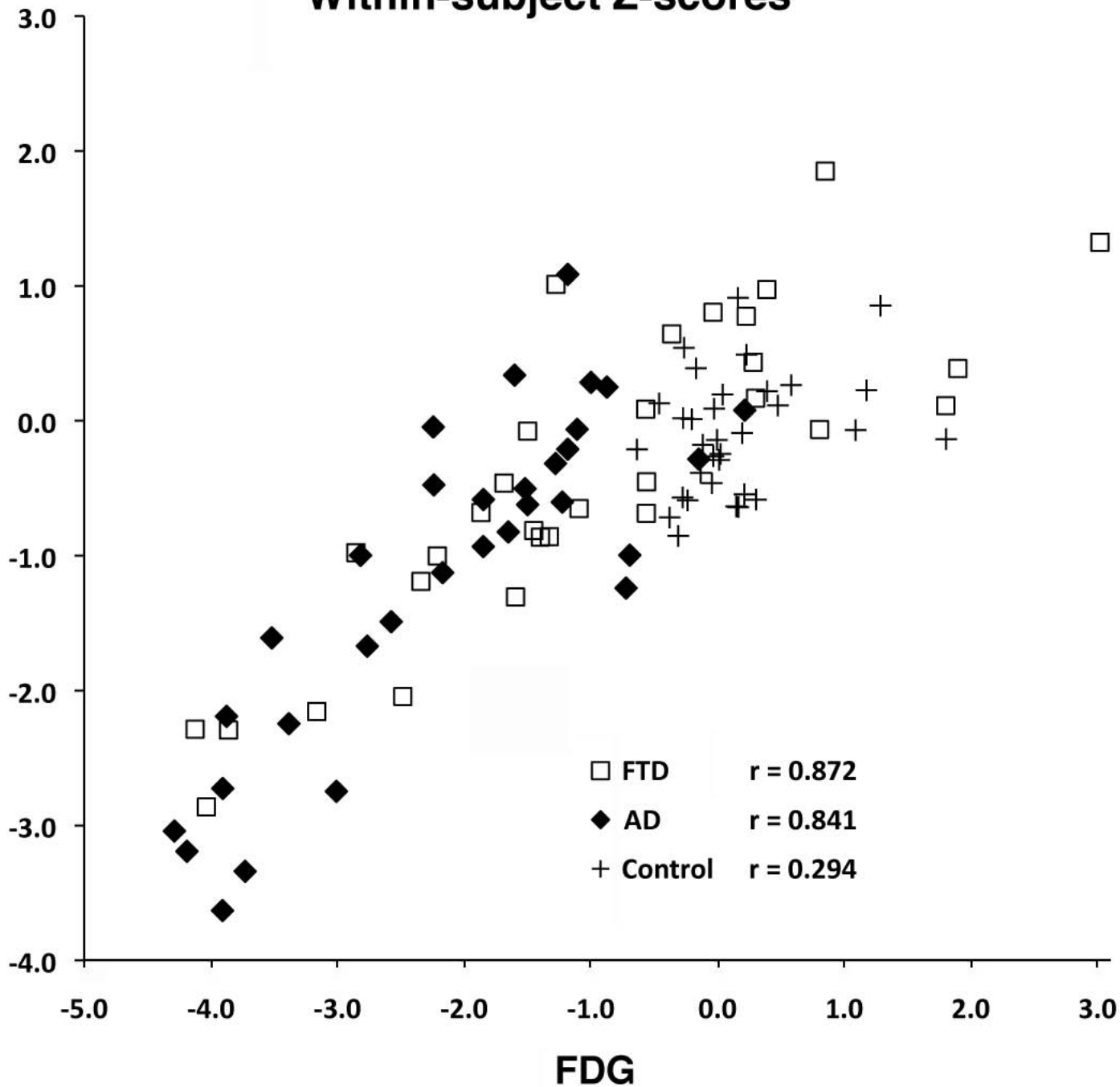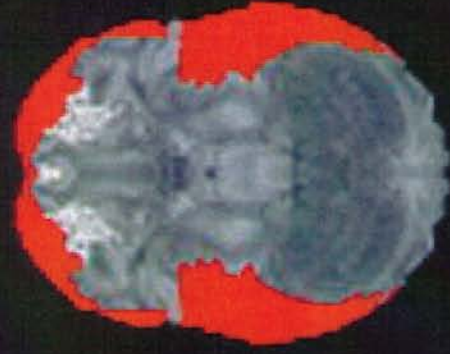**Supplementary Table 1:** Distribution of normal control data among analyses. Data from a total of 80 age-matched control subjects was used. Some subjects were used in more than one analysis.

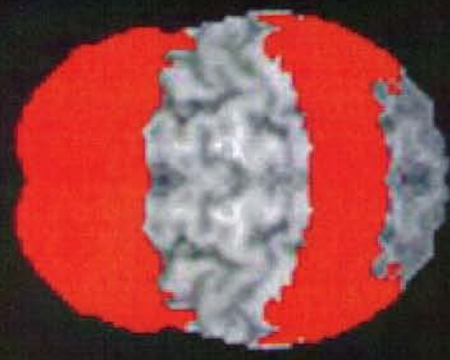| Analysis	Number of Dementia/MCI Subjects	Number of Control Subjects
Within Subject Correlation of DTBZ K_1 and FDG CMR_{glc} VOIs	50	15
Between Subject Correlation of DTBZ K_1 and FDG CMR_{glc} VOIs	50	15
SSP Analysis of FDG CMR_{glc} Data	50	27
SSP Analysis of DTBZ K_1 Data	50	68

Within-subject Z-scores

Legend:
- □ FTD   r = 0.872
- ◆ AD   r = 0.841
- + Control r = 0.294

X-axis: FDG
Y-axis: DTBZ K$_1$

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Supplementary Figure 1: Within-Subjects Correlations of Z-score. Correlations of Z-score deficits (across all 34 regions) between FDG CMR_{glc} and DTBZ K_1 for the same representative subjects shown in Figure 2. AD and FTD Z-score deviations are highly correlated with a much lower level of correlation for the control case. AD and FTD subjects have multiple abnormal regions and some relatively spared regions, providing a wide range of regional deficits relative to control mean yielding stronger correlations. Control subjects, with much smaller deviations from the mean, exhibit much less variance from normal and hence lower correlations This figure extends the results shown in Figure 2 (which show general correspondence between K_1 and FDG, while the results here show correspondence of specific regions affected in these disorders.

Supplementary Figure 2: Surface Maps of **Affected Cortex**. Maps of SSP surface pixels included in the area defined as affected cortex. Surface views from left to right are left lateral, left medial, superior and inferior. A total of 8920 surface pixels are included in the regions.