

## AbstractID: 77 Title: CBF Changes During Brain Activation: fMRI vs. PET

The changes in regional cerebral blood flow (rCBF) associated with the changes in neuronal activity are routinely measured both by positron emission tomography (PET) and functional magnetic resonance imaging (fMRI) techniques. However, direct comparison has not been performed to determine similarities and differences of PET and fMRI techniques in determining the rCBF response to brain activation. In the present study, a quantitative comparison of the functional rCBF maps obtained by PET and fMRI are made by performing an activation study in a single group of subjects under precisely controlled conditions, and using identical visual stimuli. Twelve healthy volunteers participated in the activation study using the visual checkerboard stimulation with flip frequency at 8 Hz. By selecting the conjunctive pixels which activated on both PET and fMRI maps, the changes in rCBF measured by fMRI was  $36.95 \pm 2.54$  % while the value measured by PET was  $38.79 \pm 2.63$  %. Our results have demonstrated that there is no statistically significant difference ( $p = 0.22$ ) in the measurements of rCBF change between MRI and PET methods.