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Md. researchers joining major study on causes of autism

Hopkins, Kennedy Krieger, others to examine genetic, environmental hypotheses

By Kelly Brewington | kelly.brewington@baltsun.com
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Researchers at Johns Hopkins and the [Kennedy Krieger Institute](#) are joining in what is being called one of the largest studies to examine early causes of autism.

Medical experts have been trying for years to unravel why children develop autism. Is it genes? Could it be their environment? While other studies have focused on one or the other, the four-year investigation announced yesterday will examine both questions about the puzzling neurobiological disorder that affects about 1 in 150 children nationwide.

The Baltimore investigators will join experts at four research centers in Philadelphia and Northern California to recruit 1,200 pregnant women who already have a child with autism and study them throughout pregnancy and their baby's first three years.

"This is a great opportunity to put gene and environmental hypotheses together," said Daniele Fallin, an epidemiologist at the Johns Hopkins Bloomberg School of Public Health and one of the study's principal investigators. "The great thing about this new study is we are able to do things in real time."

Fallin expects to spend the next four years recruiting about 250 women

from the Baltimore area and the Washington suburbs for the Early Autism Risk Longitudinal Investigation. The study is spearheaded by the [National Institutes of Health](#) with funding from the institute and Autism Speaks, a national advocacy group.

Scientists will closely monitor the women, taking blood and urine samples during their pregnancy and breast milk samples after they deliver. The women will be asked to keep a diary of their eating habits and lifestyle, fill out questionnaires and participate in interviews about their health, their jobs and their lives before their babies' conception. Fathers will be asked questions about chemicals they might have been exposed to and to give blood samples.

Researchers will collect dust samples from the couples' homes and examine common household chemicals, including cleaning solutions, pesticides and flame retardants used in mattresses and sofas.

Researchers will gather similar biological samples from the babies and follow them closely for any early signs of autism, such as regressions in development.

Children found at risk for developing autism will be referred for treatment, even if doing so means skewing the study's results, said Dr. Rebecca Landa, director of the Center for Autism and Related Disorders at Kennedy Krieger.

"This is a risk to the interpretation of the data that one takes for ethical reasons," she said.

The wide range of disabilities known as autism spectrum disorders is marked by impaired communication and social interaction. There is no cure for the disorder, and the factors that cause it remain a mystery.

Still, researchers have unlocked clues to possible genetic causes of the disorder. For instance, the likelihood of a child being born with autism is less than 1 percent. But for couples with one autistic child, Fallin said, the risk of having a second child with the disorder rises to between 5 percent and 20 percent.

In addition, researchers at UCLA recently found an autism-risk gene that is more common in boys than girls, which they think helps explain why the disorder is four times more common in boys. Dr. Stanley Nelson, a professor of human genetics at the [David Geffen School of Medicine at UCLA](#), believes that research ultimately will link many genes to the disorder.

For now, he said, the genetics remain murky. Several people with autism have been found

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to share the same genetic mutations, but the disorder differs in each: Some develop severe autism, some develop mild cases and others do not develop the disorder at all.

Nelson, who is not connected with the study announced yesterday, said that beginning the research during pregnancy is worthwhile but he wonders if the scope is too broad.

"My concern would be, we don't know that much about the genetics yet," he said. "Trying to study genetics, with a complex process such as pregnancy and ... combining them, they may not have enough compelling data one way or the other."

Possible environmental causes of autism are even trickier to understand. There is little hard evidence that chemicals or lifestyle cause autism, said Dr. Irva Hertz-Picciotto, of the University of California, Davis School of Medicine, who is also involved in the study. But researchers think there may be a link between environment and genetic susceptibility.

While the researchers acknowledge that their study is broad, they say it will provide a critical opportunity to study autism's causes in real time - as a baby develops from fetus to toddler.

"Many studies rely on identifying children with autism spectrum disorders and a group without, and making families recall what exposures they had early in pregnancy," said Lisa A. Croen, an epidemiologist with Kaiser Permanente and a partner in the study. "You can't get that from a study that collects data after the fact."

A small but vocal minority of parents believes that childhood vaccinations can cause autism, leading some to refuse to inoculate their children against common diseases. Studies have shown no credible link between vaccinations and autism, and research shows that individuals who miss inoculations put larger populations at risk of contracting preventable diseases.


For other families coping with autistic children, the research announced yesterday offers hope, said Peter Waldron of Lutherville, whose son Frankie, 5, has received speech and occupational therapy at Kennedy Krieger since being diagnosed with autism at 16 months. Frankie was talking when he turned 1, but several months later Waldron and his wife, Julie, noticed that Frankie had stopped saying *mommy* and *daddy*.

"Studies like this are incredibly important and in dire need," said Waldron, whose daughters, Lila, 2, and Millie, 3, took part in a study at Kennedy Krieger for siblings of children with autism. They have not been diagnosed with the disorder.

"It's very important for families to participate in these studies to help unlock some of the questions and provide some answers to what is happening," he said. "And, hopefully, answer why."

More information on the study is available at www.earlistudy.org or by calling 443-287-4768 or 877-868-8014

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