MRC National Survey of Health and Development (NSHD)

NSHD DNA repository

Guidance on use

1.0 Preamble

1.1 The MRC National Survey of Health and Development (NSHD) is an ongoing cohort study of a representative sample of 5,362 men and women born in England, Scotland and Wales during one week in March 1946, and followed, thus far, up 22 times since birth. The MRC Unit for Lifelong Health and Ageing (LHA) is responsible for the MRC NSHD.

1.2 The purpose of the NSHD DNA repository is to support genetic studies of human health and disease that make the best use of the available genotypic and phenotypic resources and are of the highest scientific calibre. We expect that proposals may involve genotyping several cohorts at the same time and NSHD procedures for approval of requests, genotyping, and merging with the phenotypic data are designed to meet such requests efficiently and effectively.

1.3 Buccal and blood DNA samples are available for 2,900 study members, collected at age 53 years. Besides these resources, the study's scientific strengths are the range and depth of prospective data collected on

a) physical growth and development, and changes in adult body size and physical function,
b) cognitive development and cognitive ageing,
c) lifetime physical and mental health and health-related behaviours, and
d) indicators of the physical and social environment.

Following a successful feasibility study, the LHA with key collaborators are currently phenotyping this cohort intensively for cardiovascular and musculoskeletal quantitative traits. It is the combination of these well-characterised longitudinal phenotypes and the DNA resources that make this study particularly valuable.

1.4 Ethical approval has been given by the Central Manchester Research Ethics Committee for genetic studies of lifelong health, disease and ageing (07/H1008/168). This can include studies of developmental traits, biological function, physical and cognitive capability, physical and mental illness and morbidity, health-related behaviours, and survival.

1.5 The NSHD Samples Access Advisory Group has been set up to assess all applications for use of the NSHD DNA resources according to a set of guidelines that will make the best use of the available resources. Applications will be considered by members of the Samples Access Advisory Group and a decision taken by the NSHD Director within two months of receipt.

2.0 Guidelines

2.1 The Director and the Samples Access Advisory Group welcome peer-reviewed research proposals from MRC recognised institutions for informed genotyping to replicate established genetic associations, or new associations that appear to be particularly strong from genome wide analysis, in relation to NSHD phenotypic measures of lifelong health and ageing.

2.2 Priority will be given to proposals that exploit the longitudinal nature of the phenotypic data to elucidate underlying biological pathways to lifelong health and ageing.

2.3 Approved genotyping requests will be undertaken by the NSHD DNA repository wherever possible, using the minimal amount of DNA resources and established quality control procedures.

2.4 Distribution of DNA to collaborators' labs will only occur in certain circumstances. Such circumstances could include telomere study (which needs a high concentration of blood DNA), and where non-standardised tests have been optimised and are readily available in the requesting lab.

2.5 Requests for a selection of a subset of samples for distribution or genotyping will be discouraged. In rare circumstances where the Committee approves such a request, the applicants will incur extra charges to cover the additional costs.

2.6 It is expected that applications will have been peer reviewed prior to submission. All applications will be reviewed by the Samples Access Advisory Group. At least three members will assess scientific priority, technical requirements, and whether the proposal meets the conditions required, and falls within the scope of current ethical approval. At least one of these members will be an external genetics expert. If a consensus cannot be reached up to 3 more advisory group members will assess the proposal.

2.7 Applicants will be asked to demonstrate there is sufficient statistical power to answer their research question. The study of quantitative traits is recommended to enhance power.

2.8 Applicants will be asked to provide sufficient detail of their analysis plan to allow the Samples Access Advisory Group to assess the full extent of the phenotypic data requested and the scientific value of the proposal. The Data Sharing Committee may ask for clarification if insufficient detail is provided in the proposal.

2.9 Any proposal that overlaps with the study team's scientific programmes at the MRC Unit for Lifelong Health and Ageing will actively involve a member of that team who will act as guarantor for the original data in relation to its design, mode of collection, reliability, maintenance and analysis. Other proposals may involve a member of the LHA study team.

2.10 Applicants are required to sign NSHD confidentiality forms before any data can be supplied. In addition, there will be a clinical sample transfer agreement signed between the MRC and an authorised signatory at the institution where the applicant is employed setting out the terms and conditions of access. This includes the date that the project will commence and its anticipated end date. Any breach of the confidentiality forms or the institutional agreement may result in action against both the individual researchers and their institution.

2.11 Once the genotyping data have been entered onto the NSHD database, the gene frequencies will be made available within 6 months to other external researchers.

2.12 Any 3rd party costs incurred in the use of the DNA (for example genotyping) will be payable directly by the applicant to the processing organisation. In addition, the LHA reserve the right to charge for any clerical, data processing and/or statistical support incurred in the distribution of DNA. Any such costs will be notified in advance.

2.13 All new data arising from any paid work on the DNA will be supplied directly to the LHA and the LHA study team will merge any such data into the NSHD data repository. If deemed necessary LHA can subsequently supply the data combined within any additional required variables to the scientists under the access to data process as set out in the Guidelines. All new data will be retained by the LHA and used to enhance the NSHD data archive.