Researchers Create a Road Map of the Bipolar Brain

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Mental health researchers around the world recently teamed to create the first-ever visual of the bipolar brain. Findings published in the journal Molecular Psychiatry detailed clear and consistent alterations in key brain regions of people living with bipolar disorder (BPD) and offers fascinating insights into what drives the mental illness, ScienceDaily reports.

According to the World Health Organization, BPD (a.k.a. manic-depressive disorder) affects about 60 million people worldwide. Individuals with the illness experience extreme mood swings—from severely depressed to euphoric or manic—and the condition isn't always easy to treat or diagnose. In addition, it's been hard for scientists to pinpoint neurobiological mechanisms of the disorder because of insufficient brain scans on people living with BPD—until now.

For this latest study, researchers from the University of Southern California's Keck School of Medicine led an international consortium of scientists called ENIGMA (Enhancing Neuro Imaging Genetics Through Meta Analysis) to map the brains of people with BPD. Scientists measured the MRI scans of 6,503 individuals—including 2,447 adults with bipolar disorder and 4,056 healthy controls.

Findings showed significant thinning of gray matter in the brains of patients with bipolar disorder when compared with the control group. These differences were most pronounced in the frontal and temporal lobes of the brain—known to control inhibition, emotion and motivation—of patients. Researchers also found that those with symptoms of psychosis showed greater deficits of gray matter in these areas than those without the condition.

In addition, scientists noted different brain signatures in bipolar patients who were given medications such as lithium, anti-psychotic drugs and anti-epileptic treatments. Study authors said the MRI scans of those who took lithium, in particular, showed less thinning of gray matter than other treatment groups, which could suggest this medication has a protective effect on the brain.

"This new map of the bipolar brain gives us a road map of where to look for treatment effects," said Paul Thompson, PhD, director of the ENIGMA consortium and coauthor of the study. "By bringing together scientists worldwide, we now have a new source of power to discover treatments that improve patients' lives."

The consortium plans to test how well different medications and treatments can shift or modify these brain measures, as well as improve symptoms and clinical outcomes for people living with bipolar disorder. Researchers also believe that mapping the brains of people living with BPD could be hugely important for early detection and prevention.

Click here to learn more about the symptoms of BPD and its available treatments.

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