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First Study To Show Brain Training Can Help With Bipolar Disorder

By Robert Preidt

Researchers at Harvard Medical School and **McLean Hospital** have discovered that a unique kind of brain training can result in large and persistent improvements in cognition in people with bipolar disorder. The brain training shown effective in the study is from Posit Science, maker of the BrainHQ online brain exercises and apps.

The findings were announced in a peer-reviewed article that published today in *The Journal of Clinical Psychiatry*. The researchers found that a cognitive exercise regimen from BrainHQ drove a large improvement in a standard measure of overall cognitive ability, as well as significant improvements in other cognitive measures. The researchers also suggest that these brain exercises could be an effective non-pharmaceutical treatment in helping people with bipolar disorder function more effectively in everyday life.

“Problems with memory, executive function, and processing speed are common symptoms of bipolar disorder, and have a direct and negative impact on an individual’s daily functioning and overall quality of life,” said lead investigator [Dr. Eve Lewandowski](#), director of clinical programming for one of McLean’s schizophrenia and bipolar disorder programs and an assistant professor at Harvard Medical School. “Improving these cognitive dysfunctions is crucial to helping patients with bipolar disorder improve their ability to thrive in the community.”

For the study, the researchers enrolled 84 patients with bipolar disorder, aged 18-50, and randomized 75 patients into an intervention group or an active comparison group (used as a control).

The intervention group was asked to use a special regimen of exercises from BrainHQ, for a total of 70 hours over the course of 24 weeks. The control group was asked to spend an equivalent amount of time on computerized exercises that focused on quiz-style games, such as identifying locations on maps, solving basic math problems, and answering questions about popular culture. Completion rates varied within groups, but did not vary significantly between groups—with the BrainHQ group completing 43 hours, on average, and the control group completing 48 hours, on average.

Following training, the participants in the BrainHQ exercise group displayed large gains in the primary outcome measure of overall cognitive performance. They also showed a large gain on the sub-domain measure of memory and visual learning, and a trend toward a medium-sized gain in the sub-domain of speed of processing. Changes in other sub-domain scores were not individually significant. Change in a secondary measure of community functioning was also not significant, but participants with the largest cognitive improvements showed the largest gains in community functioning across the sample.

The researchers assessed study participants again six months after the training ended, and they found that the gain in overall cognition persisted—and that there was even a slight further improvement. They also found a significant change in the sub-domain of speed of processing and a trend in the sub-domain of memory and visual learning.

“These findings suggest that once the brain is better able to perform cognitive tasks, it will continue to strengthen those processes, even after patients stop using the treatment,” Dr. Lewandowski said.

“We are impressed by these breakthrough results,” said Dr. Henry Mahncke, CEO of Posit Science. “There are no medications that help with cognitive function in people with bipolar disorder—and brain training represents a novel approach to this unmet medical need. Our plan has always been to make brain training that is highly effective, ubiquitous, and cheap. We plan to work with the medical community and appropriate regulators to find an efficient path to get highly affordable and easily accessible exercise regimens to patients who could be helped.”