Baby Connectome Project (BCP): Connecting the Dots on Early Brain Development

A collaboration between Wyeth Nutrition, the Foundation for the National Institutes of Health (FNIH) and scientists from University of North Carolina (UNC) and University of Minnesota (UMN) is mapping the brains of healthy infants and young children. BCP is sharing this information to advance science and shed light on brain development and the connection to genomic, environmental and behavioral data.

AT-A-GLANCE

What We Seek to Uncover

Physical Brain Changes
- Size
- Structure
- Brain signals
- Maturatation of brain functional networks

Factors Influencing Behavior & Learning
- Motor skills
- Play and social skills
- Writing
- Self-awareness and organization
- Language development
- Speech awareness
- Thinking
- Sensory processing

Surroundings & Sensory Experiences Impacting Development
- Biology (gender, general health, mental health)
- Interpersonal relationships (parent-child interaction, social networks)
- Experiences (touch, smell, taste, sight, hearing, learning, physical activity, sleep)
- Environment (housing, income, employment, education)

Three Years of Progress

4 Publications
18+ Conferences & Invited Presentations
Enrolled 376 Children
825 MRI* Scans
Novel Tools & Techniques Developed to Analyze Imagery and characterize structural and functional brain development

Sharing the Research

Available to scientific community to advance understanding of early brain development, garner insights on how children acquire capacity for motor skills, cognitive thinking and speech and learn whether these can be positively influenced.

Inform policy decisions that could impact healthy brain development in early childhood.

Building on the Research

Established in 2017, BCP-Enriched is a four-year project in which UNC and UMN researchers are leveraging images acquired by BCP and combining them with diet information to explore connections between nutrition (dietary nutrients, feeding practices, the microbiome) and functional brain development and cognitive and behavioral outcomes (e.g., sleep quality) among children in the first three years of life.

BCP is part of the National Institutes of Health (NIH) Human Connectome Project (HCP) Lifespan studies. BCP and other related projects aim to develop and share a database of information on the pathways that underlie human brain function.