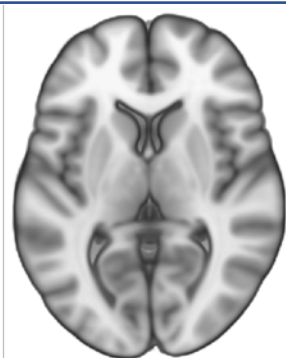


1. Rigidly align each native space T1-weighted image to the MNI template.



Single Subject's
T1-weighted image



MNI
Template

Here the SPM12 Realign function was used rigidly align each subject's image to the MNI template.

2. Left-Right (L-R) flip a copy of each rigidly-aligned image.



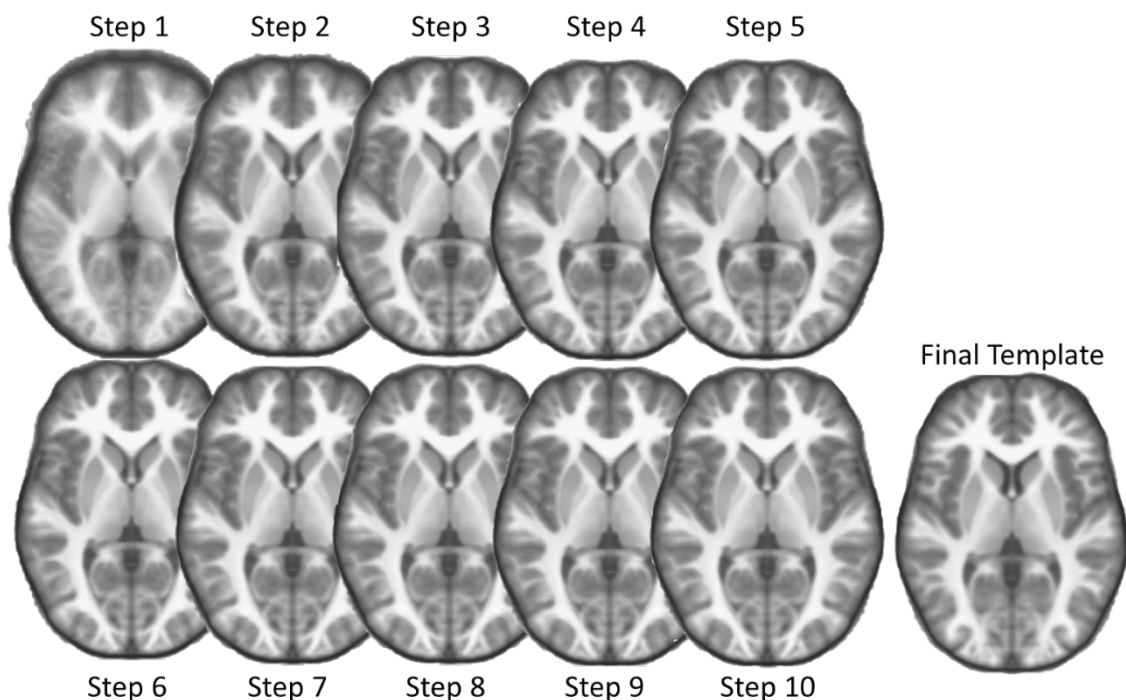
Rigidly Aligned T1-
weighted image



L-R Flipped Rigidly
Aligned T1-
weighted image

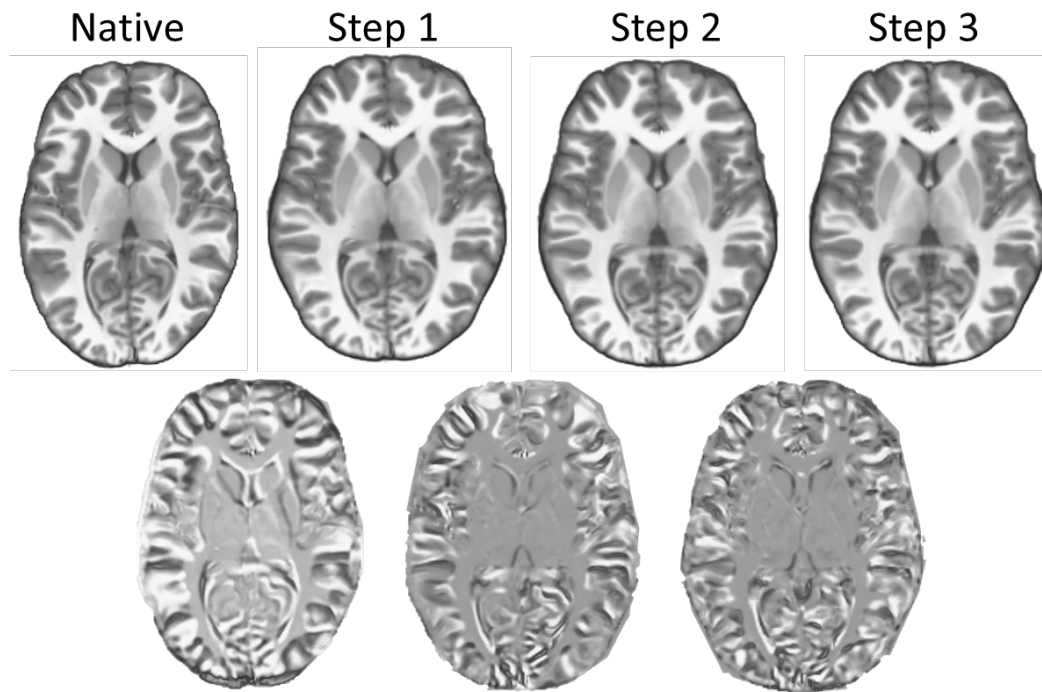
Here the SPM12 Reorient utility was used to create a left-right flipped copy of each image.

3. Warp each subject's rigidly aligned image and L-R flipped image to create a symmetrical template (the average image for Steps 1-10 and final template are shown).



Please see the buildSymmetricalTemplate.m scripts to view the code for this procedure. This script and the following can be accessed from https://www.nitrc.org/projects/structural_asym/

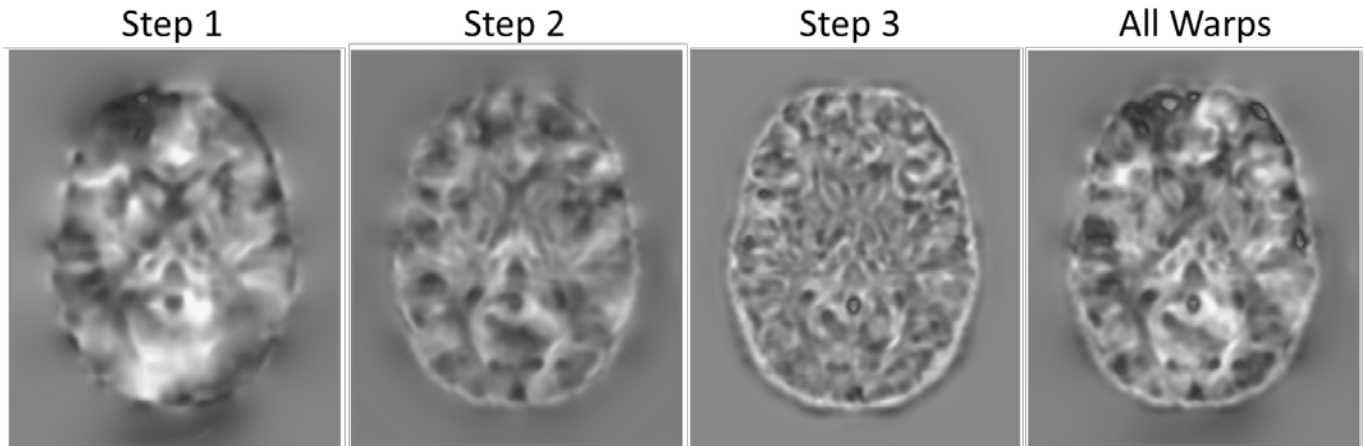
4. Warp each rigidly aligned image to match the symmetrical template [Global (Step 1), Local (Step 2), Fine (Step 3) resolution; single subject shown].



Step 1 - Native Step 2 - Step 1 Step 3 - Step 2

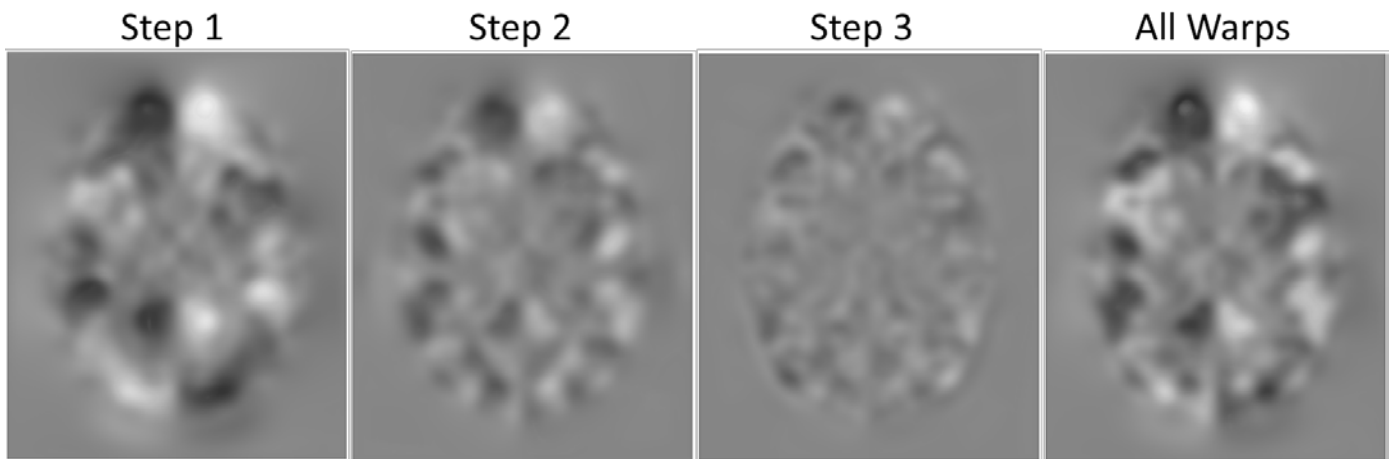
Please see the threeStepWarp.m file in Supplemental Materials to view the code for this procedure.

5. Create a Jacobian determinant image from each subject's Global (Step 1), Local (Step 2), Fine (Step 3) resolution warps and their combined warp image (single subject shown).



Please see the `makeJacobDet_Step01.sh`, `makeJacobDet_Step02.sh`, `makeJacobDet_Step03.sh` scripts to view the code for these procedures.

6. Create structural asymmetry maps by subtracting the smoothed (8 mm FWHM) Jacobian Determinant image by a L-R flipped copy of itself at each resolution (single subject shown).



The `calcAsymImages.m` script was used to create these images after smoothing the images with SPM12.