

Yes, I have data. What's now?

Demo

Program



- ▶ BIDSified dataset
- ▶ BIDSme – a multi-modal BIDSificator
 - Commands
 - Mapping
 - Next steps
- ▶ Take home message

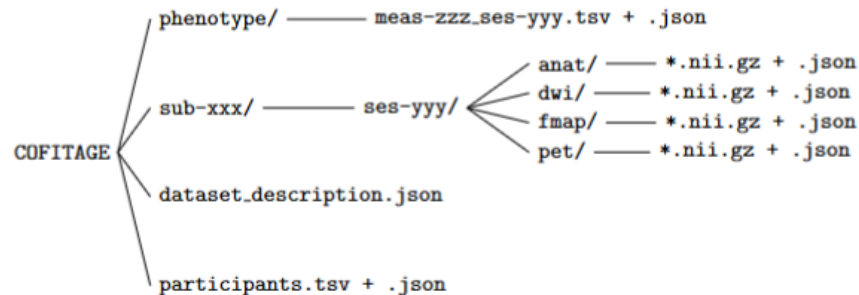


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[BIDSme Demonstration Examples](#)

COFITAGE – Multimodal & Longitudinal

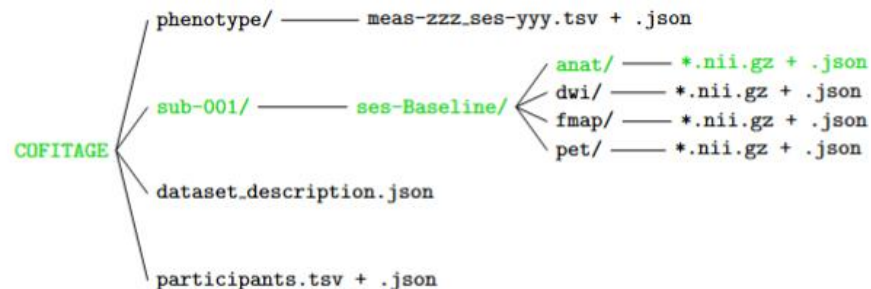


► Systematic & user-friendly

[COFITAGE dataset](#)



COFITAGE – A look

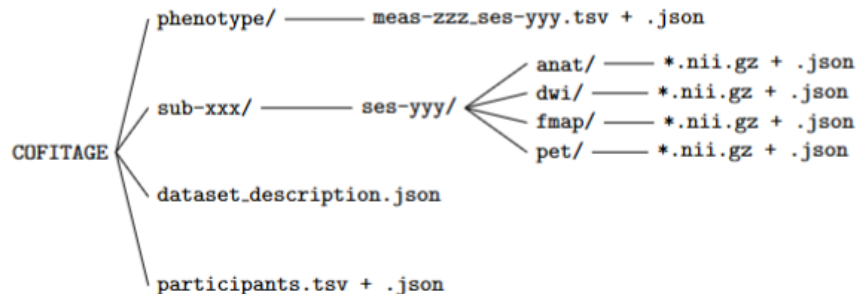


-  sub-001_ses-Baseline_acq-2D_run-1_T2w.json
-  sub-001_ses-Baseline_acq-2D_run-1_T2w.nii.gz
-  sub-001_ses-Baseline_acq-MTw_run-1_echo-1_flip-1_mt-on_part-mag_MPM.json
-  sub-001_ses-Baseline_acq-MTw_run-1_echo-1_flip-1_mt-on_part-mag_MPM.nii.gz
-  sub-001_ses-Baseline_acq-MTw_run-1_echo-1_flip-1_mt-on_part-phase_MPM.json
-  sub-001_ses-Baseline_acq-MTw_run-1_echo-1_flip-1_mt-on_part-phase_MPM.nii.gz
-  sub-001_ses-Baseline_acq-MTw_run-1_echo-2_flip-1_mt-on_part-mag_MPM.json
-  sub-001_ses-Baseline_acq-MTw_run-1_echo-2_flip-1_mt-on_part-mag_MPM.nii.gz
-  sub-001_ses-Baseline_acq-MTw_run-1_echo-2_flip-1_mt-on_part-phase_MPM.json
-  sub-001_ses-Baseline_acq-MTw_run-1_echo-2_flip-1_mt-on_part-phase_MPM.nii.gz
-
-
-

[COFITAGE dataset](#)



COFITAGE – Multimodal & Longitudinal



- Systematic & user-friendly

Subject ID	T1w/T2w	MPM/ DWI/ FMap	Amyloid- PET	Tau- PET	Phenotype	2-year Follow-Up
001 – 047	✓	✓	✓	✓	✓	✓
048	✗	✓	✓	✓	✓	✓
049	✓	✓	✗	✓	✓	✓
050 – 067	✓	✓	✓	✗	✓	✓
068 – 085	✓	✓	✓	✓	✓	✗
086 – 101	✓	✓	✓	✗	✓	✗

- Flexible even with missing data

- How to BIDSify my data? **Use a BIDSificator!**

[COFITAGE dataset](#)



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[BIDSme Demonstration Examples](#)

Why BIDSme?



- ▶ Open-source python tool
- ▶ Flexible inputs (DICOM, BrainVision, Nifti, etc)
- ▶ Direct & human-readable
(mapping approach to identify and convert the raw source data into BIDS data)
- ▶ Multimodal (MRI, PET, EEG, TMS, etc)

- ▶ How to install [BIDSme](#)?

- [Publication](#)
- Git clone



```
git clone https://github.com/CyclotronResearchCentre/bidsme.git
```

- Pip install

```
python3 -m pip install git+https://github.com/CyclotronResearchCentre/bidsme.git
```

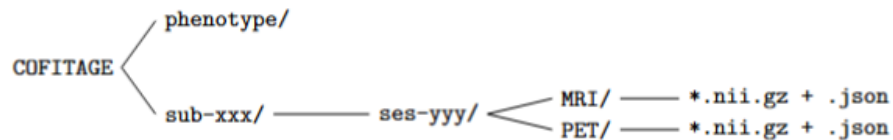
- Docker
 - > [GitHub](#)
 - > [Preprint](#)



BIDSme commands



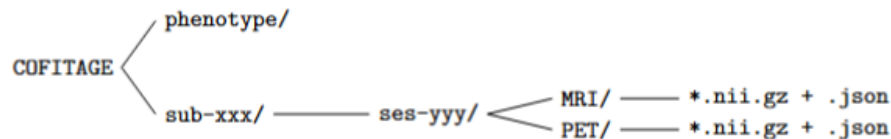
```
 bidsme prepare path_raw path_prepared --sub-prefix sub- --ses-prefix ses- -r  
 subfolder=MRI/PET/EEG --skip-in-tsv --dry-run
```



BIDSme commands



```
 bidsme prepare path_raw path_prepared --sub-prefix sub- --ses-prefix ses- -r  
 subfolder=MRI/PET/EEG --skip-in-tsv --dry-run
```

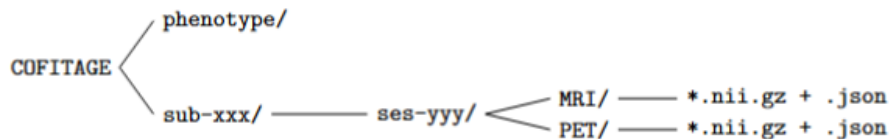


```
 bidsme map path_prepared path_mapped --plugin path_plugin --participants sub-xxx  
 --dry-run
```

BIDSme commands

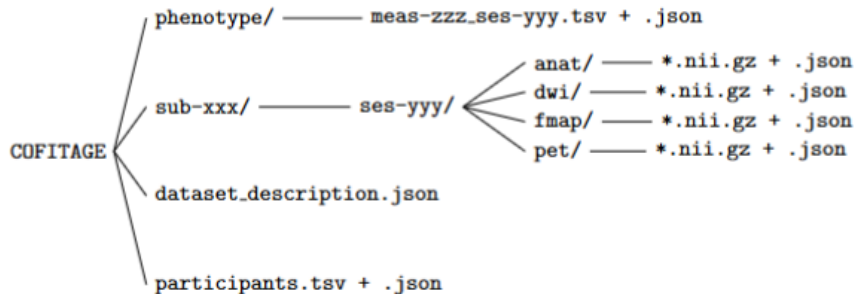


```
 bidsme prepare path_raw path_prepared --sub-prefix sub- --ses-prefix ses- -r
 subfolder=MRI/PET/EEG --skip-in-tsv --dry-run
```



```
 bidsme map path_prepared path_mapped --plugin path_plugin --participants sub-xxx
 --dry-run
```

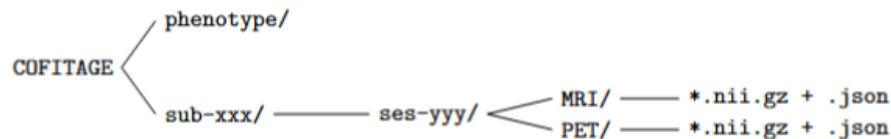
```
 bidsme bidsify path_prepared path_bidsified --bidsmap path_bidsmap --plugin path_plugin
 --participants sub-xxx --dry-run
```



BIDSme commands

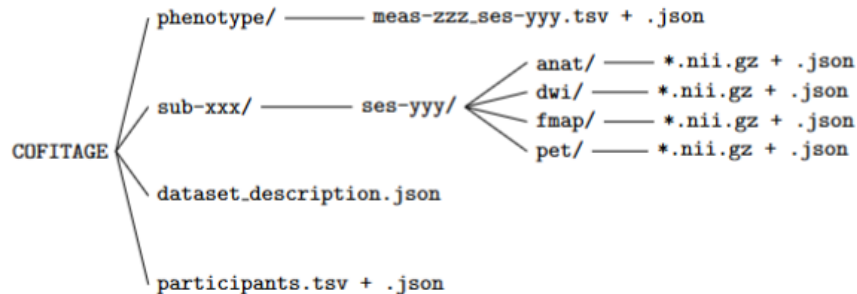


```
 bidsme prepare path_raw path_prepared --sub-prefix sub- --ses-prefix ses- -r
 subfolder=MRI/PET/EEG --skip-in-tsv --dry-run
```



```
 bidsme map path_prepared path_mapped --plugin path_plugin --participants sub-xxx
 --dry-run
```

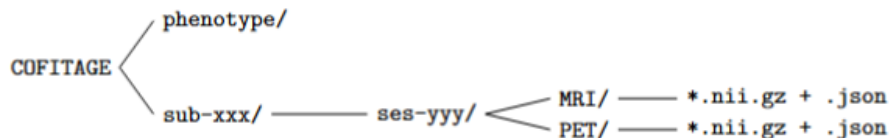
```
 bidsme bidsify path_prepared path_bidsified --bidsmap path_bidsmap --plugin path_plugin
 --participants sub-xxx --dry-run
```



BIDSme commands

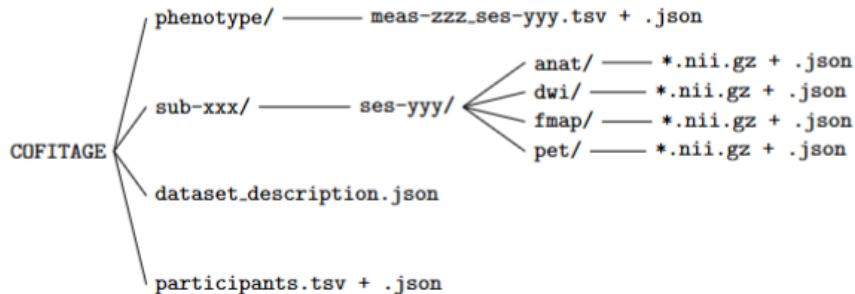


`bidsme prepare path_raw path_prepared --sub-prefix sub- --ses-prefix ses- -r`
`subfolder=MRI/PET/EEG --skip-in-tsv --dry-run`



`bidsme map path_prepared path_mapped --plugin path_plugin --participants sub-xxx`
`--dry-run`

`bidsme bidsify path_prepared path_bidsified --bidsmap path_bidsmap --plugin path_plugin`
`--participants sub-xxx --dry-run`



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[BIDSme Demonstration Examples](#)

A BIDSmap example – T1



__bids__: 1.11.0

MRI:

hmriNIFTI:

anat:

- provenance:

C:\Users\...\COFITAGE\data\prepared_sub-all_mod-MRI\sub-004\ses-Baseline\MRI\005-t1_mpr_sag_p2_iso\s939-0005-00001-000224-01.nii

example: anat/sub-004_ses-Baseline_run-1_T1w

checked: true

model: anat:T1w

suffix: T1w

attributes:

ProtocolName: t1_mpr_sag_p2_iso

bids: !!omap

- task: ~

- acq: ~

- ce: ~

- rec: ~

- run: "<<increment>>"

- echo: ~

- part: ~

- chunk: ~

json: !!omap

- NumberShots:

<CSASeriesHeaderInfo/MrPhoenixProtocol/sKSpace/IIimagesPerSlab>

- DwellTime: <scale-6:CSAImageHeaderInfo/RealDwellTime>

- NonlinearGradientCorrection: false

BIDSmap - Structure



__bids__: 1.11.0

MRI:

hmriNIFTI:

anat:

- **provenance:**

C:\Users\...\COFITAGE\data\prepared_sub-all_mod-MRI\sub-004\ses-Baseline\MRI\005-t1_mpr_sag_p2_iso\s939-0005-00001-000224-01.nii

example: anat/sub-004_ses-Baseline_run-1_T1w

checked: true

model: anat:T1w

suffix: T1w

attributes:

ProtocolName: t1_mpr_sag_p2_iso

bids: !!omap

- task: ~

- acq: ~

- ce: ~

- rec: ~

- run: "<<increment>>"

- echo: ~

- part: ~

- chunk: ~

json: !!omap

- NumberShots:

<CSASeriesHeaderInfo/MrPhoenixProtocol/sKSpace/IIimagesPerSlab>

- DwellTime: <scale-6:CSAImageHeaderInfo/RealDwellTime>

- NonlinearGradientCorrection: false

BIDSmap - Structure



__bids__: 1.11.0

MRI:

hmriNIFTI:

anat:

- **provenance:**

C:\Users\...\COFITAGE\data\prepared_sub-all_mod-MRI\sub-004\ses-Baseline\MRI\005-t1_mpr_sag_p2_iso\s939-0005-00001-000224-01.nii

example: anat/sub-004_ses-Baseline_run-1_T1w

checked: true

model: anat:T1w

suffix: T1w

attributes:

ProtocolName: t1_mpr_sag_p2_iso

bids: !!omap  BIDSified filename

- task: ~

- acq: ~

- ce: ~

- rec: ~

- run: "<<increment>>"

- echo: ~

- part: ~

- chunk: ~

json: !!omap  json file

- NumberShots:

<CSASeriesHeaderInfo/MrPhoenixProtocol/sKSpace/IIimagesPerSlab>

- DwellTime: <scale-6:CSAImageHeaderInfo/RealDwellTime>

- NonlinearGradientCorrection: false

Automatic & manual BIDS mapping



__bids__: 1.11.0

MRI:

hmriNIFTI:

anat:

- **provenance:**

C:\Users\...\COFITAGE\data\prepared_sub-all_mod-MRI\sub-004\ses-Baseline\MRI\005-t1_mpr_sag_p2_iso\s939-0005-00001-000224-01.nii

example: anat/sub-004_ses-Baseline_run-1_T1w

checked: true

model: anat:T1w

suffix: T1w

attributes:

ProtocolName: t1_mpr_sag_p2_iso

bids: !!omap

- task: ~

- acq: ~

- ce: ~

- rec: ~

- run: "<<increment>>"

- echo: ~

- part: ~

- chunk: ~

json: !!omap

- NumberShots:

<CSASeriesHeaderInfo/MrPhoenixProtocol/sKSpace/IIimagesPerSlab>

- DwellTime: <scale-6:CSAImageHeaderInfo/RealDwellTime>

- NonlinearGradientCorrection: false

Automatic & manual BIDS mapping



__bids__: 1.11.0

MRI:

hmriNIFTI:

anat:

- **provenance:**

C:\Users\...\COFITAGE\data\prepared_sub-all_mod-MRI\sub-004\ses-Baseline\MRI\005-t1_mpr_sag_p2_iso\s939-0005-00001-000224-01.nii

example: anat/sub-004_ses-Baseline_run-1_T1w

checked: true → False until fully verified

model: anat:T1w

suffix: T1w

attributes:

ProtocolName: t1_mpr_sag_p2_iso

bids: !!omap

- task: ~

- acq: ~

- ce: ~

- rec: ~

- run: "<<increment>>" → sub-004_ses-Baseline_run-1_T1w, sub-004_ses-Baseline_run-2_T1w , etc

- echo: ~

- part: ~

- chunk: ~

json: !!omap → Automatically filled based on DICOM/Nifti metadata

- NumberShots:

<CSASeriesHeaderInfo/MrPhoenixProtocol/sKSpace/IIimagesPerSlab>

- DwellTime: <scale-6:CSAImageHeaderInfo/RealDwellTime>

- NonlinearGradientCorrection: false

T1 vs T2 BIDS mapping



__bids__: 1.11.0

MRI:

hmriNIFTI:

anat:

- provenance:

C:\Users\...\MRI\005-t1_mpr_sag_p2_iso\xxx.nii

example: anat/sub-004_ses-Baseline_run-1_T1w

checked: true

model: anat:T1w

suffix: T1w

attributes:

ProtocolName: t1_mpr_sag_p2_iso

bids: !!omap

- task: ~

- acq: ~

- ce: ~

- rec: ~

- run: "<<increment>>"

- echo: ~

- part: ~

- chunk: ~

json: !!omap

- NumberShots:

<CSASeriesHeaderInfo/MrPhoenixProtocol/sKSpace/IIimagesPerSlab>

- DwellTime: <scale-6:CSAImageHeaderInfo/RealDwellTime>

- NonlinearGradientCorrection: false

__bids__: 1.11.0

MRI:

hmriNIFTI:

anat:

- provenance:

C:\Users\...\MRI\007-T2_2D_0_4x0_4x1_2mm_180flip\yyy.nii

example: anat/sub-004_ses-Baseline_acq-2D_run-1_T2w

checked: true

model: anat:T2w

suffix: T2w

attributes:

ProtocolName: T2_2D_0.4x0.4x1.2mm_180flip

bids: !!omap

- acq: 2D

- ce: ~

- rec: ~

- run: "<<increment>>"

- mod: ~

json: !!omap

- NumberShots:

<CSASeriesHeaderInfo/MrPhoenixProtocol/sKSpace/IIimagesPerSlab>

- DwellTime: <scale-6:CSAImageHeaderInfo/RealDwellTime>

DWI & Field maps



dwi:

- provenance:
C:\Users\...\MRI\015-ep2d_diff_NODDI_iso2_p2\zzz.nii
- example: dwi/sub-001_ses-Baseline_acq-dwiRFon_dir-AP_run-1_dwi
- checked: true
- model: dwi:dwi
- suffix: dwi
- attributes:
ProtocolName: ep2d_diff_NODDI_iso2_p2
- bids: !!omap
 - acq: dwiRFon
 - dir: AP
 - run: "<<increment>>"
- json: !!omap
 - NonlinearGradientCorrection: false

fmap:

- provenance:
C:\Users\...\MRI\008-al_B1mapping\fff.nii
- example: fmap/sub-004_ses-Baseline_run-1_echo-1_flip-01_TB1EPI
- checked: true
- model: fmap:TB1EPI
- suffix: TB1EPI
- attributes:
ProtocolName: al_B1mapping
- bids: !!omap
 - acq: ~
 - ce: ~
 - rec: ~
 - run: "<<increment>>"
 - echo: <EchoNumbers>
 - flip: '<format02d:AcquisitionNumber>'
 - inv: ~
 - part: ~
 - chunk: ~
- json: !!omap
 - EchoTimeSeries:
<round10:scale-6:CSASeriesHeaderInfo/MrPhoenixProtocol/alTE>
 - FlipAngleSeries: <<custom:faList>>
 - NonlinearGradientCorrection: false
 - MixingTime: <<custom:MixingTime>>
 - EchoTime: <round10:scale-3:EchoTime>
 - FlipAngle: <<custom:fa>>
 - TotalReadoutTime: <<custom:TRT>>

anat:

- provenance:

C:\Users\...\MRI\006-al_mtflash3d_MTw\aaa.nii

example:

anat/sub-004_ses-Baseline_acq-MTw_run-1_echo-1_flip-1_mt-on_part-mag_MPM

checked: true

model: anat:MPM

suffix: MPM

attributes:

ProtocolName: al_mtflash3d_MTw

ImageType: ORIGINAL\PRIMARY\M\ND

bids: !!omap

- task: ~

- acq: MTw

- ce: ~

- rec: ~

- run: "<<increment>>"

- echo: <EchoNumbers>

- flip: '1'

- mt: on → « on » only for MTw

- part: mag → « mag » or « phase »

- chunk: ~

json: !!omap

- EchoTimeSeries: <round10:scale-6:CSASeriesHeaderInfo/MrPhoenixProtocol/alTE>

- NonlinearGradientCorrection: false

- MTState: <MTState>

- EchoTime: <round10:scale-3:EchoTime>

- FlipAngle: <FlipAngle>

- RepetitionTimeExcitation: 0.0245 → needed but absent from metadata. Go back to physicists

BIDSme ignore



__bids__: 1.11.0

MRI:

hmriNIFTI:

__ignore__:  Data won't be BIDSified.

- provenance: ~

checked: true

model: __unknown__

suffix: ''

attributes:

ProtocolName: ['localizer', 'localizer_multislice_sag5', 'AAHead_Scout_64ch\.*', 'AAHead_Scout\.*',
't2_spc_da-fl_sag_p2_iso\.*', 'fl3d_iso1_NM_FoV192_05x05x20\.*', 'tse_LC\.*']  Localizers

bids: !!omap []

json: !!omap []

- provenance: ~

checked: true

model: __unknown__

suffix: ''

attributes:

ImageType: ['DERIVED\\SECONDARY.*']  Secondary data

bids: !!omap []

json: !!omap []

BIDSme ignore



__bids__: 1.11.0

MRI:

hmriNIFTI:

__ignore__:  Data won't be BIDSified.

- provenance: ~

checked: true

model: __unknown__

suffix: ''

attributes:

ProtocolName: ['localizer', 'localizer_multislice_sag5', 'AAHead_Scout_64ch\.*', 'AAHead_Scout\.*',
't2_spc_da-fl_sag_p2_iso\.*', 'fl3d_iso1_NM_FoV192_05x05x20\.*', 'tse_LC\.*']  Localizers

bids: !!omap []

json: !!omap []

- provenance: ~

checked: true

model: __unknown__

suffix: ''

attributes:

ImageType: ['DERIVED\\SECONDARY.*']  Secondary data

bids: !!omap []

json: !!omap []



All in 1 file!

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[BIDSme Demonstration Examples](#)

Next steps!



► Anonymisation

- BIDSme: name, date, location
- SPM (*spm_deface*)
- ...

► BIDS Validator

- Add missing metadata
- Refer to BIDS specifications

► Open-access?

- EBRAINS (Europe)
- Open Neuro (US)
- ...

Example of the COFITAGE project



Multiple sessions

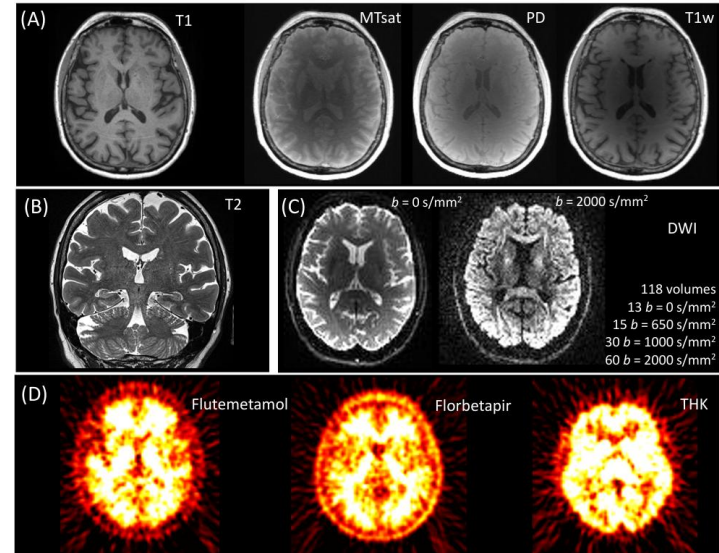
- ▶ Baseline
- ▶ 2-year Follow-Up
- ▶ 7-year Follow-Up

Data

- ▶ Polysomnography
- ▶ Demographic
- ▶ Genetic data
- ▶ MRI (T1/T2, dwi, MPM)
- ▶ PET (tau, amyloid)

Beck Anxiety Inventory
Beck Depression Inventory
Choice Reaction Time Task
Cognitive Difficulties Scale
Cognitive Reserve Hobby
Cognitive Reserve Occupation
Cognitive Reserve Sport
D2 Test of Attention
Digit Symbol Substitution Test*
Epworth Daytime Sleepiness Scale
Fluency Tests*
Forward and Backward Digit Span Task*

Free and Cued Selective Reminding Test*
Horne-Östberg questionnaire
Logical Memory Task*
Mattis*
Mill Hill Vocabulary Scale
MMSE
Mnemonic Similarity Task*
National Adult Reading Test (French)
Nback Visual Task*
Stroop Color Word Test
Trail Making Test*
Raven's Progressive Matrices



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[BIDSme Demonstration Examples](#)

How to BIDSify? A wrap-up



- ▶ Acquire your data
- ▶ Download BIDSme



[Publication](#)



[GitHub](#)



[Docker](#)

- ▶ Demo & slides



[Slides](#)



[BIDSme Demonstration Examples](#)



[COFITAGE dataset](#)

- ▶ Get your own BIDSified dataset



Thanks for your attention!
Any questions?

MaRBEL Meeting
September 2026

Antoine Jacquemin