

Autism Research Review

I N T E R N A T I O N A L

A quarterly publication of the Autism Research Institute

Reviewing biomedical and educational research in the field of autism and related disorders

Texas study links mercury from power plants to rising rates of autism in children

A new study suggests that higher levels of environmental mercury from industrial plants are correlated with rising rates of autism.

Raymond Palmer and colleagues used data from the Environmental Protection Agency to analyze county-by-county levels of mercury emissions as reported to the EPA by industrial facilities in Texas. They then used statistics from the Texas Education Agency to determine the rates of autism and special education services reported by school districts in 254 counties in the state, controlling for multiple economic and demographic factors.

Palmer et al. report, "On average, for each 1,000 pounds of environmentally released mercury, there was a 43 percent increase in the rate of special education services and a 61 percent increase in the rate of autism." When the researchers controlled for total autism counts, the link between mercury and special education rates was no longer statistically significant, indicating that "the association between mercury release and school district special education rates was completely accounted for by increased rates of autism."

Commenting on the study, Isaac Pessah of the UC Davis MIND Institute told the *Los Angeles Times*, "It's rather intriguing that the correlation is so positive. . . . It makes one worry." Palmer et al. conclude that their study "supports prior recommendations for reducing environmentally released mercury."

"Environmental mercury release, special education rates, and autism disorder: an ecological study of Texas," Raymond F. Palmer, Steven Blanchard, Zachary Stein, David Mandell, and Claudia Miller, *Health and Place* (in press). Address: Raymond F. Palmer, University of Texas Health Science Center, San Antonio Department of Family and Community Medicine, 7703 Floyd Curl Drive, San Antonio, TX 78229-3900, palmerr@uthscsa.edu.

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"Possible mercury, autism connection found in study," Thomas H. Maugh II, *Los Angeles Times*, March 17, 2005.

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"Mercury, autism link in Texas," Reuters, March 17, 2005.

Boston DAN! a smashing success!

The Spring 2005 DAN! meeting, held April 15-17 in Boston, was, by every report, a tremendous success. The sold-out crowds were large and enthusiastic. The keynote address by David Kirby, author of the best-selling new book on the mercury-autism connection, *Evidence of Harm*, was greeted by a long standing ovation, as were many of the presentations by our talented DAN! speakers.

Great news! You can now experience the Boston DAN! conference yourself, free of charge, on the Internet! See the insert in this issue of ARRI for more information about this webcast, available at www.DANwebcast.com.

Immune abnormalities again linked to autistic GI problems

New evidence of immune abnormalities linked to gut inflammation in autistic children comes from a study by Harumi Jyonouchi and colleagues.

Jyonouchi et al. compared 100 autistic children on unrestricted diets and 77 on elimination diets to typically developing control children. Controls included children with non-allergic food hypersensitivity (some on special diets and others eating regular diets), and children without such sensitivity.

The researchers report that when challenged with bacterial toxins or dietary proteins from cow's milk, the immune cells from the autistic children with gastrointestinal problems exhibited a strong pro-inflammatory response, and were less able to switch off immune system activity, than cells from the control children. Their results, the researchers say, "may indicate the intrinsic natures of dysregulated innate immune responses in autism spectrum disorder children [with gastrointestinal involvement]"—a

problem, they say, which may predispose these children to adverse gastrointestinal and behavioral reactions to benign environmental factors including dietary proteins.

These findings support earlier research by Andrew Wakefield and colleagues which revealed similar abnormal immune and inflammatory processes in autistic children.

"Dysregulated innate immune responses in young children with autism spectrum disorders: their relationship to gastrointestinal symptoms and dietary intervention," Harumi Jyonouchi, Lee Geng, Agnes Ruby, and Barbie Zimmerman-Bier, *Neuropsychobiology*, Vol. 51, 2005, 77-85. Address: Harumi Jyonouchi, Division of Pulmonary, Allergy/Immunology, and Infectious Diseases, Department of Pediatrics, New Jersey Medical School, UMDNJ, 85 South Orange Avenue, P.O. Box 1709, Newark, NJ 07101, jyanouha@umdnj.edu.

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"U.S. study confirms bowel disease findings in children with autism," press release, Thoughtful House, March 20, 2005.

Children with DCD make astonishing gains on fatty acids

Children with behavioral, cognitive, and coordination problems improve dramatically when treated with essential fatty acids, according to a new British study.

Alexandra Richardson and Paul Montgomery enrolled 117 children between the ages of 5 and 12 in the double-blind, placebo-controlled study. All of the children exhibited problems consistent with developmental coordination disorder (DCD, or dyspraxia), a syndrome that frequently overlaps with autism, attention deficit hyperactivity disorder (ADHD), and dyslexia.

Half of the children received the active treatment with essential fatty acids for the entire six months of the study. The remaining children took a placebo (olive oil) for the first three months of the study, and then began taking the fatty acid supplements. Active treatment consisted of capsules containing 80 percent fish oil and 20 percent evening primrose oil, providing high levels of the omega-3 fatty acids EPA and DHA and the omega-6 fatty acid linoleic acid.

The researchers report that no significant

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