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# ABCD Human Subject Study

Adolescent Brain Cognitive Development – ABCDSTUDY.org

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## Release Notes: Adolescent Brain Cognitive Development Study<sup>SM</sup> (ABCD Study<sup>®</sup>) Data Release 4.0

### Readme First

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October 2021

#### Change Log

October 2021 – Data Release 4.0

- Initial release

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#### General Information

The following information refers to the Adolescent Brain Cognitive Development Study<sup>SM</sup> (ABCD) Data Release 4.0 available from <https://nda.nih.gov/abcd>. An overview of the ABCD Study<sup>®</sup> is at <https://abcdstudy.org> and detailed descriptions of the assessment protocols can be viewed at <https://abcdstudy.org/scientists/protocols>.

This release contains spreadsheet data and minimally processed imaging data collected between September 1, 2016 and February 15, 2021 from the baseline visits of 11,878

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participants, the entire ABCD cohort except for three subjects who withdrew consent to share their data. Release 4.0 includes data from the full cohort from the baseline, six-month follow-up, one-year follow-up, 18-month follow-up, two-year follow-up, and partial data from the 30-month and 3-year follow-up.

Downloading all spreadsheet data for this release will provide you with 14 GB of data in tab-separated text format. Each spreadsheet can be imported into programs such as Excel, SPSS and R. A collection of scripts developed by ABCD's Data Analysis, Informatics, and Resource Center (DAIRC) to facilitate processing of these data can be found at <https://github.com/ABCD-STUDY>.

Please refer to the ABCD data dictionary page on the NDA website [https://ndar.nih.gov/data\\_dictionary.html?source=ABCD&submission=ALL](https://ndar.nih.gov/data_dictionary.html?source=ABCD&submission=ALL). Please select the ABCD Study 4.0 "Source" and select "Filter." The data dictionaries will inform you about the labels attached to each value, as well as provide detailed information on the value ranges and data value representation, especially with respect to "don't know" and "refuse to answer" values. Data filtering is required before you can use these values in statistical packages, for example, if "don't know" has been coded as "999." Also, categorical variables downloaded through this mechanism will appear as numerical entries.

Each download of ABCD data will include a documentation folder that includes a set of PDF files containing additional information about the data collection instruments in each domain, relevant references and imaging abbreviations, as well as acknowledgements of any issues relevant to specific element names, and modifications from Release 1.0 through 4.0 that users should be aware of when analyzing these data. In addition to this README file, users should also start by reading **Release Notes ABCD Imaging Instruments (includes table of imaging instruments), Changes and Known Issues Fix Release 4.0**, and **Family History Known Issues Data Release 4.0** that are included in the set of ABCD Release Notes pdf files.

Below we describe general information regarding ABCD data, data collection and clarification of changes NDA has made to the ABCD data dictionaries in the process of harmonizing the ABCD data and data dictionaries with their systems.

## COVID-19 and In-person, Remote, and Hybrid Testing

In response to COVID-19 restrictions beginning in March 2020, ABCD pivoted to remote testing when in-person testing was not possible or feasible and a subsequent hybrid in-person/remote testing procedure as sites allowed. In the 4.0 release, this affected the two- and three-year follow-up assessments and the 30-month assessments conducted from March 2020 on. Remote and hybrid testing required participants to complete some tasks and surveys on their own devices (i.e., phone, tablet, desktop, or laptop computer).

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Note that remote performance was monitored by research associates, when possible, using Zoom’s screen sharing feature. The variety of devices, relative to the ABCD standard using Apple iPad devices exclusively, may affect task performances and users should consider this when analyzing data spanning the pre-COVID-19 and post-COVID-19 periods. In addition, some tasks were incompatible with remote testing and were not administered during this time. The following guidance is provided.

### *Determining In-person, remote, and Hybrid for Overall Visit Type*

*Longitudinal Tracking Instrument (abcd\_lt01)*: This instrument includes two variables that in combination provide information about the overall visit type for the session. The in-person, remote, and hybrid visits can be determined using:

- If *sched\_delay* = 7, then visit = *In person*
- If *sched\_delay* = 9 and *sched\_hybrid* = 0, then visit = *Remote*
- If *sched\_delay* = 9 and *sched\_hybrid* = 1, then visit = *Hybrid*

## NDA and Spanish Characters

Parent questionnaires used by ABCD are dual language (English and Spanish). Each parent instrument specifies a first select-language item:

¿Español?

Sí

that affects which language the data collection instrument is displayed in. This allows the ABCD project to use a single instrument to capture responses for both languages (<https://github.com/ABCD-STUDY/redcap-hook-framework>).

We are sharing the Spanish language descriptions of items, but due to technical limitations of the export process (no support for UTF-8) the Spanish language content will appear to be broken. We hope that the visible content is still sufficient to inform the reader about the wording of the Spanish language portion. Please contact the ABCD Coordinating Center (CC) if you require access to the original Spanish language version of the REDCap<sup>1</sup> instruments used by ABCD ([abcd-cc@ucsd.edu](mailto:abcd-cc@ucsd.edu)).

## Baseline and Longitudinal Instruments

In Data Release 4.0 you will find instruments with similar questions asked at baseline and at follow-up visits. For example, Substance Use Interview / Substance Use Introduction and Patterns. At baseline, ABCD captured data with questions in the format **Have you ever tried drug x at any time in your life?** and at one year follow-up,

<sup>1</sup> The REDCap project, NIH/NCRR Colorado CTSI Grant Number UL1 RR025780

**...have you used any of the following drugs since we last saw you on \_\_\_\_? Drug x?** Due to the different time frame and wording of the baseline and follow-up questions distinct variables have been used to capture these data. For example, DAIRC has added “\_l” to the end of the baseline variable (tlfb\_drug\_used) to create the longitudinal variable (tlfb\_drug\_used\_l). In addition, to further differentiate the baseline variables from the strictly longitudinal variables, DAIRC has created longitudinal instruments that contain variables ending in “\_l.”

## ABCD/NDA Item Name Harmonization

Data are shared according to the rules of the [NIMH Data Archive](#). ABCD data collection instrument names have been edited to be compatible with existing NDA measures (data harmonization). The original names used by ABCD are preserved in the “Aliases” column of the data dictionary for the instrument. Beginning with data Release 2.0 new alias names have been introduced by the ABCD harmonization of measures across the different ABCD data domains. As an example, brain areas are now more informative and consistently named in all derived imaging scores instruments, e.g., in NDA names from Release 1.1 smri\_thick\_cdk\_cdacatelh and dmri\_dtifawm\_cdsn\_cdancntelh correspond to these DEAP names from Release 1.1 and Release 2.0:

smri\_thick\_cort.desikan\_caudalanteriorcingulate.lh and dmri\_dti.fa.wm\_cort.desikan\_caudalanteriorcingulate.lh, respectively. To map a name used prior to Release 2.0 to the ABCD harmonized names, refer to the “aliases” column of each data dictionary. When several aliases are listed, the list will contain additional pre-2.0 data release names. The newest alias names for Release 4.0 can be queried using the following NDA API call referencing scope 262:

<https://ndar.nih.gov/api/datadictionary/v2/datastructure/<instrument short name><instrument part><instrument version>?scope=262>

Valid combinations of short name and instrument version look like this: “abcd\_midasemdp201” - version 01 of the part 2 of the abcd\_midasemdp instrument. DEAP supports both the old and the new item names.

## Survey items: Directions and Descriptions

The ABCD versions of many instruments contain descriptive text used during data collection as prompts to the participant/parent. In some cases, these descriptive prompts define the meaning of the responses. These descriptive texts that sometimes precede multiple items have been removed from the data dictionaries by NDA – only items containing data values can be shared on this platform. Where appropriate the NDA item

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description has been extended to include the additional text from the descriptive prompts.

## Instruments that contain greater than 1000 variables

Due to technical limitations ABCD instruments with more than about 1,000 variables are split on the NDA platform and are provided as individual parts. For instruments that have been split into several parts, information that specifies the visibility of an item (i.e., branching logic, conditional logic) has been removed, if the conditional logic referenced items in another part of the instrument. The conditional logic field was removed to allow for data sharing. For example, the Family History instrument contains more than 1000 variables and, therefore, has been divided into two instruments. Please see data dictionary for ABCD Family History Assessment Part 1: where conditions have been removed ([https://ndar.nih.gov/data\\_structure.html?short\\_name=fhxp102](https://ndar.nih.gov/data_structure.html?short_name=fhxp102)).

## Reference items

A small list of reference items appears before the data in each NDA spreadsheet. These reference items were added during the data sharing process with the NDA platform and include:

- Sex at birth (gender)  
We are aware that the item label “gender” is misleading. The data values shared under this heading are derived from the sex at birth values collected at the baseline visit.
- collection\_id and dataset\_id  
Both values are related to the data upload process from ABCD to NDA. They can be ignored during data analysis.
- subjectkey, src\_subject\_id, and promoted\_subjectkey  
Values should be the same for each participant and refer to the pseudo global unique identifier (pGUID) assigned by NDA to each participant (see <https://ndar.nih.gov/standards.html#guid> for details).
- Age in months at the time of the interview (interview\_age)  
This value has been calculated from the de-identified birth date (middle of the birth month date) and the assent signature time stamp (annual visits) or mypi\_date for mid-year visits, and is the same for all sessions of the baseline visit for each participant (even when these fall on different days).
- The date the child was enrolled in the ABCD Study is defined by ABCD as the assent date (interview\_date).

In general, this set of items can be used to merge participant data across different data collection instruments with one exception. The behavioral spreadsheets containing imaging related data for the functional imaging runs contain a “run” item that is used to encode individual runs (run1, run2, and average). Items from these spreadsheets will appear as individual rows in the merged spreadsheet (long format) instead of as individual columns (wide format). This format has been selected to reduce the number of shared instruments.

## Table of shared non-imaging instruments

The table below lists all non-imaging instruments in the ABCD protocol. Individual instruments can be identified on NDA by the short name (second column). Instruments without short names are not included as separate instruments. For example, “caffeine intake” is not a separate instrument since it is part of the ABCD Youth Substance Use Interview. Please note that a table of shared imaging instruments can be found in the Release Notes ABCD Imaging Instruments file. Data dictionaries for all data types can be viewed at this link:

[https://ndar.nih.gov/data\\_dictionary.html?source=ABCD&submission=ALL](https://ndar.nih.gov/data_dictionary.html?source=ABCD&submission=ALL). Please select the ABCD Study 4.0 “Source” and select “Filter.”

Measure	NDA Short Name	Description
<b>Mental Health</b>		
ABCD Youth Life Events	abcd_yle01	Life events including trauma
ABCD Youth 10 Item Delinquency Scale	abcd_y10ids01	Behaviors that violate laws and social norms
ABCD Youth Brief Problem Monitor	abcd_bpm01	Normed multi-informant monitoring of children's functioning, youth report
ABCD Youth 7-Up Mania Items	abcd_y7mi01	Youth mania symptoms
ABCD Youth NIH Toolbox Positive Affect Items	abcd_ytbpai01	Positive emotions and affective well-being in past week
ABCD Youth Diagnostic Interview for DSM-5 Background Items	abcd_ksad01	School, sexual orientation
ABCD Youth Diagnostic Interview for DSM-5	abcd_ksad501	Mental health diagnosis - youth questions
UPPS-P for Children Short Form (ABCD-version)	abcd_upps01	Impulsivity

ABCD Youth Behavioral Inhibition/Behavioral Approach System Scales Modified from PHENX	abcd_bisbas01	Inhibition and reward seeking
ABCD Prodromal Psychosis Scale	pps01	Prodromal psychosis levels
ABCD Other Resilience	abcd_ysr01	Resilience (friends)
ABCD Parent Child Behavior Checklist Raw Scores Aseba	abcd_cbcl01	Dimensional psychopathology, adaptive functioning
Child Behavior Check List Scores	abcd_cbcls01	Child Behavior Check List summary scores
ABCD Parent General Behavior Inventory-Mania	abcd_pgbi01	Subsyndromal mania
ABCD Parent Adult Self Report Raw Scores Aseba	pasr01	Parent dimensional psychopathology
Adult Self Report Scores*	abcd_asrs01	Adult Self Report summary scores
ABCD Parent Diagnostic Interview for DSM-5 Background Items Full	dibf01	School, family, social relations
ABCD Longitudinal Parent Diagnostic Interview for DSM-5 Background Items Full (KSAD)	abcd_lpksad01	School, family, social relations (update)
ABCD Parent Diagnostic Interview for DSM-5 Full	abcd_ksad01	Mental health diagnosis - parent questions
Parent Diagnostic Interview for DSM-5 (KSADS) Traumatic Events	abcd_ptsd01	KSADS - PTSD raw values
ABCD Parent KSADS Conduct Disorder	abcd_pkسادscd01	KSADS - conduct disorder raw values
ABCD Parent Life Events	abcd_ple01	Life events including trauma
ABCD Parent Gender Identity	abcd_pgi01	Gender identity
ABCD Brief Problem Monitor Teacher Form	abcd_bpmt01	Normed multi-informant monitoring of children's functioning/teacher report
ABCD Family History Assessment Part 1	fhxp101	Family history of psychopathology and substance use
ABCD Family History Assessment Part 2	fhxp201	Family history of psychopathology and substance use
ABCD Summary Scores Brief Problem Monitor Teacher Form	abcd_ssbpmtf01	Normed multi-informant monitoring of children's

		functioning/teacher report summary scores
ABCD Summary Scores BPM and POA	abcd_yssbpm01	BPM Youth and NIH Toolbox Positive Affect summary scores
ABCD Sum Scores Mental Health Youth	abcd_mhy01	Mental Health summary scores - youth surveys
ABCD Sum Scores Mental Health Parent	abcd_mhp01	Mental Health summary scores - parent surveys
ABCD Parent Family History Summary Scores	abcd_fhxssp01	Family history summary scores of psychological problems in all first- and second-degree, biological relatives.
ABCD ABCL scores	abcd_abcls01	Provides dimensional measures of parental psychopathology
ABCD Early Adolescent Temperament Questionnaire - Parent	abcd_eatqp01	Parent report for children and adolescents (9-15 years old) on temperament, behavior, and higher-order scales
ABCD Youth GISH2	abcd_gish2y01	Youth measure of sexual attraction and behavior.
<b><i>New in 4.0</i></b>		
Emotion Regulation Questionnaire	emotion_reg_erq_feelings01	The youth report Emotion Regulation Questionnaire (ERQ) assess self-control of emotions.
Difficulty in Emotion Regulation Scale (Parent for Youth)	diff_emotion_reg_p01	The parent report Difficulty in Emotion Regulation Scale (DERS) assess their child's emotion regulation across multiple domains, including awareness and acceptance of emotions, ability to engage in goal-directed behavior and refrain from impulsive behavior, and access to effective emotion regulation strategies.
Perceived Stress Scale (Parent for Parent)	perceived_stress_p01	A 10-item parent report of the parent's perception of stress feelings and thoughts.
<b>Physical Health</b>		
ABCD Youth Edinburgh Handedness Inventory Short Form	abcd_ehis01	Handedness, laterality quotient



ABCD Youth Snellen Vision Screener	abcd_svs01	Vision screening
ABCD Youth Risk Behavior Survey Exercise Physical Activity	abcd_yrb01	Physical exercise
ABCD Parent Demographics Survey	pdem02	Demographics, race, gender, family structure, SES, education, occupation (includes Native American Acculturation Scale)
ABCD Longitudinal Parent Demographic Form*	abcd_ipds01	Demographics, race, gender, family structure, SES, education, occupation (update)
ABCD Parent Sleep Disturbance Scale for Children	abcd_sds01	Sleep and sleep disorders
ABCD Parent Child Behavior Checklist Raw Scores Aseba	abcd_cbcl01	Dimensional psychopathology, adaptive functioning
ABCD Youth Pubertal Development Scale and Menstrual Cycle Survey History	abcd_ypdms01	Pubertal stage and menstrual phase (for postmenarcheal girls) - youth survey
ABCD Youth Screen Time Survey	abcd_stq01	Screen time utilization - youth
ABCD Parent Pubertal Development Scale and Menstrual Cycle Survey History	abcd_ppdms01	Pubertal stage and menstrual phase (for postmenarcheal girls) - parent survey
ABCD Parent Screen Time Survey	stq01	Screen time utilization - parent
ABCD Parent Medical History Questionnaire	abcd_mx01	Medical history and health services utilization
ABCD Longitudinal Parent Medical History Questionnaire	abcd_lpmh01	Medical history and health services utilization (update)
ABCD Developmental History Questionnaire	dhx01	Prenatal exposure before and during pregnancy - medications, drugs alcohol, tobacco
ABCD Parent Medications Survey Inventory Modified from PhenX	medsy01	Medications taken in the last two weeks
ABCD Parent Sports and Activities Involvement Questionnaire	abcd_saiq02	Involvement in sports, music and hobbies, TBI risk
ABCD Longitudinal Parent Sports and Activities Involvement Questionnaire	abcd_lpsaiq01	Involvement in sports, music and hobbies, TBI risk (update)
ABCD Parent Ohio State Traumatic Brain Injury Screen-Short Modified	abcd_otbi01	Traumatic brain injury of youth

ABCD Longitudinal Parent Ohio State Traumatic Brain Injury Screen-Short Modified	abcd_lpohstbi01	Traumatic brain injury of youth (update)
ABCD Sum Scores Traumatic Brain Injury	abcd_tbi01	Traumatic brain injury of youth summary scores
ABCD Longitudinal Summary Scores Traumatic Brain Injury	abcd_lsstbi01	Traumatic brain injury of youth summary scores (update)
ABCD Sum Scores Parent Sports and Activities Involvement	abcd_spacss01	ABCD Parent Sports and Activities Involvement Questionnaire: If no is endorsed, for an activity, e.g., ballet, the value is missing for all relevant follow-up items. In this instrument, "0" has replaced missing for all relevant items.
ABCD Longitudinal Summary Scores Sports Activity	abcd_issa01	ABCD Parent Sports and Activities Involvement Questionnaire: If no is endorsed, for an activity, e.g., ballet, the value is missing for all relevant follow-up items. In this instrument, "0" has replaced missing for all relevant items (update).
ABCD Sum Scores Parent Medical History	abcd_medhxss01	ABCD Parent Medical History Questionnaire: If no is endorsed, for a gating item, e.g., Burns? value is missing for "How many times...? In this instrument, "0" has replaced missing for all relevant items.
ABCD Longitudinal Summary Scores Medical History	abcd_issmh01	ABCD Parent Medical History Questionnaire: If no is endorsed, for a gating item, e.g., Burns? value is missing for "How many times...? In this instrument, "0" has replaced missing for all relevant items (update).
ABCD Sum Scores Developmental History	abcd_devhxss01	ABCD Developmental History Questionnaire: If no is endorsed, for a gating item, e.g., Cocaine? value is missing for "How many

		times...? In this instrument, "0" has replaced missing for all relevant items.
ABCD Pubertal Hormone Saliva	sph01	Information collected by RAs at the time of collecting oral fluid to indicate current estradiol, testosterone, and DHEA levels (e.g., time of day of collection)
ABCD Hormone Saliva Salimetric Scores	abcd_hsss01	Pubertal hormone levels (estradiol, testosterone, and DHEA)
ABCD Sum Scores Physical Health Youth	abcd_ssphy01	Physical Health summary scores - youth surveys
ABCD Sum Scores Physical Health Parent	abcd_ssphp01	Physical Health summary scores - parent surveys
ABCD Youth Blood Analysis	abcd_ybd01	Summarizes whole blood analysis for hemoglobin, A1C, CBC, total cholesterol, HDL cholesterol, and Ferritin.
ABCD Youth Blood Pressure	abcd_bp01	Mean Blood pressure and pulse measurements, across three readings.
ABCD Youth Munich Chronotype Questionnaire	abcd_mcqc01	Assesses diurnal preferences that manifest in personal sleep-wake rhythms, including sleep and wake schedules on school and free days.
ABCD Youth Block Food Screen	abcd_bkfs01	Assesses youth's intake by food group measured in number of servings.
ABCD Youth Teeth Collection	bteeth01	Total number of teeth collected from caregivers for youth participants
<b><i>New in 4.0</i></b>		
ABCD Sports Activities Read Music - Parent	sports_activ_read_music_p01	Parent report survey of their youth's participation in music and reading activities.
ABCD Sports Activities Read Music - Youth	sports_activ_read_music01	Youth report survey of participation in music and reading activities.
ABCD International Physical Activity Questionnaire-Short	internat_physical_activ01	The short form of the International Physical Activity

Breastfeeding Questionnaire	breast_feeding01	<p>Questionnaire is a parent report measure of the parent’s level of physical activity.</p> <p>The Breastfeeding Questionnaire is a parent report survey of medication and substance use during breastfeeding of the participant.</p>
<b>Substance Use</b>		
ABCD Youth Substance Use Interview	abcd_ysu02	<p>Measures included in Substance Use Interview are described. At baseline, this will establish whether participant ever used alcohol or drugs (sip, puff, or full use). Measures when they first used it, first regular (weekly) use, lifetime quantity (in standard doses), maximum dose (standard), last date of use, and past 6-month quantity/frequency of each drug category. This results in data re: patterns (e.g., max recent use, days of combined use, average dose per occasion, number of binge drinking episodes, drinks/binge, etc.)</p>
Timeline Follow-back (Lifetime)	abcd_tlfb01	
PATH Inventory – Intention to Use		Youth’s intention to use alcohol, nicotine, and marijuana
Caffeine Intake		Quantity/frequency of various caffeine beverages use in past 6 months
iSay II Q2 Sipping Items		Details of first sip (when, where, what type alcohol, etc.)
Tobacco Low-Level Use Measures		Details of first puff nicotine (when, where, what type nicotine, etc.)
Marijuana Low-Level Use		Details of first puff or use of marijuana (when, where, what type marijuana, potency, how high they felt, etc.)

Peer Group Deviance		Friends' use of alcohol, nicotine, marijuana, inhalants, and "other" drugs
Acute Subjective Response to Alcohol		Participant's subjective effects to alcohol following the first 5 times ever drank, recent 6 months, and over their heaviest period
Acute Subjective Response to Tobacco		Participant's subjective response to nicotine following their first exposure
Acute Subjective Response to Marijuana		Participant's subjective response to marijuana following their first exposure
Hangover Symptom Scale		Frequency of hangover symptoms over the last 6 months
Rutgers Alcohol Problem Index (RAPI)		Symptom frequency checklist of alcohol-related problems over past 6 months
Nicotine Dependence (DAPI)		Symptom frequency checklist of nicotine-related problems over past 6 months
Marijuana Dependence Index (MAPI)		Symptom frequency checklist of marijuana-related problems over past 6 months
Drug Problem Index (DAPI)		Symptom frequency checklist of "other" drug-related problems over past 6 months
ABCD Timeline Follow-back Survey Calendar Scores	abcd_tlfb01	Time line follow-back calendar scores
ABCD Youth Participant Last Use Survey Day 1 2 3 4	abcd_plus01	Tobacco/caffeine/medication usage in the last 24 hours - youth answers
ABCD Parent Participant Last Use Survey Day 2 3 4	plus01	Tobacco/caffeine/medication usage in the last 24 hours - parent answers
ABCD Youth Substance Use Introduction and Patterns	abcd_ysuip01	Quantity/frequency of all substance use (Annual follow-up visits)
ABCD Substance Use Attitudes	abcd_yusa01	Intentions, perceived harm, peer tolerance, perceived availability,

ABCD Youth Alcohol Measures	abcd_yam01	and expectancies of substance use (update) Subjective effects, low-level use, and consequences of alcohol use (update)
ABCD Youth Nicotine Measures	abcd_ynm01	Subjective effects, low-level use, and consequences of nicotine/tobacco use (update)
ABCD Youth Marijuana Illicit Drug Measures	abcd_ymidm01	ABCD Youth Marijuana Illicit Drug Measures
ABCD Youth Alcohol Screen	yalcs01	Past day alcohol use - Breathalyzer
ABCD Youth Toxicology Test	abcd_ytt01	Past day drug use - Oral Fluid Draeger
ABCD Youth Hair Sample	abcd_hers01	Information collected by RAs at the time of collecting ~100 strands of hair for metabolites indicating substance use in past month or longer (e.g. time of day of collection)
ABCD Youth Hair Results	abcd_yhr01	Metabolites of past 3 month substance use
ABCD Youth Nicalert	abcd_yn01	Past day nicotine use
ABCD Parental Rules on Substance Use	prq01	Parental substance use approval and rules
ABCD Mid-Year Phone Interview (MYPI) Substance Use	abcd_ymypisu01	Past 6 month heard-of or use of substances
ABCD Parent Community Risk and Protective Factors (CRPF)	abcd_crpf01	Beliefs about drug availability (alcohol, nicotine, marijuana, "other" drugs) along with questions about access and exposure to medical marijuana
Summary Scores Substance Use	abcd_suss01	Caffeine summary scores
ABCD Youth Community Risk and Protective Factors	abcd_ycrpf01	Assesses youth perception of how easy it would be to get certain substances, including alcohol, nicotine products, marijuana products, illicit drugs, liquids, sprays or gasses that can be used to get high, and

prescription medications for non-medical use.

**Neurocognition**

ABCD Youth NIH TB Summary Scores	abcd_tbss01	Measures included in NIH TB summary scores are described below
NIH TBX Picture Vocabulary		Language vocabulary knowledge, estimated verbal IQ; uncorrected and age corrected scores
NIH Tbx Flanker Inhibitory Control and Attention		Attention, cognitive control, executive function, inhibition of automatic response; uncorrected and age corrected scores
NIH Tbx List Sorting Working Memory		Working memory, information processing; uncorrected and age corrected scores
NIH Tbx Dimensional Change Card Sort		Executive function: set shifting, flexible thinking, concept formation; uncorrected and age corrected scores
NIH Tbx Pattern Comparison Processing Speed		Information processing, processing speed; uncorrected and age corrected scores
NIH Tbx Picture Sequence Memory		Episodic memory; sequencing; uncorrected and age corrected scores
NIH Tbx Oral Reading Recognition		Language, oral reading (decoding) skills, academic achievement; uncorrected and age corrected scores
ABCD TBX Demo	abcddemo01	Demographics - age only
ABCD Cash Choice Task	cct01	Impulsivity, delayed gratification
ABCD Little Man Task	lmtp201	Visuospatial processing flexibility, attention
ABCD Pearson Scores	absd_ps01	Measures included in Pearson scores are described below
Rey Auditory Verbal Learning Test		Learning and immediate memory

Rey Delayed Recall Test		Delayed (30 minute) verbal memory
Matrix Reasoning Test		Fluid intelligence, visuospatial reasoning
ABCD Youth Delay Discounting Sum Scores	abcd_ydds01	Discounting and valuation of proximal and distal rewards
ABCD Youth Emotional Stroop Task	abcd_yest01	Inhibition of prepotent responses, affective regulation
ABCD Game of Dice Summary Scores	abcd_gdss01	Summary scores from the Game of Dice Task assessing risk taking.
ABCD Social Influence Summary Scores	abcd_siss01	Summary scores for the Social Influence Task measuring peer influence on risk perception.

***New in 4.0***

ABCD Stanford Mental Arithmetic Response Time Evaluation	smarte_sumscores01	The Stanford Mental Arithmetic Response Time Evaluation (SMARTE) is a youth measure that assess math fluency and single- and double-digit arithmetic operations via an iPad or smart phone app. Multiple accuracy and reaction time summary scores are calculated.
ABCD Barkley Deficits in Executive Functioning Scale	barkley_exec_func01	The short form of the Barkley Deficits in Executive Functioning Scale for Children and Adolescents is a parent report that evaluates clinically significant dimensions of child and adolescent executive functioning that are predictive of impairments in daily life activities.
ABCD Youth Neurocognition Survey Session	neurocog_youth_session01	ABCD Youth Neurocognition Survey Session Device and Status

**Culture and Environment**

Youth Prosocial Behavior Survey	abcd_psb01	Resilience
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ABCD Youth Acculturation Survey Modified from PhenX*	yacc01	Cultural factors
ABCD Parental Monitoring Survey	pmq01	Parental monitoring and supervision
ABCD Children's Report of Parental Behavioral Inventory	crpbi01	Environment - family and religion
ABCD Youth Family Environment Scale-Family Conflict Subscale Modified from PhenX	abcd_fes01	Family dynamics, cohesion, expressiveness, conflict
ABCD Youth Neighborhood Safety/Crime Survey Modified from PhenX	abcd_nsc01	Neighborhood risk and protective factors, crime
Perceived Discrimination Scale	abcd_ydmes01	Measure of perceived discrimination, discrimination perceived to occur due to ethnic background
Wills Problem Solving Scale	abcd_ywps01	Self-control, planning
ABCD School Risk and Protective Factors Survey	srpf01	School risk and protective factors
Parent Prosocial Behavior Survey	psb01	Resilience
ABCD Parent Acculturation Survey Modified from PhenX*	pacc01	Cultural factors
ABCD Parent Family Environment Scale-Family Conflict Subscale Modified from PhenX	fes02	Family dynamics, cohesion, expressiveness, conflict
ABCD Parent Neighborhood Safety/Crime Survey Modified from PhenX	abcd_pnsc01	Neighborhood risk and protective factors, crime
ABCD Parent Vancouver Index of Acculturation-Short Survey*	abcd_via01	Acculturation
ABCD Parent Multi-Group Ethnic Identity-Revised Survey	abcd_meim01	Cultural affiliation
ABCD Parent Mexican American Cultural Values Scale Modified	macv01	Familism, religion, independence, self-reliance
ABCD Sum Scores Culture & Environment Youth	abcd_sscey01	Culture and environment summary scores - youth surveys
ABCD Sum Scores Culture & Environment Parent	abcd_sscep01	Culture and environment summary scores - parent surveys
ABCD Youth/Parent School Attendance and Grades	abcd_ysaag01 abcd_saag01	Youth and parent reports of number of excused and

		unexcused school absences, grades, and participation in an Individualized Education Program (IEP).
ABCD Parent PhenX Community Cohesion	abcd_pxccp01	Community cohesion is a self-report, person-level measure about whether the people in a participant's neighborhood are close-knit, willing to help, get along with each other, share the same values and can be trusted.
ABCD Youth Peer Network Health Protective Scaler	abcd_pnhps01	Youth report on three of their close friends' protective behaviors against substance use such as encouraging not using substances, or reducing use, and providing instrumental and psychological support.
ABCD Cyber Bully	abcd_cb01	Assesses whether a youth has experienced or perpetrated cyberbullying, including information about whether it occurred in the past year and the frequency.
ABCD Peer Experiences Questionnaire	abcd_peq01	Assess whether the youth has either experienced overt, relational or reputational victimization from peers or perpetrated overt, relational or reputational aggression towards peers.
ABCD Occupation Survey Parent	abcd_occsp01	Asks caregiver about their own and their partner's occupation and job category according to the ACS job classifications.
ABCD Youth Mexican American Cultural Values Scale	abcd_macvsy01	Youth assessment of family support, family obligation, and independence and self-reliance.
<b><i>New in 4.0</i></b>		
ABCD Pet Ownership	pet_ownership01	Youth report measure on pet ownership.

ABCD Multidimensional Neglectful Behavior Scale	neglectful_behavior01	An 8-item youth report on parent neglectful behaviors.
ABCD Youth Vancouver Index of Acculturation	vancouver_identity_accult01	The short version of the Vancouver Index of Acculturation is a youth report measure of acculturation and biculturalism.

### ***Gender Identity and Sexual Health***

ABCD Youth Gender Identity	abcd_pgi01	Gender identity.
ABCD Parent Gender Identity	abcd_pgi01	Gender identity.
ABCD Youth GISH2	abcd_gish2y01	Youth measure of sexual attraction and behavior.
ABCD Sum Scores Gender Identity Parent	abcd_mhp01	Summary scores.
ABCD Sum Scores Gender Identity Youth	abcd_mhy01	Summary scores.

### **Pre- and Post-scan Questionnaires**

ABCD RA Scanning Checklist and Notes	abcd_ra01	Checklist used by site coordinators/ research assistants prior to and during scanning sessions
ABCD Youth Pre Scan Questionnaire 1	abcd_ypre101	Current mood ratings before completing MRI scan
ABCD Youth Pre Scan Questionnaire 2	abcd_ypre201	Current mood ratings before completing second MRI scan. Used if MRI is split between two days, or if there is a significant break between scan sessions. Re-assesses current mood
ABCD Youth Post Scan Questionnaire 1	abcd_ypsq101	Current mood ratings after completing MRI scan
ABCD Youth Post Scan Questionnaire 2	abcd_ypsq201	Current mood ratings after completing second MRI scan. Used if MRI is split between two days, or if there is a significant break between scan sessions. Re-assesses current mood

ABCD Youth Monetary Incentive Delay (MID) Task Survey Post Scan Questionnaire	abcd_monet01	Ratings of mood when viewing the different cues and receiving the different outcomes during the MID task to determine the effectiveness and value of wins and losses
ABCD Youth Rescan MID Task Survey Post Scan Questionnaire	abcd_prepost01	Ratings of mood when viewing the different cues and receiving the different outcomes during the MID task to determine the effectiveness and value of wins and losses, if rescan is necessary
<b>Genetics</b>		
Genomics Sample*	genomics_sample_03	Smokescreen data
ABCD Youth Genetic Blood (RUCDR)	biocf01	Information collected by RAs at the time of venipuncture blood collection for genetics studies (e.g., time of day of collection)
ABCD Youth Genetic Saliva (RUCDR)	abcd_ygs01	Information collected by RAs at the time of saliva collection for genetics studies (e.g., time of day of collection)
<b>Mobile Technology</b>		
ABCD Youth Screen Time Survey	abcd_stq01	Screen time utilization - youth
ABCD Parent Screen Time Survey	stq01	Screen time utilization - parent
ABCD Youth Fitbit Baseline	abcd_yfb01	ABCD Fitbit Pilot Study, youth baseline questionnaire data
ABCD Youth Fitbit Followup	abcd_yff01	ABCD Fitbit Pilot Study, youth follow-up questionnaire data
ABCD Parent Fitbit Baseline	abcd_pfb01	ABCD Fitbit Pilot Study, parent baseline questionnaire data
ABCD Parent Fitbit Followup	abcd_pff01	ABCD Fitbit Pilot Study, parent follow-up questionnaire data
ABCD Fitabase Raw Data	aurora01	ABCD Fitbit Pilot raw data
ABCD Sum Scores Mobile Tech Youth	abcd_ssmt01	Mobile Tech Youth summary scores

ABCD Youth / Parent Mobile Tech Preassessment	abcd_mtpry01 abcd_mtpap01	Pre-assessment youth and parent survey for passive assessment of phone use substudy.
ABCD Youth / Parent Mobile Tech Postassessment	abcd_mtpay01 abcd_mtpa01	Post-assessment youth and parent survey for passive assessment of phone use substudy
ABCD Mobil Tech from Effortless Assessment Research System (EARS)	abcd_mte01	Objective screen and application use data from EARS company for passive assessment of phone use substudy.
ABCD Mobil Tech from Vibrent Health	abcd_mtv01	Objective screen and application use data from Vibrent company for passive assessment of phone use substudy.
ABCD Pre-assessment Youth / Parent Survey for Fitbit Protocol	abcd_fbpry01 abcd_fbprp01	Pre-assessment youth and parent survey for Fitbit protocol
ABCD Post-assessment Youth / Parent Survey for Fitbit Protocol	abcd_fbpay01 abcd_fbpap01	Post-assessment youth and parent survey for Fitbit protocol
ABCD Youth Fitbit Daily Physical Activity Summaries	abcd_fbdpas01	This instrument includes daily physical activity (and sedentary behavior) at the minute level based on heart rate and accelerometer data from Fitbit.
ABCD Youth Fitbit Weekly Physical Activity Summaries	abcd_fbwpas01	This instrument includes weekly physical activity (and sedentary behavior) for all days with sufficient wear time for inclusion (>600 minutes of daytime wear), including minutes in a variety of activity intensities and steps taken that are broken into weekday only, weekend only, and all days of week.
ABCD Youth Fitbit Daily Sleep Summaries	abcd_fbdss01	This instrument includes sleep data for each participant night that had sufficient wear/sleep long enough to achieve sleep "stages"--minimum of 180 minutes of in-bed time. Metrics

ABCD Youth Fitbit Weekly Sleep Summaries	abcd_fwss01	include number of instances of, and number of minutes in, each sleep stage. Average HR within each stage is also included. This instrument includes sleep level aggregated to the week level for all valid days (i.e. >180 minutes of sleep time). Metrics include sum of and average number of instances of, and number of minutes in, each sleep stage. Average HR within each stage is also included. Weeks are broken into weekday only, weekend only, and all days of week.
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***New in 4.0***

ABCD Parent Screentime Questionnaire	screentime_psq_p01	A parent self-report of screentime behaviors and behavior modeling.
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**Other Non-Imaging Instruments**

ABCD Screener	abcd_screen01	Eligibility screener and screener risk measures
ACS Post Stratification Weights	acpsw02	ACS post stratification weights for demographic and socioeconomic measures, and family relationships table
ABCD Longitudinal Tracking	abcd_lt_01	Includes site ID of subject at each visit to facilitate identification of the site ID associated with each scan. Also contains variables necessary to determine in-person, remote, and hybrid visits conducted during COVID-19 restrictions.

***New in 4.0***

**Linked External Data (LED)**

Residential History Derived Scores

abcd\_rhds01

Environmental risk

**New in 4.0**

ABCD Stanford Education Data Archive (SEDA)

led\_school\_part\_101  
led\_school\_part\_201  
led\_school\_part\_301  
led\_school\_part\_401  
led\_school\_part\_501

The SEDA data consists of 3rd-8th grade EdFacts data from 50 states, including federally mandated Math and English Language Arts assessments placed on a nationally standardized grade equivalence scale, and a range of detailed data on educational conditions and contexts for schools, school districts, counties, commuting zones, and metropolitan statistical areas.

**Trial Level Behavioral Data**

ABCD Little Man Task Trial Level Behavior

Trial level (raw) data

ABCD Delay Discounting Task Trial Level Behavior

Trial level (raw) data

ABCD Emotional Stroop Task Trial Level Behavior

Trial level (raw) data

ABCD Game of Dice Trial Level Behavior

Trial level (raw) data

ABCD Social Influence Task Trial Level Behavior

Trial level (raw) data

ABCD Task fMRI NBack Trial Level Behavior

Trial level (raw) data

ABCD Task fMRI SST Trial Level Behavior

Trial level (raw) data

ABCD Task fMRI MID Trial Level Behavior

Trial level (raw) data

ABCD NIH Toolbox® Trial Level Behavior

Trial level (raw) data

**New in 4.0**

ABCD KSADS-COMP Trial Level Behavior

Trial level (raw) data

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