Resource Summary Report

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MGH-USC Human Connectome Project

RRID:SCR_003490
Type: Tool

Proper Citation

MGH-USC Human Connectome Project (RRID:SCR_003490)

Resource Information

URL: http://www.humanconnectomeproject.org/

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Description: A multi-center project comprising two distinct consortia (Mass. Gen. Hosp. and USC; and Wash. U. and the U. of Minn.) seeking to map white matter fiber pathways in the human brain using leading edge neuroimaging methods, genomics, architectonics, mathematical approaches, informatics, and interactive visualization. The mapping of the complete structural and functional neural connections in vivo within and across individuals provides unparalleled compilation of neural data, an interface to graphically navigate this data and the opportunity to achieve conclusions about the living human brain. The HCP is being developed to employ advanced neuroimaging methods, and to construct an extensive informatics infrastructure to link these data and connectivity models to detailed phenomic and genomic data, building upon existing multidisciplinary and collaborative efforts currently underway. Working with other HCP partners based at Washington University in St. Louis they will provide rich data, essential imaging protocols, and sophisticated connectivity analysis tools for the neuroscience community. This project is working to achieve the following: 1) develop sophisticated tools to process high-angular diffusion (HARDI) and diffusion spectrum imaging (DSI) from normal individuals to provide the foundation for the detailed mapping of the human connectome; 2) optimize advanced high-field imaging technologies and neurocognitive tests to map the human connectome; 3) collect connectomic, behavioral, and genotype data using optimized methods in a representative sample of normal subjects; 4) design and deploy a robust, web-based informatics infrastructure, 5) develop and disseminate data acquisition and analysis, educational, and training outreach materials.

Abbreviations: MGH/UCLA HCP

Synonyms: Harvard/MGH-UCLA Human Connectome Project, Harvard/MGH-UCLA

Consortium: Human Connectome Project, HCP Harvard/MGH-UCLA, MGH/UCLA Consortium: Human Connectome Project

Resource Type: production service resource, portal, material service resource, data or information resource, service resource, instrument manufacture

Keywords: human, structural, functional, neural, white matter, fiber, brain, in vivo, genomic, neuroimaging, visualization, neuroanatomy, genotype, connectivity, connectivity model, neural pathway, phenomic, connectomics, quantification, scanner, eeg, meg, shape analysis, spatial transformation, diffusion spectrum, q-ball, tensor metric, fiber tracking, connectome, behavior, scanner, web resource, diffusion spectrum, q-ball, tensor metric, quantification, shape analysis, spatial transformation, fiber tracking, FASEB list

Related Condition: Normal

Funding: NIH ;
NIH Blueprint for Neuroscience Research

Availability: Open unspecified license, (BSD/MIT-Style), LONI Software License, Public Domain

Resource Name: MGH-USC Human Connectome Project

Resource ID: SCR_003490

Alternate IDs: nif-0000-35789

Alternate URLs: http://www.nitrc.org/projects/hcp_mgh-ucla

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Record Last Update: 20250507T060136+0000

Ratings and Alerts

No rating or validation information has been found for MGH-USC Human Connectome Project.

No alerts have been found for MGH-USC Human Connectome Project.

Data and Source Information

Source: SciCrunch Registry

Usage and Citation Metrics

We found 153 mentions in open access literature.

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

Cai W, et al. (2024) Subthalamic nucleus-language network connectivity predicts dopaminergic modulation of speech function in Parkinson's disease. Proceedings of the National Academy of Sciences of the United States of America, 121(22), e2316149121.

Luan Y, et al. (2024) Tau-network mapping of domain-specific cognitive impairment in Alzheimer's disease. NeuroImage. Clinical, 44, 103699.

Chauvel M, et al. (2024) Comparative analysis of the chimpanzee and human brain superficial structural connectivities. Brain structure & function, 229(8), 1943.

Beattie BC, et al. (2024) Literature review and protocol for a prospective multicentre cohort study on multimodal prediction of seizure recurrence after unprovoked first seizure. BMJ open, 14(4), e086153.

Ryali S, et al. (2024) Deep learning models reveal replicable, generalizable, and behaviorally relevant sex differences in human functional brain organization. Proceedings of the National Academy of Sciences of the United States of America, 121(9), e2310012121.

Chakraborty S, et al. (2024) Multimodal gradients of basal forebrain connectivity across the neocortex. Nature communications, 15(1), 8990.

Kang K, et al. (2024) Study design features increase replicability in brain-wide association studies. Nature, 636(8043), 719.

Gualtierotti R, et al. (2024) Exploring the Impact of Sex and Gender in Brain Function: Implications and Considerations. Advances in therapy, 41(12), 4377.

Das S, et al. (2023) Topological data analysis of human brain networks through order statistics. PloS one, 18(3), e0276419.

Mandelli ML, et al. (2023) Network anatomy in logopenic variant of primary progressive aphasia. Human brain mapping, 44(11), 4390.

Tregidgo HFJ, et al. (2023) Accurate Bayesian segmentation of thalamic nuclei using diffusion MRI and an improved histological atlas. NeuroImage, 274, 120129.

Baniasadi M, et al. (2023) DBSegment: Fast and robust segmentation of deep brain structures considering domain generalization. Human brain mapping, 44(2), 762.

Huang NX, et al. (2023) Corticospinal fibers with different origins impair in amyotrophic lateral sclerosis: A neurite orientation dispersion and density imaging study. CNS neuroscience & therapeutics, 29(11), 3406.

Gouveia FV, et al. (2023) Multi-centre analysis of networks and genes modulated by

hypothalamic stimulation in patients with aggressive behaviours. eLife, 12.

Kumar VJ, et al. (2023) The structural connectivity mapping of the intralaminar thalamic nuclei. Scientific reports, 13(1), 11938.

Collin G, et al. (2023) Mapping the multimodal connectome: On the architects of brain network science. PLoS biology, 21(3), e3002043.

Varley TF, et al. (2023) Multivariate information theory uncovers synergistic subsystems of the human cerebral cortex. Communications biology, 6(1), 451.

Chang YN, et al. (2023) Distance-dependent distribution thresholding in probabilistic tractography. Human brain mapping, 44(10), 4064.

Chakraborty S, et al. (2023) Multimodal gradients of human basal forebrain connectivity. bioRxiv : the preprint server for biology.

Khan AF, et al. (2023) Patient-specific models link neurotransmitter receptor mechanisms with motor and visuospatial axes of Parkinson's disease. Nature communications, 14(1), 6009.