

WMH Replacement and Image Warping

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Purpose of method

- Use warping to compile statistical profiles of WMH distributions



Goal

- Prevent overestimation of ventricles during warping
- Obtain warped image with WMH voxels outside template ventricles (not inside!)

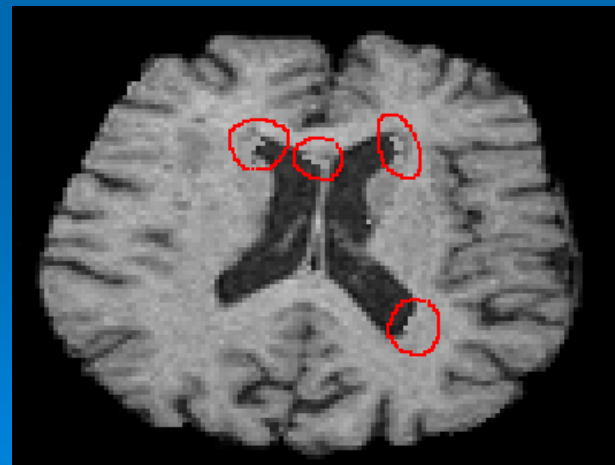
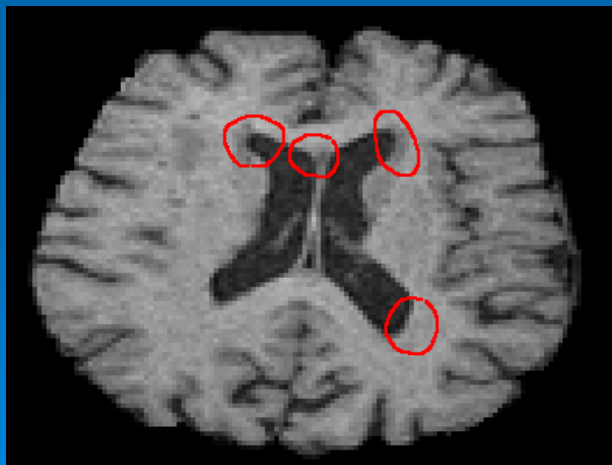
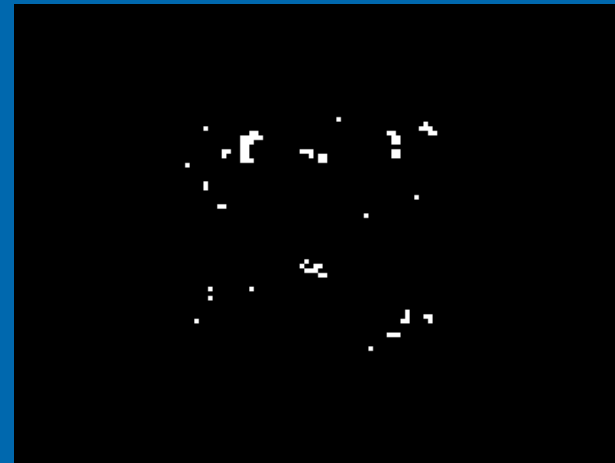
Overview of method

- Warp Template to T1 image
- Inverse transform WMH distribution masks onto template
- Create frequency maps on template
- Compare with FA images where appropriate

Steps in the Method

- Produce WMH mask by filtering FLAIR image
- Linearly align FLAIR to T1 subject image
- Readjust WMH intensities in T1 to minimize warping errors
- Warp T1 and Template

WMT alignment & tissue replacement



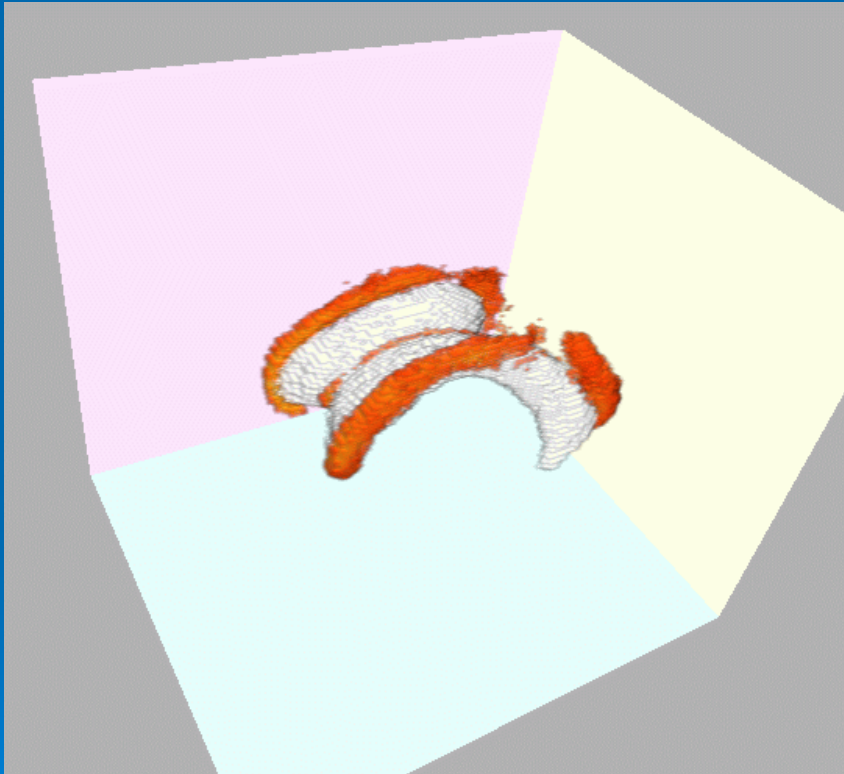
Accuracy Issues

- Low resolution of FLAIR images causes inaccuracies when reslicing to T1 space.
- Partially address these by thresholding resliced image
- WMH voxels appear dark in T1 image. Estimate replacement value by local mean of white intensity

Composite maps from warping

Accurate placement of periventricular lesions warped onto template

3D view: ventricles



Slice view

