

Tactile Cues and Spatial Navigation in Mice

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Abstract : The hippocampus, located in the limbic system, is most commonly known for its role in memory and spatial navigation (as cited in Brain Reward and Pathways). It maintains an especially important role in specifically episodic and declarative memory. The hippocampus has also recently been linked to dopamine, the reward pathway's primary neurotransmitter. Since research has found that dopamine also contributes to memory consolidation and hippocampal plasticity, this neurotransmitter is potentially responsible for contributing to the hippocampus's role in memory formation. In this experiment we tested to see the effect of tactile cues on spatial navigation for eight different mice. We used a radial arm that had one designated 'reward' arm containing sucrose. The presence or absence of bedding was our tactile cue. We attempted to see if the memory of that cue would enhance the mice's memory of having received the reward in that arm. The results from our study showed there was no significant response from the use of tactile cues on spatial navigation on our 129 mice. Tactile cues therefore do not influence spatial navigation.

Keywords : mice, radial arm maze, memory, spatial navigation, tactile cues, hippocampus, reward, sensory skills, Alzheimer's, neurodegenerative disease

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