil is used for transmission. Therefore, tattoos that are distal to the elbow will never be within any significant direct transmission field of the head coil and so those subjects may be scanned with a Tx/Rx head coil in 1Tx mode. Note that this is more stringent than findings recently published; *Experience with magnetic resonance imaging of human subjects with passive implants and tattoos at 7 T: a retrospective study*; Yacine Noureddine et al, Magn Reson Mater Phy (2015) 28:577–590. Since the magnetic field is concentrated on the head area, we discard only patients with any tattoo on head.As evidence grows from 7T sites this criteria is likely to be reviewed.The static magnetic field of 7T can cause temporary dizziness or ‘postural instability even after exiting the scanner, due to a temporary dysfunction or ‘over-compensation’ of the vestibular system at such high field strengths; vestibular function largely returns to normal within 15 minutes after scanning (e.g. Theysohn JM, Kraff O, Eilers K, Andrade D, Gerwig M, Timmann D, et al. (2014) Vestibular Effects of a 7 Tesla MRI Examination Compared to 1.5T and 0T in Healthy Volunteers. PLoS ONE 9(3): e92104). Prior to scanning, participants are made aware that such symptoms may occur, and that they can withdraw at any time from the study.The application of radiofrequency and high MR gradient amplitudes can interact with the human body via heating (specific absorption rate) or peripheral stimulation, respectively (limits for both are potentially reached at 7T for some scanning protocols which are harmless at 3T. However, as the same absolute limits apply for both scanners and they are encoded within the hardware of the 7T system, certified users will always stay below the limits using standardized scanning protocols, and no indication for any lasting health effects on humans has been observed. Participants are made aware that such symptoms may occur, and that they can withdraw at any time from the study. Participants’ anonymity will be assured by only referring to a subject number during analysis. Records of personal details will only be kept if subjects agree (for example to contact them for other studies).At present the 7T facility is not used for clinical imaging therefore images will not be reviewed by a clinician. Participants consent to the research scan in the knowledge that it is not a diagnostic scan. However if a suspected abnormality is detected by the research team, further consultation is sought following as closely as possible procedures defined by the CRIF committee (clinical research imaging facility, reviewed four times a year, refer to SOP 58.007, Version 1.0, CRIF Review of incidental findings, anonymised images).Brain scans will NOT be routinely examined for abnormalities by a trained neuro-radiologist. However, it is possible that an abnormality could be detected in the scan of a normal volunteer by the radiographer or one of the investigators. Should this situation occur, the standard procedure will be followed:1. Anatomical images will be viewed by a radiographer. 2. In this process, the anonymised MRI scans might get de-anonymised. 3. If a potential incidental finding is discovered, an NHS radiographer contact person (e.g. Tracey Hopkins or Rosie Woodward) will be informed, and will help to arrange the images to be seen by a neuroradiologist. 4. If follow-up is recommended, contact details of participant and participant’s registered GP will be forwarded. 5. Radiologist may recommend follow up with participant and participant’s GP. Participant will be contacted by the researchers to inform about potential incidental findings. 6. The incidental finding report will be recorded on PACS and form part of the participant’s medical record.7. The PI/CI will be responsible for reviewing the report after consultation with the agreed radiologist. Report will be forwarded to participant’s GP (possibly including relevant images from the research project where IF was detected). Prior to being scanned, participants consent to the scan being non-diagnostic, and must provide GP contact details. Participants are informed they will be contacted by the researchers in the case of a finding which has potential benefit for them to know about, but that they will not be contacted about an insignificant finding. |

**6. Outline the reasons why the possible benefits to be gained from the project justify any risks or discomforts involved.**

The proposed research will advance principle understanding of brain functions. Principle understanding of brain functions enhances the field of Neuroscience and might have impact on fields of Computational Neuroscience, Philosophy, Psychology, and Cognitive Science in general. Advanced understanding of Neuroscience is also the foundation of development in clinical neuroscience and some of the experiments might be done with the interest of clinical research – this motivation is clearly stated in the consent forms of subjects.

**7. Who are the investigators (including assistants) who will conduct the research? What are their qualifications and experience?**

This description will vary from study to study. The 7T MRI LOCAL RULES & OPERATING PROCEDURES describe that two persons need to be present in the console room. At least one person needs to be an MRI trained operator. At 7T, investigators must have prior MRI experience in their team.

For example:

Principal Investigator: Prof Lars Muckli, Professor of Visual and Cognitive Neuroscience, Director of Functional Brain Imaging (CCNi), Co-head of Scientific Strategy Development Workstream (ICE), MRI Certified Operator at 3T and 7T.

Second supervisor: Dr Johanna Bergmann, Postdoctoral Research Associate (CCNi), MRI Certified Operator at 3T and 7T.

**8. Are arrangements for the provision of clinical facilities to handle emergencies necessary? If so, briefly describe the arrangements made.**

In an emergency situation, access to the MR Environment must only be given under the direct supervision of an Authorised Person. All Authorised Persons must demonstrate a thorough knowledge of emergency procedures. As described in the document ‘7T MRI LOCAL RULES & OPERATING PROCEDURES’.

They must:

1) Acquaint themselves with the sounds of the various alarm systems

2) Familiarise themselves with the positions of different emergency stop buttons and make sure that they understand the differences between them.

Magnetic Quench Buttons are the only way to turn off the magnetic field. The financial consequences will result in several thousand pounds as the cryogens are lost. Electrical systems are not shut down. The couch brake is not released. Please note that it will take up to a minute for the magnetic field to decrease to zero.

Some subjects experience claustrophobia on entering the narrow bore of the MRI scanner. To minimise anxieties the following can be implemented:

1) Coaching by MR Operators, including careful introduction to the scanner.

2) Use of mirrors to allow participants to see outside of the scanner and a call button which subjects can use

at any time to communicate with the MR Operator or stop the scan.

3) Suspending scans if subjects report discomfort or claustrophobia.

Under no circumstances must a cardiac arrest crash team be allowed into the MR Environment. In the event of a cardiac arrest, it is vital that the subject is moved to a point out with the MR Environment where resuscitation can safely begin. Upon becoming aware of a cardiac arrest within the MR Environment, Facility staff will take the following action:

1) Dial 2222: State: CARDIAC ARREST IN MRI, GROUND FLOOR, ICE building

2) Move the subject as soon as possible to the adjacent anaesthetic area using the non-ferromagnetic trolley.

3) Ensure the doors to the MR Environment are locked and the key placed in a draw in the Control Room.

4) Oxygen should be administered as soon as possible using the nearest Crash Trolley.

5) CPR should then be commenced if necessary.

6) Resuscitation equipment must never be taken into the MR Environment.

The main hazards to personnel from fire in the MR Environment are the effect of the magnetic force on ferromagnetic materials worn or carried by fire fighters and smoke produced by burning materials in the MR Environment such as plastic cladding foam etc. Therefore, it is vital that as much material within the MR Environment is fire retardant, especially subject padding, bed covers etc.

It is imperative that all Facility staff and Authorised Persons are familiar with the appropriate action to take in the event of fire or a fire alarm going off in accordance with NHS GG&C procedure. If smoke is smelt or electrical arcing is heard or if sparks are seen in the magnet room or in the computer cabinet then inform the MR Operator who will power down the scanner and get any subject out. In the event of a fire developing within the MRI Facility the following action should be taken: • Activate the fire alarm in the Waiting room - this will deactivate the secure doors

1) Dial 2222, state: FIRE IN MRI, GROUND FLOOR, ICE building

2) Evacuate the Scanner, lock door and secure key.

3) Evacuate the Facility.

4) If reasonably safe to do so, tackle the fire with the designated non-ferromagnetic extinguishers.

**9. In cases where subjects will be identified from information held by another party (e.g., a doctor or hospital), describe how you intend to obtain this information. Include, where appropriate, which Multi Centre Research Ethics Committee or Local Research Ethics Committee will be applied to.**

N/A for this template. Such studies need to go through a different ethical approval procedure (REC).

**10. Specify whether subjects will include students or others in a dependent relationship and, where possible, avoid recruiting students who might feel to be, or be construed to be, under obligation to volunteer for a project. This is most likely to be when a student is enrolled on a course where the investigator is a teacher. In these circumstances, the recruitment could be carried out by one of the other investigators or a suitably qualified third party.**

The subjects are recruited through a specific “subject pool” web page – students are encouraged to sign up at the webpage as they will gain information for different experiments or earn some money. There are more than 1000 subjects in it and professor’s students or colleagues are not a-priori selected.

**11. Specify whether the research will include children or participants with mental illness, physical disability or intellectual disability. If so, please explain the necessity of involving these individuals as research subjects and include documentation of the suitability of those researchers who will be in contact with children (e.g., Disclosure Scotland or membership of the PVG Scheme).**

N/A (standard fMRI studies are conducted in healthy adult volunteers).

**12. Will payment or other incentive, such as a gift or free services, be made to any research subject? If so, please specify, and state the level of payment to be made and/or the source of the funds/gift/free service to be used. Please explain the justification for offering an incentive.**

A standard compensation rate for behavioural studies is offered at £6 per hour and for brain-scanning £10 per hour at the CCNi. For scanning with 7T-MRI which is done at the ICE building we compensate for travel and time at £15 per hour. These are guidelines that are optional.

**13. Please give details of how consent is to be obtained. A copy of the proposed consent form, along with a separate information sheet, written in simple, non-technical language MUST ACCOMPANY THIS PROPOSAL FORM.**

Participants will be recruited by adverts detailing the purpose and duration of the experiment. Written informed consent will be obtained from participants prior to the study.

**14. Comment on any cultural, social or gender-based characteristics of the subjects which have affected the design of the project or may affect its conduct.**

Standard fMRI studies involve adult volunteers without any further selection.

Where applicable, cultural, social and gender-based selection is detailed in Section 2: Study design.

**15. Please state (i) who will have access to the data, (ii) how the data will be stored, how will access be restricted, and (iii) what measures will be adopted to maintain the confidentiality of the research subjects and to comply with data protection requirements.**

All information collected about subjects during the course of the research will be kept confidential. You will be assigned a 5 digit hashtag that identifies you but is anonymous to others. During acquisition, data are accessible only by MRI operator and team members of the research team. Once the scanning procedure is concluded, data is moved to a project folder related to the study, stored in the Institute of Neuroscience and Psychology intranet grid. Here it will be accessible by the PI of the study, the research team involved in the analysis of this study, and by the IT-team for maintenance.

Subjects’ anonymity will be assured by only referring to a subject number (hashtag) during analysis, therefore the subject will not be identifiable from the raw-data. The MRI anatomy can however be used to create a volume rendering which allows to reconstruct an MRI face which could be used to match your face features. Your personal information (e.g. MRI screening form) will be kept on file and stored in a secure place at the Imaging Centre of Excellence, Queen Elizabeth University Hospital. Your anonymized brain data will be stored at the Institute of Neuroscience and Psychology, University of Glasgow.

Once the study is analysed and the scientific results is prepared for publication the data may be uploaded and shared with the scientific community. The data will then be accessible from anywhere in the world. The details are described in the form Open brain consent form MRI. That the subjects need to sign this form before the participating in the standard fMRI study

**In regard to (ii) above, please clarify (tick one) how the data will be stored:**

**(a) in a fully anonymised form (link to subject broken),**

X

**(b) in a linked anonymised form (data +/- samples linked to subject identification**

 **number but subject not identifiable to researchers), or**

**(c) in a form in which the subject could be identifiable to researcher.**

**If data are stored in linked anonymised form, please state who will have access to the code and personal information about the subject.**

**The data will be held securely for a period of ten years after the completion of the research project, or for longer if specified by the research funder or sponsor, in accordance with the University’s Code of Good Practice in Research. (**[**http://www.gla.ac.uk/media/media\_227599\_en.pdf**](http://www.gla.ac.uk/media/media_227599_en.pdf)**) Please tick**

X

**16. To your knowledge, will the intended group of research subjects be involved in other research? If so, please justify.**

Every research is independent to another, unless otherwise specified.

**17. Proposed starting date:**

01/01/2018

 **Expected completion date:**

01/01/2023

**18. Please state location(s) where the project will be carried out.**

“Standard fMRI studies” will all be performed in the fMRI suite of Imaging Centre of Excellence (ICE), located at the Queen Elizabeth University Hospital.

**19. Please state briefly any precautions being taken to protect the health and safety of researchers and others associated with the project (as distinct from the research subjects), e.g., where blood samples are being taken.**

Two researchers at least one of which is a trained operator (the other one trained in safety measures) usually carry out the experiment procedure.

**20. Please state all relevant sources of funding or support for this study.**

The experiments carried out in the ICE MRI suite will be funded by various research councils and funding bodies.

**21a). Are there any conflicts of interest related to this project for any member of the research team? This includes, but is not restricted to, financial or commercial interests in the findings. If so, please explain these in detail and justify the role of the research team. For each member of the research team please complete a declaration of conflicts of interest below.**

Researcher Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ conflict of interest Yes / No

If yes, please detail below

Researcher Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ conflict of interest Yes / No

If yes, please detail below

Researcher Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ conflict of interest Yes / No

If yes, please detail below

Researcher Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ conflict of interest Yes / No

If yes, please detail below

**21b). If there are any conflicts of interest, please describe these in detail and justify conducting the proposed study.**

N/A for this template.

**22. How do you intend to disseminate the findings of this research?**

In case of good results, a usual study ends with publication/s. In such case, all the data (e.g. brain maps) are anonymised and it’s not possible to attribute them to the owner.

**I confirm that have read the University of Glasgow’s Data Protection Policy.** [<http://www.gla.ac.uk/services/dpfoioffice/policiesandprocedures/dpa-policy/>]

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Please initial box

Name \_\_\_\_\_\_Professor Lars Muckli, PhD \_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**(Proposer of research)**

Please type your name on the line above.

**For student projects:**

**I confirm that I have read and contributed to this submission and believe that the methods proposed and ethical issues discussed are appropriate.**

**I confirm that the student will have the time and resources to complete this project.**

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**(Supervisor of student)**

Please type your name on the line above.

**Please upload the completed and signed form, along with other required documents by logging in to the Research Ethics System at -** <https://frontdoor.spa.gla.ac.uk/login/>