

ABCD Study Data Overview

ABCD. The Adolescent Brain Cognitive Development Study. As the largest and most comprehensive longitudinal study on adolescent brain development, it's made a name for itself. Year 1 is here and accessible to Washington University researchers. These data are stored on a local server in fully processed form as CIFTI files. Thus, researchers have the advantage of bypassing the downloading of the data and computation time of preprocessing the data.

Y1 Dataset for WU access

- Non-DICOM data: N = 10,287
- DICOM and behavioral data: N = 11,874

About the Study (<http://abcdstudy.org>)

- Recruitment at 9-10 YO, recruitment phase closed.
- Measures: Brain MRI, behavioral assessments, biospecimen collection
- 10-year study schedule: Annual (all measures minus imaging) and Bi-annual (all measures plus imaging)

Imaging Data (Casey et al., 2018; <https://www.ncbi.nlm.nih.gov/pubmed/29567376>)

Multimodal structural and functional brain MRI: T1/T2, DTI, rs-fMRI, Task fMRI

- fMRI task data: Monetary incentive delay (MID), stop signal (SST), and emotional n-back (EN-Back)
Scanners (3T): Siemens Prisma VE11B-C; Philips Achieva dStream, Ingenia; GE MR750, DV25-26
- Scanning parameters harmonized across 21 sites and 3 scanner platforms
- Images acquired in the axial plane and QCed by the ABCD Data Analysis & Informatics Center (DAIC)
- Data on the NIL server have undergone preprocessing (<https://github.com/DCAN-Labs/abcd-hcp-pipeline>)
 - Marek et al., 2019, *in revision*, for details.

Behavioral Data (Barch et al., 2018; <https://www.ncbi.nlm.nih.gov/pubmed/29113758>)

Comprehensive standardized battery across domains: Surveys/questionnaires/scales/interviews/assessments

- >20 participant and >20 parent surveys, questionnaires, scales:
 - Neurocognition, physical and mental health, social and emotional function, substance use, and culture and environment
- Cognitive assessment including NIH Toolbox Cognitive battery
- DSM-5 diagnostic interview:
 - Adolescent: mood, social anxiety, generalized anxiety disorder, suicide, and sleep modules
 - Parent: All modules

Biospecimens

Biospecimen collection: Breathalyzer, oral fluids, blood, hair, baby teeth

- Bioassays:
 - Hormonal, genetic, epigenetic, environmental, substance-use exposures and analysis

For access procedure and permissions, please email Kristen Scheidter at k.scheidter@wustl.edu