This is a database of average MRIs and associated MRI volumes for developmental MRI work. It consists of average MRI templates, segmented partial volume estimate volumes for GM, WM, T2W-derived CSF. The database is separated into head-based and brain-based averages. The data are separated by ages in months, years, 6-month, or 5-year intervals. The templates are grouped into first year (2 weeks through 12 months), early childhood (15 months through 4 years), childhood (4 years through 10 years), adolescence (10.5 years through 17.5 years) and adults (18 years through 89 years).

Tools for cortical source analysis of EEG and ERP are provided. These tools are based on the average MRI templates, segmenting, and atlases.

Terms of use: The MRI templates from this database are freely available and distributed for scientific work. The CC BY-NC-ND 3.0 license allows sharing but users should inform JER of any sharing. These should not be modified or used in commercial applications. Publications from this work should cite the publications for the data upon which these templates are based. JER retains all copyrights to the templates.

The database consists of MRI average templates for a number of ages; in 1-3 month increments through 18 months; then half-year increments through 19-5 years; then 5 year increments through 89 years. The templates were done separately for brain and head. Also included are segmentation PVE volumes for gm/wm/csf; T2W-derived CSF; and non-myelinated axons (NMA) for infants. Access to the dataset is separated by ages (infants; 0-12 mo; preschool, 15 mo through 4-0 years; children 4-5 through 10-5 yrs; adolescents 11-0 through 17-5 yrs; adults 20-89 years).

The segment data for ages 15-months and older consists of GM, WM, CSF, and T2W-derived CSF. The best combination of segments would be the image\_aposteriori\_seg data, using GM, WM, and T2W-derived CSF for priors. For 3 through 12 months, the best combination of segments would be the nma\_seg data; using GM, WM, NMA, and T2W-derived CSF. The “CSF” PVE segments are “Other Matter” in a 3-class segmentation (GM, WM, “Other Matter”) and does not reflect actual CSF. The T2W-derived CSF is identified as bright voxels in the T2W scan and represent actual CSF in the brain or head. There is an atlas derived from FSL “Harvard-Oxford” cortical and subcortical atlas for the infants, 8 10 12 14 16 18, and 20-24 year old templates.

Overview:  
ANTS….brain.nii.gz: Average MRI template derived from extracted brain  
ANTS….head.nii.gz: Average MRI template derived from whole head  
ANTS….brain-head: brain extracted from head template   
ANTS….T2W\_brain: MRI template separate for extracted brain T2W  
ANTS….T2W\_head: MRI template separate for whole head T2W

Segments  
AVG…T2W\_brain…: T2W for individual participants, warped to template, averaged  
AVG…image\_seg\_…: Image-based segment averages  
AVG…image\_aposteriori\_seg\_.. : Age-template priors with a posteriori FAST  
AVG…MNI\_aposteriori\_seg\_…: AVG of MNI-template priors, with a posteriori FAST  
AVG…nma\_seg\_: For infants, non-myelinated axons separate from gray matter  
AVG….seg\_csf: “Other matter” in 3-class segmentation  
AVG….seg\_t2wcsf: T2W-derived CSF

Atlas:  
ANTS…brain…brainstem: The individual files have the brain areas  
ANTS…brain\_atlas: Segmented atlas for all brain areas