

Interventional brain SPECT—A review

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Brain SPECT with HMPAO or ECD has—due to its short accumulation period—a rather high time resolution of approx. 60 sec. Compared to isopropyl amphetamine (I-123) and FDG-PET, shortlasting interventions may be evaluated by SPECT. Usually, a two-step approach is used, injecting one third of the dose under baseline conditions and two thirds during intervention. The first study is then subtracted from the second study, resulting in a “difference” image which allows to calculate the effect of the intervention. These interventional procedures may include drug, mechanical, and mental intervention as well as ictal, blood pressure and receptor intervention. Moreover, the difference of pCO₂ after hyperventilation or hypoventilation may also be used as a stimulus. The above mentioned procedures are described in detail.