

For depression, relapsers go to the front of the brain

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Depression is increasingly recognized as an illness that strikes repeatedly over the lifespan, creating cycles of relapse and recovery. This sobering knowledge has prompted researchers to search for markers of relapse risk in people who have recovered from depression. A new paper published in Elsevier's *Biological Psychiatry* suggests that when formerly depressed people experience mild states of sadness, the nature of their brains' response can predict whether or not they will become depressed again.

Patients who ruminate and activate the brain's frontal lobes are more likely to [relapse](#) into depression than those who respond with acceptance and activate [visual areas](#) in the back of the brain. Part of what makes depression such a devastating disorder is the high rate of relapse: each time a person becomes clinically depressed, increases their chances of becoming depressed by 16%. However, the fact that some patients are able to fully maintain their recovery points to the possibility that differences in the way they respond to everyday [emotional challenges](#) may reduce their chances of relapse.

Using [functional magnetic resonance imaging](#) to examine that possibility, researchers presented sixteen formerly-depressed patients with sad movie clips while taking pictures of their [brain activity](#). Over the next year and a half, nine of the sixteen patients relapsed into depression. The researchers compared the brain activity of relapsing patients against those who remained healthy and against another group of people who had never been depressed. When faced with sadness, relapsing patients showed more activity in a frontal region of the brain known as the medial prefrontal gyrus. Responses in this frontal region were also linked to higher rumination scores, the tendency to think obsessively about negative events. Patients who did not relapse showed more activity in the rear part of the [brain](#) responsible for processing visual information. Responses in this

visual area were also linked to greater feelings of acceptance and non-judgment of experience. Both the frontal and visual responses to sadness were atypical, in that they were not found in people who had never been depressed.

"Despite achieving an apparent recovery from the symptoms of depression, this study suggests that there are important differences in how formerly depressed people respond to emotional challenges that predict future well-being," explained author Dr. Norman Farb. "For a person with a history of depression, using the frontal brain's ability to analyze and interpret sadness may actually be an unhealthy reaction that can perpetuate the chronic cycle of depression."

Dr. John Krystal, editor of [Biological Psychiatry](#) added, "Relapse is one of the most vexing problems in depression treatment. Having a biomarker for relapse could guide a new generation of treatment research."

Further evaluation is needed to determine whether the brain's reaction to [sadness](#) can predict a person's risk for future depression on an individual, case-by-case basis. It will also be important to examine whether people identified as being at risk for relapse can be trained to change their way of responding to negative emotion or whether treatment strategies can be developed that would target the hyperactivity of this cortical region when processing sad or other negative stimuli.

More information: "Mood-Linked Responses in Medial Prefrontal Cortex Predict Relapse in Patients with Recurrent Unipolar Depression" by Norman A.S. Farb, Adam K. Anderson, Richard T. Bloch, and Zindel V. Segal. The article appears in *Biological Psychiatry*, Volume 70, Number 4 (August 15, 2011), [DOI 10.1016/j.biopsych.2011.03.009](#)

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