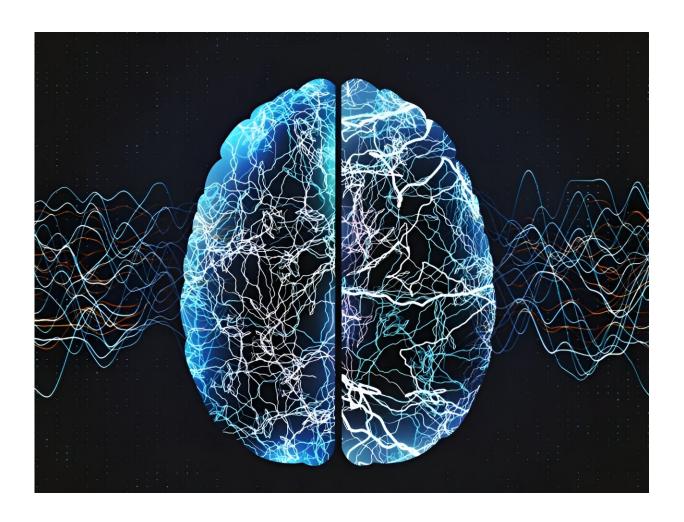# EEG model predicts response to SSRI meds in major depressive disorder

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For patients with major depressive disorder, an electroencephalography

(EEG)-based model can predict response to selective serotonin reuptake inhibitor (SSRI) medications, according to a study published online Sept. 28 in *JAMA Network Open*.

Benjamin Schwartzmann, from Simon Fraser University in Surrey, British Columbia, Canada, and colleagues established a model based on EEG to predict response to two distinct SSRI medications in a prognostic study. EEG data were collected between 2011 and 2017 from two independent cohorts of participants with depression: the first Canadian Biomarker Integration Network in Depression (CAN-BIND) group and the Establishing Moderators and Biosignatures of Antidepressant Response for Clinical Care (EMBARC) consortium. Participants were aged 18 to 65 years and had a diagnosis of major depressive disorder; 125 participants from CAN-BIND received an eight-week treatment regimen of escitalopram treatment and 105 EMBARC participants were randomly assigned to eight weeks of sertraline or placebo.

The researchers found that the model achieved a balanced accuracy of 64.2 percent, with sensitivity and specificity of 66.1 and 62.3 percent, respectively, during internal validation with CAN-BIND. The [model](link) achieved balanced accuracy of 63.7 percent during external validation with EMBARC and achieved sensitivity and specificity of 58.8 and 68.5 percent, respectively. The balanced accuracy for the EMBARC placebo group was 48.7 percent, with sensitivity and specificity of 50.0 and 47.3 percent, respectively.

"These findings represent a substantial advancement toward using EEG in future clinical practice and supporting its potential to match patients with [major depressive disorder](link) to optimized treatment," the authors write.

Several authors disclosed ties to the pharmaceutical industry.

More information: Benjamin Schwartzmann et al, Developing an Electroencephalography-Based Model for Predicting Response to Antidepressant Medication, *JAMA Network Open* (2023). DOI: 10.1001/jamanetworkopen.2023.36094