

1. Check summary information

Example:

Summary

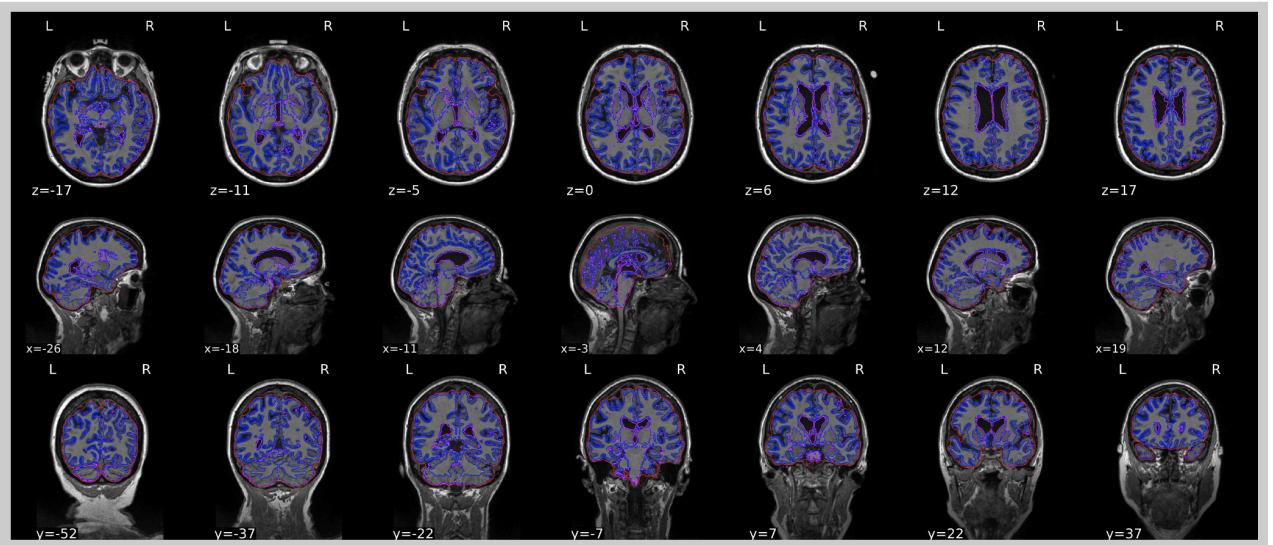
- Subject ID: MTL0003
- Structural images: 2 T1-weighted
- Functional series: 2
 - Task: rest (2 runs)
- Standard output spaces: MNI152NLin2009cAsym, fsaverage
- Non-standard output spaces: anat, fsnative
- FreeSurfer reconstruction: Run by fMRIPrep

TO DO:

- Check the number of T1 scans and functional scans that were processed

2. Check Brain mask and brain tissue segmentation of the T1w

Example:

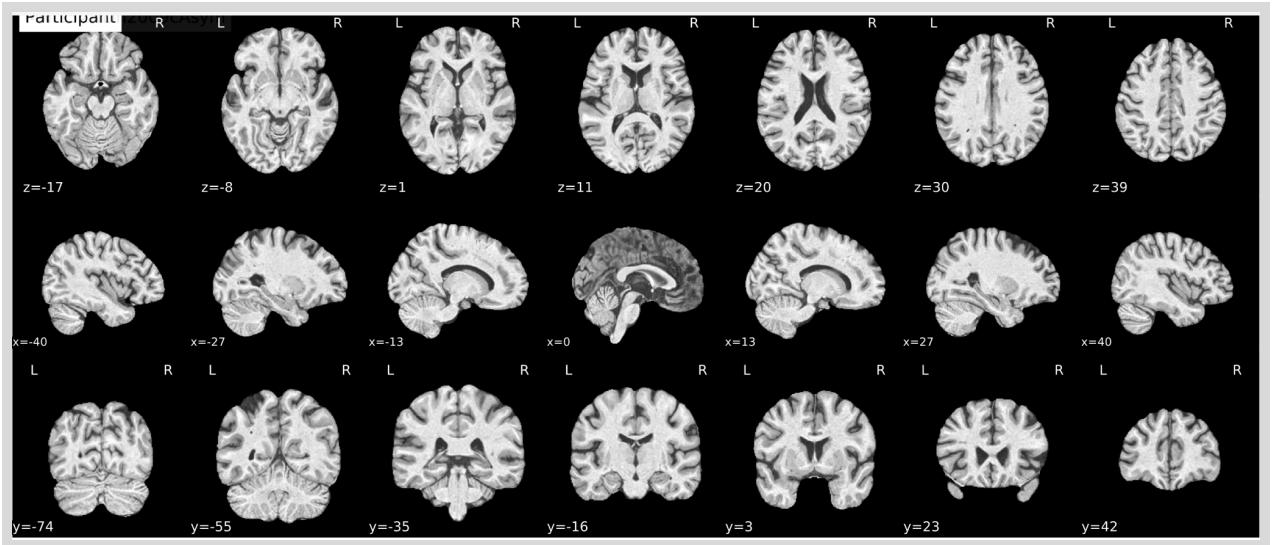


TO DO:

- Check the brain mask extraction (**red line**). Make sure the red line is around the brain - not cutting off much brain tissue or including much non-brain (skull/dura) area
- Check the segmentation between white and grey matter (**blue line**). Make sure the blue line divides between white and grey matter.

3. Check Spatial normalization of the anatomical T1w reference

Example: (the figure will alternate between participant and T1w template)



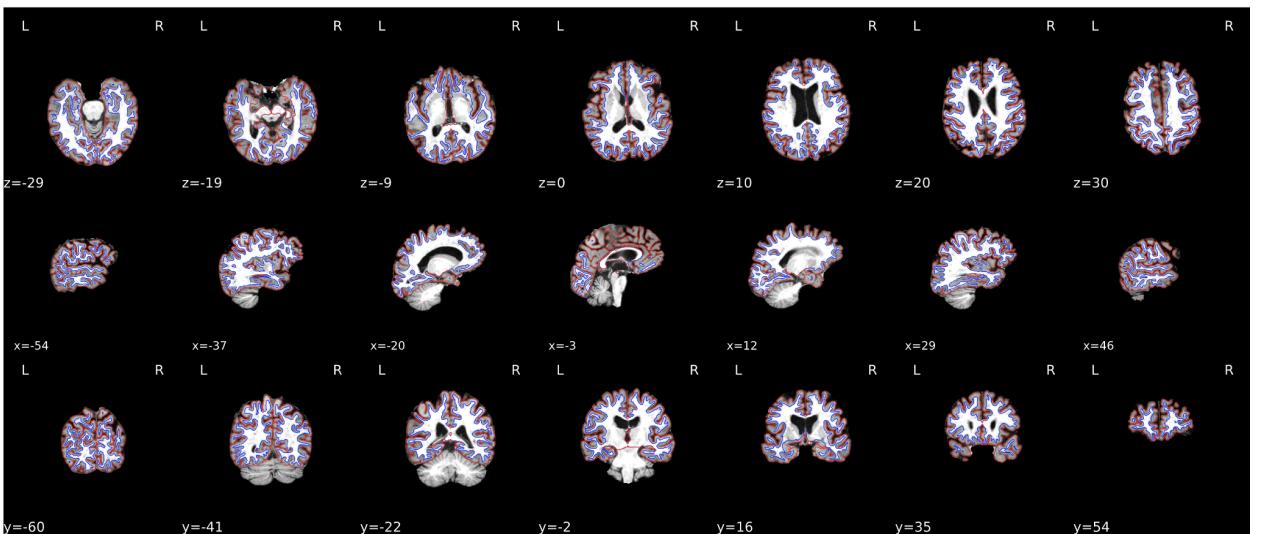
TO DO:

Look at both participant's brain and the MNI152NLin2009cAsym space.

- Check if the ventricles for both images are roughly in the same place
- Check if the boundary between white and grey matter for both images are basically the same
- Check if there's any stretched/distorted pictures

4. Check Surface reconstruction (this is similar to step2)

Example:



TO DO:

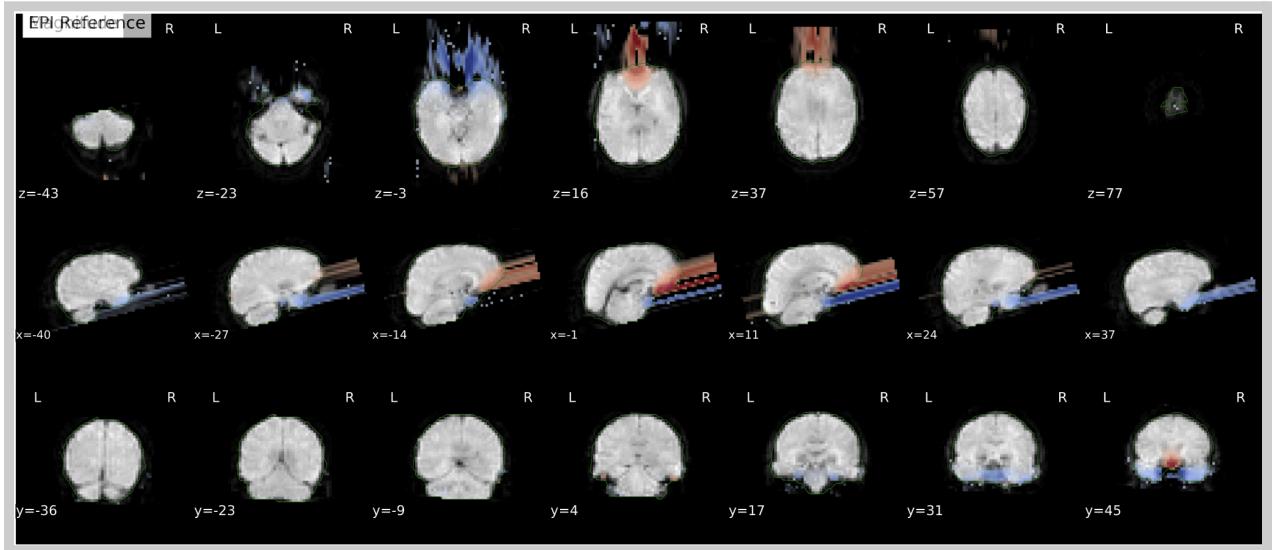
- Check the brain extraction (**Red line**). Make sure the red line is around the boundary of grey matter and not including cerebellum

- Check the Segmentation (**Blue line**). Make sure the blue line is on the boundary between white matter and grey matter.

(notes about fieldmap in fmriprep) <https://neurostars.org/t/fmriprep-fieldmap/6000/2>

5. Check Estimated fieldmap and alignment to the corresponding EPI reference

Example:

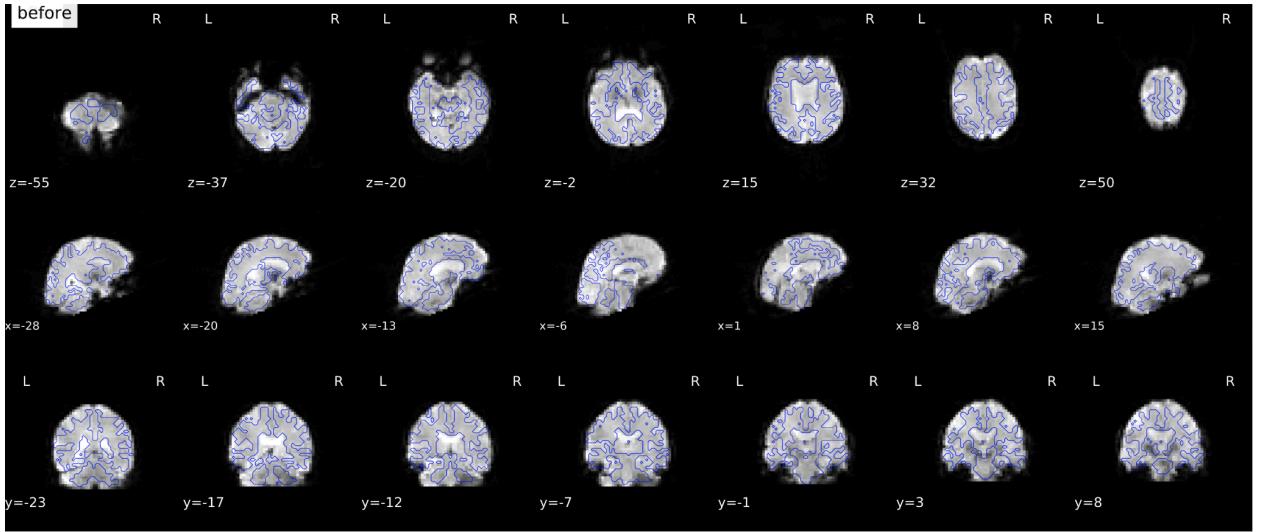


TO DO:

- Check if the ventricles for both EPI and magnitude are roughly in the same place
- Check if there is any distortion or shifting between EPI and magnitude

6. Check susceptibility distortion correction

Example:



TO DO:

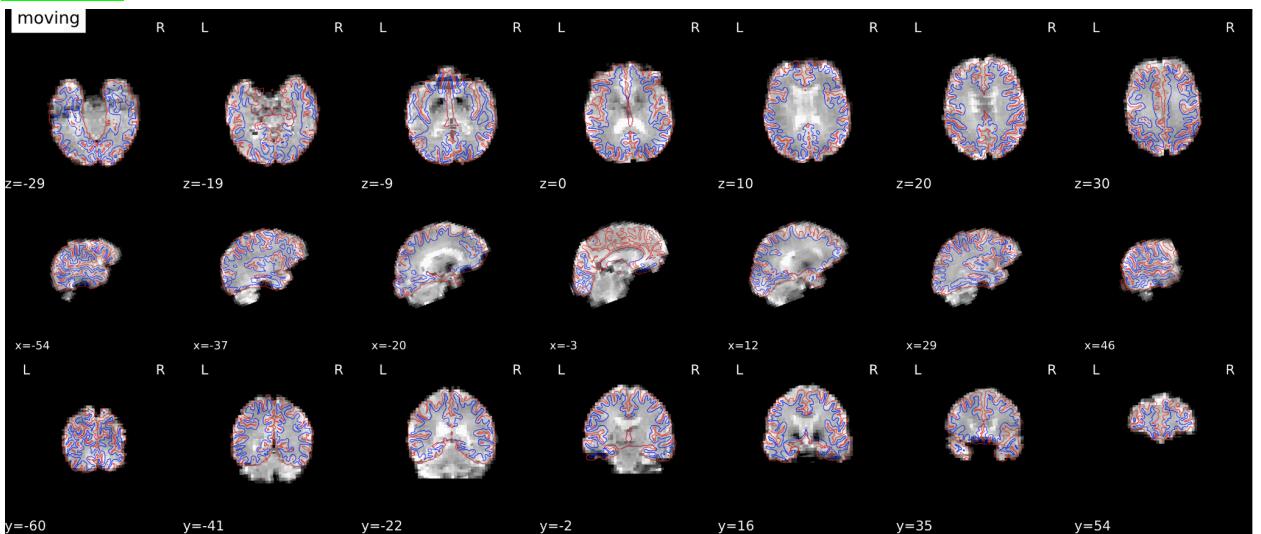
(The blue line is the boundary between white matter and grey matter)

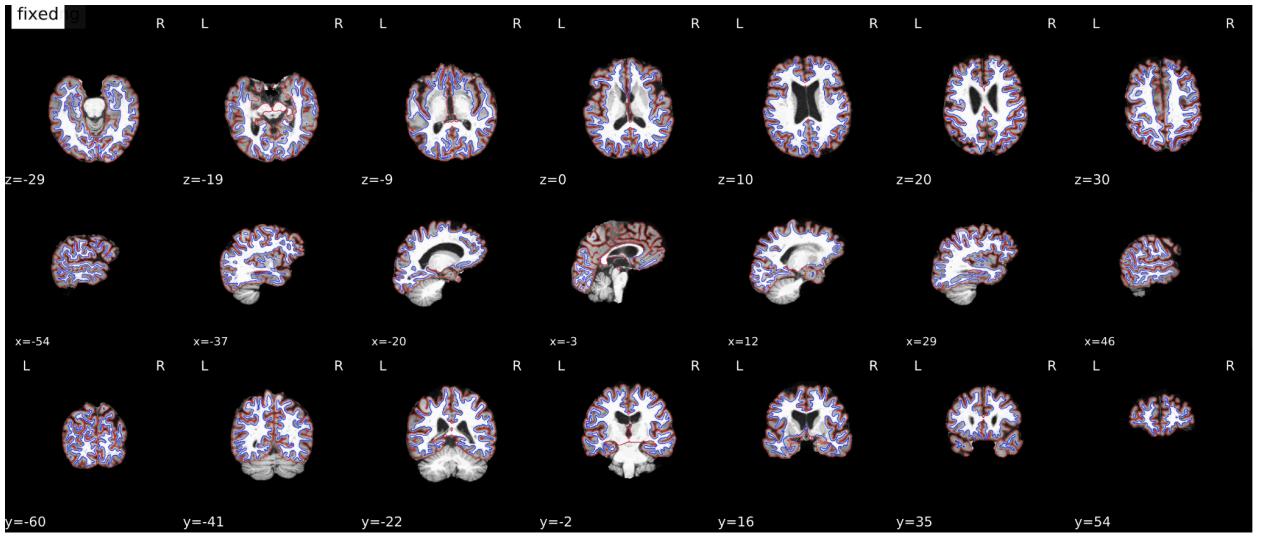
- Check if the functional image aligned with the blue line after the distortion correction (the changes could be very subtle)
- Check if the after images stand like a normal brain (no distortion/shifting)

(make sure the blue line is still on the boundary between white and gray matter after the distortion)

7. Alignment of functional and anatomical MRI data (surface driven)

Example:



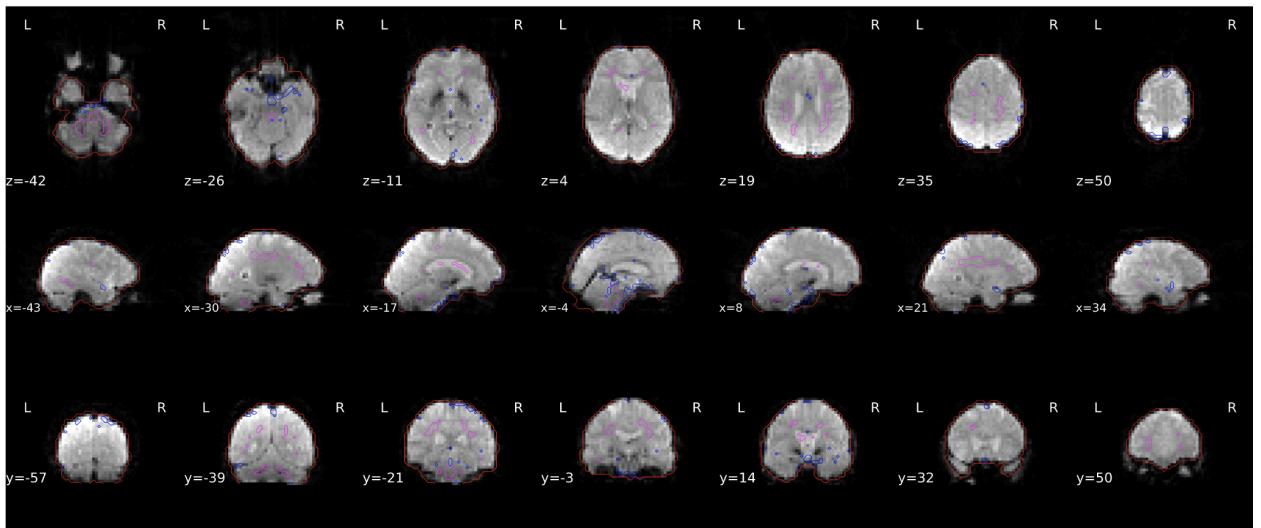


TO DO:

- Check if the **blue line** aligns with the boundary between grey matter and white matter
- No distortion or shifting between “Fixed” and “Moving”

8. Check brain mask and (anatomical/temporal) CompCor ROIs

Example:



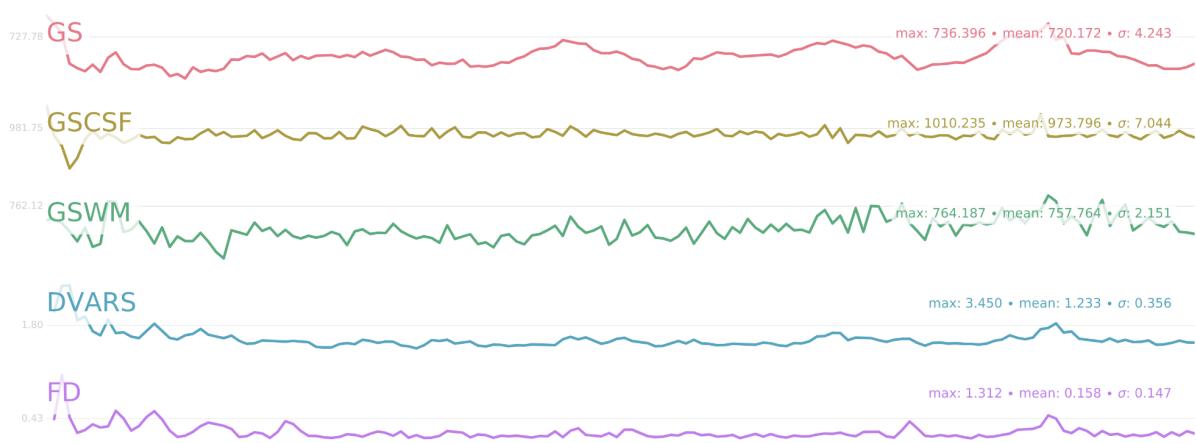
TO DO:

- Check if the **red line** is outside of the functional brain and not cutting of any brain part
- Check if the **magenta line** is inside of white matter and CSF area
 - Towards center
 - If it's towards the edge - not good
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- Check if the **blue line** is generally in areas with high CSF or blood flow (e.g., between the hemispheres, in ventricles, and between the cortex and the cerebellum, etc)
 - On the edges
 - Big portions on the cerebral cortex (surrounding ventricles) - not good
 - Blue lines showing areas of the brain with higher signal, which are areas of potential noise

9. Check BOLD Summary

Example:



TO DO:

- Check if there's any spike in any of the 5 plots (don't worry about this)
- Check if the FD (**purple line**) has a mean under **0.5** (If anyone is above **0.5**, please flag them out)

10. Check errors

TO DO:

Check if there's any error reported at the bottom of the report