

## Comparison of anatomical standardization methods regarding the sensorimotor foci localization and between-subject variation in $H_2^{15}O$ PET activation, a three-center collaboration study

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Identical sets of  $H_2^{15}O$ -PET brain activation data regarding vibrotactile stimulation and voluntary motion of the fingers in seven young normal subjects, together with the MRI, were analyzed in three PET centers by means of each center's own method of anatomical standardization to Talairach's frame. Every center used a linear or segmentally linear transformation with various number of scaling factors. A variation of 6–8 mm in each axis was observed in the foci localization due to the difference in the transformation principle and the measured brain size. Between-subject variation was similar in all the centers. Since different standardization methods define different coordinate systems, a cautious attitude should be taken to comparing results analyzed at different centers.

**Key words:** positron emission tomography, regional cerebral blood flow, primary sensorimotor cortex, activation, anatomical standardization