MedicalXpress

Researchers Identify Regional Clusters of Autism Cases in California

February 3 2010

(PhysOrg.com) -- A Columbia study has determined there are certain geographical areas in California where newborns are more likely to develop autism. The findings suggest that autism is a condition determined by one's local environment, challenging the argument that causal factors exist evenly across the country. The study, which pinpoints a small area near West Hollywood as the center of California autism cases, was published recently in the *Health & Place* journal.

"Our findings point strongly to the idea that a local rather than a global process is associated with the increased risk of autism," said Peter Bearman, the Jonathan Cole Professor of the Social Sciences and principal investigator of the paper. "Such a local process could be either an environmental factor or a social influence factor or both."

Autism impairs social interaction and predisposes children to restrictive and repetitive behaviors. Over the past two decades California has witnessed a particularly large spike in autism cases. Between 1992 and 2006, the state's caseload increased 598 percent.

After analyzing 11,683 autism cases among the 4.1 million babies born in California from 1993 to 2001, the researchers identified a primary "cluster" of autism in the state. Children born in this cluster, roughly 20 by 50 kilometers, were four times more likely to develop autism than children born elsewhere in California. These children were also two times more likely to have autism than those born to mothers over age 40—a factor strongly associated with increased risk of autism.

In addition to the high-risk cluster in West Hollywood, the researchers discovered 38 secondary clusters in the state. Each of the secondary clusters is located within the greater Los Angeles region.

The study does not attempt to identify the cause of autism—a much debated topic—but it suggests that increased prevalence is spurred by local variables, such as environmental toxins or social influences. In the case of West Hollywood, social influences might include increased awareness of autism, decreased stigma associated with the disorder, or increased number of local advocacy groups, said Soumya Mazumdar, a postdoctoral research scholar at Columbia's Institute for Social and Economic Research and Policy (ISERP) and the study's first author.

The Columbia team used a statistically rigorous method—Kulldorff's Spatial Scan Statistic—to demarcate clusters at high risk. The researchers controlled for critical variables, including parental age.

"The findings suggest that we should devote considerable resources to understanding what environmental drivers are operative in autism cases," said Bearman. "We also need a better understanding of how the diffusion of information operates—how we identify the symptoms of autism, how we secure appropriate diagnoses, and how we treat it."

More information: Paper online: dx.doi.org/10.1016/j.healthplace.2009.12.014

Provided by The Earth Institute at Columbia University