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Neural correlates of self-distraction from anxiety and a process model of cognitive emotion regulation.

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Source

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Abstract

Cognitive strategies used in volitional emotion regulation include self-distraction and reappraisal (reinterpretation). There is debate as to what the psychological and neurobiological mechanisms underlying these strategies are. For example, it is unclear whether self-distraction and reappraisal, although distinct at a phenomenological level, are also mediated by distinct neural processes. This is partly because imaging studies on reappraisal and self-distraction have been performed in different emotional contexts and are difficult to compare. We have therefore investigated the neural correlates of self-distraction, as indexed by a thought suppression task, in an anticipatory anxiety paradigm previously employed by us to study reappraisal. Brain activity was measured by functional magnetic resonance imaging. We show that self-distraction recruits the left lateral prefrontal cortex. Based on a review of the existing data, we develop a process model of cognitive emotion regulation. The model posits that both self-distraction and reappraisal attenuate emotional reactions through replacement of emotional by neutral mental contents but achieve replacement in different ways. This is associated with a dependence of self-distraction on a left prefrontal production function, whereas reappraisal depends on a right prefrontal higher order monitoring process.

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