Resource Summary Report

Generated by NIF on Aug 26, 2026

Virtual brain

RRID:SCR_002249
Type: Tool

Proper Citation

Virtual brain (RRID:SCR_002249)

Resource Information

URL: http://www.thevirtualbrain.org/

Proper Citation: Virtual brain (RRID:SCR_002249)

Description: Simulation software for modeling the entire human brain by combining structural and functional data from empirical neuroimaging data. It can generate local field potentials, EEG, MEG and fMRI BOLD data based on neural mass models. The user can also modify the model parameters to match clinical conditions from focal lesions or degenerative disorders.

Abbreviations: tvb

Synonyms: thevirtualbrain.org, The Virtual Brain, thevirtualbrain

Resource Type: simulation software, software application, software resource

Defining Citation: PMID:23442172, PMID:23774395

Keywords: dti, simulation, modeling, brain

Funding: James S. McDonnell Foundation

Availability: Free, Freely available

Resource Name: Virtual brain

Resource ID: SCR_002249

Alternate IDs: nlx_155567

Alternate URLs: http://www.nitrc.org/projects/tvb

License: GNU General Public License v2

Record Creation Time: 20220129T080212+0000

Record Last Update: 20260821T193638+0000

Ratings and Alerts

No rating or validation information has been found for Virtual brain.

No alerts have been found for Virtual brain.

Data and Source Information

Source: SciCrunch Registry

Usage and Citation Metrics

We found 45 mentions in open access literature.

Listed below are recent publications. The full list is available at NIF .

Stulz SB, et al. (2026) Phase-dependent stimulation response is shaped by the brain's dynamic functional connectivity. Network neuroscience (Cambridge, Mass.), 10(2), 475.

Milinkovic B, et al. (2025) Capturing the emergent dynamical structure in biophysical neural models. PLoS computational biology, 21(5), e1012572.

Stefanovski L, et al. (2025) An Interactive Brain Atlas of Knowledge. bioRxiv : the preprint server for biology.

Suárez LE, et al. (2024) Connectome-based reservoir computing with the conn2res toolbox. Nature communications, 15(1), 656.

Sorrentino P, et al. (2024) The virtual multiple sclerosis patient. iScience, 27(7), 110101.

Müller V, et al. (2024) Hyper-brain hyper-frequency network topology dynamics when playing guitar in quartet. Frontiers in human neuroscience, 18, 1416667.

Ye C, et al. (2024) Recent Progress in Brain Network Models for Medical Applications: A Review. Health data science, 4, 0157.

Stasinski J, et al. (2024) Homeodynamic feedback inhibition control in whole-brain simulations. PLoS computational biology, 20(12), e1012595.

Lorents A, et al. (2023) Human Brain Project Partnering Projects Meeting: Status Quo and Outlook. eNeuro, 10(9).

Dainauskas JJ, et al. (2023) Altered synaptic plasticity at hippocampal CA1-CA3 synapses in Alzheimer's disease: integration of amyloid precursor protein intracellular domain and amyloid beta effects into computational models. Frontiers in computational neuroscience, 17, 1305169.

Griffiths JD, et al. (2022) Editorial: Neuroinformatics of large-scale brain modelling. Frontiers in neuroinformatics, 16, 1043732.

Franceschiello B, et al. (2022) A Roadmap for Computational Modelling of M/EEG. Brain topography, 35(1), 1.

Triebkorn P, et al. (2022) Brain simulation augments machine-learning-based classification of dementia. Alzheimer's & dementia (New York, N. Y.), 8(1), e12303.

Eriksson O, et al. (2022) Combining hypothesis- and data-driven neuroscience modeling in FAIR workflows. eLife, 11.

Stefanovski L, et al. (2021) Bridging Scales in Alzheimer's Disease: Biological Framework for Brain Simulation With The Virtual Brain. Frontiers in neuroinformatics, 15, 630172.

Deco G, et al. (2021) Rare long-range cortical connections enhance human information processing. Current biology : CB, 31(20), 4436.

Hashemi M, et al. (2021) On the influence of prior information evaluated by fully Bayesian criteria in a personalized whole-brain model of epilepsy spread. PLoS computational biology, 17(7), e1009129.

Schmid K, et al. (2021) Interactive, Visual Simulation of a Spatio-Temporal Model of Gas Exchange in the Human Alveolus. Frontiers in bioinformatics, 1, 774300.

Tao Y, et al. (2021) Investigating the network consequences of focal brain lesions through comparisons of real and simulated lesions. Scientific reports, 11(1), 2213.

Spiegler A, et al. (2020) In silico exploration of mouse brain dynamics by focal stimulation reflects the organization of functional networks and sensory processing. Network neuroscience (Cambridge, Mass.), 4(3), 807.