Assessing neurocognitive and language development in the HEALthy Brain and Child Development (HBCD) study

Tracy Riggins¹, Julie Kable² and Alexandra S. Potter³
¹University of Maryland, ²Emory University, ³University of Vermont

HEALthy Brain and Child Development (HBCD) Study

- NIH-supported prospective study of child development (pregnancy – 10 yrs)
- Enrolling 7,500 participating families from 26 US sites
  - 50% representative US sample,
  - 25% prenatally substance exposed,
  - 25% demographically matched w/o substance exposure
- Multiple domains assessed, including EEG, MRI, biospecimen
- This poster introduces the neurocognitive and language development battery
- Measures selected based on sensitivity to:
  - brain maturation,
  - potential teratogenic effects of substances of abuse,
  - variations in social and environmental contexts

NIH Infant and Toddler (Baby) Toolbox

- Cognition, social functioning, early math/numeracy, self-regulation, motor, and executive function
- Administered via iPad
- 4 Gaze/Touch tasks
  - Looking while Listening
  - Executive Function
  - Numerical Change Detection
  - Spatial Change Detection
- Mullen Scales of Early Learning (MSEL)
  - Mullen Visual Reception scale
  - Language (adaptive Mullen Scales)

Deferred Imitation

- Long-term memory
- Props are used to create action sequences
- Number of actions determined by age
- Participants recall action sequence after ~10min delay
- Dependent measures: delayed recall for items and temporal order

Bayley Scales of Infant Development

- Cognition
- Language
- Motor
- 4th Edition
- Administered

MacArthur Bates Communicative Development Inventories

- Language
- Caregiver report

Vineland Scales of Adaptive Behavior

- Functioning in the domains of communication, daily living, socialization
- Caregiver report

Sensory Processing Measure

- Integration of auditory, visual, tactile, vestibular, and/or proprioceptive information from one’s body and environment.
- Caregiver report

Working Group Contributors

- Natacha Akshoomoff, Patricia M Blasco, Stefanie C Bodison, Lucia Cicciolla, Sherry DeGray, Zoe Hulce, Emily S Kuschner, Britley Learnard, Monica Luciana, Miriam A Novack, Alexandra Perez, So Yeon Shin, Sidney Smith, Jennifer Vannest, Eric H Zimak,

Resources

- https://hbedstudy.org
- Questions? Email: riggins@umd.edu