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Sanford study reveals fetal alcohol spectrum disorders prevalence in U.S.

Dr. Gene Hoyme, Dr. Amy Elliott co-author study in Pediatrics journal



SIOUX FALLS, S.D. – Nearly 5 percent of U.S. children may be affected by fetal alcohol spectrum disorders, according to a new study co-authored by Sanford Research's [Gene Hoyme, M.D.](#), and [Amy Elliott, Ph.D.](#), and published by [Pediatrics](#).

The study, "[Prevalence and characteristics of fetal alcohol spectrum disorders \(FASD\)](#)," explored the incidence of fetal alcohol spectrum disorders (FASD) among first-grade students, or 6 to 7 year olds, in a representative Midwestern U.S. community, which was Sioux Falls. According to Hoyme, students were enrolled from all the elementary schools in Sioux Falls, both public and parochial. The study is the first school-based ascertainment study to be completed as a measure of FASD prevalence in American children.

FASD are a group of conditions that can occur in the children of mothers who drank alcohol during pregnancy. Characteristics are both physical and cognitive and can include abnormal facial features, smaller-than-average physical growth, poor coordination, learning disabilities and vision and hearing problems.

The research team gathered data on two groups of children related to physical growth, development, dysmorphology, cognition and behavior. The first group was made up of small children who were in the 25th percentile or less in height, weight and head circumference; the second group, or the control group, was randomly selected. The mothers of children from both groups were interviewed for maternal risk related to alcohol consumption while pregnant.

Around 2.4 percent to 4.8 percent of all the children studied were found to have some form of FASD based on cognitive and physical attributes. Furthermore, women who had affected children displayed higher levels of weekend binge drinking before discovering they were pregnant, sought prenatal care later and less frequently and noted the fathers of their children were frequent drinkers.



"Previous estimates of fetal alcohol spectrum disorders put the occurrence at around 1 percent in the United States," said Hoyme. "By actively assessing the children who were part of this study, our team was able to develop a more accurate figure for the prevalence of this disorder among the predominately middle class population of Sioux Falls and identify key risk factors that can predict it."

Hoyme is internationally known for his work with FASD and also serves as president of [Sanford Research](#) and chief academic officer for [Sanford Health](#). He has led FASD research studies in South Africa for the past 15 years and helped establish the prevalence rate in South Africa, which remains the highest documented rate in the world. In 2012, Hoyme was the recipient of the National Organization on Fetal Alcohol Syndrome Excellence Award, joining the ranks of almost 40 past recipients that include Senator John McCain and the late Ted Kennedy.

Elliott leads the [Center for Health Outcomes and Prevention](#) at Sanford Research and is involved with national and international investigations about FASD and its consequences. Amy Baete and Jaymi Russo, research staff of the Center for Health Outcomes and Prevention, also contributed to the study.

[Pediatrics](#) is the official journal of the American Academy of Pediatrics.

About Sanford Research

[Sanford Research](#) is a non-profit research organization and is part of Sanford Health, an integrated health system headquartered in the Dakotas. Sanford represents the largest, rural, not-for-profit health care system in the nation with a presence in 111 communities, nine states and two countries. In 2007, a transformational gift of \$400 million by Denny Sanford provided for an expansion of children's and research initiatives, one of which was to find a cure for type 1 diabetes, and has given Sanford Research significant momentum in its goal of becoming one of the premiere research institutions in the United States and the world. Most recently, subsequent gifts of more than \$200 million by Mr. Sanford have paved the way to establish Edith Sanford Breast Cancer Research and Sanford Imagenetics.

With a team of more than 200 researchers, Sanford Research comprises several research centers, including Children's Health Research, Edith Sanford Breast Cancer, Cancer Biology, Center for Health Outcomes and Prevention and Sanford Sports Science Institute.