Data management plan

RDM F01 Data management plan v4.0

For requirements, explanation of the topics, definitions and abbreviations, see
location AMC: *SOP RDM001 Research data management*
location VUmc: *SOP RDM001 Research data management*

Study:

Protocol / Study number	Guanabenz in VWM - **NL61627.000.18**
Summary of the project	Vanishing white matter (VWM) is een ernstige, genetische wittestofziekte van de hersenen (leukodystrofie). Het ziekteverloop is variabel per patiënt. De leeftijd van ziektedebuut is een belangrijke voorspeller voor het klinisch verloop van de ziekte (hoe eerder de ziekte debuteert, hoe ernstiger het verloop). Patiënten met een ziektedebuut voor de leeftijd van 6 jaar hebben een ziekteverloop met snelle neurologische achteruitgang en een korte levensverwachting. Patiënten met een ziektedebuut na de leeftijd van 6 jaar hebben een variabel ziekteverloop wat meer geprotraheerd is (maar nog steeds fataal). Bij de meerderheid van de patiënten (ongeveer twee derde van de patiënten) debuteert de ziekte zich voor de leeftijd van 6 jaar. Er is tot op heden geen behandeling voor VWM. Het genetische defect dat VWM veroorzaakt leidt tot een abnormale activatie van de geïntegreerde stress respons. Guanabenz is een α2-adrenerg antihypertensivum. Het is een oud medicijn tegen hypertensie, bekend sinds de jaren zeventig en tachtig, en is veilig bevonden bij volwassenen en kinderen vanaf 12 jaar. Recent is er gevonden dat guanabenz invloed heeft op de geïntegreerde stress respons. Dit is tot op heden het enige medicijn met FDA goedkeuring die dit pathomechanisme beïnvloedt. Het verbeterende effect van guanabenz in VWM, is reeds aangetoond in een VWM muismodel dat representatief is voor de ziekte bij de mens. **Doel van het onderzoek:** **Primaire veiligheidsdoel**: 1. Evalueren van de veiligheid en tolerantie van guanabenz bij kpatienten met VWM met begin ≤6 jaar. **Primaire effectiviteitsdoel:** 1. Analyseren van veranderingen in kwaliteit van leven / mate van handicap bij kinderen met VWM behandeld met guanabenz. **Secondaire effectiviteitsdoelstellingen:** 1. Evalueren van de farmacokinetiek en – dynamiek van guanabenz bij kinderen met VWM. 2. Analyseren van de algemene overleving bij kinderen met VWM behandeld met guanabenz 3. Evalueren van de effecten op kwantitatieve MRI parameters bij kinderen behandeld met guanabenz. **Exploratief doelstellingen:** 1. Uitvoeren van open PK-covariaat en PK/PD analyses van guanabenz bij kinderen met VWM. 2. Evaluareren van potentiële biomarkers in het bloed en liquor bij kinderen met VWM behandeld met guanabenz.

Type of study	■ WMO compliant ☐ not WMO compliant
Co-ordinating PI / executive researcher	Prof. Dr. M.S. van der Knaap
Department	Kindergeneeskunde – (Kinder)Neurologie
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Funding body and grant number	European Leukodystrophy Association (ELA), ELA 2019-P001 Nederlandse Hersenstichting, DR-2019-00385 ZonMw, 80-86600-98-84001
Partner organization(s)	Geen
Consulted data management expert	**Version 1** CRU, datamanagement Alden van der Putten Miranda Roskam-Mul Mareen Datema

	Version 2, 25.08.2023 Meriem Manaï, Research Data Management Consultant, Amsterdam UMC, m.manai@amsterdamumc.nl **Version 3, 25.06.2025 & 27jun2025** Merel Postema, PhD, Research Data Manager, Amsterdam UMC, m.c.postema@amsterdamumc.nl Elize Vlainic, Stafadviseur Data Stewardship, Amsterdam UMC, e.vlainic@amsterdamumc.nl
Data management plan version / date	Versie 3.0 / 25juni2025
Signature	

Phase 1: Study preparation	
Privacy and security safeguards	
1.2*	☐ The data set is anonymous and cannot be linked to a human subject ■ The data set is encoded; subjects can be identified through a subject identification log ☐ The data set is directly identifiable ☐ Data are de-identified during the study *Explain why the selected level of identifiability is chosen and describe how and in what phase of the study data are de-identified:* The dataset is structured to ensure minimal identifiability of individual participants. Data are encoded (by assigning participant identification (ID) numbers to all included patients) to ensure the security of privacy-sensitive information. The assigned participant ID numbers are subsequently used to merge data that are collected over multiple time points and from multiple sources. While data from clinical systems such as EPIC are initially linked to personal identifiers, these are also mapped to these participant ID numbers to enable integration with research data without using identifiable information. This procedure enables linking any future data from any source to the correct patient without using personal identifiers.
1.3 **1.4** **1.5** **1.6**	■ A Data Protection Impact Assessment (DPIA) has been performed"[...]". Registration form for the use of personal identifiers (Privacy Officer) ■ The data acquisition has been registered; "[…]". Registration form for the use of personal identifiers (Privacy Officer) ■ An informed consent procedure has been set up that describes the data set, time span of data retention, information on sharing data or making data available for future follow-up research; *provide document name and location: "[…]"*
	Additional information: ☐ The study has been (pre)registered or a concept/design paper has been published, *specify registration number(s): …* ■ A central location for all digital study documents and (references) to data exists; *specify:* link to TMF folder *"[…]"* ■ A central location for all hard copy study documents exists; *specify:* IWO-IA0-315
Data acquisition	
General	
1.10	*Specify the data acquisition per type of data. Include a description of the terminology standard, classification or existing data definitions that has been applied in the data set:* ■ Reuse of existing data: specify: Database VWM The guanabenz trial participants will be matched with an available, existing database (N>400) set up to document the natural disease course of untreated VWM, using 1:2 matching. They will be matched based on age at disease onset and disease severity at a comparable disease duration at study entry of the trial participant. Additionally, a separate analysis will include all historical controls for comparison with guanabenz treated participants. ■ Use of measured data: specify: Measured data will be used: laboratory assessment radiologic images body fluid biomarker assessments ■ Data collection: An electronic CRF and questionnaires has been set up for the data collection: Demography Medical history Physical and neurological examination, including height and weight Adverse events Quality of Life and Disability Assessments Health Utility Index Gross Motor Function Measure (GMFM) Gross Motor Function Classification System (GMFCS) Manual Ability Classification System (MACS) Communication Function Classification System (CFCS) Vineland Adaptive Behaviour Scales Third Edition (Vineland-3) Leiter International Performance Scale 3 (Leiter-3) The dataset is defined in line with existing standards, both in generic terms and discipline specific. Terminology standards, classifications or data definitions from leading registries within the applicable are considered and where possible adapted to enhance the acceptance and reusability of the dataset.

1.11	■ Different data files are merged, using the same PIN
	Additional information: The same unique identifier is applied in each system in order to link the data in a later stage.
Reuse of existing data	☐ Not applicable
1.12	*Specify the source that is used to acquire data: the link to the old source: "[…]"; the link to the new source: "[…]".*
1.13	■ The reuse of data is covered by the subject's informed consent
1.14	☐ Contractual arrangements are in place for reuse of data from an external party; *Not applicable*
	Additional information: Only data strictly necessary for performing the research will be reused.
Measured data	☐ Not applicable
1.16	■ The system that generates the measured data are hosted by the Amsterdam UMC or by an Amsterdam UMC partner, *namely: laboratory, radiology* ☐ The system that generates the measured data is hosted by a non-Amsterdam UMC partner, *namely: …* ☐ Contractual arrangements are in place for use of measured data from an external party
1.17	■ A description of the generated data is available; *provide document name and location:* *Data format and data definition:* *"[…]"*
1.18	■ All users are trained in the system and this has been documented; *provide document name and location:* "[...]" NOTE TO FILE
	Additional information: The tool for measured data generation will be hosted by the Amsterdam UMC, so security safeguards are assumed sufficient.
Data collection	☐ Not applicable
1.20 **1.21**	■ The data collection system is hosted by the Amsterdam UMC or by an Amsterdam UMC partner, *namely: CASTOR EDC.* This software is validated and designed for data collection. (licencing and processing agreement arranged on a central level within Amsterdam UMC) ☐ The data collection system is hosted by a non-Amsterdam UMC partner, *namely: …* ☐ Contractual arrangements are in place for data collection through an external party
1.22	■ A data definition (data dictionary) is available; *provide document name and location:* *"[…]"* *Document name: "[…]"*
1.23	■ Checks on completeness, correctness and consistency are incorporated in the data collection system and have been documented; *provide document name and location: "[...]"* Procedures to check for completeness, correctness and consistency of the data are in place and are documented. Free text fields are limited to enforce that only predefined answers are chosen. These univariate checks are documented in the template data dictionary. The consistency between multiple fields, using multivariate validation checks (such as start date of a visit or adverse event that cannot be after its stop date, are checked. The checks are documented in the data validation and derivation plan.
1.24	■ The system for data collection has been tested: *Last test date: 19nov2020 By: Alden van der Putten Version tested: V1.0* ■ The test findings and final approval are documented; "[…]" The system is tested by someone not involved in the development of the system before being used. Test results, follow-up of the findings and final approval are document:
1.25	■ Access to the data collection system is managed by the coordinating PI. User roles and authorizations are documented; *provide document name and location: name "[…]"* Access to the data collection system is only granted after approval of the coordinating PI and only to persons involved in the study. It is based on unique user identification, since shared login names cannot be traced back unambiguously to a person. When no longer required, write access is revoked but read access will be maintained for continued data review. The coordinating PI will retain reading rights.
1.27	■ Users are trained in the data collection system; this is documented; *provide document name and location: location = "[...]"name = "[…]"*
	Additional information: ■ An electronic CRF is used to collect all or a part of the data, a copy of the blank CRF pages is kept as back-up ■ For each study-specific data collection, source documentation is available

* ***1.2*** *refers to* ***topic 1.2*** *in the SOP Research Data Management where this guideline is presented. Not all topics in the SOP are listed in this DMP and several SOP topics may be covered under one DMP item.*

Data storage	
1.29	*Specify where the data are stored:* ■ On the department's "[...]" ☐ On the personal H-drive (location AMC) or N-drive (location VUmc); *explain which documents and specify the path: …* ☐ The folder and file structure with the corresponding access rights are documented; *provide document name and location: …* ☐ On a (database) server that falls under a central backup regime; *specify server name:* ■ On a (database) server of an Amsterdam UMC -partner, *namely*: *Castor EDC* ☐ Externally, *namely:* … ☐ Contractual arrangements are in place for manual data collection through an external party; *provide document name and location: …*
1.30	■ The size of the data is 1 gigabyte during data collection and 1 gigabyte when archiving the project ☐ Budget is allocated for storage and archiving
1.31	■ The coordinating PI keeps track of authorizations and documentation
	Additional information: Neither the C-drive of one's own computer, nor any stand-alone device such as an external hard drive, personal laptop or USB stick is used.
Subject identification log	☐ Not applicable
1.32 **1.33**	■ The subject identification log(s) is/are kept separate from other study related dataset; *provide document name and location: "[...]"*
	Additional information:
Data sharing	■ Not applicable
1.34	☐ For the collaboration with the research partners, written agreements on data management, privacy and intellectual properties are made
	Additional information:

Phase 2: Data collection	
General	
2.1	■ A site signature and delegation log is kept of all people involved in the data collection; *provide document name and location: "[…]"*
2.3	☐ *If applicable:* a procedure for deblinding is in place and has been documented; *provide document name and location: …*
	Additional information:
Reuse of existing data / use of measured data	☐ Not applicable
2.6	■ The reused existing data or the raw, measured data are stored as read-only file and a new file is created for further processing.
	Additional information: The final dataset will be saved as a read-only file. A copy of this file will be used for further processing and statistical analysis.
Externally acquired data	■ Not applicable
2.8	☐ Procedures and responsibilities for the external data acquisition are defined; *specify: …*
2.9	☐ Contractual arrangements for the external acquisition of data are made; *provide document name and location: …*
	Additional information:
Quality control	
2.12 **2.13** **2.14**	■ Procedures for data collection are documented; *provide document name and location: "[…]"* ■ Checks on completeness, correctness and consistency are applied and documented; After completion of the data collection it will be signed by the coordinating PI electronically. ☐ Completion of multicentre data collection is signed off by the local coordinating PI ■ Other quality control procedures, *specify: 6 Monthly* monitor and DSMB audits
	Additional information:

Change control	☐ Not applicable
2.15	*How are changes to the **data** handled?* ■ Documentation on the paper data collection tool (eCRF, questionnaire) Changes in data on a paper document should be dated, initialled and explained and should not obscure the original entry. ■ Audit trail or 'track changes' functionality in the applied system Castor contains an audit trial on data changes. ■ Reason for change is documented, e.g., 'Confirm changes' setting in Castor is used ☐ Other change control, *specify:* … ……and *provide document name and location: …*
2.16	*How are changes to the **design** of the data collection handled?* ☐ By creating a new version ■ Audit trail or 'track changes' functionality in the system ☐ Other change control procedures, *specify:* …… ■ All changes in the design are also documented; *provide document name and location: "[…]"* *And changes will be documented in RDM F04*
	Additional information:

Phase 3: Processing & statistical analysis

Locking a data collection	☐ Not applicable
3.1 **3.2**	*Describe how the data collection system is locked:* ■ Using the locking functionality in the system ☐ Other, *specify:* … ☐ Approval has been documented; *provide document name and location: …*
	■ The Statistical Analysis Plan is finalized, prior to (deblinding and) analysing the data
Export to the data processing and statistical environment	☐ Not applicable
3.3 **3.4**	■ The software system(s) including version number, and format(s), applied for processing and statistical analysis, are: R version 4.5.0 or a later version ■ The data are stored in a generic and machine actionable format, specify: .csv
	Additional information:
Data processing and statistical analysis	☐ Not applicable
3.5	■ The acquired data are stored as read-only file and a new file is created for further processing and statistical analysis
3.6	■ All data processing and analysis is programmed in syntax or script files
3.7	■ Descriptive comments are added to the syntax or script files
3.8	■ Syntax or script files are placed under version control
3.9	■ Data corrections in this phase are made in the original source ■ Data corrections in this phase are programmed in syntax or script files
	Additional information:
Sharing data for processing or statistical analysis	■ Not applicable
3.11	☐ Sharing data with external parties is covered in the informed consent procedure
3.13	☐ Data are transferred in a secure way; *specify:*
	Additional information:

Phase 4: Writing & publishing

Filing	☐ Not applicable
4.1	■ For each publication a structured subfolder has been created
	Additional information:
Accessibility of the data set	
4.2	☐ The manuscript will be published in an Open Access journal that provides a PID (e.g., a DOI or URN)

	■ To make my (meta)data findable, we will crosslink any online sources where applicable *(e.g., ORCIDs of researchers, PIDs of related publications or repository references within the project, trial registry numbers, project website, etc.)*
	Additional information:

Phase 5: Archiving & open data

Open data ☐ Not applicable

5.1	■ Reusing data is covered in the informed consent procedure ■ Information regarding the subset of the data for people who consented to reuse is available ■ Procedures for withdrawal of consent for reuse have been defined ■ A more pseudonymized version of the dataset has been created for reuse in consultation with the DPO ■ For verification purposes, all data are stored internally (see 5.5 for data access procedures).
5.2	☐ The research data will be publicly accessible without any restriction ■ Conditions for reuse apply and have been documented; *provide document name and location:* "[…]" ■ Conditions for reuse have been verified by Legal Research Support or by IXA
5.3	Once the project has ended, my data will be accessible ☐ Immediately ■ After an embargo period, *specify duration and reason:* after publication
5.4	*Which data will be published?* ☐ The raw, pre-processed data ■ The processed data All newly collected data will be made available upon reasonable request. For the reused data, the queries for these data will be shared to facilitate the same data request from the original Data Owners, to allow for reproduction and verification of the data. ■ Other: *the metadata (see 5.6 and 5.7)* *Location of the data:* ■ The digital archive (location specified in 5.13) ☐ Other: …
5.5	■ The data collection can be found through an online (metadata) catalogue or web portal, *specify*: *DataverseNL - planned* ☐ The data collection can be found through an repository or archive, *specify*: … ■ This catalogue / web portal or repository / archive has a CoreTrustSeal ■ This catalogue / web portal or repository / archive creates a Persistent Identifier (e.g. a DOI or Handle), *specify: planned* ☐ I have not chosen a catalogue / web portal or repository / archive, explain why not ….
5.6	*What descriptive documentation is provided about the study**?*** … ■ Study protocol ■ Data dictionary ■ Statistical Analysis Plan ■ Data validation and derivation plan ■ Data Management Plan ☐ Other: …
5.7	*What descriptive documentation is provided about the **data**, including processing and analysis?* ■ Documentation on study procedures, *specify: Draaiboek en protocol* ■ Documentation on data definitions, *specify:* "[…]" ■ Syntaxes or scripts ☐ Software or hardware ☐ Other: …
	Additional information:

Transfer to an external party ☐ Not applicable

5.8	■ Agreements on data transfer are made; *provide document name and location: …planned*
5.9	■ A copy of the data and documentation is kept in Amsterdam UMC - planned ■ All data transfers have been documented; *provide document location: …- planned*
5.10	■ Data are transferred in a secure way; *specify:*

	SurfFile sender – when applicable
	Additional information:
Digital archiving	
5.11	■ Digital data will be preserved for 50 and longer years *This includes:* ☒ metadata ☒ raw data files ☒ final data files *If any of these boxes is not ticked, explain: …*
5.12	■ Sufficient budget is available for archiving during the retention period (see also 1.30)
5.13	■ Specify the location of the digital archive: Amsterdam UMC, G-schijf
5.14	■ A subject identification log is archived and kept separate from other study related data. This does not conflict with the subject's informed consent
	Additional information:
Paper archiving	☐ Not applicable
5.15	■ Specify the physical location of the paper archive: IWO – IAO-315, after study: Oasis Group
5.16	■ Paper documentation will be preserved for 25 years
	Additional information: