

Policies Concerning Human Subject Research

The Dana & David Dornsife Cognitive Neuroimaging Center (referred to as DNI or the Center) is a research facility located at the University of Southern California's University Park Campus. DNI is part of the Dornsife College of Letters, Arts & Sciences, and is not affiliated with the Keck School of Medicine or the University Hospital.

Magnetic Resonance Imaging (MRI) is the primary imaging technology used at the Center. As with other imaging performed at the Center, MRI scans are undertaken *for research purposes only*. Medically indicated diagnostic scans are not performed at the Center. The Center does not have medical or radiological staff to interpret MRI scans, thus no information regarding normal or abnormal findings will be provided to research participants by DNI staff.

Occasional variations from expected brain morphology can be seen in research participants undergoing MRI scans. In light of such variations, and given the rapidly increasing number of research MRIs conducted, significant ethical questions about responsibilities and procedures for detecting and disclosing incidental findings have been raised. Variations from normal morphology may or may not have medical implications.

The DNI, as a non-medical facility, together with the USC Office for the Protection of Research Subjects (OPRS) has established the following policy for MRI scans obtained for research purposes:

1. All subjects must be made aware that DNI staff *does not* have the requisite expertise to identify, interpret or communicate neurological findings for diagnosis or treatment.
2. While there is no national requirement to have every research scan read by an outside neuroradiologist, the DNI has contracted to have all structural scans of normal research subjects reviewed by a neuroradiologist. [See below for additional information about procedures for subjects with known brain damage]. The cost of the service is currently supported by DNI.
3. All subjects participating in MRI research projects shall be offered a CD copy of the structural data obtained during the study. Subjects may decline this offer.

SUBJECT IDENTIFICATION

Subjects to be scanned at the DNI are given a code number followed by the initials of the investigator. This is the "name" to be entered in the MR computer file, along with the subject's height, weight, sex and year of birth, parameters required for setting up an MR imaging protocol. No actual name or any other identifying information is to be entered in the MR computer file, to make certain that subject privacy can be maintained. Individual investigators are responsible for keeping records in order to identify the raw data collected at the DNI pertaining to their studies.

SUBJECT PROCEDURES

Each investigator is responsible for obtaining IRB approval for his/her study and for filing the approval document with the Center. Investigators are also responsible for explaining informed consent procedures to every subject and having every subject sign the informed consent form. No subject can be scanned without a valid informed consent form having been signed. The signed consent forms must be presented to a designated Center staff member and a duplicate must be left at the Center for secure filing. The code number assigned to the study will be added to the form. MR safety screening will be performed by the Center staff and will be signed by the subject and by the staff member performing the screening (see MR Safety Screening). Note that the screening results may preclude a subject from participating in a study. A copy of the signed screening form will be filed together with the informed consent form. For subjects with a history of cerebro-vascular disease, neurosurgical procedures, or accidents, in connection with which metallic objects or particles might have been lodged inside soft tissue of brain or eyes, it is necessary to submit a medical report, signed by a physician, stating that it is safe for the subject to undergo MRI. This report needs to be filed together with the signed IRB and safety screening form.

Each investigator is responsible for bringing along one certified person to help perform the actual study (for studies conducted during working hours), or two persons (for studies conducted during off hours, one of them being certified to operate the scanner at off-hours).

IRB APPROVAL

All investigators who plan to conduct human subjects research at the DNI must obtain IRB approval for their research protocols. Under no circumstances will an investigator be allowed to use the facility without submitting proof of IRB approval. Please use the UPIRB Informed Consent template for Non-Medical Research accessible here: <https://oprs.usc.edu/upirb/upirb-forms/>

The Potential Risks and Discomforts section of this informed consent template includes mandatory language for DNI studies.

A copy of the Dornsife Imaging center mandatory language is provided below:

“The Dornsife Imaging Center is a research unit, not a clinical/diagnostic MRI center. The MRI scans obtained at the Dornsife Imaging Center, such as the scan you are about to undergo, are research scans. They are not meant to provide clinical/diagnostic information. Most scans performed in normal human subjects are routine and without abnormalities. However, on occasion, though rarely, something abnormal may be present. These rare occurrences are called incidental findings.

Because the Dornsife Imaging Center **is not** a clinical/diagnostic center, the DNI has no neuroradiologist staff members (medical doctors who can comment on MRI scans), and therefore we cannot tell if your scan shows or does not show any abnormality. Because detecting and investigating such potential abnormalities may be relevant to your health, the Dornsife Imaging Center established a partnership with University Children Medical Group Inc., where a neuroradiologist will review the structural scans that are part of the research scans obtained at the Dornsife Center. If they detect any image that suggests an

abnormality, they will contact you or a physician of your choice, to inform about the findings and suggest further evaluation if needed.

If you do not want to be informed about any potential incidental finding, you may elect to NOT take part in this study.

In case you agree to participate in this study your identity, along with your physician's identity and contact information, will only be disclosed to the neuroradiologist should he need to contact you. By agreeing to participate in this study you also agree to having the neuroradiologist contact you, or the physician of your choice, about any incidental finding deemed to be important to your health. You will be asked to provide your and your physician's contact information on a separate sheet.

You will also be given the data of the structural images on a CD so you can further consult with your physician. You may decline the offer of receiving the images on a CD.”

INCIDENTAL FINDINGS

Under no circumstances may an investigator, research staff, or the imaging center personnel interpret scans as normal or abnormal. All scans performed at the Dornsife imaging center are for research purposes only and are NOT intended for clinical diagnoses or therapeutic purposes. However, in recognition of the fact that, on occasion, incidental findings may need to be investigated medically, and in a best faith effort to inform research subjects of that possibility, the policy is that all scans of normal research subjects will be read by a neuroradiologist.

Every normal subject studied at the Dornsife imaging center will have, in addition to the structural MRI performed as part of the study, a brief T2 weighted sequence (2 minutes). These data will be sent for neuroradiological review, provided by contractual agreement between DNI/USC and Dr. Marvin Nelson's team of neuroradiologists at Childrens Hospital of Los Angeles Medical Group (CHLAMG).

Normal subjects will be informed of the neuroradiology review policy and will have to read and sign an (IRB approved) agreement (see below), prior to being scanned. The document allows the subject to opt out of the neuroradiology scan review, in which case the subject will not be scanned. In other words, **subjects who agree to participate in a study but do not accept the scan review must be excluded from the study before scanning.** The neuroradiological review is an ethical approach to identify and inform subjects of any incidental finding that, though rare, may be detected. Dornsife staff will provide scans to Dr. Nelson without personally identifying data. Scans will contain solely the DNI identifying number, gender and age of the subject. In the unlikely event that Dr. Nelson's team identifies an incidental finding, Dornsife staff will be asked to provide the subject's name and contact information, as well as his/her physician's name and contact information to Dr. Nelson. Dr. Nelson will, at that time, inform DNI that the subject may not be appropriate for research and will take it upon himself to contact the subject/physician and discuss the finding and suggest further action. The DNI will **not** be involved in any medical interaction with the subject and will **not** be informed of any medical diagnosis. Dornsife staff will simply inform the respective PI/investigator, as soon as Dr. Nelson reports, that a subject may not be appropriate for research. There is a fee for this neurological service which, for the time being, will be absorbed by the DNI. Scans will be sent to Dr. Nelson at regular intervals.

Since January 2015, the DNI maintains a list with the names of the subjects in whom an incidental finding, with possible implications for research, was detected. This list is NOT freely available to researchers. However, when researchers include subjects who have participated in previous DNI studies, even if those were conducted by other investigators, the researcher can contact the Center's secretary/receptionist to ask if a given name is part of that list. The researcher will then be told if the name is found in the list, or not. No further information will be made available.

There are 2 exceptions to the above mentioned policy of scan reviews:

1. Subjects who are part of repeated scanning for multiple studies, will have their scans reviewed only after their first scanning session. If participation continues for over a year, the next scan performed one year after the previously reviewed scan will be sent for review. We need faculty cooperation in identifying such subjects. DNI does not keep a roster of those scanned.
2. Subjects with known abnormal brain findings, who are part of structural/functional MR protocols, will not have their scans sent to Dr. Nelson for review. Therefore, they should not sign the attached document. Investigators who use such individuals as research subjects should follow the practice of providing the structural scan to the subjects' physician noting that the images were obtained for a research purposes only.

DNI SUBJECT AGREEMENT

All neurologically-normal subjects must sign both DNI Subject Agreement and study-specific informed consent documents.