

# Functional MRI can improve prediction of CBT success

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Results of functional brain imaging can greatly improve prediction of which patients with social anxiety disorder will benefit from cognitive behavioral therapy, according to a study published in the January issue of *JAMA Psychiatry*.

(HealthDay)—Results of functional brain imaging can greatly improve prediction of which patients with social anxiety disorder (SAD) will benefit from cognitive behavioral therapy (CBT), according to a study published in the January issue of *JAMA Psychiatry*.

Oliver Doehrmann, Ph.D., from the Massachusetts Institute of Technology in Cambridge, and colleagues examined brain responses to angry versus neutral faces or emotional versus neutral scenes using [functional magnetic resonance imaging](#) (fMRI). This functional MRI data was collected prior to a CBT intervention to predict subsequent response to treatment in 39 medication-free patients meeting [Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition](#) criteria for the

generalized subtype of SAD. Changes in the Liebowitz Social Anxiety Scale score were measured to assess treatment outcome.

The researchers found that pretreatment responses significantly predicted the subsequent treatment outcome of patients selectively for social stimuli and particularly in regions of higher-order visual cortex. Clinical severity measures combined with the brain measures accounted for more than 40 percent of the variance in treatment response. Using brain measures greatly exceeded predictions based on clinical measures alone at baseline. Potential confounding factors such as depression severity at baseline did not affect prediction success.

"The results suggest that brain imaging can provide biomarkers that substantially improve predictions for the success of cognitive behavioral interventions and more generally suggest that such biomarkers may offer evidence-based, personalized medicine approaches for optimally selecting among treatment options for a patient," the authors write.

Several authors disclosed financial ties to the pharmaceutical industry.

**More information:** [Abstract](#)  
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