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## MRI scan shows promise in treating bipolar disorder

Accidental discovery made at McLean Hospital



*Using the MRI machine shown here, Bruce Cohen (right), Perry Renshaw (center), and Michael Rohan shared the surprising discovery that its electromagnetic radiation cheers up manic-depressives. (Photo by Stephanie Mitchell/Harvard News Office)*

A study published in the Jan. 1, 2004 issue of the American Journal of Psychiatry had a surprising start. As Michael Rohan, imaging physicist in McLean Hospital's Brain Imaging Center, explains, "We were using MRI to investigate the effectiveness of certain medications in bipolar patients and noticed that many came out of the MRI feeling much better than when they went in. We decided to investigate further." Researchers theorized that one type of magnetic pulse they were using was having the positive effect. "This was purely accidental. We just happened to use this set of magnetic gradients, which we think somehow matches the natural firing rhythm of brain cells." Technically this kind of scan is called EP-MRSI, or Echo-Planar Magnetic Resonance Spectroscopic Imaging. After realizing they may be observing a real effect, researchers expanded the study to include sham EP-MRSI scans with bipolar subjects, normal EP-MRSI scans in healthy subjects, in addition to EP-MRSI scans in bipolar subjects. The results showed 23 out of 30

bipolar subjects who received the actual EP-MRSI tests reported mood improvement, indicating a 77 percent response rate. In addition, subjects who were not on medication showed even greater response (100 percent) compared to the response rate of those on medication (63 percent).

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