

Research Data Management @ the Donders Institute

The Donders Institute strives to preserve and share all its research data for the long-term according to the [FAIR principles](#) from 2020 onwards. This Research Data Management policy aims to follow Open Science standards, before, during and after the research process. The policy meets the (inter)national standards and legislation regarding scientific integrity and privacy law (General Data Protection Regulation (GDPR), Dutch code for Scientific Integrity). The Donders Institute policy for management of research data *supplements* the [Radboud University RDM policy](#).

The Donders Institute consists of [four centres](#) of which the Donders Centre for Cognition (DCC), Donders centre for Cognitive Neuroimaging (DCCN) and the Donders Centre for Neuroscience (DCN) adhere to this RDM policy with centre-specific addenda. The Donders Centre for Medical Neuroscience (DCMN) follows the Radboudumc policy.

The [Donders Repository](#) is a professionally managed and conveniently accessible resource at the Donders Institute for long term preservation and sharing of digital research data into collections, see [these pages](#). In addition, each centre has its own facilities in place for work-in-progress data storage, documentation and analysis. These are further described in the RDM policy addenda (see below) and on the Donders Institute intranet pages.

Scope and responsibilities

This policy includes responsibilities for all employees of the DI: researchers, lab managers, research assistants, technical and administrative personnel and all designated staff who conduct studies and collect and/or process data at the DI.

Data and roles

This policy applies to all collections of research data for which a Donders Institute Principal Investigator is responsible. In general, the Radboud University, c.q. Radboudumc is the primary rights holder of data for which a Donders Institute staff member is responsible, which is stated in the [RU directives of ownership of data](#). If and insofar Radboud University or Radboudumc controls the research data, the centre director, under whose responsibility the research has been carried out, will exercise control. The Donders Institutes' centre directors are accountable for data storage and proper data management at their centres. However, the Principal Investigator of a project carries the first and primary responsibility for correct and accurate data storage and data management. This responsibility can be delegated to the PhD students and Postdocs. Students (bachelor or master) who collect data are supervised in data management by the responsible researchers.

The Donders Institute can not only be rights holder to data acquired at the Donders Institute, but also to data collections acquired at external locations that are used and stored at the Donders Institute and for which a Donders Institute staff member is responsible and for which it has been assessed that Radboud University, c.q. Radboudumc is the rights holder.

Each centre has appointed a [data steward](#), with the following responsibilities: (1) drafting centre specific and institutional research data management (RDM) policies, (2) monitoring compliance with RDM policies, (3) monitoring and developing RDM skills within their centre, (4) serving as contact point within their centre, Donders Institute, and RU for RDM-related issues.

The Donders Institute trains all new employees, guest researchers and trainees on RDM skills and procedures through centre-specific introduction sessions, see the [Donders Institute intranet](#).

Compliance with RDM policy by the Donders Institute employees, guest researchers and trainees is monitored by the data stewards by taking samples.

Donders Institute RDM policy

The following research phases are distinguished: (1) Preparing a project, (2) data acquisition, analysis and scientific writing and (3) data sharing with the external scientific community.

1. Preparing a project

During the initiation of a project¹ at the Donders Institute, a Data Management plan is drafted according to a template. Main topics described include access/authorization to and security of research data, privacy protection of research participants, long-term preservation and sharing of research data. For PhD-students this paragraph must be drafted as part of their Training and Supervision Plan, which is updated throughout the project.

All projects must have ethical approval according to applicable legislation or guidelines, see [Donders Institute intranet](#) for specifics. Additionally, each centre has procedures in place ensuring ethical and project approval before data collection initiation. See below for centre-specific guidelines:

DCCN ([project proposal meeting](#))

DCC ([project proposal form](#))

DCN ([project data management application](#))

2. Data acquisition, analysis and scientific writing

Human research data is only acquired with informed consent of the participant by informed consent procedures and study specific forms. The centres have Standard Operating Procedures for this in place, which have been attuned with the applicable ethical committees

Storage

Collected research data is always stored in a safe location (to prevent unauthorized access) and preserved for at least 10 years with regular automated backups (to prevent data loss). Experimental data is pseudonymized using non-identifiable subject-codes. Pseudonymization keys are stored separate from the experimental data on an access-restricted location.

[Personal research data](#) is only acquired for administrative purposes (contact information) or for scientific purposes and is disposed after it is no longer required for the purpose described.

Participant's personal data is always password-protected and stored on encrypted media on a separate location from the other research data.

For storage of personal research data and for work-in-progress research data, centre-specific storage systems are used. For archiving of research data it is mandatory to use the Donders Repository with the exception of extremely large datasets from the DCN, for which an alternative is offered ([see the DCN regulations](#)).

Documentation

¹ Here project refers to a series of experiments for instance a PhD- or Post-doc project, or a project funded by a specific grant, usually spanning several years.

Research data is documented and metadated according to the FAIR principles, in order to facilitate collaboration and reuse of the data. Documentation is accurate, complete, understandable and concise. Centre-specific tools are used for this purpose and all relevant documentation is archived in the Donders Repository.

Sharing

Sharing of work-in-progress experimental data such as raw data, processed data or scripts is done via password protected, backed-up media, i.e., 1) the centre-specific storage system or 2) the Donders Repository or 3) [Surf Drive](#).

Sharing of work-in-progress personal research data is limited, but if required, done through the centre-specific storage system. See below for information about centre-specific storage systems and procedures:

DCCN ([Data storage, archiving and sharing](#))

DCC ([Data Management](#))

DCN ([password protected drives of CNCZ](#))

3. Data publication

As a rule research data of all Donders Institute publications is shared with the scientific community. Deviations from this rule are only possible after explicit approval by the centre director. Possible reasons to deviate from this rule pertain to ethical, contractual, legal or severe financial constraints. The DR is the default repository for sharing data of Donders Institute researchers. If the researcher finds a repository better suited for his/her data, or a journal requests/advises to use another repository, the researcher should first seek for approval from the centre's data steward. When considering an external repository, 1) it must adhere to FAIR principles, 2) datasets that potentially contain personal identifiable information can only be shared under a Data Use Agreement that protects the identity of the participants (e.g., Data Use Agreement forbids to establish identity or to attempt to contact participants) and 3) the rights holder remains as defined earlier in the project. Data is in principle published at the moment that the final proofs are sent back to the journal. However, an embargo period of max. 2 years can be applied if (part of) the data is part of a larger dataset that is still processed for publication.

Data shared in the Donders repository will be provided in a generally accessible format including relevant metadata and it will be documented according to the FAIR principles, in order to facilitate collaboration and reuse of the data.

4. Definitions

Research Data management (RDM) processes and actions required to manage research data throughout the research lifecycle for current and future research purposes and uses

FAIR Data data that are Findable, Accessible, Interoperable, and Re-usable, in order to facilitate knowledge discovery by assisting humans and machines in their discovery of, access to, integration and analysis of, task-appropriate scientific data and their associated algorithms and workflows

Research data recorded information, digital and non-digital, gathered, collected, obtained or produced during or as a result of scientific research, and used for scientific development of theories, hypothesis testing, or validation of scientific findings, observations or conclusions.

Documentation any digital files such as a codebook, technical or methodology report or user guide, which explain the research data's production, provenance, processing or interpretation (see also <https://www.ru.nl/rdm/vm/terms-definitions/>)