



INFORMATION FORM - PARENTS

These notes give some information about an (f)MRI study in which your child/ ward is invited to take part.

fMRI is a method for producing images of the activity in the brain as people carry out various mental tasks. It involves placing the participant inside a large, powerful magnet which forms part of the brain scanner. 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.

MRI is a method for producing images of the grey and white matter of the brain. This is made possible due to the fact that regions containing gray or white matter have different effects on the echoes from brief pulses of radio waves, which we can visualize as 3D images.

DTI is a method for visualizing anatomical connections between different brain regions. This is made possible due to the fact that water molecules tend to move along a major direction in areas that are part of a fibre bundle, whereas they tend to move in random directions outside such fibre bundles. This difference can be visualized in 3D images.

MRS is a method for measuring the amount of certain metabolites (e.g. GABA) in a specific region of the brain. This is made possible by the fact that different metabolites have different effects on the echoes from brief pulses of radio waves, and these differences can be measured.

In a typical experiment, your child/ ward may be scanned with just one or a combination of the methods described above. In some research projects, other body parts such as the lower leg, knee, thigh or ankle may be scanned. The researcher will be able to provide you with more details about these scans. In those cases, the body part being scanned will be put in the centre of the scanner, so the head might be just outside.

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 your child/ ward has had surgery which may have involved the use of metal items it 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 your child/ ward from being scanned, though a dental plate which contained metal would do so, and your child/ ward would be asked to remove it. Your child/ ward will be asked to remove metal from his/ her 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. Together with your child/ ward 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 your child/ ward to be scanned. In addition, you are asked to give the name and address of your child's/ ward's Family Doctor. This is because there is a very small chance that the scan could reveal something which required investigation by a doctor. If that happened, we would seek advice from a specialist, using anonymised data, whether or not a follow-up is suggested, and if so, contact your child's/ ward's doctor directly. By signing the consent form, you and your child/ ward authorise us to do this. You and your child/ ward will also be asked to complete a second, shorter, screening form immediately before the scan. Finally, we might be asking your child some confidential health questions in your absence as it is very important that your child/ ward feels able to answer honestly.

To be scanned, your child/ ward would lie on your back on a narrow bed on runners, on which your child/ ward 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 your child/ ward would wear ear-plugs and, where suitable, ear muffs or sound-attenuating headphones. We would be able to talk to your child/ ward while being inside the scanner through an intercom. If your child/ ward is likely to become very uneasy in this relatively confined space (suffer from claustrophobia), your child/ ward should NOT take part in the study. If your child/ ward does take part and this happens, he/she will be able to alert the experimenters by activating an alarm and will then be removed from the scanner quickly. It is important that your



child/ ward keeps its head as still as possible during the scan, and to help him/ her with this, the head will be partially restrained with padded headrests. We shall ask your child/ ward to relax your head and keep it still for a period that depends on the experiment but may be more than one hour, which may require some effort on your child's/ ward's part. If this becomes unacceptably difficult or uncomfortable, your child/ ward may demand to be removed from the scanner.

Your child/ ward may be asked to look at a screen through a small mirror (or other optical device) placed just above his/ her eyes and/or be asked to listen to sounds through headphones. Your child/ ward may be asked to make judgements about what he/ she sees or asked to perform some other kind of mental task. Details of the specific experiment in which your child/ ward is invited to participate will either be appended to this sheet or else given to you and your child/ ward verbally by the experimenter. Detailed instructions will be given just before the scan, and from time to time during it.

The whole procedure will typically take about 1 hour, plus another 15 minutes to discuss with you and your child/ ward the purposes of the study and answer any questions about it which you and your child/ ward may raise. Your child/ ward will be able to say that he/ she wishes to stop the testing and leave at any time, without giving a reason. This would not affect your relationship or the relationship of your child/ ward with the experimenters in any way. The study will not benefit you or your child/ ward directly, and does not form part of any medical diagnosis or treatment. If you and your child/ ward agree that your he/she participates you and your child/ ward will be asked to sign the initial screening form that accompanies this information sheet, in the presence of the experimenter (or other witness, who should countersign the form giving their name and address, if this is not practical). It is perfectly in order for you and your child/ ward to take time to consider whether to participate, or discuss the study with other people, before signing. After signing, you and your child/ ward will still have the right to withdraw at any time before or during the experiment, without giving a reason.

The images of your child's/ ward's brain will be held securely and your child/ ward will not be identified by name in any publications that might arise from the study. We may share your data with carefully chosen research colleagues, or with big databases such as the UK Data Archive, but the information we share will never contain your name or address, or the name or address of your child/ ward.

The information in the two screening forms will also be treated as strictly confidential and the forms will be held securely until eventually destroyed.

Everything your child will say will be treated as confidential, unless we are worried that there is a risk of harm (e.g. suspicion of physical abuse) to your child/ ward or another young person, in which case we will inform Surrey Children's Services (<http://www.surreycc.gov.uk/social-care-and-health/contacting-social-care/contact-childrens-services>).

Further information about the specific study in which your child/ ward 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.