The NIH Genome-Wide Association Studies Policy:
A common approach to data sharing

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Office of the Director
National Human Genome Research Institute

GAIN Analysis Workshop II
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Guiding Principle

The greatest public benefit will be realized if data from GWAS are made available, under terms and conditions consistent with the informed consent provided by individual participants, in a timely manner to the largest possible number of investigators.
### Participating Institutes, Centers, & Offices

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GWAS Timeline (Policy Development)

March 23 - April: GWAS Ad Hoc Working Group created and begins work

May 15: NIH GWAS Notice to Applicants of Pending Policy Development and intention to track projects across the agency

Aug 25– Nov 30: RFI for Public Comment (90 Days)

Sept – Nov: Public Consultation (e.g., Town Hall Mtg., Science Mtgs.)

January – August: Develop Policy & Final Approvals

Phase I: Planning

Phase II: Public Consultation

Phase III: Policy Dev.
GWAS Policy Elements

- Data Management
  - Data Submission Procedures
  - Data Access Principles
  - Protection of Research Participants

- Scientific Publication

- Intellectual Property
GWAS Data Management Overview

Data Collection

Research Participants

Informed consent

Submitting Investigators

Data Submission

GWAS Data Repository

De-identified, Coded Data

Submission & Management of Data

Recipient Investigators

Data Access Request

Distribution & Secondary Use of Data
NCBI WGA Document
Age Related Eye Disease Study

Chapter 7 EXAMINATION PROCEDURES

7.1 INTRODUCTION

The procedures for carrying out the examinations required in the study are described in this chapter. Required ocular examinations include refraction and visual acuity measurements, biomicroscopic pachymetry measurements, and slit-lamp biomicroscopy examinations. General characteristics assessments include measurement of height, weight, and blood pressure and determination of past medical history. Risk factor assessments will require the administration of the food frequency and sunlight exposure questionnaires as well as collection of blood specimens. Procedures for participant identification, tracking, documentation, and management of the supplementation, adherence assessment, and baseline examination are also described. Procedures for taking photographs of the lens and fundus are described in detail in Chapter II. The schedule and descriptions of participant visits in Chapter II outline the examinations required during each visit.

7.2 REFRACtion AND VISUAL ACUITY

A manifest refraction and visual acuity measurement according to the detailed study protocol must be performed in one of the Qualifying Visit when the visual acuity scores on Chart R is 70 letters or less in at least one eye, (b) the Qualifying Visit, (c) Randomized Visit, (d) Annual Visit, and (e) any Nonrandomized Visit when the visual acuity score using Chart R has dropped by 10 letters or more compared to the Randomization Visit score for the first time. Participants pupils should not be dilated at the time of visual acuity testing at any visit; thus they may be dilated during the Qualifying Visit. Pupils are not tested as part of AREDS. At the Qualifying Visit, visual acuity may be initially measured utilizing the participant’s current distance glasses. At the Nonrandomized Visit, visual acuity is initially measured utilizing the previously obtained manifest refraction. Participants will be asked to read the letters on Chart R only (not Chart 1 or 2), using the equipment described in Section 7.2.1. They will start reading from the top left-to-right letter first with the right eye and then with the left eye. A visual acuity score will be calculated as described in Section 7.2.3. If at the Qualifying Visit the visual acuity is 74 letters or more in each eye or if at a Nonrandomized Visit the visual acuity is within nine letters of the Randomization Visit score in each eye, or if a vision drop has already been documented in each eye, the visual acuity measurement will be entered on the study form. For those participants, a manifest refraction and measurement of best-corrected visual acuity, using the detailed protocol (Sections 7.2.1 – 7.2.3), will not be required.

7.2.1 Visual Acuity Equipment and Facilities

7.2.1.1 Introduction — The visual acuity of participants will be measured according to the standard procedures developed for the Early Treatment diabetic Retinopathy Study (ETDRS) and adapted for AREDS. The procedure is described in this section. The following equipment is used in AREDS: a set of three LightShade Visual Acuity Test Charts: second edition, which are modified ETDRS Charts 1, 2, and 3, and coordinated with the standard chart illuminance, as modified from the design by Piers and Speckens. The charts and charts are manufactured by:

Lightshade Vision Products
36-02 Northern Boulevard
Long Island, New York 11101
Data Submission: GAIN/GWAS Similarities

- Approval for submission to the central repository rests with the local institution.
- Investigators and home institutions are responsible for compliance with relevant laws and policies.
- Data is de-identified and coded with a random, unique identifier.
- Information regarding any data use limitations is provided at the time of data submission.
- Investigators and institutional officials formally acknowledge the scientific publication and intellectual property policies.
Data Submission: GAIN/GWAS Distinctions

- GAIN obtained agreement to policies and procedures through an “Applicant Agreement” signed by investigators and an Institutional Official.

- The NIH GWAS Policy seeks approval for data deposition and agreement to policies through an “institutional certification” that includes review by an IRB or Privacy Board:
  - to assess the de-identification plans for a given dataset
  - to assess the consistency of the informed consent with inclusion in the central repository

- GWAS will not accept datasets that include any of the identifiers listed in the HIPAA Privacy Rule.
Data Submission - Points to Consider

- Intent is to provide investigators and IRBs reviewing datasets for GWAS submission with information on important participant protection considerations

- Topics include:
  - Background on the scientific opportunities presented by GWAS
  - Discussion of the ethical issues relevant to the review of submission plans for GWAS datasets
  - Specific points to consider in the evaluation of informed consent documents
GWAS Data Management Overview

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Submitting Investigators

GWAS Data Repository

Data Access

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De-identified, Coded Data

Data Access Request
Chapter 7 EXAMINATION PROCEDURES

7.1 INTRODUCTION

The procedures for carrying out the examinations required in the study are described in this chapter. Required ocular examinations include refraction and visual acuity measurements, intorsion paresis measurement, and ophthalmoscopic examination. General characteristics are measurement of height, weight, and blood pressure and determination of past medical history. Risk factor assessments will require the administration of the food frequency and sleep disturbance questionnaires as well as collection of blood specimens. Procedures for patient identification, masking, documentation, and management of the supplementation, adherence assessment, bone mineral density examination are also described. Procedures for taking photographs of the eyes and fundus are described in detail in Chapter 8. The schedule and descriptions of participant visits as Chapter 6 outline the examinations required during each visit.

7.2 REFRACTION AND VISUAL ACUITY

A manifest refraction and visual acuity measurement according to the detailed study protocol must be performed through the Qualifying Visit when the visual acuity score using Chart R is 77 letters or less in at least one eye. (b) the Randomization Visit, (c) Annual Visit, and (d) any Nonannual Visit when the visual acuity score using Chart R has dropped by 10 letters or more compared to the Randomization Visit score for the first time. Participant pupils shall not be dilated at the time of visual acuity testing at any study visit, except they may be dilated during the Qualifying Visit. Pupils acuity will not be tested as part of AREDMS. At the Qualifying Visit, visual acuity may be initially measured utilizing the participant’s current distance glasses. At the Nonannual Visits, visual acuity is initially measured utilizing the previously obtained manifest refraction. Participants will be asked to read the letters on Chart R only (not Chart 1 or 2), using the equipment described in Section 7.2.1. They will start reading from the top left-most letter—first with the right eye and then with the left eye. A visual acuity score will be calculated as described in Section 7.2.3. If at the Qualifying Visit the visual acuity is 74 letters or more in each eye or if at a Nonannual Visit the visual acuity is within nine letters of the Randomization Visit score in each eye or a vision drug has already been documented in each eye, the visual acuities measured will be entered on the study form. For these participants, a manifest refraction and measurement of best-corrected visual acuity, using the detailed protocol (Sections 7.2.1 - 7.2.3), will not be required.

7.2.1 Visual Acuity Equipment and Facilities

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36-02 Northern Boulevard
Long Island, New York 11101
Open Access  (summary information)

- Search for studies, review protocols and questionnaires
- View summary phenotype and genotype data
- View pre-computed or published genetic associations (after embargo)
- Identify studies of interest, view their consent conditions, and review terms for data access
- Locate potential collaborators for follow up studies
- No individual data
Controlled Access  (individual-level)

- Genotype & Phenotype Data  
- dbGaP Database  
- Public Access  
- Controlled Access  
- Specific access rights  
- Data Access Committee  
  - Request data for specific research use  
  - Agreement by PI and institution to terms of access in the Data Use Certification  
- Specific Research Use  
- Study Protocol Descriptive Information  
- Coded Genotypes Phenotypes Pre-computes

GAIN and GWAS policies are the same in this area
The NIH is not currently planning to draft a single Data Use Certification, but the intent is to produce a common framework with similar elements across programs.

Within the GAIN DUC: Requestors and home institutions will certify that they:

- are responsible for compliance with federal, state, and local policies
- will only use the data for the specified research use
- will disseminate research results broadly and acknowledge GAIN & Contributing Investigators in published or presented work
- acknowledge GAIN policies on Publication and Intellectual Property
- will submit brief annual updates on research progress and publications
- will immediately notify the DAC if a security breach occurs
- will not identify study participants
- will not transfer data
- will be identified within the dbGaP as an Approved User of GAIN data and their approved research use will be posted
Public Disclosure under FOIA

- dbGaP GWAS data will be coded and deidentified.
- Policy concern remains that the extensive genotype data in dbGaP is intrinsically unique.
- NIH officials have agreed that FOIA requests for individual-level GWAS data will be denied.
GWAS Policy Elements

- Data Management
  - Data Submission Procedures
  - Data Access Principles
  - Protection of Research Participants

- Scientific Publication

- Intellectual Property
Scientific Publication

- **Period of exclusivity for Primary Investigators**
  - Maximum period of 12 months for PIs to publish
  - Exclusivity to apply to any public dissemination of the data or analyses

- **Acknowledgement of contributing investigators and funding organization**
Intellectual Property

- NIH urges that genotype-phenotype associations remain available to all investigators, unencumbered by IP claims.

- NIH discourages premature claims on pre-competitive information.

- NIH encourages broad use of NIH supported genotype-phenotype data consistent with NIH’s Best Practices for Licensing with Genomic Inventions.
GWAS Oversight Structure

NIH Director

Senior Oversight Committee

Technical Standards Steering Committee

Participant Protection & Data Management Steering Committee

Advisory Committee to the Director
Implementation Timeline

August: Notice in the NIH Guide & the Federal Register

Nov/Dec: Notice in the NIH Guide With Implementation Details

Jan 25: Receipt Cycle I
Policy Applicable Trans-NIH

Dec-Jan: Investigators Prepare Applications

Watch Here: http://grants.nih.gov/grants/gwas/index.htm