Date of Presentation: 12/4/02
Title (Reference): Evidence for Striatal Dopamine Release During a Video Game (Nature 393:266-8, 1998)
Presenter: David L. Dean
Study Type: Literature Review
Sample: 8 healthy, right-handed males
Task Types: Video Game, with a monetary reward for each level completed
Image Parameters: ^{11}C-labelled raclopride and Positron Emission Tomography
Study Hypothesis: Dopamine release in striatum may be involved in the processing and reinforcement of rewarding behavior. More specifically, dopamine release in the ventral striatum may be related to affective components of the task, whereas dopamine release in the dorsal striatum may be related to sensorimotor coordination and response selection.
Data Analysis:
Results: Positron emission tomography is able to detect neurotransmitter fluxes *in vivo* during behavioral manipulations. Decreases in [^{11}C]RAC-binding potential, reflecting increases in extracellular dopamine levels, are correlated with increasing levels of performance.
Strengths:
Limits/Biases: Baseline condition is a blank screen. This is not an adequate "control", as there are numerous differences (between behavioral and baseline conditions) which may be causing the observed change in extracellular dopamine.