

## Feeling sensations, including ones connected to sadness, may be key to depression recovery

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The physical sensations that accompany sadness can feel as undesirable as they are intense—a constriction of the chest, watery eyes and a raw throat, to name a few.



But Norman Farb, an associate professor of psychology at the University of Toronto Mississauga, and Zindel Segal, a distinguished professor of psychology in <u>mood disorders</u> at U of T Scarborough, have discovered that keeping sensation alive in the face of stress is critical for well-being, particularly for those who have recovered from depression.

In the largest neuroimaging study to date of psychotherapy for preventing relapse and recurrence in depression, the researchers linked past depression with a greater tendency to shut down <u>sensory processing</u> when faced with an emotional stressor.

They also found that blocking out sensation is related to a greater risk of depressive relapse.

"We don't like feeling bad things, (but) we don't really think about the implications of balancing our short-term relief with our long-term health," says Farb. "Our research explains why working to keep feeling is so important. It lays the groundwork for seeing that <a href="emotional stress">emotional stress</a> actually robs us of sensation—and to undo stress, one must counter this inhibitory effect."

The study, published recently in the journal *NeuroImage: Clinical*, was coauthored by Farb and Segal, along with Ph.D. student Philip Desormeau, in the psychological clinical science graduate department at U of T Scarborough, and Cornell University Professor Adam Anderson.

The study included 166 participants who had recovered from depression but were vulnerable to a future episode. They were divided into two groups. Over an eight-week period, one group underwent <u>cognitive</u> therapy with a well-being focus, while the other group underwent mindfulness-based cognitive therapy.

Between cognitive therapy sessions, 85 participants also had their brain



activity measured through a fMRI scan while watching four consecutive clips from TV shows that wouldn't normally produce an emotional trigger as a baseline—for example, a lifestyle-related show on HGTV—as well as clips from an emotionally charged movie such as 1983's Terms of Endearment.

For the following two years, researchers followed up with participants every two months.

Farb says he and colleagues discovered something fascinating while studying the brain scans of those who relapsed: they had more of a tendency to "shut down." When exposed to the emotionally charged video clips, the parts of their brain that control sensations shut down more often than those who had not relapsed. Researchers also found that those who reported higher feelings of sadness during the movie clips weren't necessarily more likely to suffer a relapse.

"What actually determined their depression levels was how much that sadness was accompanied by a sensory shutdown," Farb says.

He adds that when our brains shut out <u>sensory information</u> during a <u>negative mood</u>, we are left with only our thoughts to make sense of what is happening. Often, these thoughts fail to provide a wider view of what is going on—and blocking out bodily sensations locks people into an "echo chamber" of their negative views.

"Our thoughts are there to nail things down so you can hold onto them over time, and that's fine as long as they keep getting updated—but the thing that updates it is new sensations," Farb explains.

The researchers say their findings help explain why negative everyday life situations—such as getting criticized at a work meeting or butting heads with your spouse—could cause a relapse in somebody who has



recovered from depression.

Segal says such seemingly minor events can trigger deeper feelings of inadequacy and worthlessness in those with a history of depression.

"This negative mood gets tied up with thoughts about themselves and can be easily perpetuated over time, and the person can feel worse," Segal says, adding that such thoughts often produce bodily sensations. "If the person suppresses these bodily sensations, their thoughts will compound into more and more depressive reactions."

Farb adds that the study could help clinical researchers create new assessments around sensory inhibition as a risk marker for depression. It could also contribute to developing targeted therapies that help people recovering from <u>depression</u> become better at noticing their sensations throughout the day, which, in turn, could help them counter negative moods that can shut down sensation and "lock in" depressive thinking.

"We don't have to wait until the person starts to really spiral, where it takes a lot of resources and time and effort to pull them out," Farb says. "You can start to notice if the person is starting to fit the profile of someone who's getting really sensory-avoidant. We can address it then, before the person stops showing up to work or taking care of their kids."

**More information:** Norman A.S. Farb et al, Static and treatment-responsive brain biomarkers of depression relapse vulnerability following prophylactic psychotherapy: Evidence from a randomized control trial, *NeuroImage: Clinical* (2022). DOI: 10.1016/j.nicl.2022.102969

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