Spect in neuropshiateric disorders

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Normal brain Perfusion Pattern The normal adult brain shows bilaterally symmetric tracer distribution in both hemispheres, high perfusion is observed in the gray matter including basal ganglia and thalami, and especially in the primary visual cortex. normally other areas in the brain show higher activity including, temporal, parietal, occipital (primary visual) and cingulate gyrus. Activity in the white matter and interhemispheric fissures is less. The gray matter-to-white matter flow ratio is approximately 4:1.This general pattern of radiopharmaceutical distribution can be affected by several factors such as the visual, auditory, and somatosensory stimuli that the patient experiences during radiopharmaceutical administration. Eyes open or closed may increase or decrease, respectively, the visual cortex activity by 30%. Motor and sensory stimuli have similar but asymmetric effects. Auditory stimuli effects are symmetric but less impressive. To eliminate differences, clearly defined clinical practices should be used to control environmental variables (24).Age related changes in normal brain perfusion pattern:Brain perfusion of a neonate is globally lower, but gradually increases to be even higher than that of an adult until the age of 7 years. Afterwards, global brain perfusion gradually decreases to be similar to that of an adult at adolescence. Although there are some age-related variations of regional cerebral perfusion, the perfusion patterns are similar between different ages more than 10 years old.