



November 2020

ABCD Scientists' Newsletter

NEWS

Curated ABCD Data Release 3.0 Released. With the third release of curated ABCD Study® data, longitudinal measures of neuroimaging, cognitive performance, and social, emotional and environmental factors will be available for authorized researchers. As this large cohort enters adolescence, this is a key period for investigating the emergence of psychiatric and neurological symptomatology. For neuroimaging assessments, this release contains all baseline data and half of the 2-year follow-up (second imaging timepoint). For non-imaging assessments, this release contains baseline and follow-up data for the 6-month and 1 year visits on the full participant cohort, as well as interim data for the 18-month, 2-year, and 30-month visits. Authorized users can obtain more information and access the updated data from <https://nda.nih.gov/abcd>. An updated RDS and DEAP will be published in the next few weeks.

Event	Number of participants	% of baseline
Baseline	11878	100%
6 month	11398	96%
1 Year	11235	95%
18 month	9911	83%
2 year	6571	55%
30 month	3601	30%
Total events	54594	

Updated **NDA tutorials for downloading the ABCD dataset** are now available <https://abcd.nimhda.org/training/module?trainingModuleId=training.abcd.query&slideId=slide.abcd.intro.query>.

As part of Release 3.0 we will be including **trial level behavioral data** from all of the neurocognitive tasks completed as part of the ABCD battery. This includes: the NIH Toolbox, Little Man Task, Delay Discounting Task, Emotional Stroop Task, Game of Dice Task, Social Influence Task and the fMRI tasks (Emotional N-Back Task, Stop Signal Task, Monetary Incentive Delay Task). These raw data files will be downloadable from NDA separately as a .zip file for each task with individual .csv files per subject per time point (except for the NIH Toolbox which will have one .zip file with all data

across subjects and time points). Data files have been curated only to ensure the data is as user-friendly as possible; researchers are required to perform their own quality control of the data prior to analysis. Accompanying release notes contain important information explaining all of the variables in these data files. We hope this gives researchers the opportunity to expand statistical analyses of ABCD data beyond the summary variables included in the main data files.

HIGHLIGHTS

As part of the **COVID-19 Rapid Response Research**, the ABCD cohort was sent monthly surveys about their experience of the COVID-19 pandemic, between May and September 2020. Roughly 50% of the youth and the parents responded (youth mean age = 12.7 years). This additional information will help researchers explore the relationship between the COVID-19 pandemic response and mental health, substance use, physical activities, sleep, parental supervision, economic hardship, sleep, educational outcomes and more, in conjunction with detailed pre- and post-pandemic data including neuroimaging. Data from the first three survey waves will be released by the end of 2020, with Months 4-5 and extended Fitbit data to be released in the first quarter of 2021.

Hurricane Irma substudy. As natural disasters increase in frequency and severity mounting evidence reveals that their human toll extends beyond death, injury, and loss. Posttraumatic stress (PTS) can be common among exposed individuals, and children are particularly vulnerable. This study investigated this issue with data from nearly 400 9- to 11-year-old children collected prior to and after Hurricane Irma. They evaluate whether preexisting neural patterns predict degree of media effects on later Irma-related PTS. They show that “dose” of Irma-related media exposure predicted Irma-related PTS—even among children dwelling thousands of kilometers away from the hurricane. The variables collected for the Hurricane Irma substudy are available in the curated Data Release and DEAP.

Anthony Steven Dick, Karin Silva, Raul Gonzalez, Matthew T. Sutherland, Angela R Laird, Wesley K Thompson, Susan F Tapert, Lindsay M Squeglia, Kevin M Gray, Sara Jo Nixon, Linda B Cottler, Annette M La Greca, Robin H Gurwitch, Jonathan S Comer (in review) **Neural vulnerability and hurricane-related media predict posttraumatic stress in youth.** bioRxiv 2020.08.27.271056; doi: <https://doi.org/10.1101/2020.08.27.271056>

TECHNICAL TIPS

With over 60,000 variables to use, it can be challenging **finding and interpreting variables in the ABCD study**. Here are a few ways:

1. For a general overview of what variables are captured per timepoint, refer to <https://abcdstudy.org/scientists/protocols/>. This will provide information on what questions are asked and MRI parameters.
2. Read the Release Notes, especially the README and Imaging Instruments notes. The Release Notes are available at the ABCD Collection Page https://nda.nih.gov/edit_collection.html?id=2573.
3. On the NDA website, review the data dictionary at https://nda.nih.gov/data_dictionary.html. Choose the source as “ABCD Release 3.0” then press enter to see a list of all the instruments. Enter search queries in the “Refine results” dialog box to quickly find items. This

is also a good location to understand the questions, responses and expected values, as well as to select instruments for download.

4. Go to DEAP <https://deap.nimhda.org/> and click on the explore tab. A dialog box on the right lets you search for variables and will provide summary statistics.
5. From the Data Release 3.0 Study page (<https://nda.nih.gov/study.html?id=901>), download the mapping file (abcd_3.0_mapping.csv). Open the spreadsheet and search for your variable or feature of interest.

If you can't find what you need with any of the above, the NDA Help Desk can serve as a resource as well ndahelp@mail.nih.gov.

The best genetically inferred **zygosity status information** is available from DEAP (<https://deap.nimhda.org/>). Login to DEAP and choose the "Explore" tab. In the search box enter "zygosity" to get the genetically inferred zygosity status. This can be added to your cart and downloaded in various formats. While the genetically determined zygosity status is the most accurate biological measure, the zygosity self-report responses are also available in the screener instrument: https://nda.nih.gov/data_structure.html?short_name=abcd_screen01.

RECENT PUBLICATIONS

The views expressed in these publications are those of the authors and do not constitute an endorsement by the ABCD Study®.

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ABCD CALENDAR

- TBA

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