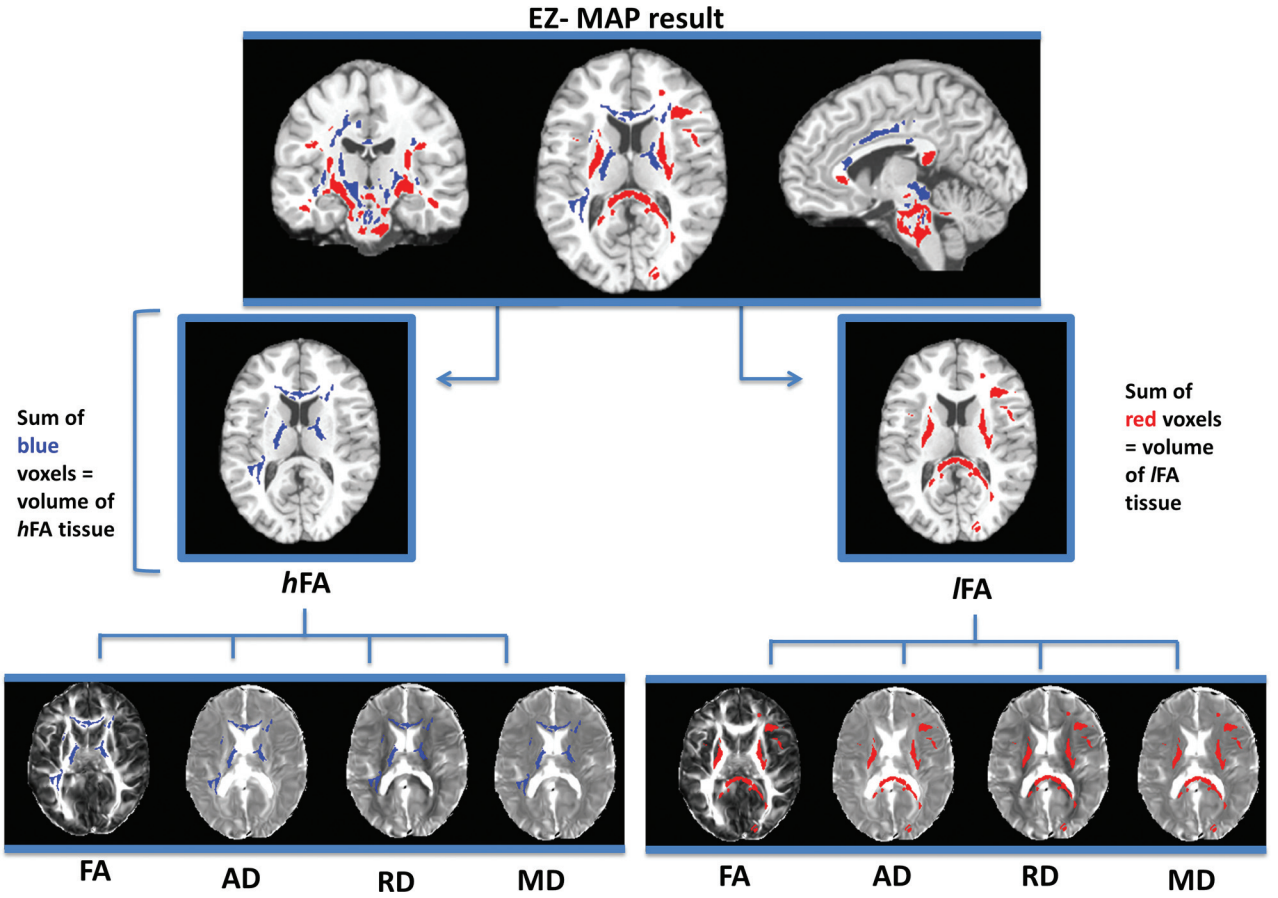
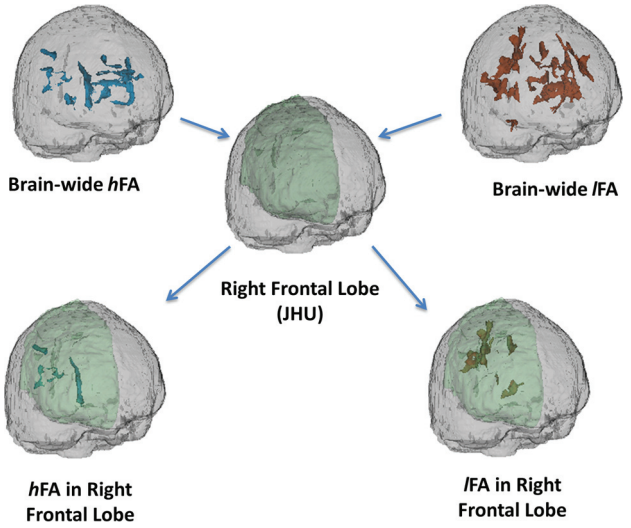
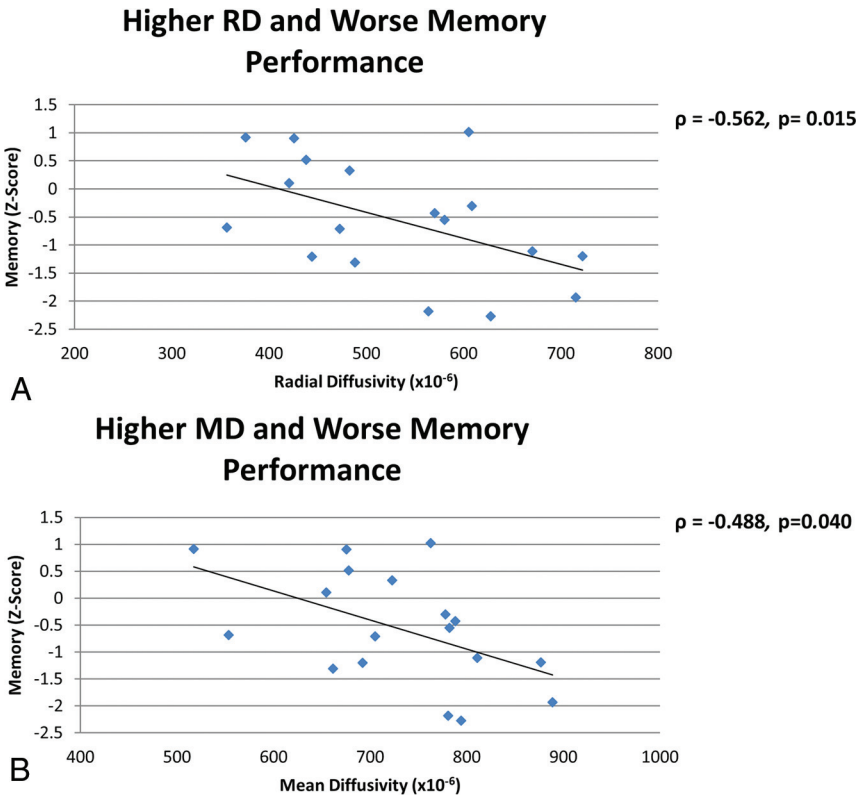


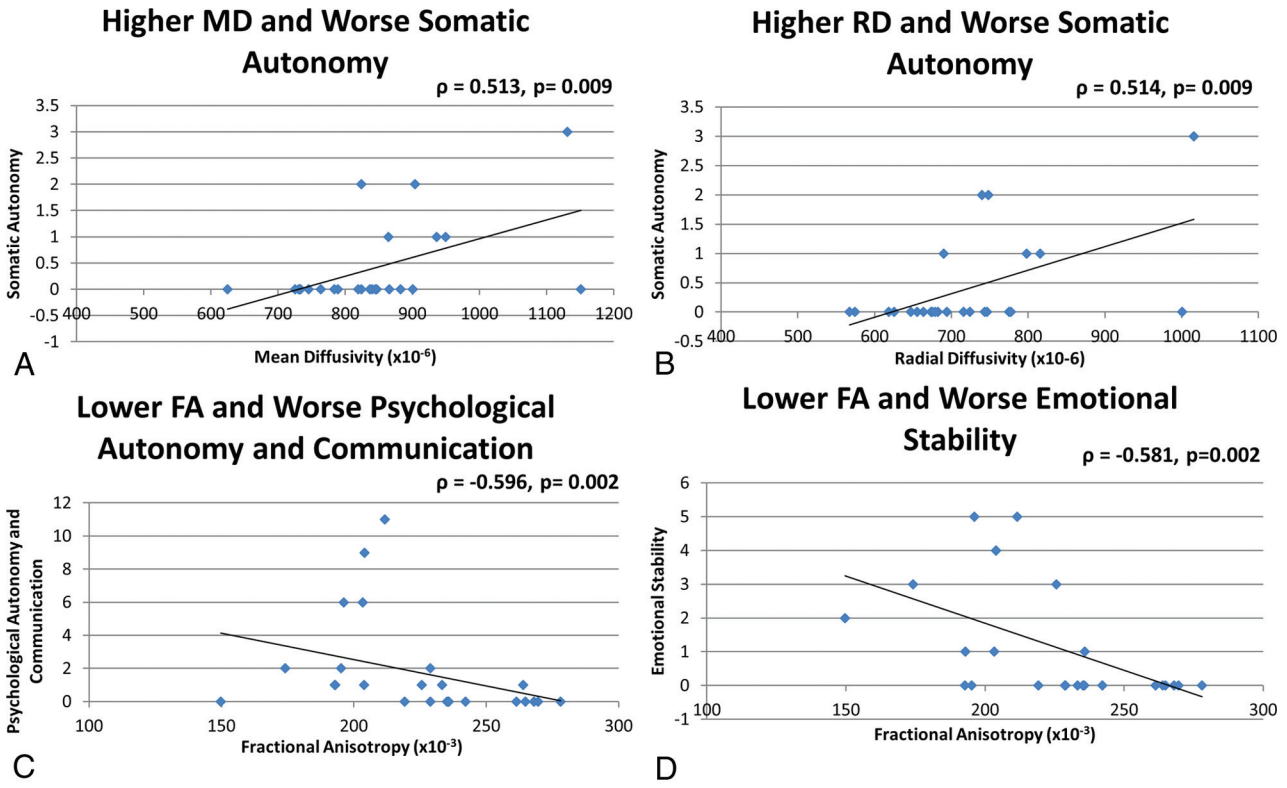
ON-LINE FIG 1. Methods: Extraction and calculation of brain-wide measures of abnormality. This schematic diagram is based on actual images and quantitative results from 1 representative subject. Regions of *h*FA (blue) and *l*FA (red) are identified by comparing the subject with controls by using the EZ-MAP procedure ($|EZ| > 1.96$ for each voxel and cluster size *P* value 1%, corrected for multiple comparisons). Abnormal regions are then segregated into separate maps of *h*FA and *l*FA. The *h*FA and *l*FA maps are next applied separately as masks to each subject's FA, AD, RD, and MD volume. Each of these parameters is then averaged across the voxels, and mean FA, AD, RD, and MD across all voxels showing *h*FA and across all voxels showing *l*FA are used as calculated imaging variables.



ON-LINE FIG 2. Methods: Regional measures of abnormality. Shown is the procedure for calculation of regional imaging measures, by using the right frontal lobe in a single subject as an example. The same procedure is used for the other white matter brain regions chosen for analysis.



ON-LINE FIG 3. Associations between brain-wide imaging measures and long-term cognitive outcomes. Higher RD (*A*) and MD (*B*) within areas showing *h*FA correlate with worse performance on tasks of memory at 1 year ($\rho = -0.562$, $P = .015$ and $\rho = -0.488$, $P = .040$, respectively).



ON-LINE FIG 4. Associations between brain-wide imaging measures and long-term functional outcomes. Higher MD (*A*) and RD (*B*) within areas showing *l*FA correlate with greater impairment in somatic autonomy at 1 year ($\rho = 0.513$, $P = .009$; $\rho = 0.514$, $P = .009$, respectively). Lower FA within areas showing *l*FA correlates with greater impairment in psychological autonomy and communication ($\rho = -0.596$, $P = .002$) (*C*) and emotional stability ($\rho = -0.581$, $P = .002$) (*D*).