

# Genetic clue points to most vulnerable children

January 6 2015

---



Dustin Albert. Credit: Kara Bonneau

Some children are more sensitive to their environments, for better and for worse. Now Duke University researchers have identified a gene variant that may serve as a marker for these children, who are among society's most vulnerable.

"The findings are a step toward understanding the biology of what makes a child particularly sensitive to positive and negative environments," said Dustin Albert, a research scientist at the Duke Center for Child and Family Policy. "This gives us an important clue about some of the

[children](#) who need help the most."

Drawing on two decades worth of data on high-risk first-graders from four locations across the country, the study found that children from high-risk backgrounds who also carried a certain common [gene variant](#) were extremely likely to develop serious problems as adults. Left untreated, 75 percent with the gene variant developed psychological problems by age 25, including alcohol abuse, [substance abuse](#) and [antisocial personality disorder](#).

The picture changed dramatically, though, when children with the gene variant participated in an intensive program called the Fast Track Project. After receiving support services in childhood, just 18 percent developed psychopathology as adults.

"It's a hopeful finding," Albert said. "The children we studied were very susceptible to stress. But far from being doomed, they were instead particularly responsive to help."

Previous research has suggested that while some children thrive like dandelions in a wide range of circumstances, others are more like orchids who wither or bloom in different environments. The new study suggests that children's different levels of sensitivity are related to differences in their genomes.

The study appeared online today in the *Journal of Policy Analysis and Management*.

This is the latest finding from the Fast Track Project, a multi-faceted intervention for aggressive first-graders that ran for a decade at sites in North Carolina, Tennessee, Pennsylvania and Washington state. Beginning in 1991, researchers screened nearly 10,000 kindergartners for aggressive behavior problems, identifying nearly 900 who were at

high risk, and assigning half of that group to receive intensive help. It was the largest violence-prevention trial ever supported by the National Institutes of Health and researchers have now followed participants since the early 1990's.

Previous research has linked participation in Fast Track interventions to lower rates of psychiatric problems, substance abuse and convictions for violent crime in adulthood.

The new study looks at the possible biology behind those responses. Albert said these findings could be a first step toward potential personalized treatments for some of society's most troubled children. Knowledge like this might someday be used to help match children who would benefit with programs they badly need.

Key questions remain though, Albert said. For starters, while the Fast Track Project was offered to children of all races, the new findings were limited to white children. Specifically, the authors observed strong response to Fast Track among the 60 white children with a common variant of the [glucocorticoid receptor gene](#) NR3C1, a gene involved in the body's stress response.

Although children of other ethnicities benefited from Fast Track, the authors have not yet found a similar genetic clue to help identify which of these children responded most positively to the intervention.

"That doesn't mean such genetic markers don't exist among children of other races," Albert said. "We simply don't know yet what those markers are."

That's one of several important avenues for future research, Albert said, adding that thoughtful examination of the ethical issues involved is needed before the findings can be translated into policy.

"It would be premature to use this finding to screen children to determine who should receive intervention," Albert said. "A lot more work needs to be done before we decide whether or not to make that leap."

**More information:** *Journal of Policy Analysis and Management*, [onlinelibrary.wiley.com/doi/10... ampaign=wolearlyview](https://onlinelibrary.wiley.com/doi/10.1111/jpam.12111)

Provided by Duke University

Citation: Genetic clue points to most vulnerable children (2015, January 6) retrieved 20 March 2024 from <https://medicalxpress.com/news/2015-01-genetic-clue-vulnerable-children.html>

|  |
|--|
| <p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p> |
|--|