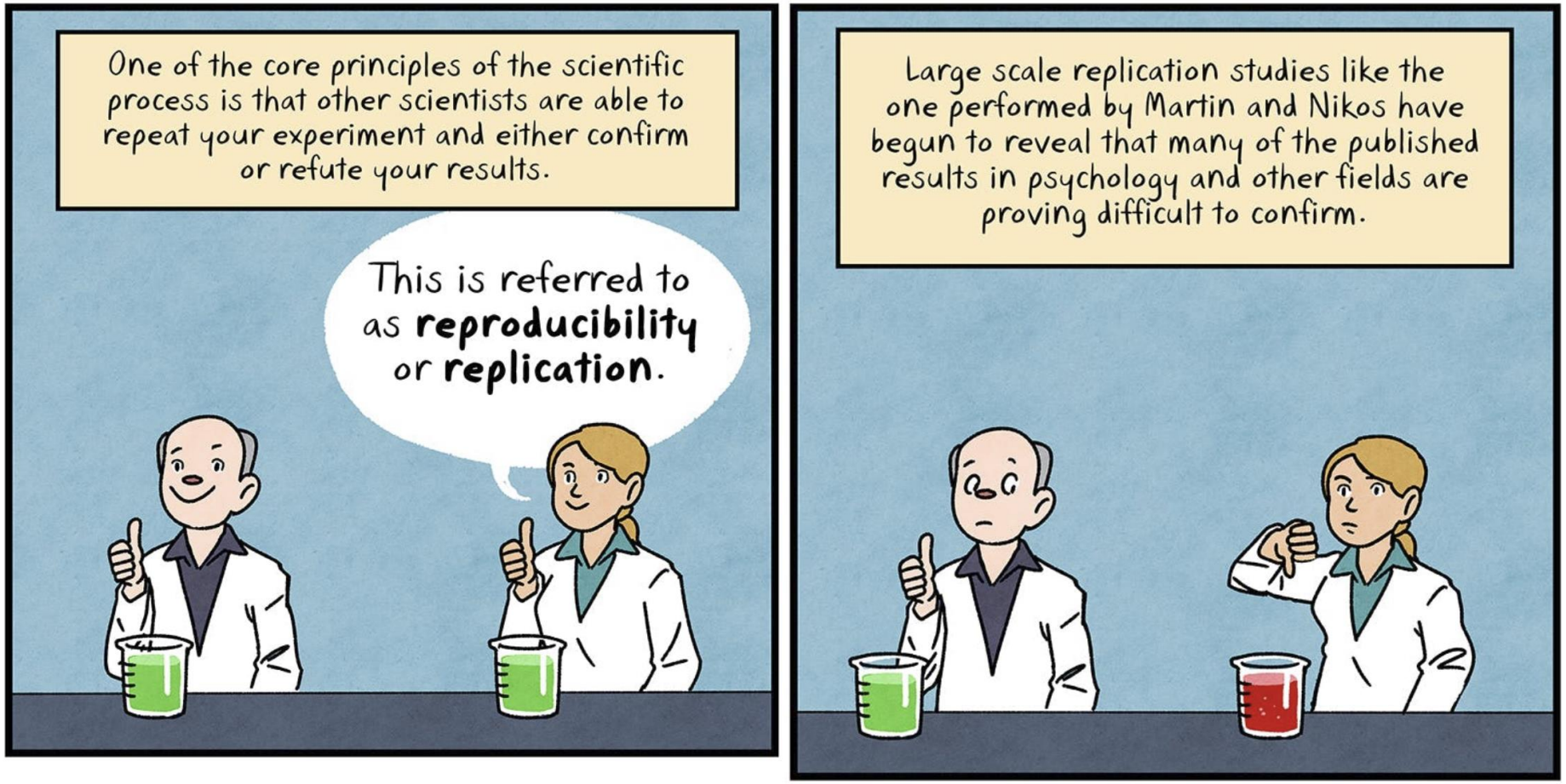
PET data formats: past history and current resources

PET is wonderful 2025 - Continued Education Workshop

Melanie Ganz-Benjaminsen
Copenhagen University Hospital, Denmark &
Department of Computer Science, University of Copenhagen

KØBENHAVNS UNIVERSITET

Replication crisis



https://thenib.com/repeat-after-me/

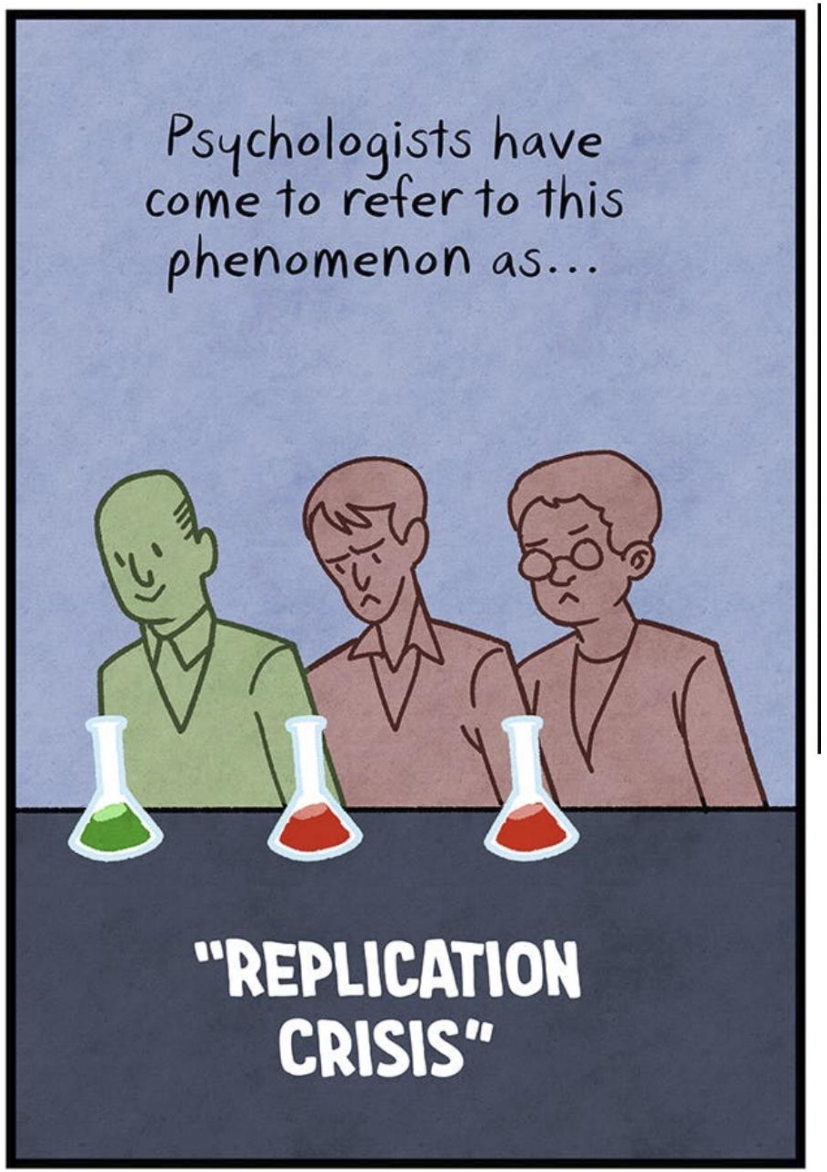
Replication crisis

But only a **third** of the attempts led to the same statistically significant result as found in the original study.

https://thenib.com/repeat-after-me/

Replication crisis

But only a **third** of the attempts led to the same statistically significant result as found in the original study.



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Data sharing is not a choice anymore

nature reviews neuroscience

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Comment | Published: 24 October 2023

Data sharing in neuroimaging: experiences from the BIDS project

Melanie Ganz & Russell A. Poldrack

Nature Reviews Neuroscience (2023) | Cite this article

"Data sharing is moving from a choice that every researcher has to make to an expectation by funding agencies and governments, but also by the research community. At the same time, it requires community efforts to make data sharing easy and to ensure that what is shared can actually be re-used."

And in PET we are on a good track!

- PET is much more than clinical scans with [^{18}F]FDG

- PET can visualize and quantitatively measure the function of biological and cellular processes in vivo

Journal of Cerebral Blood Flow & Metabolism (2007) 27, 1533–1539
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www.jcbfm.com

Review Article

Consensus nomenclature for *in vivo* imaging of reversibly binding radioligands

Robert B Innis[1], Vincent J Cunningham[2], Jacques Delforge[3], Masahiro Fujita[1], Albert Gjedde[4], Roger N Gunn[5], James Holden[6], Sylvain Houle[7], Sung-Cheng Huang[8], Masanori Ichise[9], Hidehiro Iida[10], Hiroshi Ito[11], Yuichi Kimura[12], Robert A Koeppe[13], Gitte M Knudsen[14], Juhani Knuuti[15], Adriaan A Lammertsma[16], Marc Laruelle[2], Jean Logan[17], Ralph Paul Maguire[18], Mark A Mintun[19], Evan D Morris[20], Ramin Parsey[9], Julie C Price[21], Mark Slifstein[9], Vesna Sossi[22], Tetsuya Suhara[11], John R Votaw[23], Dean F Wong[24] and Richard E Carson[25]

[1]National Institute of Mental Health, Bethesda, Maryland, USA; [2]GlaxoSmithKline and Imperial College, London, UK; [3]CEA/DSV/SHF, Orsay, France; [4]University of Aarhus, Aarhus, Denmark; [5]GlaxoSmithKline and University of Oxford, London, UK; [6]University of Wisconsin, Madison, Wisconsin, USA; [7]Centre for Addiction and Mental Health & University of Toronto, Toronto, Ontario, Canada; [8]UCLA School of Medicine, Los Angeles, California, USA; [9]Columbia University, New York, New York, USA; [10]National Cardiovascular Center Research Institute, Suita City, Osaka, Japan; [11]National Institute of Radiological Sciences, Chiba, Japan; [12]Tokyo Metropolitan Institute of Gerontology, Tokyo, Japan; [13]University of Michigan, Ann Arbor, Michigan, USA; [14]Copenhagen University Hospital Rigshospitalet, Copenhagen, Denmark; [15]Turku PET Centre, Turku, Finland; [16]VU University Medical Centre, Amsterdam, The Netherlands; [17]Brookhaven National Laboratory, Upton, New York, USA; [18]Pfizer Global R&D, Groton, Connecticut, USA; [19]Washington University School of Medicine, St Louis, Missouri, USA; [20]Indiana University-Purdue University, Indianapolis, Indiana, USA; [21]University of Pittsburgh, Pittsburgh, Pennsylvania, USA; [22]University of British Columbia, Vancouver, British Columbia, Canada; [23]Emory University, Atlanta, Georgia, USA; [24]Johns Hopkins University School of Medicine, Baltimore, Maryland, USA; [25]Yale University, New Haven, Connecticut, USA

Consensus on publishing PET experiments

- Replication in science can be improved with standards for reporting and sharing of primary research data

Opinion

JCBFM

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2020, Vol. 40(8) 1576–1585
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DOI: 10.1177/0271678X20905433
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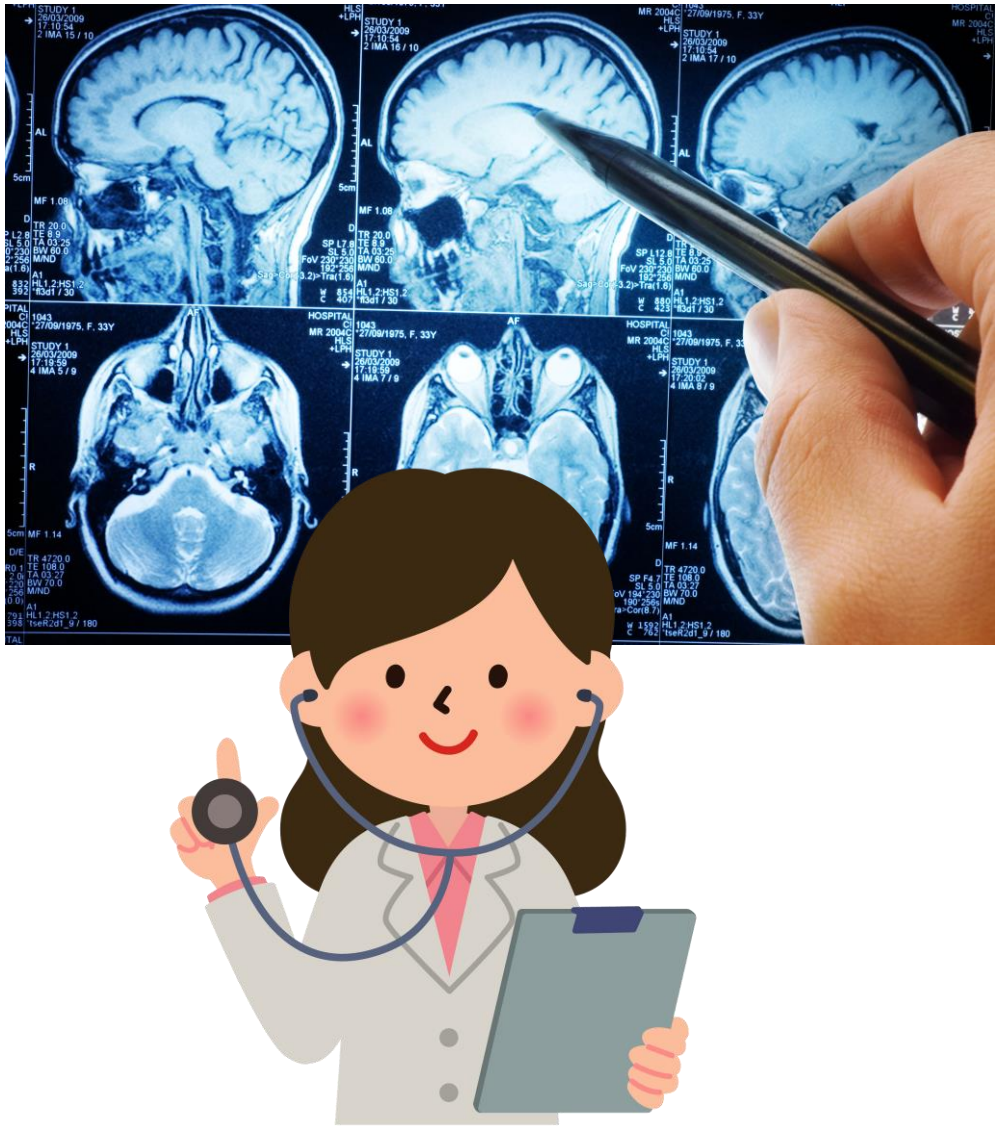
SAGE

Guidelines for the content and format of PET brain data in publications and archives: A consensus paper

Gitte M Knudsen[1], Melanie Ganz[1], Stefan Appelhoff[2], Ronald Boellaard[3], Guy Bormans[4], Richard E Carson[5], Ciprian Catana[6], Doris Doudet[7], Antony D Gee[8], Douglas N Greve[6], Roger N Gunn[9], Christer Halldin[10], Peter Herscovitch[11], Henry Huang[5], Sune H Keller[12], Adriaan A Lammertsma[3], Rupert Lanzenberger[13], Jeih-San Liow[14], Talakad G Lohith[15], Mark Lubberink[16], Chul H Lyoo[17], J John Mann[18], Granville J Matheson[10], Thomas E Nichols[19], Martin Nørgaard[1], Todd Ogden[20], Ramin Parsey[21], Victor W Pike[14], Julie Price[6], Gaia Rizzo[9], Pedro Rosa-Neto[22,23], Martin Schain[20], Peter JH Scott[24], Graham Searle[9], Mark Slifstein[21], Tetsuya Suhara[25], Peter S Talbot[26], Adam Thomas[27], Mattia Veronese[28], Dean F Wong[29], Maqsood Yaqub[3], Francesca Zanderigo[30], Sami Zoghbi[14] and Robert B Innis[14]

A typical PET neuroimaging study



Hypothesis

Data Acquisition

Preprocessing

Analysis

Biomarker

Preprocessing I

ORIGINAL RESEARCH article

Front. Neuroinform., 24 April 2015 | https://doi.org/10.3389/fninf.2015.00012

Reproducibility of neuroimaging analyses across operating systems

Tristan Glatard[1,2], Lindsay B. Lewis[1], Rafael Ferreira da Silva[3], Reza Adalat[1], Natacha Beck[1], Claude Lepage[1], Pierre R
Sherif[1], Ewa Deelman[3], Najmeh Khalili-M

[1]McConnell Brain Imaging Centre, Montreal Neurological
[2]Centre National de la Recherche Scientifique, University
[3]Information Sciences Institute, University of Southern Ca

PLOS ONE

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RESEARCH ARTICLE

The Effects of FreeSurfer Version, Workstation Type, and Macintosh Operating System Version on Anatomical Volume and Cortical Thickness Measurements

Ed H. B. M. Gronenschild, Petra Habets, Heidi I. L. Jacobs, Ron Mengelers, Nico Rozendaal, Jim van Os, Machteld Marcelis

Published: June 1, 2012 • https://doi.org/10.1371/journal.pone.0038234

Preprocessing II

Review Article

Cerebral serotonin transporter measurements with [^{11}C]DASB: A review on acquisition and preprocessing across 21 PET centres

Martin Nørgaard[1,2], Melanie Ganz[1,3], Claus Svarer[1], Ling Feng[1], Masanori Ichise[4], Rupert Lanzenberger[5], Mark Lubberink[6], Ramin V Parsey[7], Marios Politis[8], Eugenii A Rabiner[9,10], Mark Slifstein[7], Vesna Sossi[11], Tetsuya Suhara[4], Peter S Talbot[12], Federico Turkheimer[13], Stephen C Strother[14] and Gitte M Knudsen[1,2]

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Contents lists available at ScienceDirect
NeuroImage
journal homepage: www.elsevier.com/locate/neuroimage

Optimization of preprocessing strategies in Positron Emission Tomography (PET) neuroimaging: A [^{11}C]DASB PET study

Martin Nørgaard[a,b], Melanie Ganz[a,c], Claus Svarer[a], Vibe G. Frokjaer[a], Douglas N. Greve[e], Stephen C. Strother[d], Gitte M. Knudsen[a,b,*]

[a] Neurobiology Research Unit, Copenhagen University Hospital, Rigshospitalet, Copenhagen, Denmark
[b] Faculty of Health and Medical Sciences, University of Copenhagen, Copenhagen, Denmark
[c] Department of Computer Science, University of Copenhagen, Copenhagen, Denmark
[d] Rotman Research Institute, Baycrest, Department of Medical Biophysics, University of Toronto, Toronto, Canada
[e] Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Harvard Medical School, Boston, MA, USA

ARTICLE INFO
Keywords:
Positron emission tomography
Preprocessing
Head motion
Optimization
Partial volume correction
Kinetic modeling
Test-retest
[^{11}C]DASB

ABSTRACT
Positron Emission Tomography (PET) is an important neuroimaging tool to quantify the distribution of specific molecules in the brain. The quantification is based on a series of individually designed data preprocessing steps (pipeline) and an optimal preprocessing strategy is per definition associated with less noise and improved statistical power, potentially allowing for more valid neurobiological interpretations. In spite of this, it is currently unclear how to design the best preprocessing pipeline and to what extent the choice of each preprocessing step in the pipeline minimizes subject-specific errors.

To evaluate the impact of various preprocessing strategies, we systematically examined 384 different pipeline strategies in data from 30 healthy participants scanned twice with the serotonin transporter (5-HTT) radioligand [^{11}C]DASB. Five commonly used preprocessing steps with two to four options were investigated: (1) motion correction (MC) (2) co-registration (3) delineation of volumes of interest (VOI's) (4) partial volume correction (PVC), and (5) kinetic modeling. To quantitatively compare and evaluate the impact of various preprocessing strategies, we used the performance metrics: test-retest bias, within- and between-subject variability, the intraclass-correlation coefficient, and global signal-to-noise ratio. We also performed a power analysis to estimate the required sample size to detect either a 5% or 10% difference in 5-HTT binding as a function of preprocessing pipeline.

The results showed a complex downstream dependency between the various preprocessing steps on the per-

JCBFM Journal of Cerebral Blood Flow & Metabolism

Article

Variability in the analysis of a single neuroimaging dataset by many teams

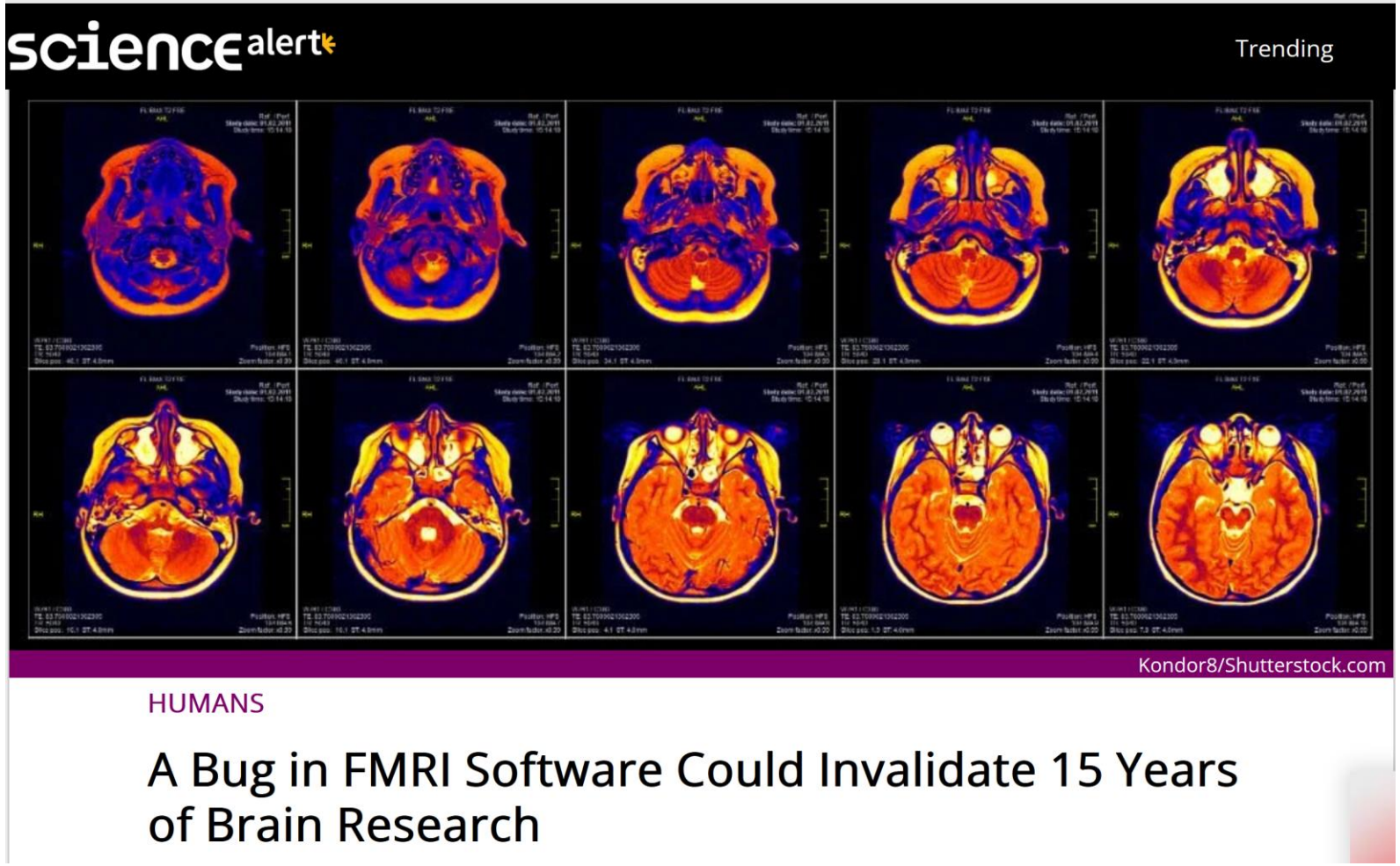
NARPS - https://www.narps.info

J Cereb Blood Flow Metab. 2020 Sep; 40(9): 1902–1911.
Published online 2019 Oct 1. doi: 10.1177/0271678X19880450
PMCID: PMC7446563
PMID: 31575336

Different preprocessing strategies lead to different conclusions: A [^{11}C]DASB-PET reproducibility study

Martin Nørgaard,[1,2] Melanie Ganz,[1,3] Claus Svarer,[1] Vibe G Frokjaer,[1] Douglas N Greve,[4] Stephen C Strother,[5] and Gitte M Knudsen[1,2]

Statistical Analysis



Statistical Analysis

PNAS Proceedings of the National Academy of Sciences of the United States of America

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RESEARCH ARTICLE

Cluster failure: Why fMRI inferences for spatial extent have inflated false-positive rates

Anders

ELSEVIER

NeuroImage

Volume 171, 1 May 2018, Pages 6-14

False positive rates in surface-based anatomical analysis

Douglas N. Greve [a, b], Bruce Fischl [a, b]

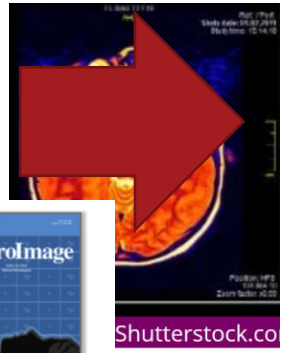
JCBFM Journal of Cerebral Blood Flow & Metabolism

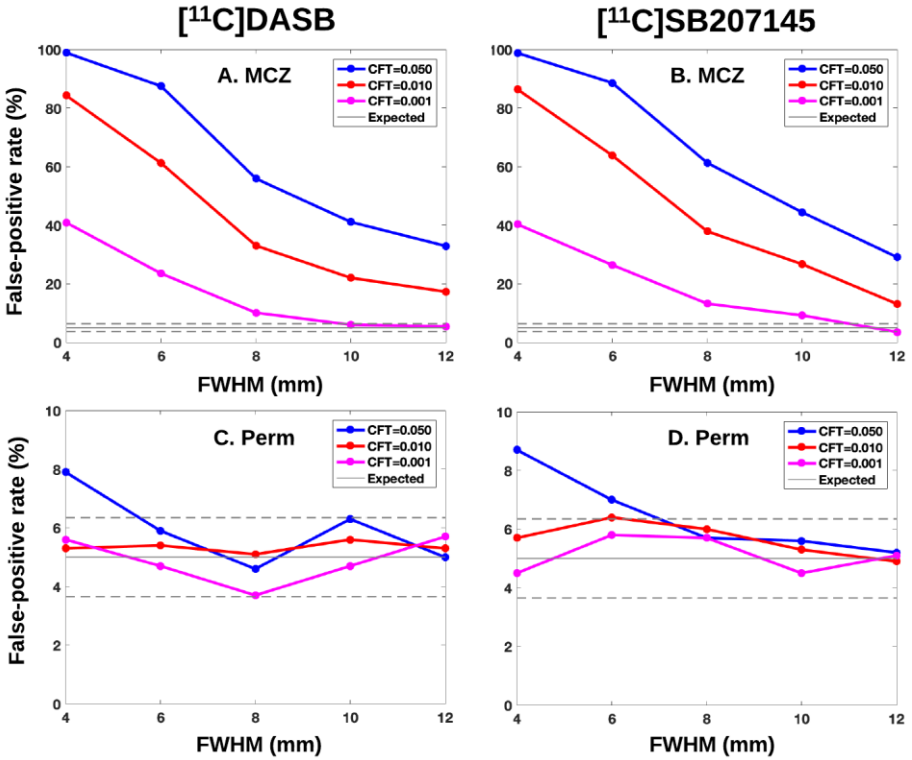
J Cereb Blood Flow Metab. 2021 Jul; 41(7): 1647–1657.
Published online 2020 Nov 26. doi: 10.1177/0271678X20974961

PMCID: PMC8221774
PMID: 33241770

False positive rates in positron emission tomography (PET) voxelwise analyses

Melanie Ganz,[1,2,*] Martin Nørgaard,[1,3,*] Vincent Beliveau,[4] Claus Svarer,[1] Gitte M Knudsen,[1,3] and Douglas N Greve[5]





Solutions?

Reproducible Research. Image adapted from The Turing Way handbook
DOI: 10.5281/zenodo.3332807 https://the-turing-way.netlify.app/welcome.html

Solutions I

SCIENTIFIC DATA

OPEN

SUBJECT CATEGORIES
» Data publication and archiving
» Research data

The brain imaging data structure, a format for organizing and describing outputs of neuroimaging experiments

Krzysztof J. Gorgolewski[1], Tibor Auer[2], Vince D. Calhoun[3,4], R. Cameron Craddock[5,6], Samir Das[7], Eugene P. Duff[8], Guillaume Flandin[9], Satrajit S. Ghosh[10,11], Tristan Glatard[7,12], Yaroslav O. Halchenko[13], Daniel A. Handwerker[14], Michael Hanke[15,16], David Keator[17], Xiangrui Li[18], Zachary Michael[19], Camille Maumet[20], B. Nolan Nichols[21,22], Thomas E. Nichols[20,23], John Pellman[6], Jean-Baptiste Poline[24], Ariel Rokem[25], Gunnar Schaefer[1,26], Vanessa Sochat[27], William Triplett[1], Jessica A. Turner[3,28], Gaël Varoquaux[29] & Russell A. Poldrack[1]

Received: 18 December 2015
Accepted: 19 May 2016
Published: 21 June 2016

Review Article

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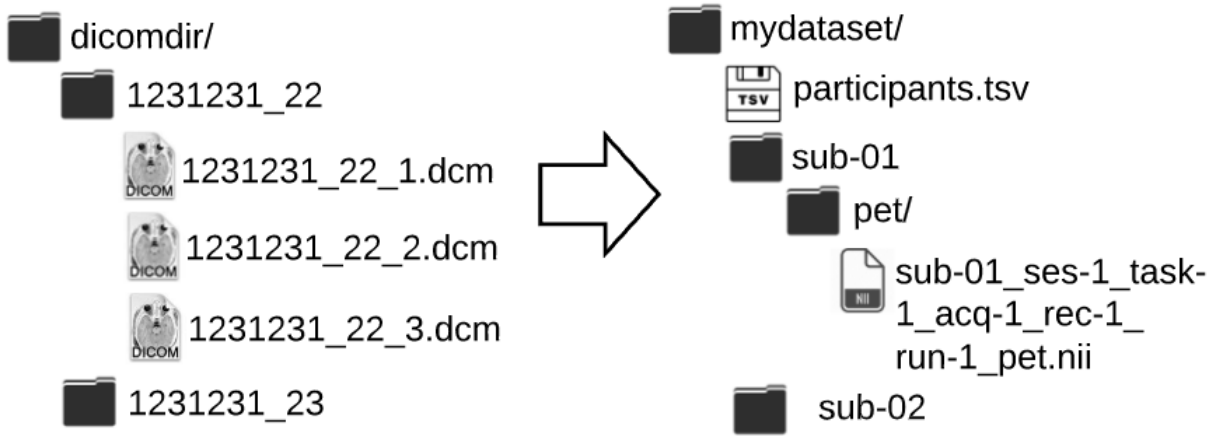
Guidelines for the content and format of PET brain data in publications and archives: A consensus paper

Gitte M Knudsen[1], Melanie Ganz[1], Stefan Appelhoff[2], Ronald Boellaard[3], Guy Bormans[4], Richard E Carson[5], Ciprian Catana[6], Doris Doudet[7], Antony D Gee[8], Douglas N Greve[6], Roger N Gunn[9], Christer Halldin[10], Peter Herscovitch[11], Henry Huang[5], Sune H Keller[12], Adriaan A Lammertsma[3], Rupert Lanzenberger[13], Jeih-San Liow[14], Talakad G Lohith[15], Mark Lubberink[16], Chul H Lyoo[17], J John Mann[18], Granville J Matheson[10], Thomas E Nichols[19], Martin Nørgaard[1], Todd Ogden[20], Ramin Parsey[21], Victor W Pike[14], Julie Price[6], Gaia Rizzo[9], Pedro Rosa-Neto[22,23], Martin Schain[20], Peter JH Scott[24], Graham Searle[9], Mark Slifstein[21], Tetsuya Suhara[25], Peter S Talbot[26], Adam Thomas[27], Mattia Veronese[28], Dean F Wong[29], Maqsood Yaqub[3], Francesca Zanderigo[30], Sami Zoghbi[14] and Robert B Innis[14]

BIDS
BRAIN IMAGING DATA STRUCTURE

From raw data to BIDS format



[WIP]

PET-BIDS standard

- Community- derived
- Started in 2016/17
- Finalized in 2021
- Published in 2022

scientific **data**

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nature > scientific data > comment > article

Comment | Open access | Published: 02 March 2022

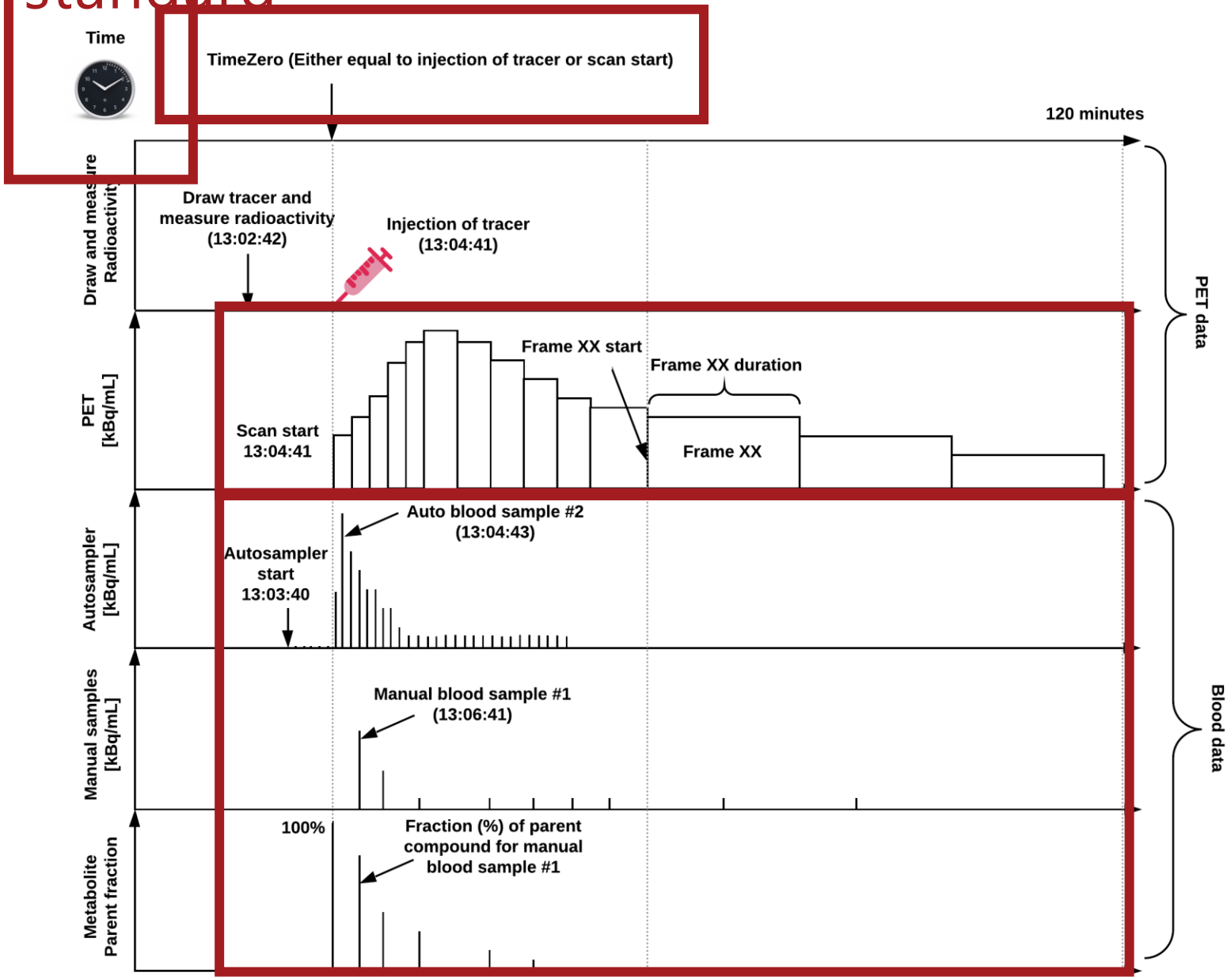
PET-BIDS, an extension to the brain imaging data structure for positron emission tomography

Martin Norgaard, Granville J. Matheson, Hanne D. Hansen, Adam Thomas, Graham Searle, Gaia Rizzo, Mattia Veronese, Alessio Giacomel, Maqsood Yaqub, Matteo Tonietto, Thomas Funck, Ashley Gillman, Hugo Boniface, Alexandre Routier, Jelle R. Dalenberg, Tobey Betthauser, Franklin Feingold, Christopher J. Markiewicz, Krzysztof J. Gorgolewski, Ross W. Blair, Stefan Appelhoff, Remi Gau, Taylor Salo, Guiomar Niso, ... Melanie Ganz + Show authors

Scientific Data **9**, Article number: 65 (2022) | Cite this article

3337 Accesses | **10** Citations | **20** Altmetric | Metrics

PET-BIDS standard



PET-BIDS standard

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    "Authors": "NRU, Copenhagen",
    "Acknowledgements": "Hansen et al. 202
    Visual stimuli induce serotonin release...,
    Hum Brain Mapp. 2020; 41: 4753– 4763.
    https://doi.org/10.1002/hbm.25156",
    "Funding": "Lundbeck Foundation",
    "DatasetDOI: ""
}
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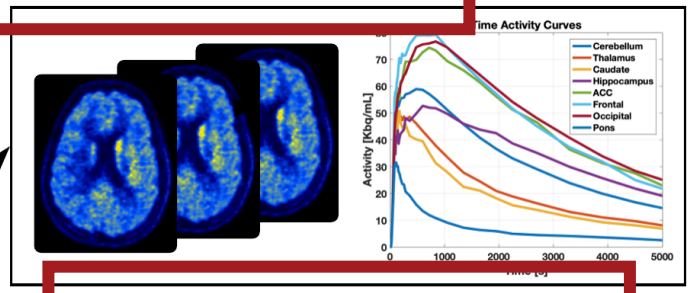


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{
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    "WholeBloodAvail": true,
    "MetaboliteAvail": true,
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    "DispersionCorrected": false,
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        "Description": "Time in relation to time zero
        defined by the _pet.json",
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    },
}
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time	plasma_radioactivity	whole_blood_radioactivity	metabo	
0	0	0	1	0
145	43.31	33.79	0.5749	0.1336
292	48.96	37.42	0.3149	0.2746
602	39.84	32.05	0.1469	0.3548
1248	37.38	31.52	0.073	0.444

- study folder
  - README
  - dataset_description.json
  - participants.tsv
  - participants.json
  - sub-01
    - ses-01
      - anat
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        - sub-01_ses-01_T1w.nii.gz
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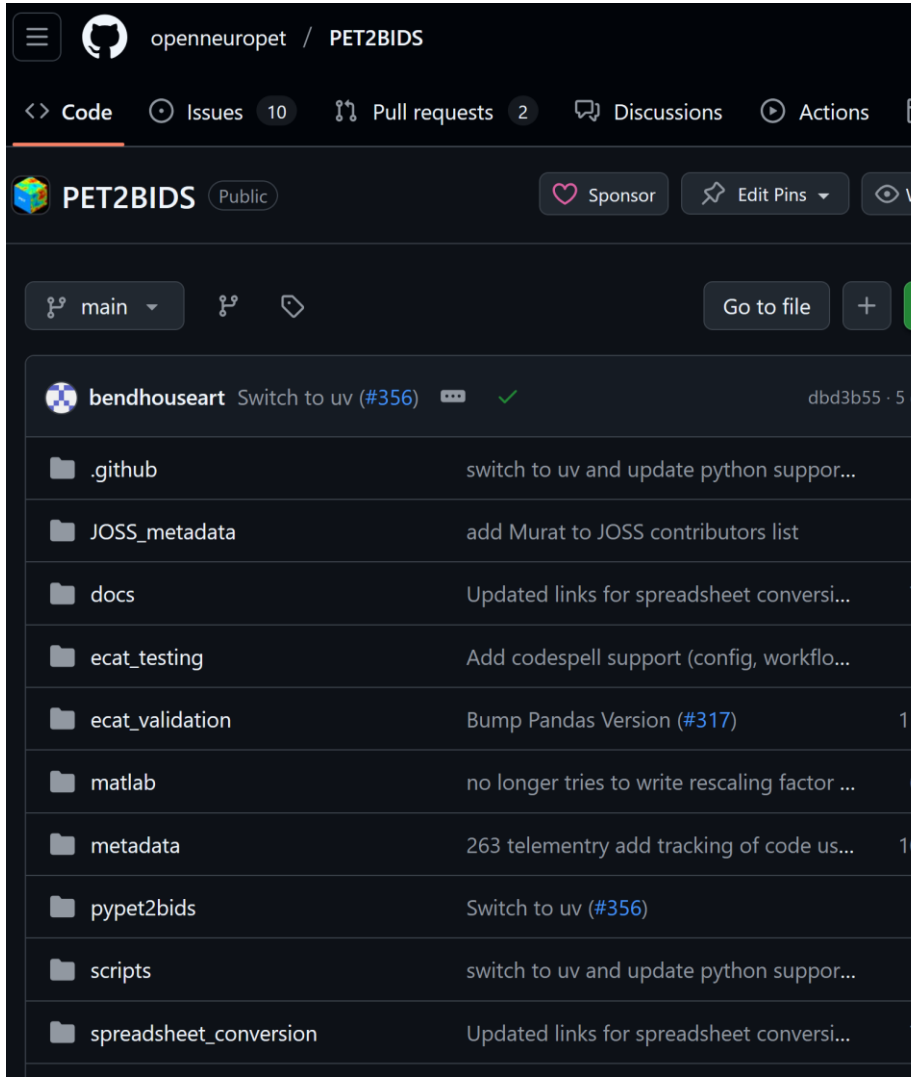
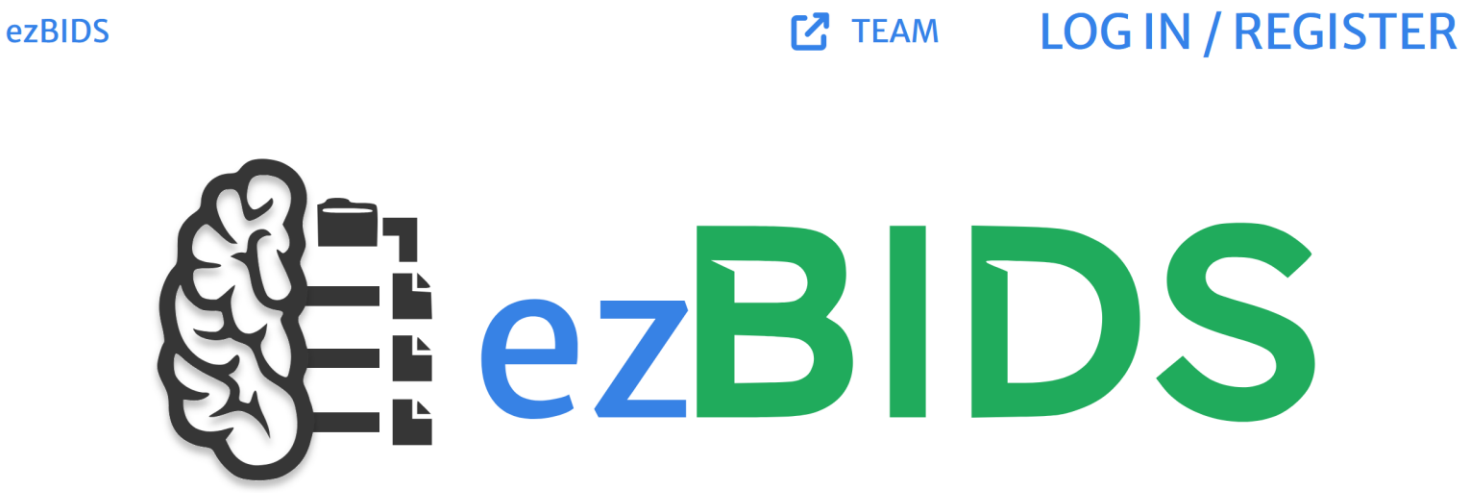
        - sub-01_ses-01_recording-autosampler_blood.json
        - sub-01_ses-01_recording-autosampler_blood.tsv

1 2 3 4 5 6

Converting PET data to BIDS

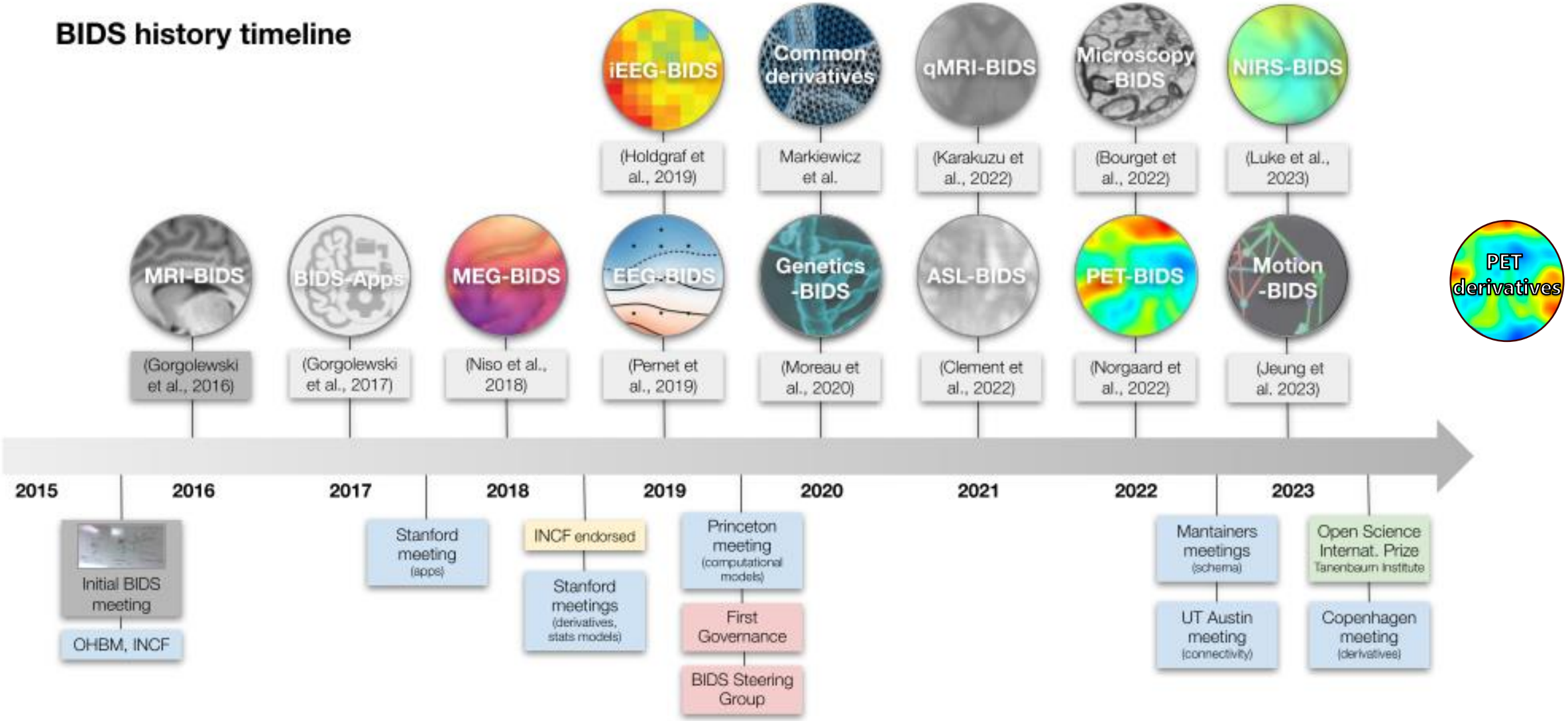




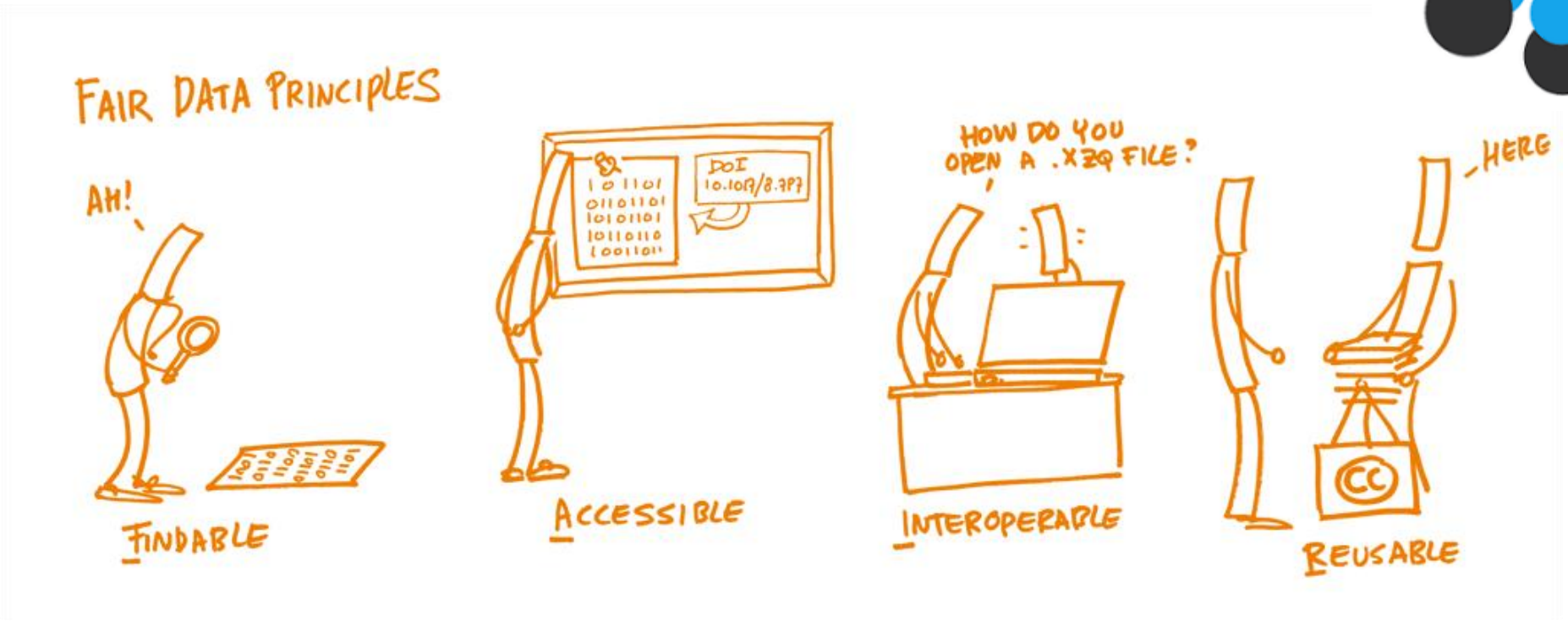
Convert neuroimaging data and associated metadata to the BIDS standard

ezBIDS requires neither coding proficiency nor knowledge of BIDS in order to get started. It is the first BIDS tool to offer guided standardization, support for task events conversion, and interoperability with OpenNeuro and brainlife.io. Our recent publication in *Scientific Data* can be found here.

Expanding the BIDS standard

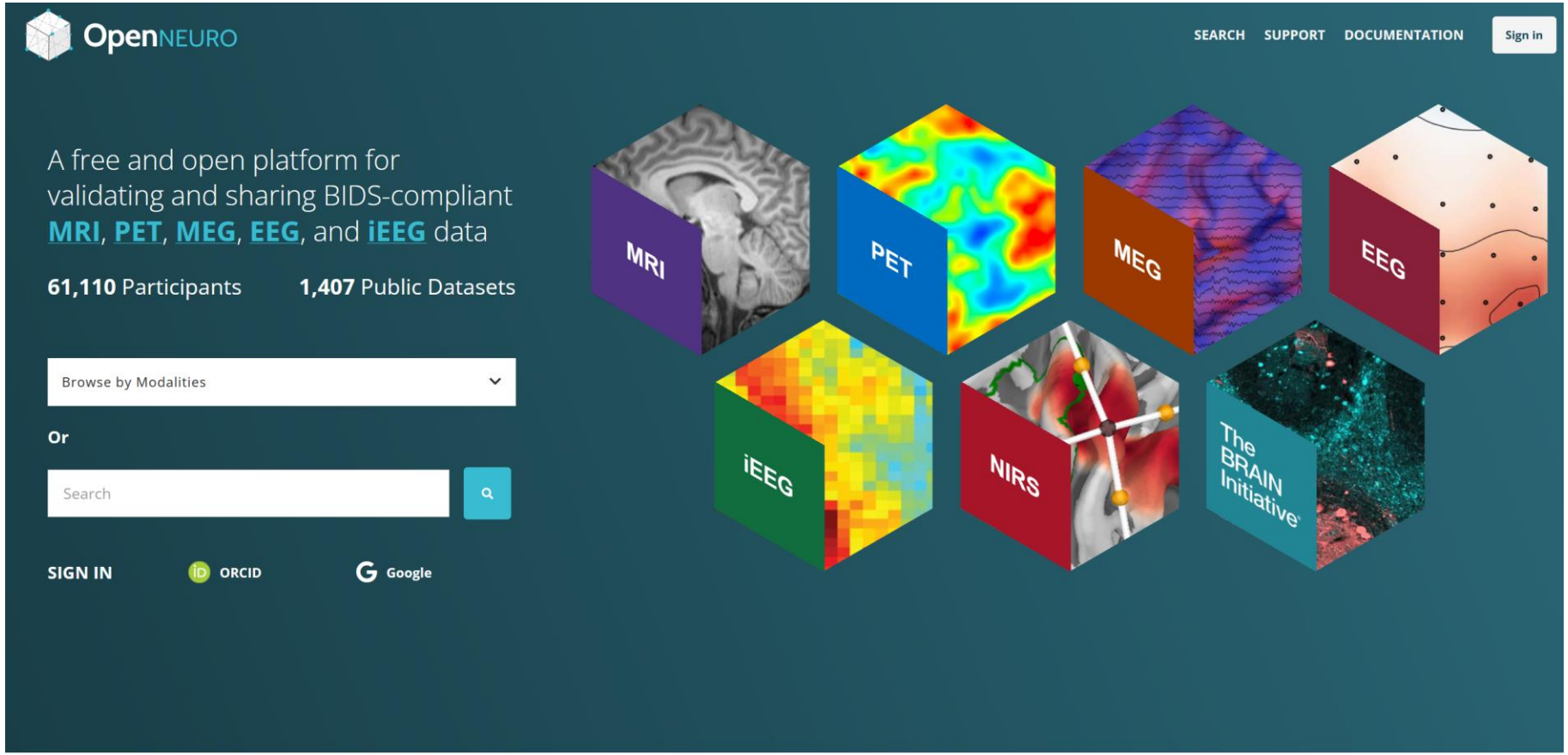


Solutions II



https://www.fosteropenscience.eu/learning/assessing-the-fairness-of-data

Solutions II



This repository is under review for potential modification in compliance with Administration directives.

BIDS

Validation Using BIDS

The Brain Imaging Data Structure (BIDS) is an emerging standard for the organization of neuroimaging data.

DataLad

OpenNeuro Runs on DataLad

Want to access OpenNeuro datasets with DataLad? Visit the dataset collection on GitHub.

A data management solution built on

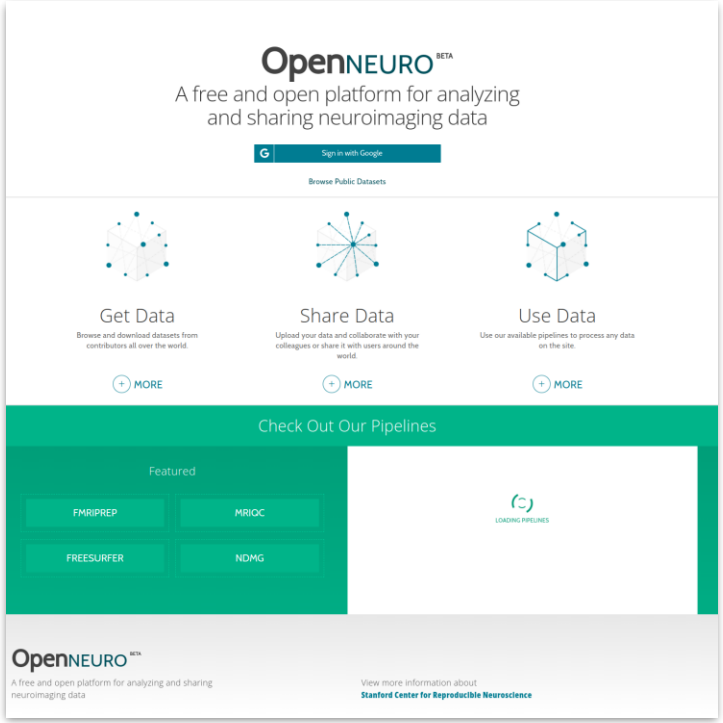
NIH The BRAIN Initiative®

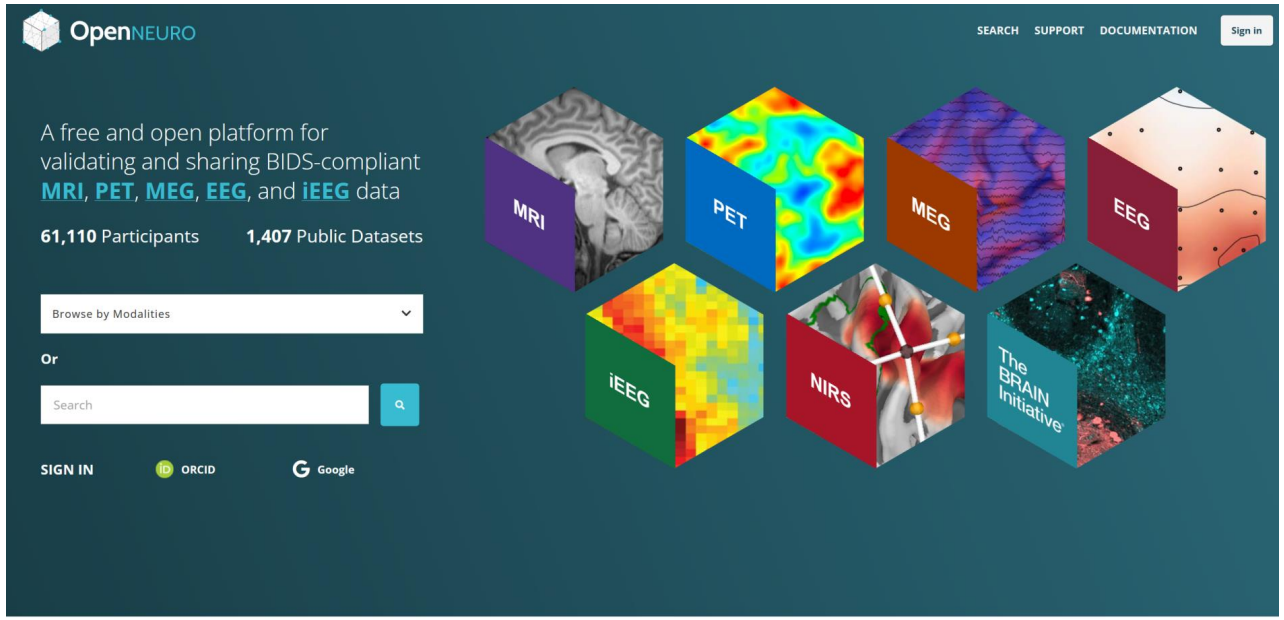
OpenNeuro is a BRAIN Initiative designated data archive

Data collected under BRAIN Initiative-funded grants may be uploaded to OpenNeuro.

Collaboration with OpenNeuroPET

- Frontend redesign in 2021

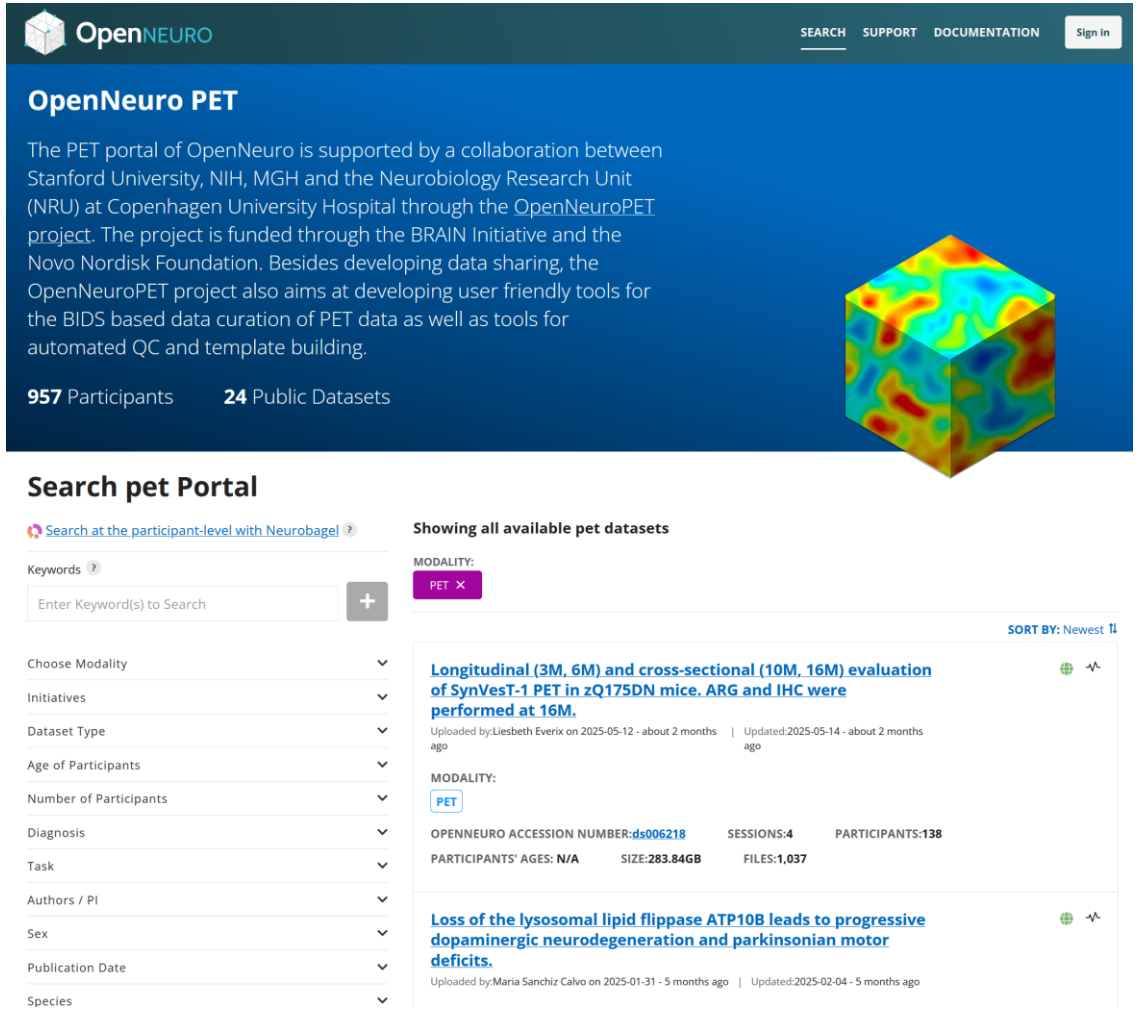




This repository is under review for potential modification in compliance with Administration directives.

OpenNeuroPET project

- Establish PET archive as an extension of OpenNeuro
  - Standard format and content
  - “Best Practices” for pipelines and QC checks
- Educate and seek feedback from the PET user community
- Establish average images of receptor density, connecting to larger fMRI community



OpenNEURO

SUPPORT DOCUMENTATION UPLOAD My Account

A free and open platform for validating and sharing BIDS-compliant MRI, PET, MEG, EEG, and iEEG data

61,110 Participants 1,407 Public Dat

Browse by Modalities

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Upload Dataset

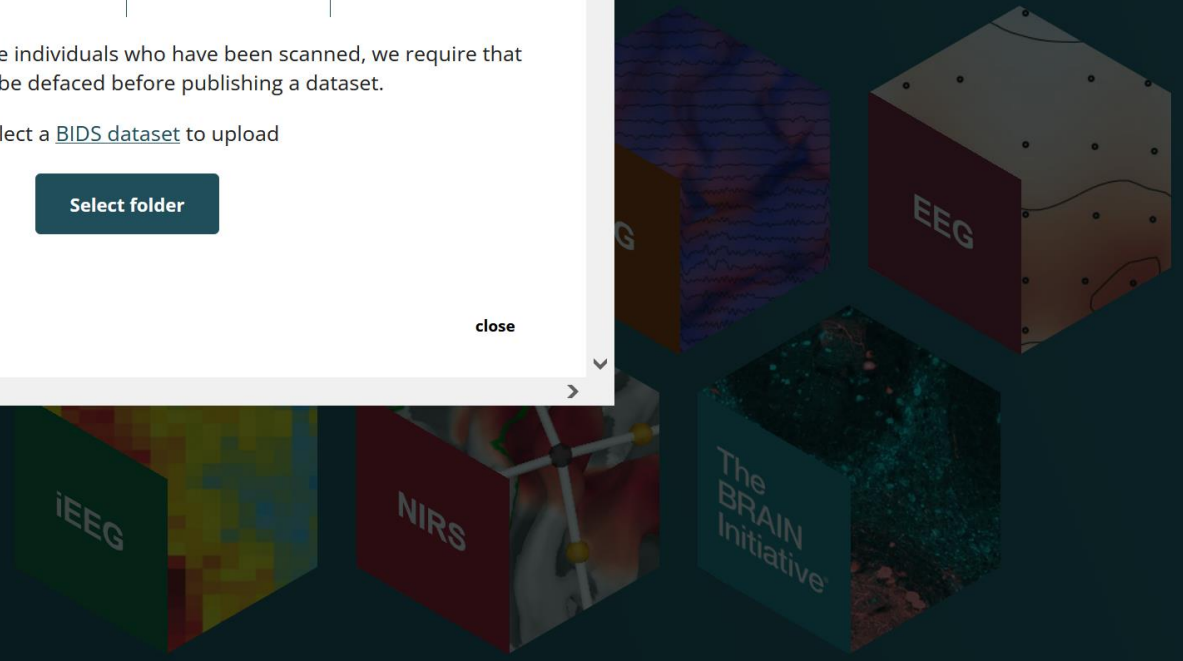
Step 1: Select Files | Step 2: Validation | Step 3: Metadata | Step 4: Accept Terms

To protect the privacy of the individuals who have been scanned, we require that all scan data be defaced before publishing a dataset.

Select a BIDS dataset to upload

Select folder

close



This repository is under review for potential modification in compliance with Administration directives.

BIDS

Validation Using BIDS

The Brain Imaging Data

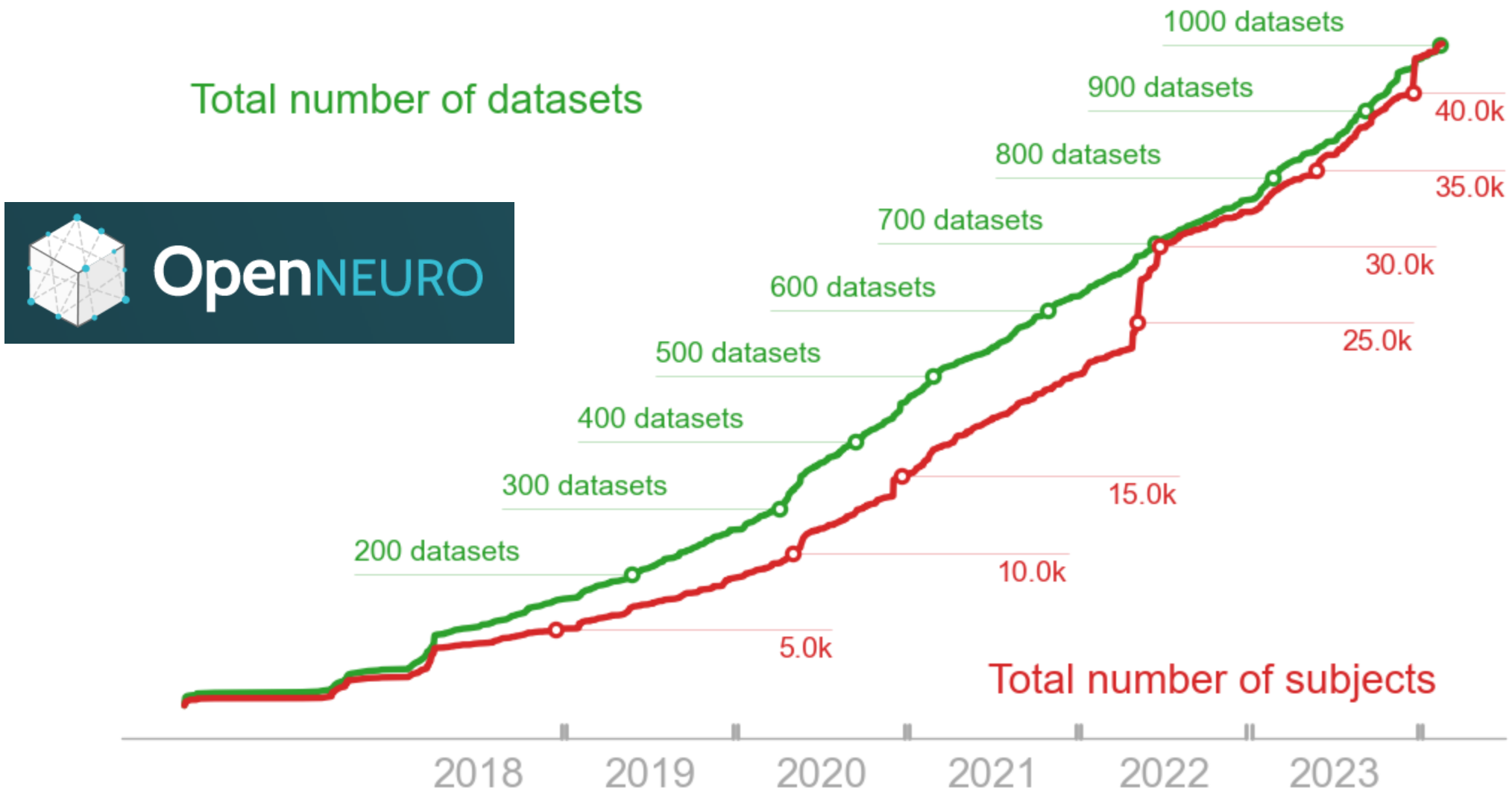
DataLad

OpenNeuro Runs on DataLad

Want to access OpenNeuro

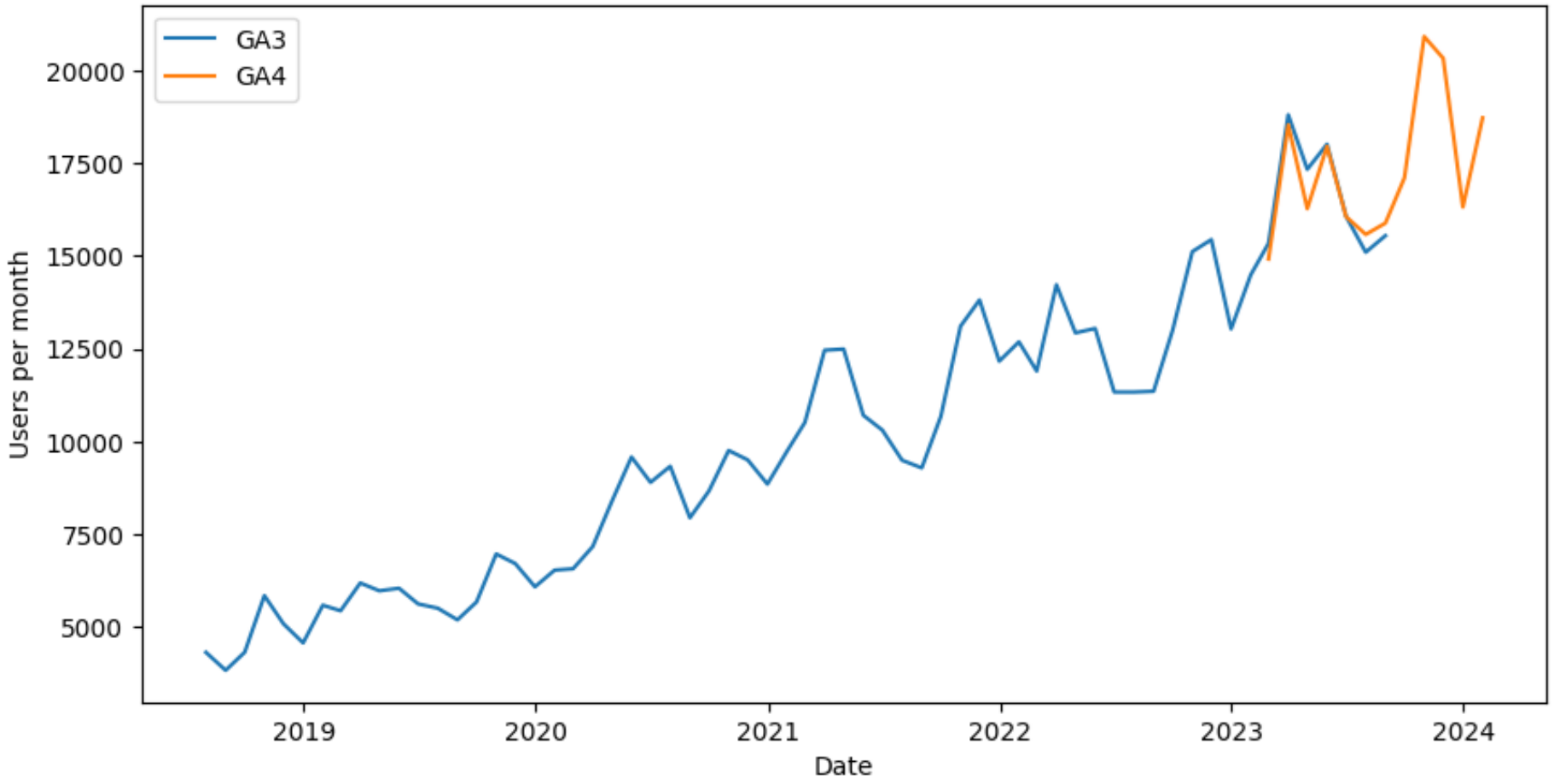
NIH The BRAIN Initiative®

OpenNeuro is a BRAIN Initiative designated data archive



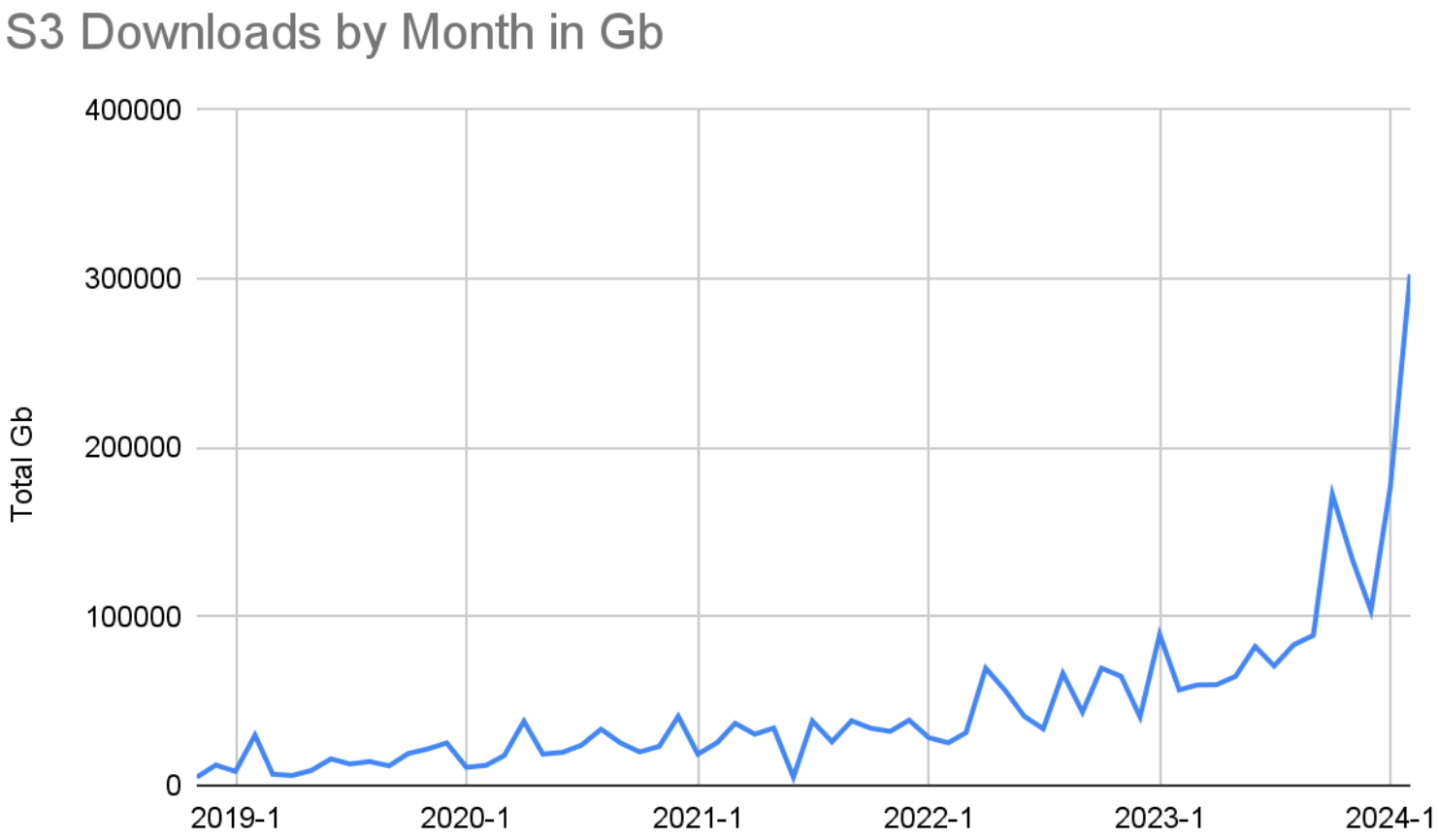
Provided by OpenNeuro Team, updated from Markiewicz et al, 2021, *eLife*

OpenNeuro Usage



Provided by OpenNeuro Team

OpenNeuro Download Trends



Provided by OpenNeuro Team

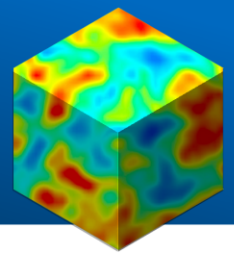
OpenNeuroPET status

OpenNEURO SEARCH SUPPORT DOCUMENTATION Sign in

OpenNeuro PET

The PET portal of OpenNeuro is supported by a collaboration between Stanford University, NIH, MGH and the Neurobiology Research Unit (NRU) at Copenhagen University Hospital through the OpenNeuroPET project. The project is funded through the BRAIN Initiative and the Novo Nordisk Foundation. Besides developing data sharing, the OpenNeuroPET project also aims at developing user friendly tools for the BIDS based data curation of PET data as well as tools for automated QC and template building.

957 Participants **24** Public Datasets



Search pet Portal

Search at the participant-level with Neurobagel

Keywords

Enter Keyword(s) to Search

Choose Modality
Initiatives
Dataset Type
Age of Participants
Number of Participants
Diagnosis
Task
Authors / PI
Sex
Publication Date
Species

Showing all available pet datasets

MODALITY: PET ×

SORT BY: Newest

Longitudinal (3M, 6M) and cross-sectional (10M, 16M) evaluation of SynVesT-1 PET in zQ175DN mice. ARG and IHC were performed at 16M.

Uploaded by:Liesbeth Everix on 2025-05-12 - about 2 months ago | Updated:2025-05-14 - about 2 months ago

MODALITY: PET

OPENNEURO ACCESSION NUMBER:ds006218 SESSIONS:4 PARTICIPANTS:138

PARTICIPANTS' AGES: N/A SIZE:283.84GB FILES:1,037

Loss of the lysosomal lipid flippase ATP10B leads to progressive dopaminergic neurodegeneration and parkinsonian motor deficits.

Uploaded by:Maria Sanchiz Calvo on 2025-01-31 - 5 months ago | Updated:2025-02-04 - 5 months ago

OpenNeuroPET status

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The PET portal of Op
Stanford University,
(NRU) at Copenhage
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Novo Nordisk Found
OpenNeuroPET proj
the BIDS based data
automated QC and

957 Participants

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Keywords

Enter Keyword(s) to Search

Choose Modality
Initiatives
Dataset Type
Age of Participants
Number of Participants
Diagnosis
Task
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FILES:1,037

Loss of the lysosomal lipid flippase ATP10B leads to progressive dopaminergic neurodegeneration and parkinsonian motor deficits.
Uploaded by:Maria Sanchiz Calvo on 2025-01-31 - 5 months ago | Updated:2025-02-04 - 5 months ago
MODALITY: PET
OPENNEURO ACCESSION NUMBER:ds005895 SESSIONS:4 PARTICIPANTS:25 PARTICIPANTS' AGES: N/A SIZE:7.04GB
FILES:161

[18F]SF51, a Novel 18F-labeled PET Radioligand for Translocator Protein 18kDa (TSPO) in Brain, Works Well in Monkeys but Fails in Humans
Uploaded by:Xuefeng Yan on 2024-11-05 - 8 months ago | Updated:2024-12-18 - 7 months ago
MODALITIES: PET MRI
OPENNEURO ACCESSION NUMBER:ds005619 SESSIONS:1 PARTICIPANTS:7 PARTICIPANTS' AGES: 33 - 56 SIZE:1.07GB
FILES:47

Positron Emission Tomography Quantification in rodents of Cyclooxygenase-2 (COX-2), a Potential Biomarker of Neuroinflammation
Uploaded by:Martin Nørgaard on 2024-10-30 - 8 months ago | Updated:2024-11-04 - 8 months ago
MODALITY: PET
RADIOTRACER: MC1
OPENNEURO ACCESSION NUMBER:ds005605 SESSIONS:4 PARTICIPANTS:18 PARTICIPANTS' AGES: 8 - 15 SIZE:358.22MB
FILES:65

[18F]SF51, a Novel 18F-labeled PET Radioligand for Translocator Protein 18kDa (TSPO) in Brain, Works Well in Monkeys but Fails in Humans
Uploaded by:Isabella Piacentino on 2024-10-23 - 8 months ago | Updated:2024-10-31 - 8 months ago
MODALITIES: PET MRI
RADIOTRACER: SF12051
OPENNEURO ACCESSION NUMBER:ds005590 SESSIONS:1 PARTICIPANTS:7 PARTICIPANTS' AGES: N/A SIZE:1.07GB FILES:47

eddymotionPET benchmark dataset
Uploaded by:Martin Nørgaard on 2024-05-15 - about 1 year ago | Updated:2024-05-21 - about 1 year ago
MODALITY: PET
RADIOTRACERS: DASB SB
OPENNEURO ACCESSION NUMBER:ds005138 SESSIONS:1 PARTICIPANTS:5 PARTICIPANTS' AGES: 20 - 21 SIZE:1.14GB
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Evaluation of microglia activation related markers following a clinical course of TBS: a non-human primate study
Uploaded by:Lucero Aceves on 2024-04-17 - about 1 year ago | Updated:2024-04-18 - about 1 year ago
MODALITY: PET
OPENNEURO ACCESSION NUMBER:ds005093 SESSIONS:6 PARTICIPANTS:11 PARTICIPANTS' AGES: N/A SIZE:30.93GB
FILES:39

Positron emission tomography (PET) quantification in healthy humans of cyclooxygenase-2 (COX-2), a potential biomarker of neuroinflammation
Uploaded by:Martin Nørgaard on 2023-12-04 - over 1 year ago | Updated:2024-08-19 - 11 months ago
MODALITIES: PET MRI
RADIOTRACERS: MC1 Mc1
OPENNEURO ACCESSION NUMBER:ds004869 SESSIONS:4 PARTICIPANTS:27 PARTICIPANTS' AGES: 22 - 56 SIZE:7.79GB
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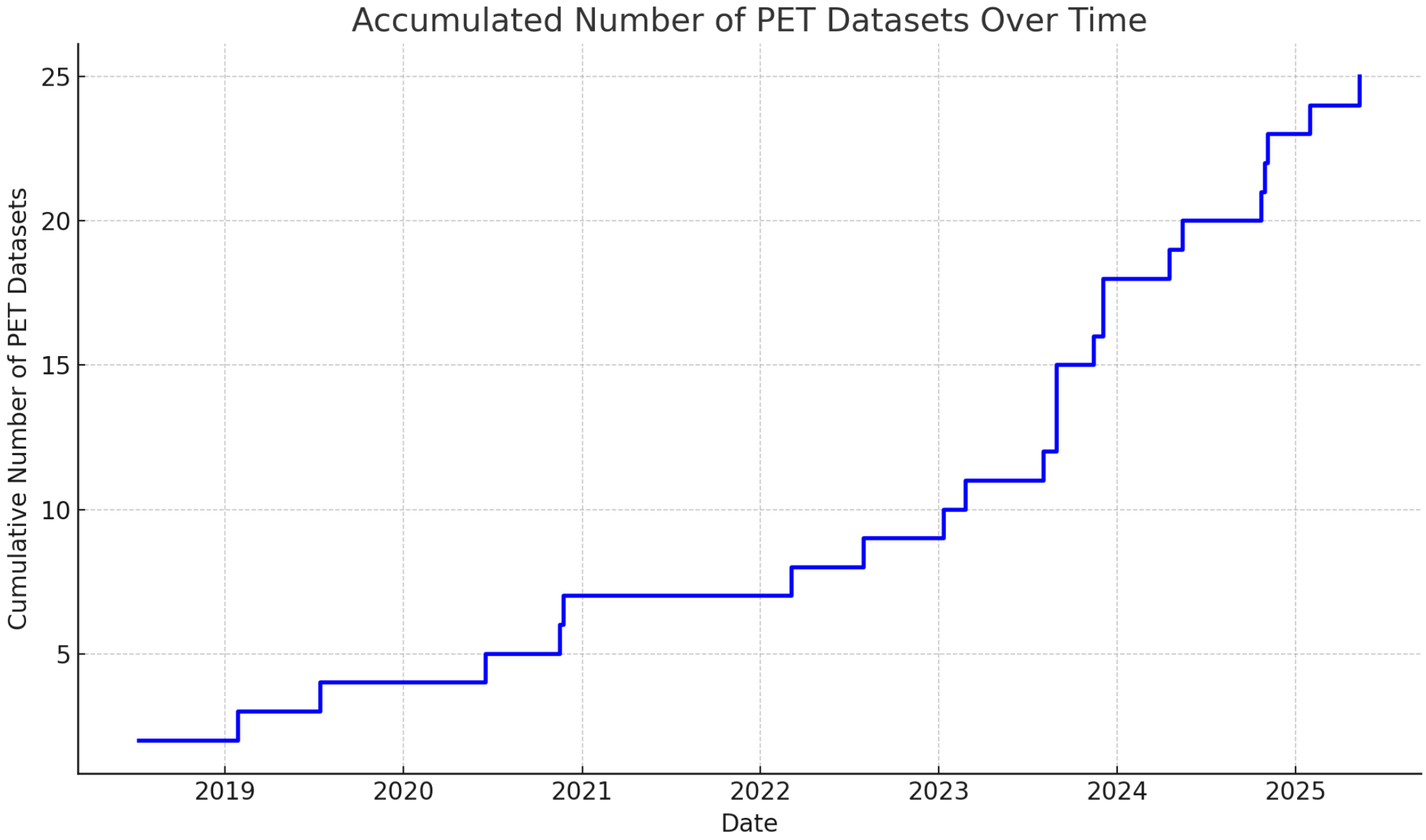
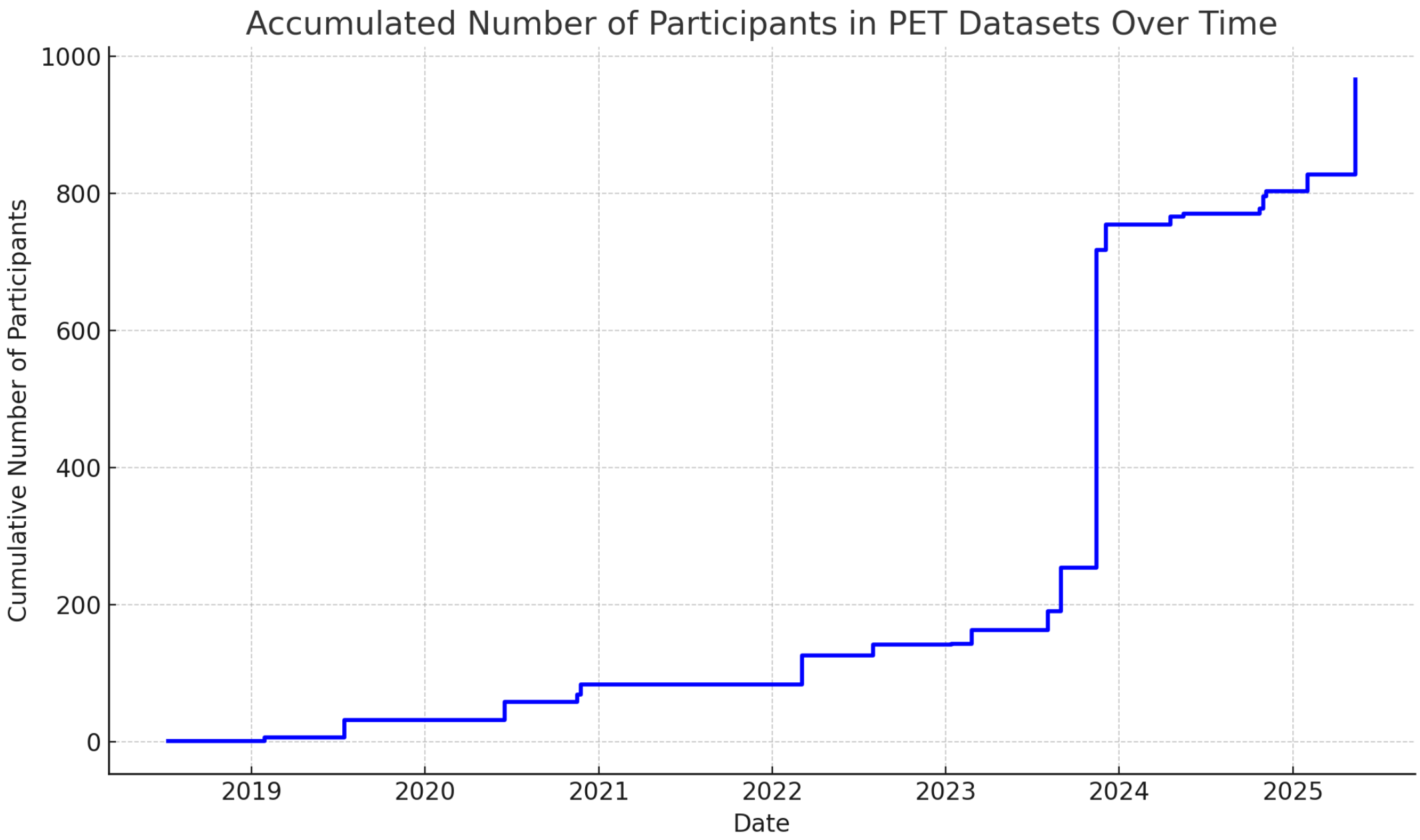
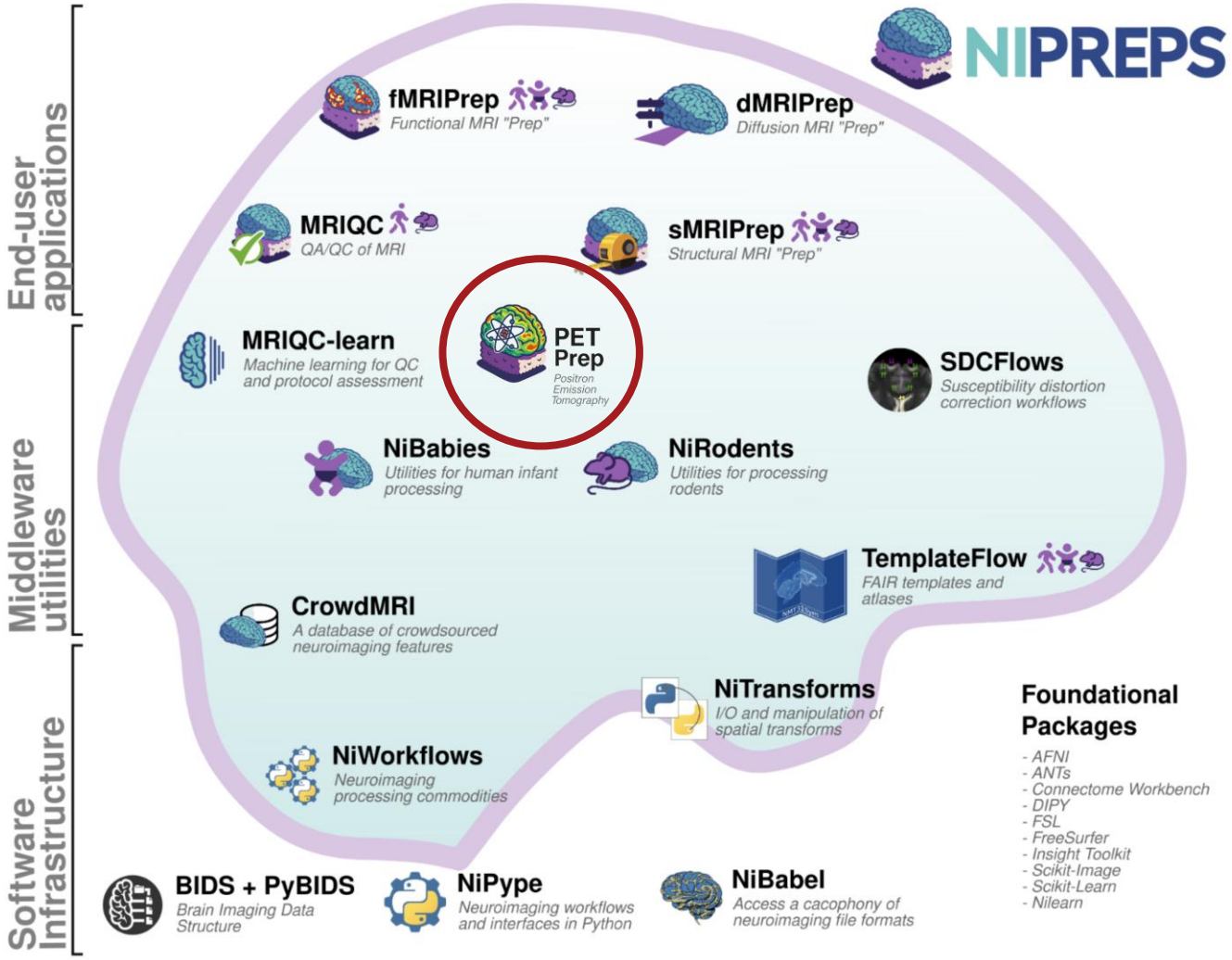


Provided by Martin Nørgaard



Provided by Martin Nørgaard

Solutions III



ReproNim

docker

Questions?

BIDS resources:

- Website https://bids.neuroimaging.io
- Starter Kit https://bids-standard.github.io/bids-starter-kit/
- YouTube channel https://www.youtube.com/channel/UCxZUcYfd_nvIVWAbzRB1tlw

Data sharing resources:

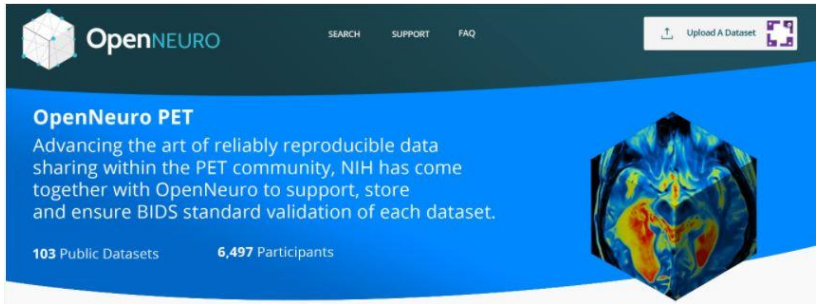
- Openneuro https://openneuro.org/
- OpenNeuroPET https://openneuropet.github.io/
- PublicNeuro https://publicneuro.eu/
- Serotonin atlas https://xtra.nru.dk/FS5ht-atlas/
- Benzodiazepine atlas https://xtra.nru.dk/BZR-atlas/
- SV2A atlas https://xtra.nru.dk/SV2A-atlas/

These slides are available here:

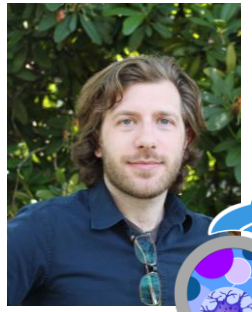
We want you!

- Check out our mission statement on https://openneuropet.github.io/
- Take a peak at PET2BIDS on https://github.com/openneuropet to get help in converting your data
- Come and meet Martin and me while we are attending PET is wonderful!

Thank you!



https://openneuropet.github.io/
https://public-neuro.github.io/



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NIH National Institute of Mental Health

Athinoula A. Martinos Center For Biomedical Imaging

Harvard–MIT Health Sciences & Technology

MASSACHUSETTS GENERAL HOSPITAL

Stanford University

REGION H Rigshospitalet

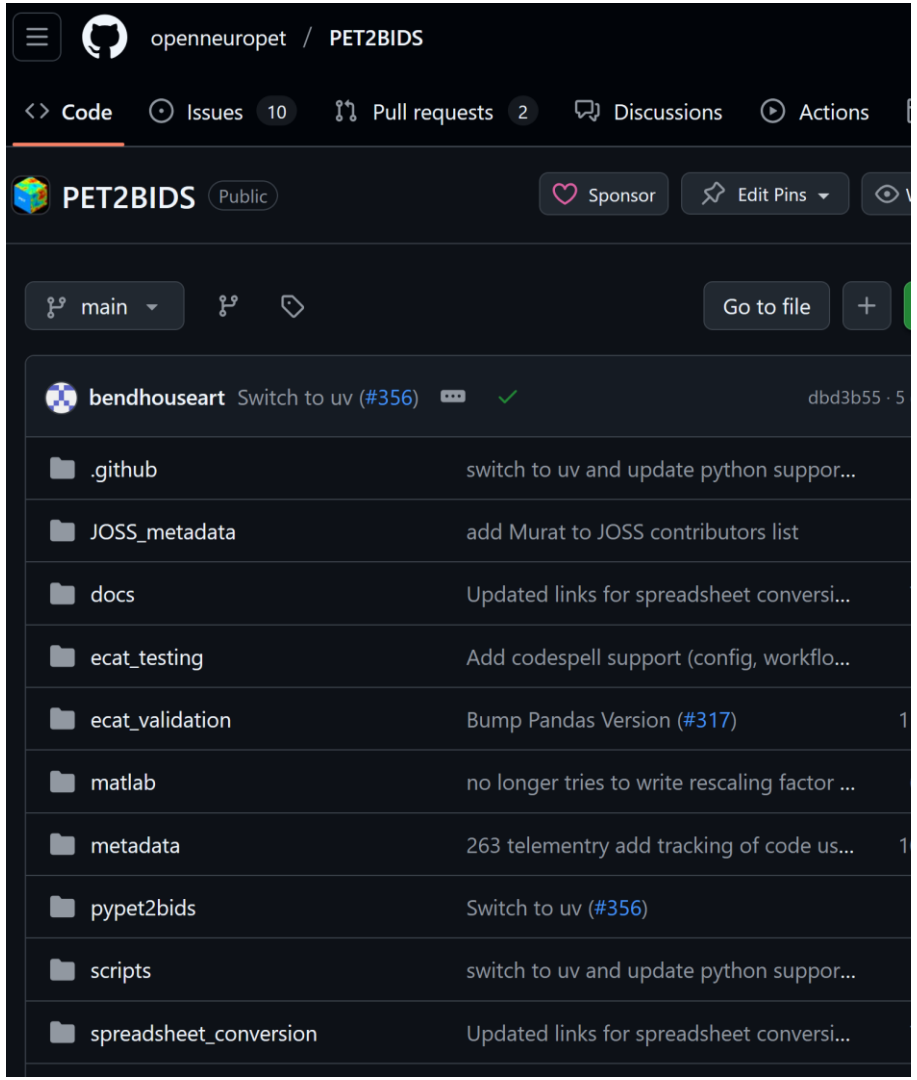
Exercises on data formats

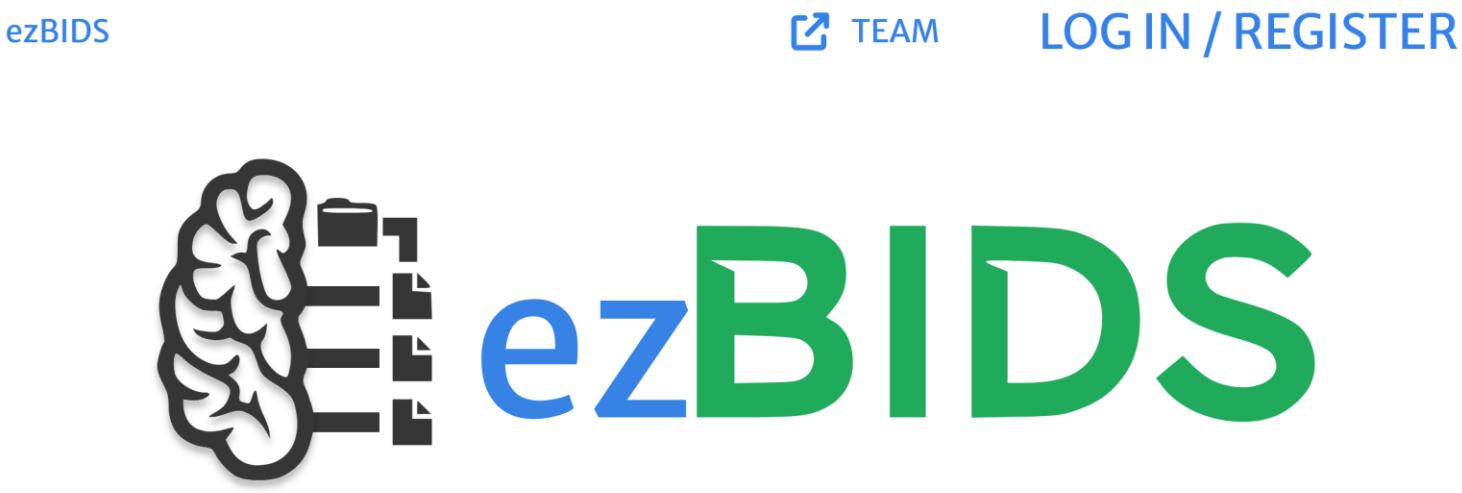
PET is wonderful 2025 - Continued Education Workshop

Melanie Ganz-Benjaminsen
Copenhagen University Hospital, Denmark &
Department of Computer Science, University of Copenhagen

KØBENHAVNS UNIVERSITET

Converting PET data to BIDS





Convert neuroimaging data and associated metadata to the BIDS standard

ezBIDS requires neither coding proficiency nor knowledge of BIDS in order to get started. It is the first BIDS tool to offer guided standardization, support for task events conversion, and interoperability with OpenNeuro and brainlife.io. Our recent publication in *Scientific Data* can be found here.

Your tasks

- Go to the EZBIDS website and make an account: https://brainlife.io/ezbids/
- Download phantom data from PublicnEUro: https://publicneuro.eu/
- Try and convert source data to BIDS!

PublicnEUro catalog

OpenNeuroPET Phantoms

Søren Baarsgaard Hansen, Murat Bilgel, Keith Ciantar, Anthony Galassi, Gabriel Gonzalez-Escamilla, Sune Høgild Kell

Version: V1 **Last updated:** *unknown* **DOI:** 10.70883/IGQP1334 **License:** CC BY 4.0

Cite | Export metadata | Share

Description: The PET Brain phantoms dataset is curated by OpenNeuroPET. This repository contains source data from PET scanners that need to be converted to nifti format, preferably following BIDS. An issue with ecat and DICOM data is that many tags are not mandatory and many values are not standardized making it difficult to harmonize the outputs of conversion, in particular side car json files. Here we collected many phantoms from different sites and scanners allowing to check the different header tags and values. This also allows validated conversion tools. Such test is performed via the code folder where one use the PET2BIDS library to do the conversion (which depends on dcm2niix for DICOM). Feel free to contact OpenNeuroPET to add your data from a scanner we have not tested.

Content | Datasets (

- dataset_description.json
- sourcedata
- sub-CanonCartesionPrimeNIA
- sub-GeneralElectricAdvanceJHU
- sub-GeneralElectricAdvanceLongNIMH
- sub-GeneralElectricAdvanceNIMH
- sub-GeneralElectricDiscoveryAarhus

Your tasks

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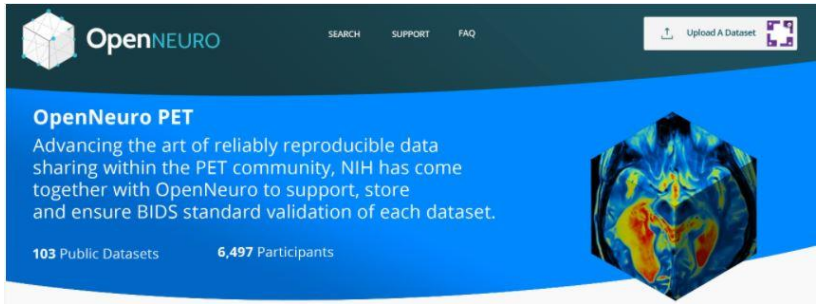
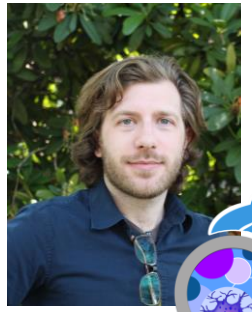


https://openneuropet.github.io/
https://public-neuro.github.io/



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