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## Plan Overview

*A Data Management Plan created using DMPonline*

**Title:** 1000G

**Creator:** Sander W. van der Laan

**Principal Investigator:** Vinicius Tragante do Ó, Jessica van Setten , Charlotte N. Onland-Moret, Kristel R. van Eijk, Sander W. van der Laan

**Data Manager:** Vinicius Tragante do Ó, Jessica van Setten , Charlotte N. Onland-Moret, Kristel R. van Eijk, Sander W. van der Laan

**Project Administrator:** Vinicius Tragante do Ó, Jessica van Setten , Charlotte N. Onland-Moret, Kristel R. van Eijk, Sander W. van der Laan

**Affiliation:** Other

**Funder:** European Commission

**Template:** UMC Utrecht DMP

**ORCID ID:** 0000-0002-8223-8957

**ORCID ID:** 0000-0002-4934-7510

**ORCID ID:** 0000-0002-2360-913X

**ORCID ID:** 0000-0001-6888-1404

**ID:** 80380

**Start date:** 01-01-2021

**End date:** 01-01-3000

**Last modified:** 20-04-2022

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# 1000G

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## 1. General features

1.1. Please fill in the table below. When not applicable (yet), please fill in N/A.

|  |  |
|--|--|
| DMP template version                                 | 29 (don't change)  |
| ABR number <i>(only for human-related research)</i>  | n/a  |
| METC number <i>(only for human-related research)</i> | n/a  |
| DEC number <i>(only for animal-related research)</i> | n/a  |
| Acronym/short study title                            | 1000G  |
| Name Research Folder                                 | smb://ds.umcutrecht.nl/data/LAB/lab_research/RES-Folder-LKCH/1000G |
| Name Division  | Laboratories, Pharmacy, and Biomedical genetics                    |
| Name Department                                      | Central Diagnostic Laboratory                                      |
| Partner Organization                                 |  |
| Start date study                                     | 2021-01-01   |
| Planned end date study                               | 3000-01-01   |
| Name of datamanager consulted*                       | Saskia Haitjema  |
| Check date by datamanager                            | January 6th 2022   |

1.2 Select the specifics that are applicable for your research.

- Non-WMO
- Fundamental / translational study

We will use data from the 1000G (<https://www.internationalgenome.org>) as reference in many studies or as part of a course curriculum in practicals to learn genetic analyses methods.

The 1000 Genomes Project created a catalogue of common human genetic variation, using openly consented samples from people who declared themselves to be healthy. The reference data resources generated by the project remain heavily used by the biomedical science community.

The International Genome Sample Resource (IGSR) maintains and shares the human genetic variation resources built by the 1000 Genomes Project. We also update the resources to the current reference assembly, add new data sets generated from the 1000 Genomes Project samples and add data from projects working with other openly consented samples.

Please note we only obtained a sampleID and **no** key-table whatsoever.

## 2. Data Collection

2.1 Give a short description of the research data.

| Subjects | Volume | Data Source   | Data Capture Tool     | File Type                   | Format                             | Storage space |
|----------|--------|---------------|-----------------------|-----------------------------|------------------------------------|---------------|
| Human    | 1      | Genotype data | R, SNPTEST, GCTA, etc | PLINK-format, Oxford-format | .vcf, .bed/.bim/.fam, .gen/.sample | ±1Tb          |
|          |        |               |                       |                             |                                    |               |

2.2 Do you reuse existing data?

- Yes, please specify

Existing data from the 1000G:

- Genotype data
- Some 'clinical' data, i.e. age (when available), sex, relationships (parent-child)

### 2.3 Describe who will have access to which data during your study.

Please note, that the data has been de-identified for the purpose of public sharing.

| Type of data       | Who has access             |
|--------------------|----------------------------|
| Pseudonymized data | Research team, Datamanager |

### 2.4 Describe how you will take care of good data quality.

| #   | Question   | Yes | No | N/A |
|-----|--|-----|----|-----|
| 1.  | Do you use a certified Data Capture Tool or Electronic Lab Notebook? |     |    | x   |
| 2.  | Have you built in skips and validation checks?                       |     |    | x   |
| 3.  | Do you perform repeated measurements?                                |     |    | x   |
| 4.  | Are your devices calibrated?   |     |    | x   |
| 5.  | Are your data (partially) checked by others (4 eyes principle)?      |     |    | x   |
| 6.  | Are your data fully up to date?                                      | x   |    |     |
| 7.  | Do you lock your raw data (frozen dataset)                           | x   |    |     |
| 8.  | Do you keep a logging (audit trail) of all changes?                  | x   |    |     |
| 9.  | Do you have a policy for handling missing data?                      |     |    | x   |
| 10. | Do you have a policy for handling outliers?                          | x   |    |     |

### 2.5 Specify data management costs and how you plan to cover these costs.

| #  | Type of costs       | Division ("overhead") | Funder | Other (specify) |
|----|---------------------|-----------------------|--------|-----------------|
| 1. | Archiving           | x                     |        |                 |
| 2. | Storage             | x                     |        |                 |
| 3. | Maintenance Dataset |                       | x      |                 |
| 4. | Datamanager         | x                     |        |                 |
| 5. | Data analysis tool  | x                     |        |                 |

### 2.6 State how ownership of the data and intellectual property rights (IPR) to the data will be managed, and which agreements will be or are made.

The International Genome Sample Resource (IGSR) and the 1000 Genomes Project

IGSR was set up to ensure the future usability and accessibility of data from the [1000 Genomes Project](#) and to extend the data set produced by the 1000 Genomes Project to include new data generated from the [1000 Genomes Project samples](#) and new populations where sampling has been carried out in line with [IGSR sampling principles](#).

The [1000 Genomes Project](#) ran between 2008 and 2015, creating the largest public catalogue of human variation and genotype data. As the project ended, the Data Coordination Centre at [EMBL-FBI](#) received funding from [the Wellcome Trust](#) to create IGSR with the following aims:

1. [Ensure the future access to and usability of the 1000 Genomes reference data](#)
2. [Incorporate additional published genomic data on the 1000 Genomes samples](#)
3. [Expand the data collection to include new populations not represented in the 1000 Genomes Project](#)

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Where specific restrictions or claimed rights have been made known to IGSR, that information will be provided by IGSR with the data, however, IGSR can not guarantee the information being accurate for any purpose. It remains the responsibility of users to ensure that their exploitation of the data does not infringe any of the rights of third parties, including the data owners.

Data from the 1000 Genomes Project is now available without embargo, following the final publication from the project. Use of the data should be cited in the usual way, with current details available at <http://www.internationalgenome.org/faq/how-do-i-cite-1000-genomes-project>.

Data from the Human Genome Structural Variation Consortium (HGSVC) continues the philosophy of the 1000 Genomes Project, making data available prior to publication in line with Fort Lauderdale principles, allowing others to use the data but allowing the data producers to make the first presentations and to publish the first paper with global analyses of the data. Users should see the [data reuse statement](#) accompanying the data.

For all data collections in IGSR, please check the accompanying data reuse statements and cite any available publications appropriately.

For any enquiries, including the terms of use of data and citation, please contact [info@1000genomes.org](mailto:info@1000genomes.org).

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Further details are available in the [Privacy Notice](#) for this service.

There is also a [Privacy Notice for our FTP site](#) and a [Privacy Notice for our helpdesk at info@1000genomes.org](#), which are specific to those services.

### 3. Personal data (Data Protection Impact Assessment (DPIA) light)

**Will you be using personal data (direct or indirect identifying) from the Electronic Patient Dossier (EPD), DNA, body material, images or any other form of personal data?**

- Yes, go to next question

We obtained these data through ISGR as described in section 1.2. These data contain genotypes, ancestral-information and sex of the individuals.

#### 3.1 Describe which personal data you are collecting and why you need them.

| <b>Which personal data?</b> | <b>Why?</b>                       |
|-----------------------------|-----------------------------------|
| Genotyping data             | To answer the research questions. |
| Ancestral information       | To answer the research questions. |
| Sex/gender                  | To answer the research questions. |

### **3.2 What legal right do you have to process personal data?**

- Study-specific informed consent

Please refer to section 1.2: the ISGR maintains and shares the data.

### **3.3 Describe how you manage your data to comply to the rights of study participants.**

Please refer to section 1.2: the ISGR maintains and shares the data.

### **3.4 Describe the tools and procedures that you use to ensure that only authorized persons have access to personal data.**

We use the secured HPC, Research Folder Structure, and/or UMCU-managed desktops and/or laptops that ensures that only authorized personnel has access to these data.

### **3.5 Describe how you ensure secure transport of personal data and what contracts are in place for doing that.**

Under the conditions of ISGR we are allowed to share the data. See section 1.2.

## **4. Data Storage and Backup**

### **4.1 Describe where you will store your data and documentation during the research.**

The digital files will be stored in a secured Research Folder Structure of the UMC Utrecht. We will need +/- 1 Tb storage space, so the capacity of the network drive will be sufficient.

For purposes of analyses digital files are partly and temporarily stored on the high-performance computer cluster (HPC) facilitated by the institute or a UMC Utrecht owned and managed device.

Data storage is only accessible to authorized personnel.

### **4.2 Describe your backup strategy or the automated backup strategy of your storage locations.**

All (research) data is stored on UMC Utrecht networked drives from which backups are made automatically twice a day by the division IT (dIT).

We will have multiple copies 1) at the HPC, and 2) at the UMC internal network.

## **5. Metadata and Documentation**

### **5.1 Describe the metadata that you will collect and which standards you use.**

We do not collect anything else, but the data we can obtain through a download. This includes relationships (parent-child), age (when available), and sex.

### **5.2 Describe your version control and file naming standards.**

We will use GitHub as version control with a specific GitHub repository for the each individual project. We will use the release-system native of GitHub and where possible link it to Zenodo (code only!).

## **6. Data Analysis**

### **6 Describe how you will make the data analysis procedure insightful for peers.**

We will write an analysis plan in which we state why we will use which data and which statistical analysis we plan to do in which software. The analysis plan will be stored at GitHub or potentially through a pre-registration server, e.g. [OSF](#). This way this will be findable for our peers.

## **7. Data Preservation and Archiving**

### **7.1 Describe which data and documents are needed to reproduce your findings.**

The data package will contain: the study protocol describing the methods and materials, the script to process the data, the scripts leading to tables and figures in the publication, a codebook with explanations on the variable names, and a 'read\_me.txt' file with an overview of files included and their content and use.

After finishing the projects, documentation will be stored at the UMC Utrecht under the responsibility of the Principal Investigator of the research group and at their respective RFS.

ISGR maintains the data, see section 1.2.

### **7.2 Describe for how long the data and documents needed for reproducibility will be available.**

Documentation needed to reproduce findings from this WMO study will be stored for at least 10 years.

Data is maintained and stored by ISGR. See section 1.2.

### **7.3 Describe which archive or repository (include the link!) you will use for long-term archiving of your data and whether the repository is certified.**

We do not 'own' the data, it is controlled/managed by the [IGSR: The International Genome Sample Resource](#). We will only keep copies for local use, and potentially archive projects through Archivemeta and share codes used publications etc through DataverseNL according to the principles of FAIR. At the same time a copy will remain at the department server in the existing Research Folder Structure and is under the responsibility of the Principal Investigator of the research group.

### **7.4 Give the Persistent Identifier (PID) that you will use as a permanent link to your published dataset.**

When we get DOI-codes we will update this plan to included these.

## **8. Data Sharing Statement**

**8.1 Describe what reuse of your research data you intend or foresee, and what audience will be interested in your data.**

Specifically the methods and codes developed for the use of this data will be of interest to our peers. Since the data is managed by the [IGSR: The International Genome Sample Resource](#) we refrain from stating anything regarding data re-use, other than that in general these data make for an excellent population reference for multiple purposes.

**8.2 Are there any reasons to make part of the data NOT publicly available or to restrict access to the data once made publicly available?**

- Yes (please specify)

As the data is privacy-sensitive, and managed by the [IGSR: The International Genome Sample Resource](#) we will refrain from sharing these data publicly; this should go through IGSR.

**8.3 Describe which metadata will be available with the data and what methods or software tools are needed to reuse the data.**

Publications will be open access. The study protocol and this Data Management Plan will also be available. Along with the publication, the codebook of the data and scripts of analyses will be available through GitHub. Data (raw or processed) will be accessible under conditions set forward by the [IGSR: The International Genome Sample Resource](#)

**8.4 Describe when and for how long the (meta)data will be available for reuse**

- Other (please specify)

Meta data will be accessible under conditions set forward by the [IGSR: The International Genome Sample Resource](#)

**8.5 Describe where you will make your data findable and available to others.**

We will publish and archive publication, codes, etc as described above through Archivemetica (local archiving) and DataverseNL (public) with a note that the data will be accessible under conditions set forward by the [IGSR: The International Genome Sample Resource](#).