# **Resource Summary Report**

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# **NIRS-SPM**

RRID:SCR\_009630

Type: Tool

### **Proper Citation**

NIRS-SPM (RRID:SCR\_009630)

#### **Resource Information**

URL: http://bisp.kaist.ac.kr/NIRS-SPM

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**Description:** A SPM and MATLAB-based software package for statistical analysis of near-infrared spectroscopy (NIRS) signals. Based on the general linear model (GLM), and Sun's tube formula / Lipschitz-Killing curvature (LKC) based expected Euler characteristics, NIRS-SPM not only provides activation maps of oxy-, deoxy-, and total-hemoglobin, but also allows for super-resolution activation localization. Additional features, including a wavelet-minimum description length detrending algorithm and cerebral metabolic rate of oxygen (CMRO2) estimation without hypercapnia, were implemented in the NIRS-SPM software package.

**Abbreviations: NIRS-SPM** 

Resource Type: software resource, data analysis software, software application, data

processing software

Keywords: optical imaging, near-infrared spectroscopy, spm, matlab

**Funding:** 

Availability: GNU General Public License

Resource Name: NIRS-SPM

Resource ID: SCR\_009630

Alternate IDs: nlx 155885

Alternate URLs: http://www.nitrc.org/projects/nirs\_spm

**Record Creation Time:** 20220129T080254+0000

Record Last Update: 20250509T055922+0000

### Ratings and Alerts

No rating or validation information has been found for NIRS-SPM.

No alerts have been found for NIRS-SPM.

#### Data and Source Information

Source: SciCrunch Registry

## **Usage and Citation Metrics**

We found 121 mentions in open access literature.

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

Nemoto M, et al. (2025) Long-Term Multimodal Exercise Intervention for Patients with Frontotemporal Lobar Degeneration: Feasibility and Preliminary Outcomes. Dementia and geriatric cognitive disorders extra, 15(1), 19.

Zhang H, et al. (2024) Neurovascular coupling in the attention during visual working memory processes. iScience, 27(4), 109368.

Lu J, et al. (2024) Age-related differences of subjective visual vertical perception in adults-a functional near-infrared spectroscopy study. Frontiers in aging neuroscience, 16, 1449455.

Liu Y, et al. (2024) Brain activation patterns in patients with post-stroke cognitive impairment during working memory task: a functional near-infrared spectroscopy study. Frontiers in neurology, 15, 1419128.

Wu J, et al. (2024) Effects of rhythmic visual cues on cortical activation and functional connectivity features during stepping: an fNIRS study. Frontiers in human neuroscience, 18, 1337504.

Wang J, et al. (2024) Comparison of different rhythmic auditory stimuli on prefrontal cortex cortical activation during upper limb movement in patients with Parkinson's disease: a functional near-infrared spectroscopy study. Frontiers in neurology, 15, 1336268.

Wang H, et al. (2024) Effects of two-person synchronized cycling exercise on interpersonal cooperation: A near-infrared spectroscopy hyperscanning study. International journal of

clinical and health psychology: IJCHP, 24(3), 100492.

Chen S, et al. (2024) Cortical activity in patients with high-functioning ischemic stroke during the Purdue Pegboard Test: insights into bimanual coordinated fine motor skills with functional near-infrared spectroscopy. Neural regeneration research, 19(5), 1098.

Eken A, et al. (2024) Explainable fNIRS-based pain decoding under pharmacological conditions via deep transfer learning approach. Neurophotonics, 11(4), 045015.

Zhang X, et al. (2024) Support vector machine prediction of individual Autism Diagnostic Observation Schedule (ADOS) scores based on neural responses during live eye-to-eye contact. Scientific reports, 14(1), 3232.

Gan L, et al. (2024) Effects of low-frequency rTMS combined with speech and language therapy on Broca's aphasia in subacute stroke patients. Frontiers in neurology, 15, 1473254.

Huo C, et al. (2024) Effectiveness of unilateral lower-limb exoskeleton robot on balance and gait recovery and neuroplasticity in patients with subacute stroke: a randomized controlled trial. Journal of neuroengineering and rehabilitation, 21(1), 213.

Okumura Y, et al. (2024) The Impact of Listening to Background Music on Inhibition Control and Prefrontal Cortical Activation in Healthy Older Adults: A Study Using Functional Near-Infrared Spectroscopy. Cureus, 16(9), e69445.

Wang C, et al. (2023) An fNIRS investigation of novel expressed emotion stimulations in schizophrenia. Scientific reports, 13(1), 11141.

Alcock L, et al. (2023) Faster Walking Speeds Require Greater Activity from the Primary Motor Cortex in Older Adults Compared to Younger Adults. Sensors (Basel, Switzerland), 23(15).

Lee G, et al. (2023) HyperOptoNet: a MATLAB-based toolbox for inter-brain neuronal synchrony analysis using fNIRS hyperscanning. Neurophotonics, 10(2), 025015.

Crum J, et al. (2022) Decreased Exercise-Induced Changes in Prefrontal Cortex Hemodynamics Are Associated With Depressive Symptoms. Frontiers in neuroergonomics, 3, 806485.

Hirsch J, et al. (2022) Neural correlates of eye contact and social function in autism spectrum disorder. PloS one, 17(11), e0265798.

Chen L, et al. (2022) Distinct Contributions of Genes and Environment to Visual Size Illusion and the Underlying Neural Mechanism. Cerebral cortex (New York, N.Y.: 1991), 32(5), 1014.

Cheng X, et al. (2022) Integration of social status and trust through interpersonal brain synchronization. NeuroImage, 246, 118777.