Resource Summary Report

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LEAD-DBS

RRID:SCR_002915
Type: Tool

Proper Citation

LEAD-DBS (RRID:SCR_002915)

Resource Information

URL: http://www.lead-dbs.org/

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Description: MATLAB toolbox for deep-brain-stimulation (DBS) electrode reconstructions and visualizations based on postoperative MRI and computed tomography (CT) imaging. The toolbox also facilitates visualization of localization results in 2D/3D, analysis of DBS-electrode placement's effects on clinical results, simulation of DBS stimulations, diffusion tensor imaging (DTI) based connectivity estimates, and fiber-tracking from the VAT to other brain regions (connectomic surgery).

Synonyms: Lead-DBS, LEAD DBS, Lead DBS

Resource Type: software resource, software toolkit

Keywords: matlab, deep brain stimulation, structural mri, reconstruction, dwi, dti, volume of activated tissue, modeling, subcortical atlas, depression, mri, computed tomography, atlas application, simulation, diffusion mr fiber tracking, three dimensional display, two dimensional display, surface rendering, volume rendering, workflow, neuroimaging, data repository

Related Condition: Parkinson's disease, Dystonia, Depressive Disorder

Funding: DFG KFO 247

Availability: Free, Available for download, Freely available

Resource Name: LEAD-DBS

Resource ID: SCR_002915

Alternate IDs: SciRes_000188

Alternate URLs: http://www.nitrc.org/projects/lead-dbs

License: GNU General Public License version 3

Record Creation Time: 20220129T080216+0000

Record Last Update: 20260821T193651+0000

Ratings and Alerts

No rating or validation information has been found for LEAD-DBS.

No alerts have been found for LEAD-DBS.

Data and Source Information

Source: SciCrunch Registry

Usage and Citation Metrics

We found 279 mentions in open access literature.

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

Vissani M, et al. (2026) Pallidal alpha activity is an electrophysiological biomarker of symptom severity in obsessive-compulsive disorder. Research square.

Sharma A, et al. (2026) Dynamic neural states underpin motor symptom severity in Parkinson's disease: a longitudinal analysis of chronic cortico-subthalamic nucleus recordings. EBioMedicine, 128, 106293.

Hossain N, et al. (2026) Unilateral inferior olivary hypertrophy in a patient with primary progressive apraxia of speech. Neuroimage. Reports, 6(2), 100352.

Dzhalagoniya I, et al. (2026) Pallidal physiology and predictors of successful deep brain stimulation in jerky dystonia, dystonia with tremor, and their combination. Clinical neurophysiology : official journal of the International Federation of Clinical Neurophysiology, 188, 2111900.

Giacobbe P, et al. (2026) Deep Brain Stimulation to the Subgenual Cingulate Gyrus for Treatment-Resistant Depression: A Randomized Controlled Trial and 2-Year Long-Term Follow-Up: Stimulation cérébrale profonde du gyrus cingulaire subgénual pour traiter la dépression résistante au traitement : Essai contrôlé à répartition aléatoire et suivi à long terme sur deux ans. Canadian journal of psychiatry. Revue canadienne de psychiatrie, 71(4), 266.

Martinez-Nunez AE, et al. (2026) Functional Connectivity to the Cerebellum and Resting-State Networks Predict Earlier Improvement of Dystonia Following Globus Pallidus Internus-Deep Brain Stimulation (GPi-DBS). Movement disorders : official journal of the Movement Disorder Society, 41(3), 719.

Iskin SA, et al. (2026) Capturing Brain Response Patterns to Subcallosal Cingulate Deep Brain Stimulation Using Cycling fMRI: A Proof-of-Concept Study: Acquisition de schémas cérébraux de réponse à la stimulation cérébrale profonde ciblant le cortex cingulaire subgénual à l'aide de l'IRMf en cycles : étude de validation. Canadian journal of psychiatry. Revue canadienne de psychiatrie, 71(4), 277.

Nonaka T, et al. (2026) Optimal Stimulation Sites and Long-Term Efficacy of Pallidal Deep-Brain Stimulation for Patients With Tardive Dystonia. Journal of movement disorders, 19(1), 49.

Nishitani M, et al. (2026) Probabilistic Lesion Mapping to Optimize Thalamotomy Targets for Focal Hand Dystonia. Annals of neurology, 99(5), 1227.

Ren J, et al. (2026) Parkinson's disease as a somato-cognitive action network disorder. Nature, 651(8107), 1030.

Leavitt D, et al. (2026) Machine learning-based optimization of dual subthalamic nucleus and substantia nigra targeting in deep brain stimulation. NPJ Parkinson's disease, 12(1).

Lai Y, et al. (2026) Bed nucleus of the stria terminalis-nucleus accumbens stimulation for depression: A randomized, double-blind, crossover trial. Cell reports. Medicine, 7(4), 102711.

Khoshnoud S, et al. (2026) Age, emotional burden and deep brain stimulation electrode location shape Parkinson's disease quality of life. NPJ digital medicine, 9(1).

Calvano A, et al. (2026) Subthalamic segmentations in relation to deep brain stimulation volumes in Parkinson's disease. Acta neurochirurgica, 168(1).

Peschke S, et al. (2026) Patient-Reported Feedback Suggests an Alternative Sweet Spot for Deep Brain Stimulation Programming in Essential Tremor. Movement disorders : official journal of the Movement Disorder Society, 41(5), 1209.

Bahners BH, et al. (2026) Spatial signature of low-frequency network changes accounts for pallidal stimulation outcome in cervical dystonia. EBioMedicine, 124, 106140.

Wu J, et al. (2026) Correlation between electrode location and clinical efficacy of deep brain stimulation of the globus pallidus internus in isolated generalized dystonia. Frontiers in neurology, 17, 1779301.

van den Heuvel MP, et al. (2026) Investigating the methodological foundation of lesion network mapping. Nature neuroscience, 29(5), 1237.

Meng D, et al. (2026) Case Report: Effective management of a Meige syndrome patient with subthalamic stimulation-induced dyskinesia through timed stimulation programming of different contacts. Frontiers in human neuroscience, 20, 1743270.

Merk T, et al. (2026) Invasive neurophysiology and whole brain connectomics for neural decoding in patients with brain implants. Nature biomedical engineering, 10(5), 852.