Data Access

This dataset is available free of charge to qualified biomedical or biobehavioral researchers who are studying normal brain development, disorders or disease, and/or who are developing image processing tools.

Application forms, available through the website, include a Data Access Request using form 424 and a Data Use Certification, which must be signed by the applicant and countersigned by an institutional official. Institutions must be covered by a federalwide assurance (FWA), and applicants must have an NIH Commons user account or an NIH login.

Under the terms of the Data Use Certification, users agree not to attempt to identify participants, not to transfer data to others or to another institution, to identify in publications the version of the dataset analyzed, to report publications to the NIH, and to appropriately acknowledge the project in publications. They further agree to provide a 1-year progress report and to allow the posting of information contained in their Data Access Request on the NIH Pediatric MRI website.

Approvals for data access remain in effect for 1 year, after which a new application is required.

Data Releases

Version 1 – 2006
Version 2 – 2007
Version 3 – 2009

For further information, visit:

www.NIH-PediatricMRI.org

NIH Pediatric MRI Data Repository

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NIMH National Institute of Mental Health

National Institute of Neurological Disorders and Stroke

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National Institutes of Health (NIH)

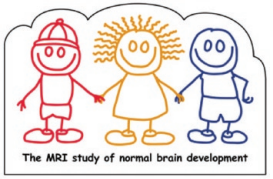
Pediatric MRI Data Repository

A Resource for the Scientific Community

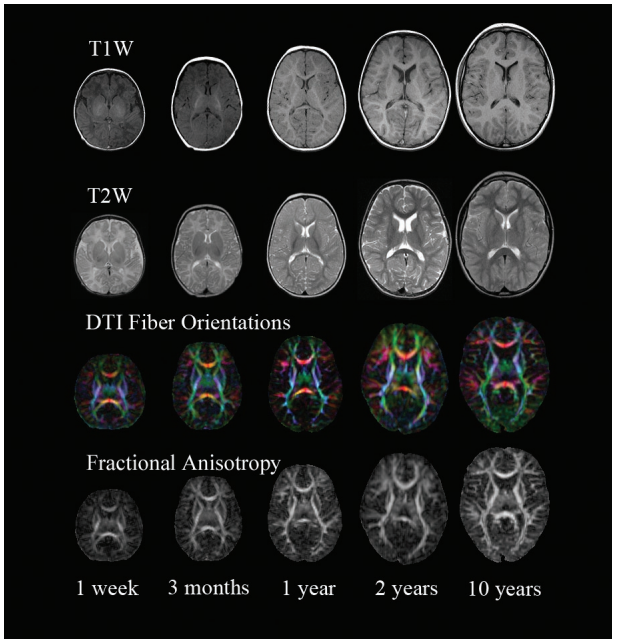
Purpose: To further our understanding of healthy, normal brain development as a basis for understanding childhood disorders and to facilitate the development of new image processing tools.

Features:

- Longitudinal anatomic MRI data
- Ages newborn to early adulthood
- Clinical/behavioral measures
- Ancillary spectroscopy and DTI



February 2010



Sample anatomic MRI and DTI images

Overview

Participants: ~550 unsedated medically healthy, psychiatrically normal children and adolescents/young adults

Two age cohorts
Objective 1: Ages 4 years, 6 months to 18 years upon enrollment, 3 timepoints, 2-year intervals (N = 433)

Objective 2: Newborn to 4 years, 5 months upon enrollment, up to 10 timepoints, intervals range from 3 months to 1 year (N = 116)

Study design and procedures

Epidemiological sampling strategy — stratified by age and sex, matched to U.S. Census on family income and race/ethnicity

Longitudinal design

Core imaging modality — anatomic MRI

Clinical/behavioral measures — at each scanning time point

Ancillary modalities — proton MR spectroscopy, diffusion tensor imaging, collected on subsamples

Data

Checkmark indicates currently available (February 2010)

✔ Anatomic MRI

- ✔ **Multispectral (T1, T2/PD) datasets (~1500)**
- ✔ Raw images — native space
- ✔ Stereotaxically normalized images
  - ✔ Tissue-classified images
  - ✔ Segmented images
  - ✔ Scalar values for regional volumes
  - Cortical thickness maps

✔ Proton MR Spectroscopy

- ✔ **Single-voxel datasets**
- ✔ 336 datasets from 159 subjects. Each dataset includes frontal white matter, thalamus, and parietal white matter (all on left) and midline occipital gray matter.
  - ✔ Spectra with LC model printout
  - Anatomic images showing voxel placement

MRSI datasets

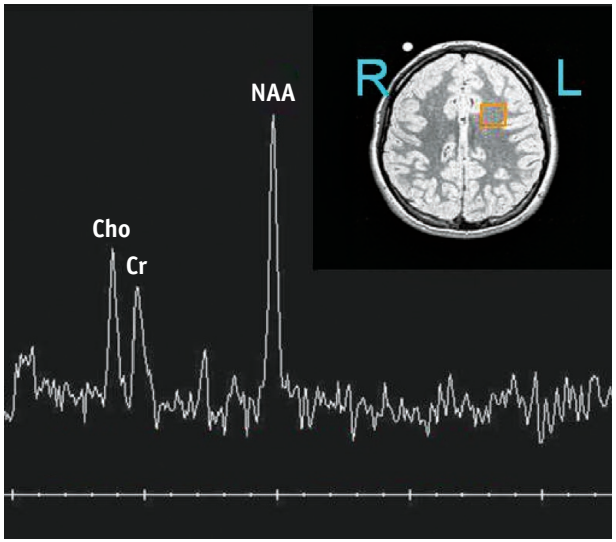
Diffusion Tensor Imaging (DTI)

Diffusion-weighted images
- Raw images (native resolution and orientation)
- Processed/corrected images (motion and distortion corrected)
  - Reoriented to a standardized reference frame
  - Resampled to 2mm isotropic resolution

Tensor-derived quantities
- Diffusion tensor elements computed from corrected images
- Trace of diffusion tensor (equal to 3x mean diffusivity)
- Eigenvalues
- Fractional anisotropy index
- Lattice anisotropy index
- Directionally encoded color (DEC) maps

✔ Clinical/Behavioral

- ✔ **Demographics —** age, sex, parental education, family income, race/ethnicity
- ✔ **Physical neurological exams**
- ✔ **Hormonal measures —** cortisol, DHEA, estradiol, testosterone
- ✔ **Structured psychiatric interviews —** Family Interview for Genetic Studies, Computerized Diagnostic Interview for Children (DISC) — Parent and youth versions, DISC Predictive scales
- ✔ **Tests —** Bayley Scales of Infant Development, California Verbal Learning, CANTAB, Differential Ability Scales, Handedness, Verbal fluency, Preschool Language Scales-3, Purdue Pegboard, Wechsler Digit span, Digit symbol and Coding, Wechsler Abbreviated Scale of Intelligence (WASI), Woodcock-Johnson Tests of Achievement-III
- ✔ **Behavioral rating scales —** Behavior Rating Inventory of Executive Function, Cary Temperament Scales, Child Behavior Checklist, Parenting Stress Index



Sample proton MR spectrum