

Lack of positivity bias can predict relapse in bipolar disorder

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Bipolar disorder is characterized by transitions between depression and mania. Credit: Wikipedia

Relapse in people with bipolar disorder can be predicted accurately by their tendency towards having pessimistic beliefs, according to a study published today in *eLife*.

The results could provide an urgently needed tool for doctors to predict upcoming relapse and provide timely treatment.

Bipolar disorder is characterized by successive periods of elation (mania) and depression, interspersed with asymptomatic phases, called euthymia. People who have shorter periods of asymptomatic euthymia are more likely to suffer disability, unemployment, hospitalization and increased suicidal feelings. However, predicting relapses using existing clinical diagnostic tools or [demographic information](#) has proven largely ineffective in bipolar disorder.

"It is already known that people with depression tend to give negative [information](#) more weight than positive information, leading to pessimistic views that may make symptoms worse," explains lead author Paolo Ossola, Research Fellow at the Department of Medicine and Surgery, University of Parma, Italy. "We wanted to test the idea that, before symptomatic relapse occurs in bipolar disorder, patients show a specific pattern in the way they update their beliefs according to new information, and this pattern makes them more vulnerable to relapse."

The team carried out a [belief](#) update task with 36 people with bipolar disorder and then monitored them every two months for five years to see when they developed symptoms of a relapse. In the belief update task, patients were given information about 40 adverse life events, such as robbery or credit card fraud. They were asked to estimate how likely they thought the event was to happen to them.

Next, they were given information on the real probability of the event happening. In some cases, they received bad news (for example, a higher chance of a robbery than they thought) and in some cases, good news (for example, they were less likely to be a victim of card fraud than they thought). In a second later session they were asked again to estimate their own likelihood of encountering the event. The difference between how much they updated their beliefs in response to good or [bad news](#) (called the belief update bias) was then compared with how soon they had a relapse.

The analysis showed that people who had a greater change in their beliefs in response to positive information, and were more likely to take an optimistic view, had a longer time period before the next onset of symptoms. However, the task did not predict whether the next episode was likely to be mania or depression.

When tested against other clinical features, such as

age, history of psychotic symptoms, and duration of illness, only belief update bias was strongly linked to more time spent in the eurythmic phase, and taking antidepressants was linked with a shorter time spent in eurythmia.

"Our findings show that the extent to which bipolar patients updated their beliefs in response to [positive information](#), compared with negative information, was predictive of when they would [relapse](#)," concludes senior author Tali Sharot, Professor of Cognitive Neuroscience at the Department of Experimental Psychology, University College London, UK. "The way patients update their beliefs could be introduced in future as a risk prediction tool for [bipolar disorder](#), allowing patients and clinicians to step up vigilance to recognize symptoms and intervene where necessary."

More information: Paolo Ossola et al, Belief updating in bipolar disorder predicts time of recurrence, *eLife* (2020). DOI: [10.7554/eLife.58891](https://doi.org/10.7554/eLife.58891)

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