

## The autism epidemic: further evidence revealed

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responded with a study that calculated the prevalence of autism in all children aged three through ten years, whose families resided in Brick Township at any time during 1998. (The CDC selected this age range because it corresponds with the age range included in a large-scale autism prevalence study currently underway in Atlanta.)

In April, the CDC reported finding "high rates of autistic disorder and autistic spectrum disorder (ASD) in Brick Township relative to rates from previously published studies." Using strict criteria for diagnosis, CDC researchers identified 60 autistic or autistic-like children, of whom 36 were classically autistic. This translates into a prevalence rate of 6.7 cases of autistic spectrum disorder per 1,000 children, of which 4 cases per 1,000 are classical autism.

### Anesthesia Information Request

Parents often ask ARI for information regarding the anesthetics that are best to use—or to avoid—when autistic children are scheduled for dental work or surgery requiring anesthesia. If you have expertise on this topic, we would appreciate hearing from you. ARI would be happy to make such information available to its readers, and on its website.

These figures are far greater than the accepted figures for autism, but the CDC researchers note, "a few, very recent studies yield rates close to those in Brick Township."

The CDC figures from Brick Township translate into a prevalence of 6.7 cases of autistic spectrum disorder per 1,000 children.

For instance, they note, preliminary data from the Atlanta study reveal a prevalence rate of 2 to 3 per 1,000 children. Similarly, they note, "studies conducted in Japan and Sweden showed rates of autism ranging from 2.1 to 6.0 per thousand children."

The CDC study failed to uncover a connection between autism and pollution in the area. However, the CDC did not investigate the problem that the parents had specifically asked them to study: the possible role of vaccines, especially the MMR vaccine, in bringing about the upsurge (see ARRI 13/2 editorial).

"Prevalence of autism in Brick Township, New Jersey, 1998: Community Report," Centers for Disease Control and Prevention, April 2000. A copy of this report is available on the CDC website, <http://www.cdc.gov/nceh/programs/cddh/dd/report.htm>.

## Protein identified as likely culprit in celiac disease

Some cases of autism stem from celiac disease, an inherited metabolic disorder. In addition to causing psychiatric symptoms, celiac disease causes nutritional deficiencies, chronic digestive problems, weight loss, and extreme fatigue. The disorder affects as many as one in 250 people, many of them undiagnosed.

Individuals with celiac disease currently must avoid the gluten in wheat, rye, and several other grains in order to reduce their symptoms. New research, however, suggests that doctors may someday be able to eliminate celiac disease symptoms by controlling zonulin, an intestinal "gatekeeper" protein.

Alessio Fasano and colleagues recently compared the intestinal tissues of seven patients with celiac disease and six healthy controls, and found that the subjects in the celiac disease group, but not the controls, had elevated levels of zonulin. Zonulin binds to receptors in the intestines, opening the junctions between cells and allowing molecules to leave the intestines and enter the bloodstream. "When appropriately produced," Fasano says, "[Zonulin] does some good for us. It opens the gate to allow nutrients in, and after a time it closes the gate automatically." In people with celiac disease, however, excess zonulin keeps pathways from the intestines to the bloodstream open when they should be closed. The result, Fasano says, is that large molecules such as gluten escape and can affect the immune system.

Fasano believes abnormal zonulin production may be linked to a wide range of autoimmune diseases, including rheumatoid arthritis, Type I diabetes, and lupus. His research group is in the process of developing a substance that will prevent zonulin from binding to receptors in the intestines.

In earlier research, Fasano et al. demonstrated that zonulin and another protein, zot, play a crucial role in the blood-brain barrier, which prevents foreign substances from entering the brain via the bloodstream.

"Zonulin, a newly discovered modulator of intestinal permeability, and its expression in celiac disease," Alessio Fasano, Tarcisio Not, Wenle Wang, Sergio Uzzau, Irene Berti, Alberto Tommasini, and Simeon E. Goldblum, *The Lancet*, Vol. 355, No. 9214, April 29, 2000, Address: Alessio Fasano, University of Maryland, School of Medicine, 655 W. Baltimore St., Baltimore, MD 21202-1559.

—and—

"Scientists find clue to digestive disease," Jeff Kelliher, HealthSCOUT, May 2000.

—and—

"UM researchers discover 'key' to blood-brain barrier," University of Maryland press release, January 3, 2000.

—SAVE THE DATE!—

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