

Resource Summary Report

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Network Based Statistic Toolbox

RRID:SCR_002454

Type: Tool

Proper Citation

Network Based Statistic Toolbox (RRID:SCR_002454)

Resource Information

URL: <https://sites.google.com/site/bctnet/comparison/nbs>

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Description: Matlab toolbox for testing hypotheses about the human connectome. NBS has been widely used to identify connections and networks comprising the connectome that are associated with an experimental effect or a between-group difference. User provides a series of connectivity matrices from different cohorts, or from the same subject during different experimental conditions. Connectivity matrices are inferred from neuroimaging data using other packages that, for example, count the number of tractography streamlines that interconnect each pair of regions (diffusion-MRI), or measure the extent of inter-regional correlation in BOLD response (fMRI). User specifies hypothesis to be tested at every connection with the general linear model. Features include: graphical user interface; NBSview, a basic network viewer modeled on SPMresults; exchange blocks for repeated measures; options to measure network size with intensity or extent; false discovery rate (FDR) option. Developed by Zalesky, Fornito, Cocchi and Bullmore.

Abbreviations: NBS

Synonyms: Network Based Statistic Toolbox, Network-Based Statistic (NBS)

Resource Type: software toolkit, software resource

Defining Citation: [PMID:20600983](#)

Keywords: connectivity analysis, domain independent, statistical operation, matlab

Availability: Free, Available for download, Freely available

Resource Name: Network Based Statistic Toolbox

Resource ID: SCR_002454

Alternate IDs: nlx_155826

Alternate URLs: <http://www.nitrc.org/projects/nbs>

License: GNU General Public License

Record Creation Time: 20220129T080213+0000

Record Last Update: 20260819T044048+0000

Ratings and Alerts

No rating or validation information has been found for Network Based Statistic Toolbox.

No alerts have been found for Network Based Statistic Toolbox.

Data and Source Information

Source: [SciCrunch Registry](#)

Usage and Citation Metrics

We found 68 mentions in open access literature.

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

Tao Y, et al. (2026) Multimodal neuroimaging of locus coeruleus-default mode network connectivity for predicting dexmedetomidine response in chronic insomnia disorder. *Frontiers in psychiatry*, 17, 1718790.

Yang L, et al. (2026) Preoperative MEG reveals differential brain network characteristics in drug-resistant epilepsy patients based on vagus nerve stimulation response. *Neurological sciences : official journal of the Italian Neurological Society and of the Italian Society of Clinical Neurophysiology*, 47(1), 143.

Zhao S, et al. (2026) Alterations in whole-brain white matter structural network among females with abdominal obesity by appetite subtypes. *Frontiers in nutrition*, 13, 1768938.

Estevez-Fraga C, et al. (2025) Cell-specific mechanisms drive connectivity across the time course of Huntington's disease. *Nature communications*, 16(1), 5519.

Ma X, et al. (2025) Sex Similarities and Differences in Brain Dynamic Functional Connectivity Among Individuals With and Without Autism Spectrum Disorders. *Human brain mapping*, 46(17), e70423.

Qu C, et al. (2025) Disrupted modular and hub topology in right temporal lobe epilepsy: a multimodal MRI network analysis. *Frontiers in neurology*, 16, 1618388.

Lu J, et al. (2025) The relationship between neuromagnetic networks and cognitive impairment in self-limited epilepsy with centrotemporal spikes. *Epilepsia open*, 10(3), 842.

Tremblay C, et al. (2025) Altered network efficiency in isolated REM sleep behavior disorder: A multicentric study. *Alzheimer's & dementia : the journal of the Alzheimer's Association*, 21(8), e70574.

Qian W, et al. (2025) Aberrant static and dynamic brain functional topological organization in the differentiation of myelin oligodendrocyte glycoprotein antibody-seropositive optic neuritis from seronegative optic neuritis. *Frontiers in neuroscience*, 19, 1627269.

Cheung CY, et al. (2025) Individualized connectomic tACS immediately improves oscillatory network with language facilitation in post-stroke aphasia: a feasibility study of a dysfunctome-based targeting approach. *Frontiers in computational neuroscience*, 19, 1635497.

Mu R, et al. (2024) Aberrant baseline brain activity and disrupted functional connectivity in patients with vascular cognitive impairment due to cerebral small vessel disease. *Frontiers in neurology*, 15, 1421283.

Chen F, et al. (2024) Abnormal topological organization of functional brain networks in the patients with anterior segment ischemic optic neuropathy. *Frontiers in neuroscience*, 18, 1458897.

Li J, et al. (2024) Disrupted topological organization of functional brain networks in traumatic axonal injury. *Brain imaging and behavior*, 18(2), 279.

Wei B, et al. (2024) Analyzing the topological properties of resting-state brain function network connectivity based on graph theoretical methods in patients with high myopia. *BMC ophthalmology*, 24(1), 315.

Ma H, et al. (2024) In patients with mild disability NMOSD: is the alteration in the cortical morphological or functional network topological properties more significant. *Frontiers in immunology*, 15, 1345843.

Lin J, et al. (2024) Structural covariance alterations reveal motor damage in periventricular leukomalacia. *Brain communications*, 6(6), fcae405.

Tolonen T, et al. (2024) Working memory related functional connectivity in adult ADHD and its amenability to training: A randomized controlled trial. *NeuroImage. Clinical*, 44, 103696.

Wang Y, et al. (2024) Hypo-connectivity of the primary somatosensory cortex in Parkinson's disease: a resting-state functional MRI study. *Frontiers in neurology*, 15, 1361063.

Li Y, et al. (2024) Disrupted individual-level morphological brain network in spinal muscular atrophy types 2 and 3. *CNS neuroscience & therapeutics*, 30(6), e14804.

Tian T, et al. (2024) Long-term effects of childhood single-parent family structure on brain connectivity and psychological well-being. *Brain imaging and behavior*.