Transcranial magnetic stimulation of the occipital pole interferes with verbal processing in blind subjects

By zroth
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By zroth July 4, 2011


Abstract:
Recent neuroimaging studies in blind persons show that the occipital cortex, including the primary visual cortex (V1), is active during language-related and verbal-memory tasks. No studies, however, have identified a causal link between early visual cortex activity and successful performance on such tasks. We show here that repetitive transcranial magnetic stimulation (rTMS) of the occipital pole reduces accuracy on a verb-generation task in blind subjects, but not in sighted controls. An analysis of error types revealed that the most common error produced by rTMS was semantic; phonological errors and interference with motor execution or articulation were rare. Thus, in blind persons, a transient 'virtual lesion' of the left occipital cortex interferes with high-level verbal processing

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