

## **Acute Stress Influences Decision-Making by Diminishing the Consideration of Long-Term Reward**

*Hannah Evans*

Stress impairs the ability to engage in goal-directed activity, which often enhances disadvantageous decision-making. However, the impact this has on individuals' evaluation of long-term and short-term reward is not well-understood. The current study explored how stress may enhance temporal discounting using a reinforcement learning framework, providing insight on a potential link between the two phenomena. We hypothesized that stressed individuals would have a reduction in goal-directed activity, which would enhance their tendency to choose immediately valuable but suboptimal actions. 261 participants were exposed to acute stress or the control condition before completing a decision-making task in which participants maximized their points over a short sequence of actions. Participants could approach this task using a suboptimal strategy favoring short-term reward or an optimal strategy that considered potential future rewards through goal-directed activity. We found that participants in the stress condition made significantly more immediately valuable actions at the expense of the optimal ones than those in the control condition. These results indicate that stressed individuals engage in increased suboptimal decision-making due to reduced consideration of long-term reward through goal-directed learning. Altogether, this study provides insight to a possible pathway through which goal-directed activity influences temporal discounting in a state of stress.