

Resource Summary Report

Generated by SPARC SAWG on Aug 9, 2026

Functional Real-time Interactive Endogenous Neuromodulation and Decoding (FRIEND)

RRID:SCR_014186

Type: Tool

Proper Citation

Functional Real-time Interactive Endogenous Neuromodulation and Decoding (FRIEND)
(RRID:SCR_014186)

Resource Information

URL: <http://www.nitrc.org/projects/friend>

Proper Citation: Functional Real-time Interactive Endogenous Neuromodulation and Decoding (FRIEND) (RRID:SCR_014186)

Description: A GUI-based software for real-time fMRI processing, multivoxel pattern decoding and neurofeedback. The package integrates routines for image preprocessing in real-time, ROI-based feedback and brain decoding-based feedback using the FSL and libSVM libraries. Users can create or employ pre-specified visual stimuli for neurofeedback experiments. FRIEND can be used as Windows standalone software or as a multiplatform toolbox (called FRIEND Engine).

Abbreviations: FRIEND

Resource Type: image processing software, software resource, software application, standalone software, data processing software

Keywords: real time, fmri, processing, neuro feedback, standalone software, toolbox,

Availability: Public, Available to the research community, The community can contribute to this resource

Resource Name: Functional Real-time Interactive Endogenous Neuromodulation and Decoding (FRIEND)

Resource ID: SCR_014186

License: FRIEND License

Record Creation Time: 20220129T080319+0000

Record Last Update: 20260808T190028+0000

Ratings and Alerts

No rating or validation information has been found for Functional Real-time Interactive Endogenous Neuromodulation and Decoding (FRIEND).

No alerts have been found for Functional Real-time Interactive Endogenous Neuromodulation and Decoding (FRIEND).

Data and Source Information

Source: [SciCrunch Registry](#)

Usage and Citation Metrics

We found 13 mentions in open access literature.

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

McCarthy OM, et al. (2026) Impact of cardiovascular autonomic neuropathy on cardiopulmonary, sympathoadrenal and metabolic responses to physical exercise in adults with type 1 diabetes. *Diabetologia*, 69(3), 618.

Boulet J, et al. (2025) Cardiorespiratory fitness in COPD and HF from the Fitness Registry and the Importance of Exercise: a National Database. *European heart journal open*, 5(1), oeae104.

Inskip M, et al. (2024) The Frailty Reduction via Implementation of Exercise, Nutrition, and Deprescribing (FRIEND) Trial: Study Protocol and Recruitment Results. *Methods and protocols*, 7(2).

Watso JC, et al. (2024) Hypertension and Ventilatory Responses During Exercise in the Fitness Registry and the Importance of Exercise National Database (FRIEND). *Journal of the American Heart Association*, 13(15), e034114.

Pignanelli C, et al. (2024) The addition of blood flow restriction during resistance exercise does not increase prolonged low-frequency force depression. *Experimental physiology*, 109(5), 738.

Jaeckle T, et al. (2023) Self-blame in major depression: a randomised pilot trial comparing fMRI neurofeedback with self-guided psychological strategies. *Psychological medicine*, 53(7), 2831.

Hedman K, et al. (2021) Low but not high exercise systolic blood pressure is associated with long-term all-cause mortality. *BMJ open sport & exercise medicine*, 7(2), e001106.

Myers J, et al. (2021) Comparison of the FRIEND and Wasserman-Hansen Equations in Predicting Outcomes in Heart Failure. *Journal of the American Heart Association*, 10(21), e021246.

Zahn R, et al. (2019) Blame-rebalance fMRI neurofeedback in major depressive disorder: A randomised proof-of-concept trial. *NeuroImage. Clinical*, 24, 101992.

Yang K, et al. (2016) The DmtA methyltransferase contributes to *Aspergillus flavus* conidiation, sclerotial production, aflatoxin biosynthesis and virulence. *Scientific reports*, 6, 23259.

Yang K, et al. (2016) Adenylate Cyclase AcyA Regulates Development, Aflatoxin Biosynthesis and Fungal Virulence in *Aspergillus flavus*. *Frontiers in cellular and infection microbiology*, 6, 190.

Leidner AJ, et al. (2014) Estimating the effectiveness of health-risk communications with propensity-score matching: application to arsenic groundwater contamination in four US locations. *Journal of environmental and public health*, 2014, 783902.

Sato JR, et al. (2013) Real-time fMRI pattern decoding and neurofeedback using FRIEND: an FSL-integrated BCI toolbox. *PloS one*, 8(12), e81658.