People who engage in self-injury report high levels of negative urgency\(^1\), the tendency to act impulsively when experiencing negative emotions. This suggests that self-injurers may have impaired cognitive control during negative mood.

Based on previous research, we hypothesized:

No baseline differences in cognitive control between healthy individuals and people who self-injure in the absence of a mood induction.

Decreased cognitive control and increased negative affect in self-injurers, compared to healthy controls, following a negative mood induction.

Multi-Source Interference Task (MSIT)\(^2\) 31 controls and 36 self-injurers completed the MSIT, a cognitive control task, at baseline and immediately following a negative mood induction. On each trial in this task, subjects are presented with three numbers. Two of the numbers are identical *distractors*. The third is the *target*, a distinct number which the participants try to quickly identify and report via keypad. On *control trials*, the distractors are always "0", and the target number is presented in the location that corresponds to its position on the keypad (e.g., "003" or "020").

On *interference trials*, the distractors are "1", "2", or "3", which are all options on the keypad. Also, the target location is incongruent with its position on the keypad (e.g., "332" or "211").

Cognitive control is assessed by subtracting reaction time (RT) on *control trials* from *interference trials*. Higher numbers indicate increased cognitive interference, i.e., less cognitive control.

Positive and Negative Affect Scales (PANAS)\(^3\) Participants completed the PANAS before each administration of the MSIT. The second PANAS was completed after the mood induction, which involved writing an autobiographical vignette about feelings of worthlessness, failure, and/or shame.

Participants who self-injured responded as predicted to the negative mood induction. They reported more negative affect after the induction, compared to their baseline levels and compared to the healthy control group.

Contrary to expectation, cognitive control *increased* rather than *decreased* following the negative mood induction. This improved performance may reflect a practice effect.

Even when challenged by negative affect, self-injurers showed no impairment in cognitive control. This is surprising, given the self-reported impulsivity and emotional dysregulation associated with self-injury. However, it is consistent with studies that do not find increased behavioral impulsivity among self-injurers.\(^4\) Elsewhere, we report that people who self-injure have impaired inhibitory control over their behavioral responses to negative emotional images in a modified stop-signal task.\(^5\) Together, these data suggest that only certain types of stimuli may disrupt specific aspects of executive functioning in self-injurers.

**Method**

**Background**

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**Results**

**Summary**

**Figure 1. Negative mood induction increased negative affect in self-injurers (○) but not in healthy controls (●).**

**Figure 2. Negative mood induction did not impair cognitive control.**