

# Identifying brain variations to predict patient response to surgery for OCD

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Identifying brain variations may help physicians predict which patients will respond to a neurosurgical procedure to treat obsessive-compulsive disorder (OCD) that does not respond to medication or cognitive-behavioral therapies, according to a report published online by *JAMA Psychiatry*.

OCD is a debilitating disorder characterized by repetitive intentional behaviors and intrusive thoughts. About 10 percent to 20 percent of patients have refractory OCD, which does not respond to medication or therapy to achieve symptom relief, and therefore the patients may be candidates for [surgical treatment](#). The dorsal anterior cingulotomy is such a procedure and involves lesioning (causing damage to) a region of the brain that is believed to play a role in the neural network that causes OCD, according to the study background.

Garrett P. Banks, B.S., of Columbia University, New York, and coauthors looked to identify neuroanatomical characteristics on preoperative imaging that might differentiate patients whose OCD would respond to dorsal anterior cingulotomy from nonresponders. Their small study of 15 patients (nine men and six women) analyzed [magnetic resonance imaging](#) (MRI) sequences. Of the 15 patients, eight (53 percent) responded to the procedure.

The authors found that features of the [anterior cingulate cortex](#) structure and connectivity seemed to predict whether a patient would respond to the surgical treatment.

"These results suggest that the variability seen in individual responses to a highly consistent, stereotyped procedure may be due to neuroanatomical variation in the patients. Furthermore, these variations may allow us to predict which patients are most likely to respond to cingulotomy, thereby refining our ability to individualize this treatment for refractory psychiatric disorders," the study conclude.

In a related editorial, Odile A. van den Heuvel, M.D., Ph.D., of the VU University Medical Center, Amsterdam, the Netherlands, writes: "The article by Banks and colleagues in this issue of *JAMA Psychiatry* is an elegant example of how the brain imaging field struggles to translate information on brain mechanisms at the group level to guide clinical practice for individuals. ... Lesioning the brain is serious business."

"The consensus guideline on neurosurgery in psychiatry stresses the importance of being careful not to prematurely designate an investigational intervention as the standard of care. The field may benefit from small pilot studies to optimize the targets for surgical interventions and the parameters of invasive and noninvasive neuromodulation. Comparative studies across the various interventions on short-term and long-term outcomes, also taking into account the natural course of disease, are urgently needed. If reliable predictive markers are identified, invasive ablative treatments might be offered only to patients with a predicted good outcome, thereby preventing unnecessary costs and iatrogenic (illness related to medical treatment) damage in the remaining [patients](#)," the author concludes.

**More information:** *JAMA Psychiatry*. Published online December 23, 2014. [DOI: 10.1001/jamapsychiatry.2014.2216](https://doi.org/10.1001/jamapsychiatry.2014.2216)  
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