

Clinical Research Tools

NIH Toolbox for Assessment of Neurological and Behavioral Function

Many clinical studies collect data on aspects of neurological and behavioral function. However, the neurological and behavioral tests currently available to researchers lack uniformity and often require specialized training to administer. These limitations make it difficult to compile data across the full range of normal neurological function, and to compare data across studies.

The goal of the NIH Toolbox project is to develop an integrated set of tools for measuring cognitive, emotional, motor and sensory function. These tools will be validated for use in diverse cultures, ethnic and geographic groups, ages (3-85 years) and study types.

The NIH Toolbox is expected to allow for valid cross-study comparisons, and to provide a more complete picture of neurological and behavioral health in single studies, especially large-scale longitudinal studies, epidemiological studies, and prevention and intervention trials. Moreover, the tools within the Toolbox will:

- be minimally burdensome to subjects and investigators,
- utilize state-of-the art psychometric approaches and technology, including computer-assisted evaluation, and
- be dynamic and adaptable to changes in measurement and technology.

The NIH Toolbox contract is operated by the NorthShore University HealthSystem Research Institute in Evanston, Illinois, under the leadership of researchers at Northwestern University in Chicago. For more information, visit www.nihtoolbox.org.

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NIH MRI Study of Normal Brain Development and Pediatric MRI Data Repository

This study has tracked brain and behavioral development in more than 500 healthy American children, from birth to young adulthood. The study will offer new insights into the structural changes that occur during normal brain development and how these changes influence behavior, and it may lead to new brain imaging tools. The data also provide a control sample for future studies of childhood disorders that affect the brain, and are freely available to qualified researchers.

Investigators at six study sites across the U.S. scanned the children's brains using anatomic magnetic resonance imaging (aMRI), magnetic resonance spectroscopy (MRS) and diffusion tensor imaging (DTI). A variety of tests were used to measure motor control, language, computation, social skills and aspects of intelligence, and to assess hormonal changes over time.



Clinical Research Tools *(continued)*

Although no child was followed for the entire developmental span covered by the study, each child was evaluated for several months to several years, depending on the child's age. A Data Coordinating Center at the Montreal Neurological Institute at McGill University is releasing the data in stages. For more information, see www.NIH-PediatricMRI.org.

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