

Resource Summary Report

Generated by RRID on Aug 5, 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: data processing software, standalone software, software resource, software application, image 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: 20260805T044321+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 12 mentions in open access literature.

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

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.

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.

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.

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.