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Visual Underpinnings of Body Aesthetics: A TMS Study

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Abstract. The 'Dual route model' for visual body processing suggests that occipital-lateral cortex and premotor cortex may have complementary influences on body perception. In particular, while the Extrastriate body area (EBA) may be involved in body form processing, premotor cortex (PMC) is necessary in body action processing. Here, we applied rTMS over bilateral EBA and PMC to investigate the neural mechanisms of esthetic of body perception. Female and male healthy volunteers were required to express VAS judgments of how much they liked virtual model bodies that varied either in body size and implied motion. After a 500-ms fixation cross, the stimuli were presented for 150 ms at the center of the screen and were followed by a mask for 500 ms and, finally, by the 100 mm VAS scale. Five 10 Hz rTMS pulses were delivered after 150 ms from stimulus onset. The analysis on the esthetic liking VAS revealed specific effects of EBAvs. dPMC-rTMS according to the size and posture of the bodies. While, rTMS over right EBA specifically decreased the liking judgments of fat models, stimulation of left EBA decreased the liking judgments of slim dynamic models. Importantly, only the left PMC, but not the left EBA, decreased the judgments of slim static bodies. Our results provide evidence of lateralization effects for the positive vs. negative evaluation of the body of conspecifics. Crucially, both EBA and PMC seem to play a complementary role in esthetic processing and their individual contributions influence the final esthetic judgment.