

Researchers refine DNA testing for predisposition to bipolar disorder

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Dr. Alexander B. Niculescu

(PhysOrg.com) -- Genetic testing may rise to a new level with the findings of Indiana University School of Medicine researchers whose "prototype" for laboratory testing for bipolar disorder appears today in the online edition of the *American Journal of Medical Genetics Part B: Neuropsychiatric Genetics*.

"This is an important advance in the development of a prototype for lab tests for [bipolar disorder](#), and can serve as a model for developing tests in other complex disorders," said lead author Dr. Alexander B. Niculescu III, associate professor of psychiatry and medical neuroscience at the IU School of Medicine and director of INBRAIN at the IU Institute of

Psychiatric Research.

Niculescu and colleagues used two different populations from large scale genetic studies and compared those individuals' genes to a small panel of 56 genes implicated in bipolar disorder by their work, to predict who has a predisposition to the disease.

The analysis resulted in a genetic risk prediction score that indicates high or low potential for developing bipolar disorder. "The coupling of a high score with certain environmental factors may be a predictor, not a certainty, that the individual will develop bipolar disorder" said Niculescu, who also is a staff psychiatrist at the Indianapolis Roudebush VA Medical Center.

"Genes explain a small portion of the risk of developing the illness," said Niculescu. "Unlike some [genetic predisposition](#) to diseases like Huntington's or [cystic fibrosis](#), the variances in genes that can predispose people to mood disorders are found in all of us. What we are learning is that it may take a combination of factors -- too many gene variances in the wrong environment and you are at higher risk."

The predictive value of the [genetic risk factors](#) could be useful in screening before the disorder manifests itself clinically, and the implementation of interventions to lower stress, adjust regular sleep hours and other life style factors that could serve as an environmental deterrent for developing bipolar disorder. Closer follow-up and earlier therapeutic intervention may be useful for individuals who are at higher risk.

The research was funded by a Veterans Administration as well as the National Institute of Mental Health.

In a corresponding editorial in the *American Journal of Medical Genetics*,

Dr. Alexander B. Niculescu and Dr. Helen Le-Niculescu advocate for a more efficient way to identify genes involved with mental disorders.

More information: Niculescu AB, Le-Niculescu H. The P-Value Illusion: How to Improve (Psychiatric) Genetic Studies. American Journal of Medical Genetics Part B (Neuropsychiatric Genetics). 2010. Epub Mar 17.

Provided by Indiana University

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