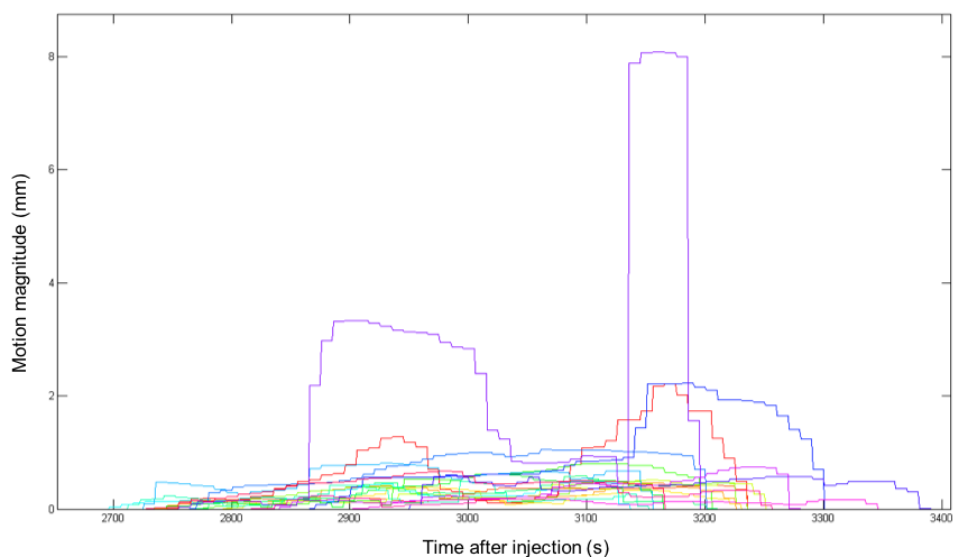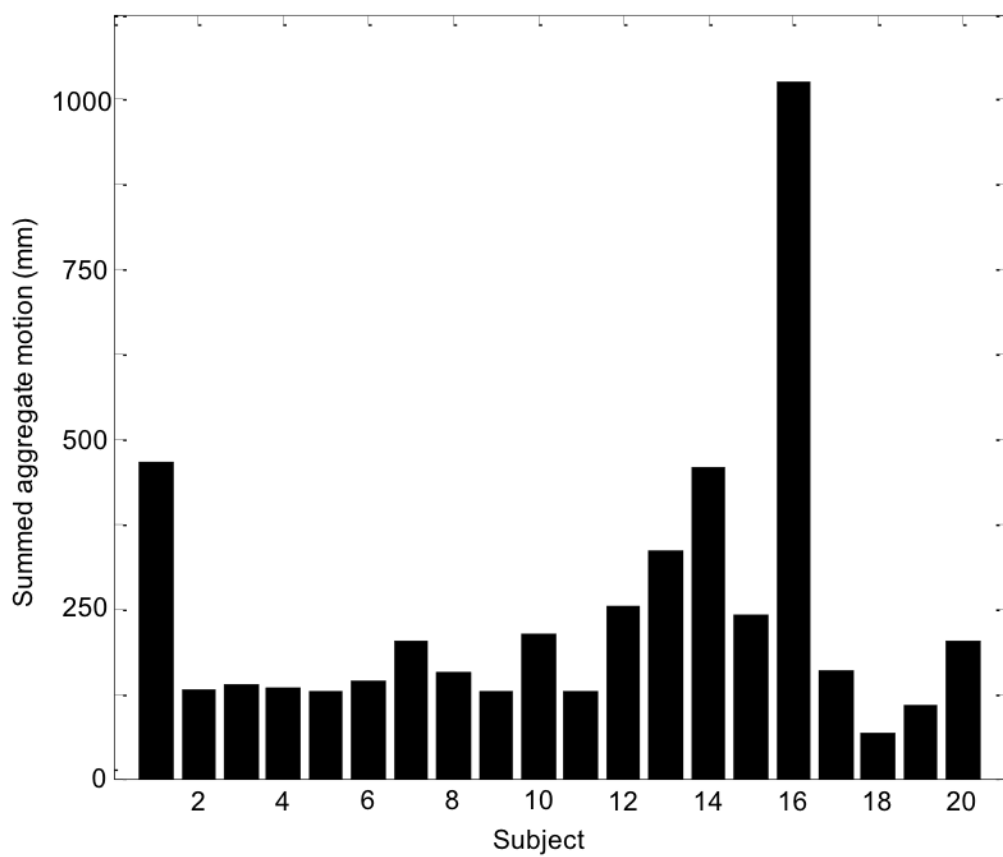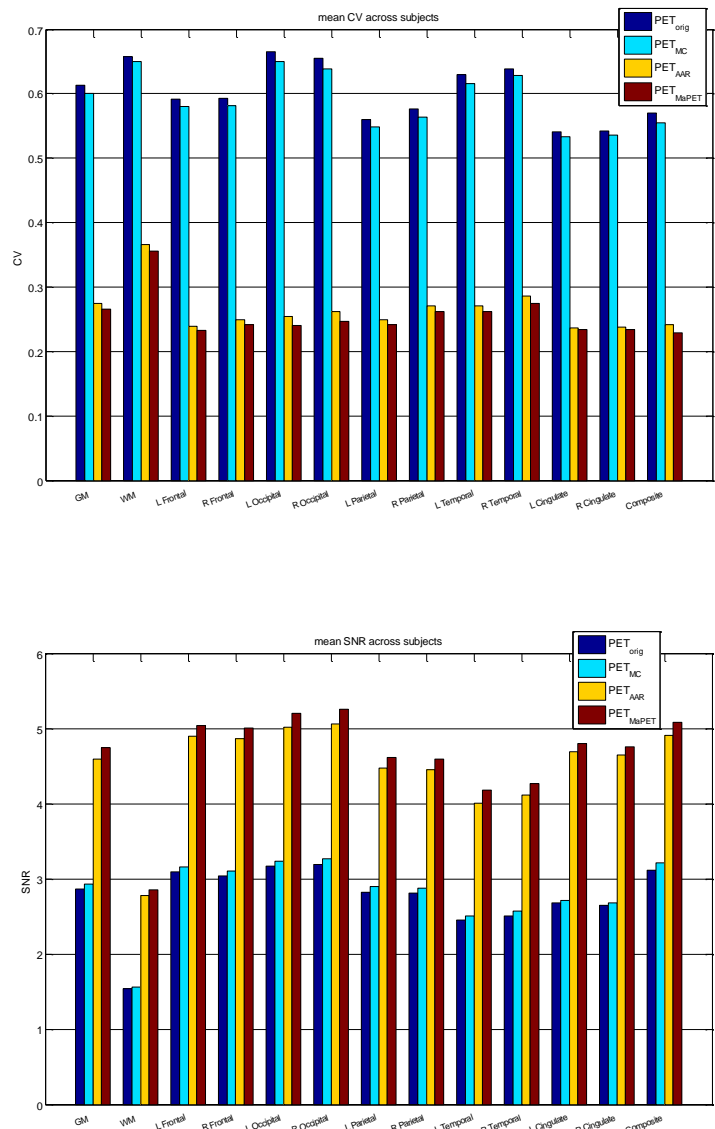**Supplemental Figure 1** (left) The motion magnitude, as estimated by the vNav images, for a representative subject that moved the most and another representative subject that did not exhibit much motion. (right) The motion magnitude of the median-filtered motion parameters used in motion correction

Supplemental Figure 2 The motion magnitude curves for all subjects

Supplemental Figure 3 The summed aggregate motion parameters for all 20 subjects. One subject moved considerably more than the rest

Supplemental Figure 4 The mean (top) CV and (bottom) SNR values of PET_{orig}, PET_{MC}, PET_{AAR}, and PET_{MaPET} images across subjects for different brain regions