

# Resource Summary Report

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## BrainWeb - Simulated Brain Database

RRID:SCR\_003263

Type: Tool

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### Proper Citation

BrainWeb - Simulated Brain Database (RRID:SCR\_003263)

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### Resource Information

**URL:** <http://www.bic.mni.mcgill.ca/brainweb/>

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**Description:** Database of human brain images derived from a realistic phantom and generated using a sophisticated MRI simulator. Custom simulations may be generated to match a user's selected parameters. The goal is to aid validation of computer-aided quantitative analysis of medical image data. The SBD contains a set of realistic MRI data volumes produced by an MRI simulator. These data can be used by the neuroimaging community to evaluate the performance of various image analysis methods in a setting where the truth is known. The SBD contains simulated brain MRI data based on two anatomical models: normal and multiple sclerosis (MS). For both of these, full 3-dimensional data volumes have been simulated using three sequences (T1-, T2-, and proton-density- (PD-) weighted) and a variety of slice thicknesses, noise levels, and levels of intensity non-uniformity. These data are available for viewing in three orthogonal views (transversal, sagittal, and coronal), and for downloading.

**Synonyms:** BrainWeb, BainWeb SBD, BrainWeb Simulated Brain Database

**Resource Type:** atlas, data or information resource, database

**Defining Citation:** [PMID:16750398](#)

**Keywords:** human brain, human brain image, human brain database, mri simulation, brain imaging

**Availability:** Free, Freely available

**Resource Name:** BrainWeb - Simulated Brain Database

**Resource ID:** SCR\_003263

**Alternate IDs:** nif-0000-00020

**Record Creation Time:** 20220129T080218+0000

**Record Last Update:** 20260912T200128+0000

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## Ratings and Alerts

No rating or validation information has been found for BrainWeb - Simulated Brain Database.

No alerts have been found for BrainWeb - Simulated Brain Database.

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## Data and Source Information

**Source:** [SciCrunch Registry](#)

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## Usage and Citation Metrics

We found 77 mentions in open access literature.

**Listed below are recent publications.** The full list is available at [SPARC SAWG](#) .

Saladi S, et al. (2024) A unique unsupervised enhanced intuitionistic fuzzy C-means for MR brain tissue segmentation. Scientific reports, 14(1), 29804.

Hardy SM, et al. (2023) Modulation in alpha band activity reflects syntax composition: an MEG study of minimal syntactic binding. Cerebral cortex (New York, N.Y. : 1991), 33(3), 497.

Kumazawa S, et al. (2022) Estimation of undistorted images in brain echo-planar images with distortions using the conjugate gradient method with anatomical regularization. Medical physics, 49(12), 7531.

Cabeza-Ruiz R, et al. (2022) Convolutional Neural Networks for Segmenting Cerebellar Fissures from Magnetic Resonance Imaging. Sensors (Basel, Switzerland), 22(4).

Mauriello C, et al. (2022) Dysfunctional temporal stages of eye-gaze perception in adults with ADHD: A high-density EEG study. Biological psychology, 171, 108351.

Ruby P, et al. (2021) Dynamics of hippocampus and orbitofrontal cortex activity during arousing reactions from sleep: An intracranial electroencephalographic study. Human brain mapping, 42(16), 5188.

de Vega M, et al. (2021) Crossing hands behind your back reduces recall of manual action sentences and alters brain dynamics. Cortex; a journal devoted to the study of the nervous system and behavior, 140, 51.

Chen HM, et al. (2021) Comparison of Multispectral Image-Processing Methods for Brain Tissue Classification in BrainWeb Synthetic Data and Real MR Images. BioMed research international, 2021, 9820145.

Drobnjak I, et al. (2021) Physical and digital phantoms for validating tractography and assessing artifacts. *NeuroImage*, 245, 118704.

Perizzolo Pointet VC, et al. (2020) Violence Exposure Is Associated With Atypical Appraisal of Threat Among Women: An EEG Study. *Frontiers in psychology*, 11, 576852.

Huang B, et al. (2020) A Review of Multimodal Medical Image Fusion Techniques. *Computational and mathematical methods in medicine*, 2020, 8279342.

Miao Y, et al. (2020) Logarithmic Fuzzy Entropy Function for Similarity Measurement in Multimodal Medical Images Registration. *Computational and mathematical methods in medicine*, 2020, 5487168.

Donno B, et al. (2020) The impact of body posture on intrinsic brain activity: The role of beta power at rest. *PloS one*, 15(1), e0218977.

Van Ackeren MJ, et al. (2018) Neuronal populations in the occipital cortex of the blind synchronize to the temporal dynamics of speech. *eLife*, 7.

Wang C, et al. (2018) The same modality medical image registration with large deformation and clinical application based on adaptive diffeomorphic multi-resolution demons. *BMC medical imaging*, 18(1), 21.

Jain S, et al. (2017) Patch-Based Super-Resolution of MR Spectroscopic Images: Application to Multiple Sclerosis. *Frontiers in neuroscience*, 11, 13.

Berchio C, et al. (2017) Dysfunctional gaze processing in bipolar disorder. *NeuroImage. Clinical*, 16, 545.

Ji Z, et al. (2017) A Rough Set Bounded Spatially Constrained Asymmetric Gaussian Mixture Model for Image Segmentation. *PloS one*, 12(1), e0168449.

Frey JN, et al. (2016) The Tactile Window to Consciousness is Characterized by Frequency-Specific Integration and Segregation of the Primary Somatosensory Cortex. *Scientific reports*, 6, 20805.

Lee G, et al. (2016) Adaptive Dimensionality Reduction with Semi-Supervision (AdDReSS): Classifying Multi-Attribute Biomedical Data. *PloS one*, 11(7), e0159088.