

- Job stress / Burn out (Psychology)

## Exhaustion at work can lead to difficulty controlling emotions, scientists say

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If a hard day in the office leaves you crabby and uncooperative, you may have an excuse: scientists say exercising self-restraint can exhaust parts of the brain related to decision-making and impulse control, leaving you less able to manage your behaviour towards others.



The researchers say their results tie into the theory of “ego depletion” – a controversial idea in psychology that willpower is a limited resource that gets used up by effort. The results, they add, suggest it might be best to take a break after a day of mental exertion before engaging in other tasks.

“If you want to have a discussion with your partner and feel that you are mentally exhausted, don’t,” said Erica Ordali, first author of the study from the IMT School for Advanced Studies Lucca, in Italy. “Take your time. Do it in another day.”

While the idea of ego depletion has been around for decades, it has garnered criticism, with some studies failing to replicate results. Ordali, however, noted an important factor may be that the tasks used in these studies to sap self-control often only last 10 minutes.

Writing in the Proceedings of the National Academy of Sciences, Ordali and her colleagues reported how they explored the impact of a longer duration, by asking 44 participants to undertake various computer-based activities for 45 minutes, including watching emotive video clips.

While half the participants were asked to use self-control during the activities, for example not showing their emotions in response to the videos, the other group did not have to exert self-control.

Each participant was also fitted with an electroencephalogram (EEG) headset, allowing the researchers to measure their brain activity.

Among other results, the team found participants in the self-control group showed increases in delta brain wave activity in the areas of the prefrontal cortex related to decision-making and impulse control, compared with their brain activity at the start of the activities. No such change was seen for the other group.

Crucially, said Ordali, delta waves are typically seen during sleep rather than wake – suggesting parts of the brain had “dozed off” in participants who had exerted self-control. The team then asked both groups to take part in a variety of games, including one known as “hawks and doves”, where individuals had to decide whether to cooperate to share resources, or behave in a hostile manner to secure them.

The results reveal 86% of participants who were not asked to exert self-control at the start of the study behaved like doves, engaging in peaceful cooperation. In contrast, the figure was just 41% among participants initially given self-control tasks, suggesting they tended to behave like hawks.

The team found no differences when it came to games that examined participants’ general social preferences, such as how altruistic they were.

The team then split another 403 participants into two groups and repeated the study, but without recording participants’ brain activity. Again, participants who were asked to show self-control subsequently behaved more aggressively.

Michael Inzlicht, a professor of psychology at the University of Toronto who was not involved in the study, urged caution noting most of the behavioural results did not show significant effects, while the connection between brain and behaviour was not strong. “These are interesting results and are consistent with a commonsense view of fatigue,” he said. “But given all the past controversy and the weakness of this data, I would want to see if they were replicated independently before calling the press about it.”