

# Childhood risk factors for developing substance dependence

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There is ample evidence for the genetic influence of alcohol dependence, and ongoing studies are actively looking for specific genes that may confer this increased susceptibility. In addition, while it is well-known that individual risk is increased with the number of relatives with alcohol dependence, scientists have not been in a position to identify who among these individuals might have greater or lesser risk.

*Biological Psychiatry* is now publishing an article in which researchers evaluated and identified childhood risk factors for the development of future substance use disorders (SUD).

Dr. Shirley Hill and her colleagues recruited children with either high or low familial risk for developing [alcohol dependence](#) and followed them annually over an eleven-year span. During this time, they repeatedly evaluated a series of thirteen predictors that are thought to influence familial risk, including educational achievement scores, personality variables, self-esteem, and anxiety, along with specific neurobiological variables (P300 amplitude, a brain neuroelectric potential, and postural body sway).

They found that children with increased body sway and reduced P300 amplitude had an 8-fold increase in their likelihood of developing a substance use disorder by young adulthood, indicating that neurobiological variables are among the most important in predicting outcome. "The P300 is a brain signal that is associated with the significance of events in our environment and may reflect an individual's

ability to make optimal use of such information to guide future behavior. It is both interesting and important that the long-term risk for developing alcohol dependence can be connected to this relatively basic feature of brain wiring," explained Dr. John Krystal, Editor of *Biological Psychiatry*.

Dr. Hill commented that these results are important "in showing that risk markers for alcohol dependence and other substance use disorders can be identified long before individuals develop symptoms of these disorders. Better and earlier identification of those at highest risk makes it possible to develop targeted intervention/prevention efforts for these children, possibly enabling them to avoid [this] outcome." In addition, uncovering these childhood risk markers aids in the search for genes associated with the development of substance use disorders.

More information: The article is "Childhood Risk Factors for Young Adult Substance Dependence Outcome in Offspring from Multiplex Alcohol Dependence Families: A Prospective Study" by Shirley Y. Hill, Stuart R. Steinhauer, Jeannette Locke-Wellman, and Richard Ulrich. The authors are affiliated with the Department of Psychiatry, University of Pittsburgh School of Medicine, Pittsburgh, Pennsylvania. Steinhauer is also affiliated with the Veterans Affairs (VA) Pittsburgh Healthcare System, Pittsburgh, Pennsylvania. The article appears in [Biological Psychiatry](#), Volume 66, Issue 8 (October 15, 2009), published by Elsevier.

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