NIH Toolbox
Assessment of Neurological and Behavioral Function

NIH Toolbox Connection to Other Projects
Kevin P. Conway, Ph.D.

This study is funded in whole or in part with Federal funds from the Blueprint for Neuroscience Research, National Institutes of Health under Contract No. HHS-N-260-2006-00007-C

Richard C. Gershon, PhD, PI  gershon@northwestern.edu

NIH Toolbox and Related Projects

The MRI Study of Normal Brain Development
- Development of a “normal” or baseline brain image of children and adolescents
  - Used to enhance understanding of normal
  - Improved diagnostic capacity
  - Eliminates or reduces need to recruit controls for comparative brain studies
  - Data available to scientific community starting July 2006
- Principal Investigator: Alan Evans, Ph.D.
  - McGill University
- Project Officer: Lisa Freund, Ph.D.
  - NICHD
The MRI Study of Normal Brain Development

Study Design
- Multi-Center
- Six participating centers
- Population-based
- Target n = 500
- Ages 7 days to 18 years
- Standardized to 2000 U.S. population
- Mixed Cross-Sectional and Longitudinal

The MRI Study of Normal Brain Development

Measures:
- CBCL
- C-DISC-4
- DPS-4
- Woodcock-Johnson
- WASI
- WISC-III
- Purdue Pegboard
- CANTAB
- FIGS-MRI
- BRIEF
- JTCI & TCI
- Tanner Staging Questionnaire
- WAIS-R
- CVLT
- NEPSY

PROMIS

Patient Reported Outcomes Measurement Information System (PROMIS)
- Mission: to build a computer-adaptive test database for gathering patient-reported outcomes across major chronic diseases.
- Principal Investigator: David Cell, Ph.D.
  - NorthShore University HealthSystem
  - NIH Project Leader: Deborah Ader, Ph.D.
  - NIAMS
**PROMIS**

**PROMIS Core Areas**
- Physical Health
  - Physical Function
  - Sleep/Wake Function
  - Sexual Function
- Mental Health
  - Emotional Distress
  - Cognitive Function
- Social Health
  - Social Function
  - Social Support

**NIH Toolbox Contains**
- Motor & Sensory Measures
  - 23 motor
  - 23 sensory
  - 1 from PROMIS
- Emotion & Cognition Measures
  - 14 emotion
  - 4 from PROMIS
  - 13 cognition

---

**Neuro-QOL**

**Quality of Life in Neurological Disorders**
- Developed out of need for a group of standardized assessment instruments
- Multi-site collaboration
- Principal Investigator: David Cell, Ph.D.
  - Evanston Northwestern Healthcare
- Project Officer: Claudia Scala-Moy, Ph.D.
- NINDS

---

**Neuro-QOL Areas:**
- Mobility/Ambulation
- Depression
- Anxiety
- Stigma
- Cognition
- Social Role Performance
- Social Role Satisfaction
- Fatigue
- Personality/Behavioral Change

**NIH Toolbox Contains**
- 12 Motor
- 2 Affect
- 2 Stress
- 13 Cognition
- 3 Social Relationship
- 3 Endurance
**National Children’s Study (NCS)**

- Prospective Cohort study from birth to adulthood, to evaluate the effects of both chronic and intermittent exposures on child health and human development
  - Lead Agency: NICHD
  - 27 starting hypotheses to be tested
  - Sample size = 100,000 recruited from 105 sites

**NCS Area of Interest:**
- Omnibus IQ
- Executive function
- Language / verbal skills
- Academic skills
- Visuospatial abilities
- Learning / memory
- Attention
- Motor skills
- Hearing

**NIH Toolbox Contains:**
- 3 Exec Functioning
- 2 Language
- 3 Visual
- 3 Memory
- 2 Attention
- 12 Motor skills
- 4 Hearing

**NINDS-Examiner**

- Main Goals:
  - Develop a Standard Battery of Tasks for Specific Domains of Executive Function
  - Integrate Studies of Executive Function in Clinical Neurology Applications
  - NIH Toolbox contains 3 tests of executive function

- Multi-Site Project
  - Principal Investigator: Joel Kramer, Psy.D.
  - University of California, San Francisco
  - Project Officer: Emmeline Edwards, Ph.D.
  - NINDS
Clinical & Translational Science Awards (CTSA)

- Funded by the National Center for Research Resources
- Creates a "home" for clinical and translational research within academic institutions
  - Target of 60 institutions
  - Focus on bench to bedside
  - CTSA institutions linked together as well as work with external agencies
  - VA, DoD, community hospitals, pharmaceutical companies

PhenX

- Three year project led by RTI International and funded by NHGRI to contribute to the integration of genetics and epidemiologic research
  - The PhenX Toolkit will be comprise of background information, standard operating procedures, common data elements, glossary of terms, and an outline of suggested protocols and methods for analyzing GWAS data
  - Principal Investigator: Carol Hamilton, Ph.D.
    - RTI International
  - Project Officer: Erin Ramos, Ph.D., M.P.H.
    - NHGRI

PhenX

- PhenX Domains include:
  - Aging
  - Quality of Life
  - Cognitive Measures
  - Psycho-Social
    - Anger
    - Stress
    - Attitudes
  - Physical Activity
    - Physical Fitness
    - Hand Strength

- NIH Toolbox contains:
  - 12 Motor Skills
  - 3 Social Relationship
  - 13 Cognitive
  - 1 Anger
  - 2 Stress
  - 3 Endurance
  - 1 Upper Strength
NIH Toolbox Connection to Other Projects

Kevin P. Conway, Ph.D.

This study is funded in whole or in part with Federal funds from the Blueprint for Neuroscience Research, National Institutes of Health under Contract No. HHS-N-260-2006-00007-C.

For more information, please visit www.nihtoolbox.org.

Richard C. Gershon, PhD, PI  gershon@northwestern.edu