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## **Self-Referential Processing effects of Non-Invasive Brain Stimulation: A Systematic Review**

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Studies have confirmed stimulus-induced activity in response to verbal and non-verbal self-referential processing (SRP) in cortical midline structures, temporoparietal cortex and insula. Whether SRP can be causally modulated by non-invasive brain stimulation (NIBS) has also been investigated in several studies. Here we summarize the NIBS literature including 27 studies of task-based SRP comparing response between verbal and non-verbal SRP tasks. The studies differed in design, experimental tasks and stimulation parameters. Results support the role of left inferior parietal lobule (left IPL) in verbal SRP and for the medial prefrontal cortex when valenced stimuli were used. Further, results support roles for the bilateral parietal lobe (IPL, posterior cingulate cortex), the sensorimotor areas (the primary sensory and motor cortex, the premotor cortex, and the extrastriate body area) and the insula in non-verbal SRP (bodily self-consciousness). We conclude that NIBS may differentially modulate verbal and non-verbal SRP by targeting the corresponding brain areas.