

# HBCD

PROTOCOL SUMMARY

VISIT 1: PRENATAL



HEALthy Brain and Child Development  
*Babies · Brains · Bright Futures*

[HBCDStudy.org](http://HBCDStudy.org)



# The HEALthy Brain and Child Development Study

The HBCD Study is the largest longitudinal study of early brain and child development in the United States. Knowledge gained from this research will have lasting impacts on future generations of children.

This ambitious project will enroll over 7,000 participating families from across the United States and follow them from pregnancy through early childhood. The HBCD Research Consortium consists of the HBCD Consortium Administrative Core (HCAC), the HBCD Data Coordinating Center (HDCC), and 27 recruitment sites across the country (see map).

Leading researchers in the fields of child development and neuroscience will work with participating families and their children to understand how the brain develops and how exposure to substances and other environmental, social, and biological factors during pregnancy and after birth impact outcomes.

## HBCD Open Science Model

The data generated in the study will be made broadly available to the research community through an open science model and serve as a resource to support numerous additional studies and foster new hypotheses to be explored.

### Locations of HBCD Recruitment Sites in the United States

**Recruitment Sites**

- Arkansas Children's Hospital Research Institute
- Boston Children's Hospital | Harvard Medical School
- Cedars-Sinai Medical Center
- Children's Hospital of Los Angeles
- Children's Hospital of Philadelphia
- Cincinnati Children's Hospital
- Emory University
- Johns Hopkins University/Kennedy Krieger Institute
- New York University School of Medicine
- Northwestern University
- Oklahoma State University Center for Health Sciences
- Oregon Health & Science University
- Pennsylvania State University-University Park
- Pennsylvania State University College of Medicine
- University of Alabama at Birmingham
- University of Alabama at Tuscaloosa
- University of Arkansas for Medical Sciences
- University of Maryland
- University of Minnesota
- University of New Mexico
- University of North Carolina Chapel Hill
- University of Vermont
- University of Wisconsin-Madison
- University of California, San Diego
- Vanderbilt University
- Virginia Tech
- Washington University

**HCAC**

- University of California San Diego
- Boston Children's Hospital | Harvard Medical School

**HDCC**

- University of California San Diego
- University of Minnesota
- Washington University

# Prenatal

HBCD Measure	What it Measures	Time (min)
<b>Maternal Health</b>		
<b>American Psychiatric Association (APA) DSM-5 Level 1</b>	Current mental health symptoms, including depression, anxiety, sleep problems, memory, psychosis, personality functioning, etc.	2.5
<b>APA Patient-Reported Outcome Measurement Information System (PROMIS) Level 2</b>	More detailed current mental health symptoms, including anxiety, depression, anger, sleep disturbances, mania, obsessive-compulsive behaviors, and personality functioning	2.5
<b>DSM-5 Severity Scales - Acute Stress or Post-Traumatic Stress Disorder (PTSD)</b>	Severity of acute stress and PTSD symptoms	5
<b>Edinburgh Postnatal Depression Scale (EPDS)</b>	Symptoms of postnatal depression	3
<b>Family History Assessment Module (FHAM)</b>	Family alcohol and substance use, psychiatric history	3
<b>Health History</b>	Parental and current pregnancy health history, medication and other substance exposures	30
<b>Substance Use</b>		
<b>Alcohol, Smoking and Substance Involvement Screening Test (ASSIST)</b>	Lifetime and prenatal substance use	10
<b>Timeline Followback (TLFB)</b>	Quantitative estimates of prenatal alcohol and substance use	30
<b>Biospecimens</b>		
<b>Maternal Blood (whole, serum, plasma)</b>	Metals, nutrition, toxins, proteins	10
<b>Maternal Nails</b>	Substance and environmental exposures	15
<b>Maternal Saliva</b>	Genome-wide association studies (GWAS), Epigenome-wide association studies (EWAS), transcriptomes	10
<b>Maternal Urine</b>	Substance and environmental exposures	10
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# Prenatal

HBCD Measure	What it Measures	Time (min)
<b>Social and Environmental Determinants</b>		
<b>Baby's First Years (BFY) Services/Support</b>	Use of benefit programs and services during the past 12 months	2
<b>Baby's First Years (BFY) Economic Stress</b>	Experiences with economic stress during the past 12 months	2
<b>Demographics</b>	Race, ethnicity, marital status, gender identity, sexual orientation, education, income, jobs during pregnancy and work-related environmental exposures (see below), active-duty military	10
<b>Intimate Partner Violence (E-HITS)</b>	Physical or emotional intimate partner violence during the past month	2
<b>Patient-Reported Outcome Measurement Information System (PROMIS) Social Support/ Perceived Stress</b>	Availability of social support and perceptions of stress during the past month	4
<b>Protective and Compensatory Experiences (PACES)</b>	Experiences that protect against risk and increase resilience during the past 12 months	5
<b>PhenX Discrimination</b>	Experiences with unfair and discriminatory treatment during the past 12 months	3
<b>PhenX Neighborhood Safety</b>	Perceptions about safety and crime in the neighborhood	1
<b>Residential History for Geocoded Data Linkage</b>	Home, work, or other frequented addresses for linking to external datasets	5
<b>Work-related Environmental Exposures</b>	Environmental exposures related to employment during pregnancy (temperature, physical activity, noise levels, use of safety and protective equipment, chemicals)	5
<b>Total visit time (min)</b>		<b>170</b>

All measures in the prenatal visit apply to the birthing parent only. A proportion of participants (no more than 10%) will be recruited within five days of birth and will complete these assessments postnatally.







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