

Analyzing past failures may boost future performance by reducing stress

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Credit: Nik Shuliahin, CC0

Insights from past failures can help boost performance on a new task—and a new study is the first to explain why. US researchers report that writing critically about past setbacks leads to lower levels of the "stress" hormone, cortisol, and more careful choices when faced with a new stressful task, resulting in improved performance. The study, published today in open access journal *Frontiers in Behavioral Neuroscience*, is the first demonstration that writing and thinking deeply

about a past failure improves the body's response to stress and enhances performance on a new task. This technique may be useful in improving performance in many areas, including therapeutic settings, education and sports.

People are often advised to "stay positive" when faced with a challenging task. However, a vast body of research suggests that paying close attention to negative events or feelings—by either meditating or writing about them—can actually lead to positive outcomes.

But why does this counter-intuitive approach lead to benefits? To investigate this question, [Brynne DiMenichi](#), a doctoral candidate from Rutgers University-Newark, together with other researchers from the University of Pennsylvania and Duke University, examined the effect of writing about past failures on future task performance in two groups of volunteers.

A test group wrote about their past failures while a control group wrote about a topic not related to themselves. The researchers used salivary [cortisol levels](#) to provide a physiological readout of the [stress](#) experienced by the people in both groups. These levels were comparable across the test and control groups at the start of the study.

DiMenichi and colleagues then measured the performance of the volunteers on a new stressful task and continued to monitor their cortisol levels. They found that the test group had lower cortisol levels compared to the control group when performing the new challenge.

"We didn't find that writing itself had a direct relationship on the body's stress responses," says DiMenichi. "Instead, our results suggest that, in a future stressful situation, having previously written about a past [failure](#) causes the body's stress response to look more similar to someone who isn't exposed to stress at all."

The researchers also found that volunteers who wrote about a past failure made more careful choices on a new task, and overall performed better than the [control group](#).

"Together, these findings indicate that writing and thinking critically about a past failure can prepare an individual both physiologically and cognitively for new challenges," observes DiMenichi.

While everyone experiences setbacks and stress at some point in their lives, this study may provide insight about how one can use these experiences to better perform in future challenges.

"It provides anyone who wants to utilize this technique in an educational, sports, or even therapeutic setting with clear-cut evidence of expressive writing's effectiveness," says DiMenichi. "However, it is difficult to compare laboratory measures of cognitive performance to performance on say, the Olympic track. Future research can examine the effect of writing manipulation on actual athletic [performance](#)."

The article is part of a special research collection on [the impact of stress on cognition and motivation](#).

More information: *Frontiers in Behavioral Neuroscience*, [DOI: 10.3389/fnbeh.2018.00045](#)

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