



School of Psychology
and Clinical Language
Sciences

These notes give some information about an MRI study in which you are invited to take part.

Brief summary of the MRI technique

MRI is a method for producing images of the brain and other parts of the body. It involves placing the participant inside a large, powerful magnet which forms part of the brain Scanner. We use MRI to image the composition of different parts of your brain. We can also image which parts of your brain are more or less active. When particular regions of the brain are active, they require more oxygen, which comes from red corpuscles in the blood. As a result, the flow of blood increases. This can be detected as changes in the echoes from brief pulses of radio waves. These changes can then be converted by a computer into 3D images. This enables us to determine which parts of the brain are active during different tasks.

Potential risks with the procedure and precautions taken

As far as we know, this procedure poses no direct health risks. However, the Department of Health advises that certain people should NOT be scanned. Because the scanner magnet is very powerful, it can interfere with heart pacemakers and clips or other metal items which have been implanted into the body by a surgeon, or with body-piercing items. If you have had surgery which may have involved the use of metal items you should NOT take part. Note that only ferro-magnetic materials (e.g. steel) are likely to cause significant problems. Thus normal dental amalgam fillings do not prohibit you from being scanned, though a dental plate which contained metal would do so, and you would be asked to remove it. If you wear transdermal patches (e.g. nicotine patches) that contain metal, you will be asked to remove them. If you cannot, or are unwilling, to remove these, please do not volunteer for this study. You will also be asked to remove metal from your pockets (coins, keys), remove articles of clothing which have metal fasteners (belts, bras, etc.), as well as most jewellery. Alternative clothing will be provided as necessary. Watches and credit cards should not be taken into the scanner since it can interfere with their operation. We will provide you with a box in which you can leave your personal belongings securely while you are in the scanner. You will be asked to complete a questionnaire (the Initial Screening Form) which asks about these and other matters to determine whether it is safe for you to be scanned. You will also be asked to complete a second, shorter, screening form immediately before the scan.

Possible discovery of findings related to research scans

There is no intended clinical benefit to you from taking part in this study. The scans are not intended to provide a medical diagnosis or a clean 'bill of health' – and the person conducting your scans will not be able to comment on the results of your scans.

The researchers involved do not have expertise in MRI diagnosis, as they are psychologists or allied scientists and are not medical doctors. We ask you to give the name and address of your general practitioner (GP). This is because occasionally, when we image healthy participants, the researchers may be concerned that a potential abnormality may exist on the scan. In such cases, we will send a copy of the image first to a radiologist for initial advice, then if advised to do so by the radiologist, to your GP. These qualified persons then decide what course of action is best. By signing the consent form, you authorise us to do this. If you are not willing to authorise this, please do not volunteer for the study.

It is important that you realise that these research scans are NOT a medical screening procedure, and will not provide any information that may help in the diagnosis of any medical condition. Even if the scan is reviewed by qualified experts, an additional medical issue cannot be ruled out. This is because the types of scans that we obtain for research purposes may be different to the scans used for diagnostic purposes. If you do have any health concerns, you should contact a qualified medical practitioner in the normal way.

What can you expect in the scanner

To be scanned, you would lie on your back on a narrow bed on runners, on which you would be moved until your head was inside the magnet. This is rather like having your head put inside the drum of a very large front-loading washing machine. The scanning process itself creates intermittent loud noises, and you would wear ear-plugs or sound-attenuating headphones. We would be able to talk to you while you are in the scanner through an intercom. If you are likely to become very uneasy in this relatively confined space (suffer from claustrophobia), you should NOT take part in the study. If you do take part and this happens, you will be able to alert the experimenters by activating an alarm and will then be removed from the scanner quickly. It is important that you keep your head as still as possible during the scan, and to help you with this, your head will be partially restrained with padded headrests. We shall ask you to relax your head and keep it still for a period that depends on the experiment but may be more than one hour (though you will not be continuously scanned for this period), which may require some effort on your part. If this becomes unacceptably difficult or uncomfortable, you may demand to be removed from the scanner.

You may be asked to look at a screen through a small mirror (or other optical device) placed just above your eyes and/or be asked to listen to sounds through headphones. You may be asked to make judgements about what you see or asked to perform some other kind of mental task. Details of the specific experiment in which you are invited to participate will

either be appended to this sheet or else given to you verbally by the experimenter. Detailed instructions will be given just before the scan, and from time to time during it.

Your participation is voluntary

You will be able to say that you wish to stop the testing and leave at any time, without giving a reason. This would not affect your relationship with the experimenters in any way. The study will not benefit you directly, and does not form part of any medical diagnosis or treatment. If you agree to participate you will be asked to sign the initial screening form that accompanies this information sheet, in the presence of the experimenter. It is perfectly in order for you to take time to consider whether to participate, or discuss the study with other people, before signing. After signing, you will still have the right to withdraw at any time before or during the experiment, without giving a reason.

How we handle confidential information

The images of your brain will be held securely and you will not be identified by name in any publications that might arise from the study. The information in the two screening forms will also be treated as strictly confidential and the forms will be held securely until eventually destroyed.

Further information about the specific study in which you are invited to participate may have been appended overleaf, if the experimenter has felt that this would be helpful. Otherwise, he/she will already have told you about the study and will give full instructions prior to the scan. Please feel free to ask any questions about any aspect of the study or the scanning procedure before completing the initial screening form.

Appendix 1:

This study is designed to help us further develop a new application of magnetic resonance (MR) imaging, namely MR spectroscopy (MRS). MRS allows us to measure the concentration of chemicals in the human body, and how it changes over time, during a particular task, or after the administration of a drug, or a kind of food.

The data from your participation will enable us to see how stable our MRS measurements are and work out what we need to do to estimate chemical concentrations more accurately. We do not need your personal information in this research, so all data will be completely anonymised. Signed consent forms and personal identifiers will be stored securely in line with university policy before confidentially destroyed. Anonymised data will be deposited in an open access data repository so that the wider scientific community can benefit from this work.

The study has been reviewed by the University of Reading Research Ethics Committee and has received a favourable opinion for conduct.