Reassessing the location of motor activity in the Superior Colliculus map during adaptation.
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Introduction

The deep layers of the superior colliculus (SC) are an important part of the sensorimotor system, involved in the control of eye movements and other forms of saccadic eye movements. The SC is characterized by a two-dimensional representation of the visual field, and the location of the visual target can modulate the activity of neurons in the SC. The location of the target can determine the direction and amplitude of the visual target displacement, and the observed movement.

Methods

In our study, we examined the activity of SC neurons during adaptation and their corresponding changes in the visual field. We recorded the activity of SC neurons during a two-dimensional adaptation phase in which the target displacement increased, the amplitude decreased, and the neuron became less active.

Conclusions

Our results indicate that during adaptation, the activity of the neurons of the deep layers of the Superior Colliculus map the visual target displacement and the observed movement. The active center is characterized by the original movement, and the adapted movement. This suggests that the Superior Colliculus is not directly involved in the manipulation of adaptation.