

Resource Summary Report

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NODDI Matlab Toolbox

RRID:SCR_006826

Type: Tool

Proper Citation

NODDI Matlab Toolbox (RRID:SCR_006826)

Resource Information

URL: <http://cmic.cs.ucl.ac.uk/mig/index.php?n=Tutorial.NODDI matlab>

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Description: This MATLAB toolbox implements a data fitting routine for Neurite Orientation Dispersion and Density Imaging (NODDI). NODDI is a new diffusion MRI technique for imaging brain tissue microstructure. Compared to DTI, it has the advantage of providing measures of tissue microstructure that are much more direct and hence more specific. It achieves this by adopting the model-based strategy which relates the signals from diffusion MRI to geometric models of tissue microstructure. In contrast to typical model-based techniques, NODDI is much more clinically feasible and can be acquired on standard MR scanners with an imaging time comparable to DTI.

Abbreviations: NODDI Matlab Toolbox

Resource Type: software resource, software toolkit

Keywords: analyze, matlab, magnetic resonance, nifti, os independent, neurite orientation dispersion and density imaging, diffusion mri

Availability: Artistic License

Resource Name: NODDI Matlab Toolbox

Resource ID: SCR_006826

Alternate IDs: nlx_155892

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

Record Creation Time: 20220129T080238+0000

Record Last Update: 20260912T200236+0000

Ratings and Alerts

No rating or validation information has been found for NODDI Matlab Toolbox.

No alerts have been found for NODDI Matlab Toolbox.

Data and Source Information

Source: [SciCrunch Registry](#)

Usage and Citation Metrics

We found 29 mentions in open access literature.

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

Aye N, et al. (2026) Motor learning induces myelin-related white matter changes revealed by MRI-based in vivo histology. *Communications biology*, 9(1).

Sharbafshaaer M, et al. (2026) Subcortical microstructural impairment in amyotrophic lateral sclerosis: clinical correlates of neurite orientation dispersion and density imaging (NODDI) changes. *Frontiers in neuroscience*, 20, 1757470.

Filip P, et al. (2025) Clinical and MRI Correlates of ??-Amyloid Load Inconsistent With Its Presumed Neurotoxicity in Cognitively Healthy Ageing. *Journal of neurochemistry*, 169(9), e70241.

Basaia S, et al. (2025) Unveiling hidden neurodegeneration in isolated REM sleep behavior disorder through MRI microstructure and glymphatic flow. *NPJ Parkinson's disease*, 11(1), 346.

Diamandi J, et al. (2025) Use of multi-modal non-contrast MRI to predict functional outcomes after stroke: A study using DP-pCASL, DTI, NODDI, and MAP MRI. *NeuroImage. Clinical*, 45, 103742.

Huang Y, et al. (2025) Added prognostic value of histogram features from preoperative multi-modal diffusion MRI in predicting Ki-67 proliferation for adult-type diffuse gliomas. *Quantitative imaging in medicine and surgery*, 15(9), 8423.

Jiang S, et al. (2025) Cognitive Implications of White Matter Alterations in Overweight Chinese Individuals: An NODDI and DTI Study. *Brain and behavior*, 15(8), e70777.

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Agosta F, et al. (2025) Modelling pathological spread through the structural connectome in the frontotemporal dementia clinical spectrum. *Brain : a journal of neurology*, 148(6), 1994.

Taubert M, et al. (2024) Higher surface folding of the human premotor cortex is associated with better long-term learning capability. *Communications biology*, 7(1), 635.

Wei X, et al. (2024) Gait impairment-related axonal degeneration in Parkinson's disease by neurite orientation dispersion and density imaging. NPJ Parkinson's disease, 10(1), 45.

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Danciut I, et al. (2024) Understanding the mechanisms of fatigue in multiple sclerosis: linking interoception, metacognition and white matter dysconnectivity. Brain communications, 6(5), fcae292.

Cheng Y, et al. (2024) Efficacy, safety, and response predictors of Astragalus in patients with mild to moderate Alzheimer's disease: A study protocol of an assessor-blind, statistician-blind open-label randomized controlled trial. Contemporary clinical trials communications, 41, 101339.

Mouchtouris N, et al. (2024) The impact of mechanical thrombectomy on the blood-brain barrier in patients with acute ischemic stroke: A non-contrast MR imaging study using DP-pCASL and NODDI. NeuroImage. Clinical, 43, 103629.

Churchill NW, et al. (2024) Effects of post-acute COVID-19 syndrome on cerebral white matter and emotional health among non-hospitalized individuals. Frontiers in neurology, 15, 1432450.

Saito Y, et al. (2023) Traveling Subject-Informed Harmonization Increases Reliability of Brain Diffusion Tensor and Neurite Mapping. Aging and disease, 15(6), 2770.

Henriques RN, et al. (2023) Unique information from common diffusion MRI models about white-matter differences across the human adult lifespan. Imaging neuroscience (Cambridge, Mass.), 1.

Kimura I, et al. (2022) Microstructural Properties of Human Brain Revealed by Fractional Anisotropy Can Predict the After-Effect of Intermittent Theta Burst Stimulation. Cerebral cortex communications, 3(1), tgab065.

Meijboom R, et al. (2022) Rationale and design of the brain magnetic resonance imaging protocol for FutureMS: a longitudinal multi-centre study of newly diagnosed patients with relapsing-remitting multiple sclerosis in Scotland. Wellcome open research, 7, 94.