

Maternal, Neurodevelopmental & Contextual Assessments



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Re-Cap

- 3 Subgroups
- Groups shared current data collection plans for R34
- ABCD documents shared
- Chairs developed guiding principles – BROADLY SIMILAR
- Subgroups formed based on domains and expertise
 - Perinatal
 - Neurodevelopment
 - Family & Environment
- Subgroups chose constructs/facets and possible measures
- Groups had presentations to inform decisions:
 - Hill Goldsmith & Nathan Fox (temperament)
 - Helen Egger (psychopathology)
 - Beth Planalp (Experimenter Ratings)
 - Richard Gershon (CAT and Baby Toolbox)
- Next steps – recommendations on when to give what assessments



Guiding Principles

- Balance developmental sensitivity with lifespan coherence
- Include direct assessment for enhancing detection of exposure effects
- Be well-suited for brain-behavior linkages
- Use state of the art methods
- Balance risk optimization for pragmatic focus
- Be socio-culturally sensitive
- Include strengths-based assessments



PERINATAL SUBGROUP



Subgroup Members

- Amy Salisbury– co-chair
- Emily Stinnett – co-chair
- Claire Coles
- Michelle Leff
- Lynn Singer
- Michael Georgeiff



Essential Perinatal Maternal Measures

Assessment & Construct	Method	Time in Minutes	Location
Mental Health:IDS, Edinburg	Caregiver Survey	5	Remote, In-Person
Exposures: Prenatal psych: Medications TLFB	Caregiver Interview	20	Telephone, in-person
Exposures: Illicit DAST-10 screener	Caregiver Survey	5	Remote, In-person
Exposures: Illicit TLFB	Caregiver Interview	20	Telephone, in-person
Exposures: Nicotine/Tobacco products TLFB	Caregiver Interview	10	Telephone, in-person
Exposures: Alcohol AUDIT-C	Caregiver Survey	5	Remote, In-person
Family Support: Family Support - fMSPSS, Fad	Caregiver Survey	5	Remote, In-Person
Feeding@delivery: Breastfeeding: duration, frequency (EMR)	Medical Record Abstraction	5	Remote, In-person *
Feeding@delivery:Formula type/Solids (EMR)	Medical Record Abstraction	5	Remote, In-person *
Maternal Sleep Quality: Pittsburg Sleep Quality Index	Caregiver Survey	5	Remote, In-Person
Medical history: Medical history/Diagnoses (EMR)	Questionnaire/Interview/Data Abstraction	5	Remote, telephone, in-person
Maternal psychiatric diagnoses Phenx Tier1, CAT-MH, BSI	Caregiver Survey	20	Telephone, in-person
Maternal psychiatric diagnoses SCID	Caregiver Interview	60-90	Telephone, in-person

****Measurement after delivery;***

Note: list does not include necessary toxicology from EMR or biosamples



Essential Perinatal Maternal Measures

Assessment & Construct	Method	Time in Minutes	Location
Obstetric History:EDD	Medical Record Abstraction		Hospital/Remote *
Obstetric History:Date and gestational age at 1 st prenatal visit	Medical Record Abstraction		Hospital/Remote *
Obstetric History:BP at 1st prenatal visit	Medical Record Abstraction		Hospital/Remote *
Obstetric History:Height and weight at first prenatal visit	Medical Record Abstraction		Hospital/Remote *
Obstetric History:number prior deliveries, indications for prior PTB (if applicable), prior birth weights	Questionnaire/Interview/EMR	5	Remote, telephone, in-person *
Obstetric History:GA at delivery	Medical Record Abstraction		Hospital/Remote *
Prenatal Stress:Perceived Stress Scale/Pregnancy Experiences	Caregiver Survey	5	Remote, In-Person
Sociodemographics: STD Survey	Caregiver Survey	5	Remote, telephone, in-person

**Measurement after delivery*



Essential Newborn Measures

Assessment & Construct	Method	Time in Minutes	Location
Child Health: Other illnesses/treatments	Medical Record Abstraction		Hospital/Remote *
Child Health: NICU admission, Y/N, # Days, Reason	Medical Record Abstraction		Hospital/Remote *
NOWS: diagnosis/severity (Finnigan or other STD measure)	Medical Record Abstraction		Hospital/Remote *
NOWS: treatment: medications, non-pharm (EMR)	Medical Record Abstraction		Hospital/Remote *
Growth: Birth weight, length, head circumference (EMR)	Medical Record Abstraction		Hospital/Remote *
Neurobehavior: Motor:Neurobehavior/NAS (R/T other substance exposure)/Motor/Regulation	Direct	30	In person *
Neurobehavior: Sleep:Quantification of sleep, sleep stages	Direct	variable	In person *



NEURODEVELOPMENT SUBGROUP



Subgroup Members

- Amanda Morris – co-chair
- Scott Johnson – co-chair
- Lauri Wakschlag – co-chair
- Lauren Shuffrey – co-chair
- Dima Amso
- James Blair
- Claire Coles
- Nathan Fox
- Susan Perlman
- Beth Planalp
- Beth Smith
- Sheila Krogh-Jespersen
- Nicole Lorenzo



Neurodevelopmental Domains

- Social-emotional (e.g., temperament, reactivity, regulation)
- Cognitive and neurocognitive development (e.g., executive function)
- Language development
- Motor and physical development
- Health and growth, including brief assessments of sleep, physical activity, and nutrition
- Developmental psychopathology (internalizing, externalizing)



(3-9 months) 1 time point prior to 12 months

Assessment & Construct	Method	Time in minutes	Remote data collection ?
LabTAB – self-regulation	Direct, Observation	20-30	Home or lab
Bayley IV – general development	Direct	60	Home or lab
Change detection task – short-term memory/attention	Direct	5-10	Home or lab
Growth & Health	Exam, chart review, EMR	10	Home or lab
Brief Infant Sleep Questionnaire	Caregiver Survey	3	Yes – phone or link
Ages & Stages	Caregiver Survey	10	Yes - phone or zoom
IBQ – temperament	Caregiver Survey	10	Yes – phone or link



12 months

Assessment & Construct	Method	Time in minutes	Remote data collection?
LabTAB – self-regulation	Direct, Observation	20-30	Home or lab
Bayley IV – general development	Direct	60	Home or lab
Change detection task – short-term memory/attention	Direct	5-10	Home or lab
Growth & Health	Exam, chart review, EMR	10	Home or lab
Brief Infant Sleep Questionnaire	Caregiver Survey	3	Yes – phone or link
Ages & Stages	Caregiver Survey	10	Yes - phone or zoom
IBQ – temperament	Caregiver Survey	10	Yes – phone or link
BITSEA, internalizing, externalizing, competence	Caregiver Survey	10	Yes – phone or link
Dietary Screener/Nutrition	Caregiver Survey	5	Yes – phone or link



24 months

Assessment & Construct	Method	Time in minutes	Remote data collection?
LabTAB – self-regulation	Direct, Observation	20-30	Home or lab
Bayley IV – general development	Direct	60	Home or lab
Change detection task – short-term memory/attention	Direct	5-10	Home or lab
Growth & Health	Exam, chart review, EMR	10	Home or lab
Brief Infant Sleep Quest.	Caregiver Survey	3	Yes – phone or link
Ages & Stages	Caregiver Survey	10	Yes - phone or link
ECBQ – temperament	Caregiver Survey	10	Yes – phone or link
BITSEA, internalizing, externalizing, competence	Caregiver Survey	10	Yes – phone or link
M-CHAT-R autism checklist	Caregiver Survey	10	Yes - phone or link
Dietary Screener/Nutrition	Caregiver Survey	5	Yes – phone or link



3, 4, & 5 years

Assessment & Construct	Method	Time in minutes	Remote data collection?
DB-DOS- social competence, (dys)regulation of emotions and behavior (e.g., irritability)	Direct, Observation (w/parent and examiner) – gives parenting data	45	Home or lab
PAPA – psychiatric assessment/impairment	Caregiver Interview	60	Phone
NIH Toolbox Executive Function (flanker, DCCS)	Direct	60	Home or lab
Snack Delay – inhibitory control	Direct	5	Home or lab
Growth & Health	Exam, chart review, EMR	10	Home or lab
PROMIS Pediatric Sleep	Caregiver Survey	3	Yes – phone or link
Ages & Stages	Caregiver Survey	10	Yes - phone or link
ECBQ/CBQ – temperament	Caregiver Survey	10	Yes – phone or link
Child Eating Behavior Ques.	Caregiver Survey	3	Yes- phone or link



3, 4, & 5 years (continued)

Assessment & Construct	Method	Time in minutes	Can be remote data collection
Vineland – adaptive function	Caregiver Interviews/survey	15	Phone or link
Family Life Impairment Scale	Caregiver survey	10	Phone or link
Physical Activity & Screen time	Multiple options – surveys or actigraph/biosensor	varies	Varies
BITSEA, internalizing, externalizing, competence	Caregiver Survey	10	Yes – phone or link
MAP-DB Dimensional irritability scale	Caregiver Survey	7	Home or lab
Picture Vocabulary Test (PVT) and Oral Reading Recognition Test (ORRT)	Direct, part of NIH toolbox, done on I-PAD	8	Home or Lab



FAMILY & ENVIRONMENT SUBGROUP



Subgroup Members

- Joan Kaufman – co-chair
- Renee Johnson – co-chair
- Ashley Acheson
- James Blair
- Alice Graham
- Brenda Jones Harden
- Maristella Lucchini
- Allyson Mackey
- Nancy L. McElwain
- Amanda Morris
- Julie A Poehlmann-Tynan
- Alexi Potter
- Pilar San Juan
- Amy Salisbury
- Lauri Wakschlag



Guiding Principles in Selecting Domains of Family and Environment Risk Assessments

- Accounts for individual differences in infant, child, and adult structural and functional brain imaging measures
- Associated with increased risk for child psychopathology and later substance use disorders
- Associated with earlier age of onset, more persistent course of illness, and frequently a less favorable response to evidence-based treatments
- Accounts for heterogeneity in the neurobiological correlates of psychopathology



Family and Environment Risk Domains

- Prenatal Substance Use Exposure
- Prenatal Stress
- Child Maltreatment and Other Adverse Childhood Experiences
- Family History of Psychiatric and Substance Use Disorders
- Socioeconomic Status and Neighborhood Factors
- Discrimination and Health Disparities
- Nutrition and Food Insecurity



Core Concepts

- Environmental exposures begin prenatally
- Risk is dynamic and may change over time
- Most constructs are best assessed using multiple measures, multiple informants, and/or multiple assessment strategies
- There are sensitive periods of risk when exposures are apt to be most toxic
- Protective factors in the environment can mitigate the effects of risk and are critical to assess



Selection of Measures for Each Construct

There are multiple measurement options for each construct:

- Selection of measures will need to be balanced with the demands of the larger protocol
- External data sources (e.g., geocoding, medical records, child protective services records) will be used to enrich assessments without enhancing burden on participants
- A combination of remote and in-person assessment strategies are planned
- Relatively frequent remote surveys of key constructs with instantaneous gift card payments will be used to engage and maintain the sample

Prenatal Assessment



This will be the only visit “all about the mom.” It will provide an opportunity to establish rapport and assess critical prenatal family and environment risk and protective factors.

Construct	Method	Time in minutes	Remote data collection ?
Prenatal Substance Exposure	Caregiver survey/interview, biospecimens, medical record	20-25	Home or lab
Prenatal Stress	Caregiver survey/interview	20	Home or lab
Child Maltreatment and Other Adverse Child Experiences	Caregiver survey/interview	5-10	Home or lab
Family History of Psychiatric and Substance Use Disorders	Caregiver survey/interviews, medical record	120	Home or lab
Socioeconomic and Neighborhood Factors	Caregiver survey, geocoding	5	Home or lab
Discrimination and Health Disparities	Caregiver survey	5	Home or lab
Nutrition and Food Insecurity	Caregiver survey, biospecimens	10	Home or lab
Protective Factors (e.g., social supports, treatment)	Caregiver survey, medical records	29	Home or lab

24 Months



There are multiple measurement options for each construct and the selection of measures, and location of collection, will be balanced with the demands of the larger protocol (see Family and Environment Workgroup Folder on Box@NIH).

Construct	Method	Time in minutes	Remote data collection?
Adverse Child Experiences	Caregiver survey/CPS records	5-10	Home, lab, or remote
Psychiatric and Substance Use Symptoms	Caregiver(s) surveys	10-15	Home, lab, or remote
SES and Neighborhood	Caregiver survey, geocoding	5	Home or lab or remote
Discrimination and Health Disparities	Caregiver survey	5	Home, lab, or remote
Nutrition and Food Insecurity	Caregiver survey, biospecimens	10	Home, lab, or remote
Protective Factors (e.g., social supports, attachment, enrichment)	Caregiver survey, parent-child Interaction	10-30	Home, lab, or remote



Key Points

- **Importance of prenatal/perinatal assessments for the entire study**
 - One-time opportunity to capture essential data that will be critical for interpretation of individual and group trajectories
 - Critical period for establishing/cementing relationship with mother to enhance recruitment and retention
- **Importance of context**
 - Understanding brain/behavior relationships requires clear understanding of environmental context