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The Effects of Transcranial Magnetic Stimulation over Premotor Cortex on the Perception of Biological Motion

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Abstract: We investigated the roles of posterior superior temporal sulcus (STS) and premotor cortex in biological motion perception using transcranial magnetic stimulation (TMS). Subjects viewed noise masked point light displays (PLDs) of humans and scrambled figures and determined whether a person was present in each trial. Non-biologically moving PLDs (polygons) served as control stimuli. Theta burst TMS was delivered over left premotor cortex, left STS, or vertex (Saygin, 2007, Brain). Sensitivity and response bias were both affected after premotor TMS (but not STS) which was due to an increase in false alarms. This effect was not found in the control task. These data suggest that the STS and premotor areas play dissociable roles in biological motion perception. The increased false alarms after premotor TMS suggests that this region may normally help refine the computations of posterior areas during biological motion perception.