Enhancing NeuroImaging Genetics through Meta-Analysis (ENIGMA)
ADHD Neuroimaging Meta-/Mega-Analysis Working Group
Memorandum of Understanding

Introduction

Members of the ENIGMA ADHD Neuroimaging Meta-analysis Working Group include investigators from different centers around the world who are actively engaged in neuroimaging research and who have contributed results from primary analyses of imaging, and/or genetic data, and/or algorithm development for the purpose of meta-/mega-analysis, replication, and/or algorithm testing in a collaborative manner. The Working Group's initial effort is to demonstrate the success of collaborative, systematic neuroimaging analyses across multiple centers to clarify the effect of ADHD phenotypes on brain structure.

The ADHD Working Group is expected to work collaboratively on a growing dataset of contributed results from brain phenotypes in several large samples, potentially being extended later to include genetic data. This database will likely be useful to investigators both within and outside of the ADHD Working Group who may request to use parts of the dataset for secondary analyses. In addition, the ADHD Working Group will likely conduct future primary analyses of different brain phenotypes, agreed in each case by contributors. This wealth of data requires (1) organization, (2) protection of authorship rights for contributors to the primary analyses, and (3) direction for future analyses.

In order to accomplish these three aims, the ADHD Working Group's scientific initiatives and policies will be guided and overseen by a support group. The ADHD Working Group support group will be composed of a selection of principal investigators participating in the Working Group. The ADHD Working Group support group is responsible for ensuring that work is carried out in a timely manner, and within the appropriate ethical guidelines set down for research on human subjects. Part of this responsibility is to ensure that all sites have obtained approval from their local Ethics Committees, and that such assurances are updated regularly in accordance with Office for Human Research Protections (OHRP) regulations. In addition, the ADHD Working Group support group will be responsible for oversight of authorship, whether a paper constitutes a Working Group Publication, and whether the scientific contributions of the sites have been correctly and fairly acknowledged in the publication.

Experts

The ADHD Working Group has appointed three experts within the group who can be contacted for specific questions. Jan Buitelaar (j.buitelaar@cns.umcn.nl) will answer questions about clinical issues (e.g. medication, comorbidities etc); Philip Shaw (shawp@mail.nih.gov) can be consulted for questions about longitudinal analyses, and Mitul Mehta (mitul.mehta@kcl.ac.uk) for questions about imaging methods.

Authorship and Publications

What Constitutes a Working Group Publication?

ENIGMA ADHD Working Group publications are papers or abstracts based on investigations that: (1) rely on intellectual resources of the Working Group or (2) use data collected through the efforts of the Working Group, or (3) rely, in whole or in part, on information obtained through Working Group membership.

In agreeing to contribute data to an ADHD Working Group meta-/mega-analysis for a given phenotype, the members at that site also agree that they will not publish or publicize (to the media or on the Internet) the results of the meta-/mega-analyses for that phenotype prior to the publication of the Working Group meta-analysis. Prior to publication, findings may be presented at conferences after consulting in advance with the ADHD Working Group support group. This consultation is designed to ensure that they comply with embargo policies of top-tier journals, protecting the interests of other Working Group members. In addition, secondary analyses based on the findings of the Working Group (for example functional imaging correlates of an ADHD-related brain structure found through a meta-analysis by the ADHD Working Group), may not be submitted to journals for publication until after the original Working Group paper is accepted for publication. This is intended to avoid the risk of duplicate submissions that may jeopardize a Working Group publication.

Any participating site may choose to publish and present the results of brain imaging analysis for a given phenotype conducted at their own site, which does not contain analyses conducted as part of the ADHD Working Group. These publications *do not* constitute Working Group publications. If an ADHD Working Group meta-/mega-analysis for a given phenotype is proposed and a group is already engaged in a meta-/mega-analysis for that same phenotype, the site agrees to disclose their participation in the ongoing project(s) for that phenotype if they wish to participate in the ENIGMA ADHD Neuroimaging Working Group meta-/mega-analysis. This is also intended to avoid the risk of duplicate submissions that may jeopardize a Working Group publication.

ADHD Working Group publications may be classified as primary or secondary publications. Primary publications of the ENIGMA ADHD Neuroimaging Working Group are those for which a meta-analysis is conducted for the first time by the Working Group on a phenotype of interest (for example a meta-analysis of subcortical brain volumes). Secondary publications are those that rely upon data collected in primary publications (for example re-analyzing the ADHD Working Group data using a novel meta-/mega-analysis technique).

Guidelines for Authorship on Primary Publications of the ENIGMA ADHD Neuroimaging Working Group

The ADHD Working Group will be listed as an author on all Working Group publications, including manuscripts on which all contributing Working Group members are listed by name. The text "for the ENIGMA ADHD Neuroimaging Working Group" will appear the end of the author list. In the occasion that not all authors can be named due to a journal's policy, the phrase 'and the ENIGMA ADHD Neuroimaging Working Group' will be added, which will make sure that all members will be named in PubMed.

Authorship credit should be based on substantial contribution to: (1) the measurement of structural Magnetic Resonance Imaging (sMRI) phenotypes or genotypic data for a meta-/mega-analysis; (2) contributions or generation of data for replication of results obtained in the meta-/mega-analysis; (3) contributions to the conception, design, analysis and/or interpretation of the data; (4) drafting the manuscript or revising it critically for important intellectual content, and (5) final approval of the manuscript version to be published.

Based upon the level of contribution, authorship at each site may vary from one publication to another. For each discrete publication, each site PI is responsible for preparing authorship and acknowledgment lists for their site.

Authorship for all ADHD Working Group papers will be weighted by current effort and contribution rather than on past contribution to ADHD Working Group research. Working Group members will be reasonable and self-critical in their claims for authorship. If a question arises regarding the appropriateness of authorship of (a) member(s), other Working Group members will be asked to advocate for these members in order to avoid putting members in the awkward position of having to advocate for themselves.

Guidelines for secondary analyses of and access to data collected during an ENIGMA ADHD Neuroimaging Working Group meta-analysis

Although the data contributed to the ADHD Working Group are limited in extent and coded, there is theoretically a small risk of determining whether a given individual participated in a study. While the re-identification of samples requires access to more extensive raw phenotype or genotype data of the target individual and constitutes scientific misconduct, most groups have opted to appoint a gate-keeper approach rather than allowing full public access to the results of GWAS analyses or meta-/mega-analyses. Within the ADHD Working Group the support group will act as the gate-keeper, any Working Group member wishing to access the results of meta-/mega-analyses will be asked to complete a short proposal describing (in 1-2 paragraphs) why they wish to access the results files from each group. Non-Working Group members will be asked to complete a more detailed proposal and sign the Memorandum of Understanding regarding authorship and publishing.

The ADHD Working Group support group will screen proposals for scientific interest. The proposal will then be sent by e-mail to all ADHD Working Group members and will be posted on an ENIGMA forum webpage. Working Group members will have 14 days from the time of mailing to opt-out of the analysis, ask for clarification, voice concerns or objections and/or give feedback to the proposal. No site data will be shared without the consent of the PI of the site, who may opt to impose specific conditions or limitations on the use of the data. If the author of the proposal agrees to the authorship and publication policies of the ADHD Working Group the access request will be granted to the results files for those groups who have not opted-out of the analysis and a member of the ADHD Working Group support group will be assigned as a project liaison. The ADHD Working Group support group liaison will be responsible for providing the data and answering any queries relating to the project, and providing the contributing site PIs with updates. The individual data will be housed at the Donders Institute for Brain, Cognition and Behaviour and will not to be transferred or mirrored to other sites without explicit approval of the site PI because of privacy concerns.

Manuscripts using data obtained via this mechanism will be considered secondary ADHD Working Group publications. We request that the 'ENIGMA ADHD Neuroimaging Working Group' and the liaison person will be listed as co-authors. The ADHD Working Group on the byline will reference the PIs of each study, in addition to contributors at their site. In this way the authors contributing data to the ADHD Working Group will be appropriately acknowledged on any publication.

Participation in the ENIGMA ADHD Neuroimaging Working group

Admitting New Sites as Members

Success of the first meta-/mega-analysis is anticipated to lead to a larger, longstanding ADHD Working Group. New Working Group members will sign the Memorandum of Understanding

indicating that they agree with the policies listed here and that they have obtained the required ethical clearances to participate or send data.

Expulsion from the ENIGMA ADHD Neuroimaging Working Group

Expulsion from the ADHD Working Group will be considered when a site fails to uphold this Memorandum of Understanding, or does not contribute significantly to the work of the ADHD Working Group either in data collection, data analyses, or its goals. It is the responsibility of the ADHD Working Group support group to assemble evidence and present the reasons for possible expulsion to the PIs. Expulsion from the ADHD Working Group will require a simple majority vote of the PIs.

A site may request to withdraw from the ADHD Working Group. Requests for withdrawal will be reviewed by the ADHD Working Group support group. The withdrawing site will need to agree in writing to a moratorium on publication of any data that were obtained in the context of the ADHD Working Group work, or where the interpretation of the data relies in any part on unpublished ADHD Working Group work.

ENIGMA ADHD Neuroimaging Working Group Membership is contingent upon signing the following statement:

I AGREE:

1. To consider participation in meta-/mega-analyses and secondary analyses proposed by the ENIGMA ADHD Working Group, subject to constraints or limitations that I can impose in each case.

2. To abide by the guidelines for authorship and publication, and other guidelines described in this document.

3. Not to distribute or communicate any privileged information to individuals who are not members without consent of the entire ADHD Working Group. This includes any other existing collaborators who are not members of the ADHD Working Group. Privileged information includes results of any unpublished analyses completed by members of the ADHD Working Group.

4. Not to distribute or copy any data collected by the ADHD Working Group without prior written consent of all Working Group members.

5. That the ADHD Working Group support group will review and evaluate future scientific opportunities, and will make recommendations regarding the needed expertise and research program to maximize those opportunities in the best possible way.

6. That failure to uphold this agreement may result in my expulsion from the ADHD Working Group (but I will still be bound by publication moratorium on ADHD Working Group work, as described above).

Signature   Date

_____   _____

Please print name

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