

The ability to perceive and orient to new information is crucial to survival. The centre median and parafascicular nuclei (CM/Pf) of the thalamus are hypothesized to play a critical role in the sensorimotor process of attentional orienting. Recent studies have suggested that information about salient sensory input is relayed through CM/Pf to forebrain targets, where it serves to interrupt ongoing processing and redirect attention to the salient stimulus. The proposed research will test this hypothesis by assessing the specific impact of sensory processing in CM/Pf on its downstream targets in neocortex and basal ganglia using a combination of correlative, causal (optogenetic) and behavioral measures. In the mouse, lateral and medial Pf are homologous to the CM (sensorimotor) and Pf (associative) thalamic nuclei of primates, respectively. We will systematically test the impact of mouse lateral Pf activity on stimulus representations in primary somatosensory neocortex (SI) and dorsolateral (sensorimotor) striatum (DLS) using a 2-vibrisa stimulation paradigm in which the salience of each stimulus is manipulated according to its probability of occurrence ¹⁾.

¹⁾

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