

Autism upsurge: are Agent Orange, other pollutants, factors in increase?

The evidence for a widespread increase in the prevalence of autism continues to accumulate, from many sources. Recent examples:

Brick, New Jersey: Parents Bobby and Bill Gallagher, alarmed at the dramatic increase in the population of young autistic children in their area, have conducted a survey which showed a three times greater incidence of autism, especially in young children, than the national average. (Editor's note: During several visits to New Jersey during the past two years, I have been told by parents about a number of other towns like Brick, with an alarming upsurge of autism.)

Houston, Texas: Agent Orange? After reporter Phil Ireland wrote in the *Houston Star-Journal* that the Veterans Administration had begun compensating veterans exposed to Agent Orange (a defoliant used during the

Vietnam War) for costs incurred in caring for their children born with spina bifida, he unexpectedly learned that there may also be an Agent Orange/autism link. The mother of a teenage autistic son phoned to say that her husband, who had worked with Agent Orange in Vietnam, had begun calling his former Air Force buddies to organize a reunion. He was surprised to find that three of his former co-workers also had autistic children.

Oakland, California/Westport, Connecticut: Several autistic children in California and Connecticut have come to our attention recently with premature puberty and/or high testosterone levels. A mystery!

Clusters? If you know of cases similar to any of the above, or can shed light on these problems, write or fax ARI (fax 619-563-6840).

New 'pacemaker' helps control severe seizures

A new device called a vagus nerve stimulator can reduce seizures by up to 50 percent in some individuals with severe seizures that cannot be controlled by drugs or other means.

The device, which has been tested on more than 900 patients, was recently approved by the FDA for use in individuals 16 or older who have intractable seizures. It consists of a small, battery-powered generator that is implanted under the collar bone and connected by wire to the vagus nerve. Every five minutes, whether a patient is having a seizure or not, the generator sends a brief electrical signal to the brain.

According to a recent study, half of patients using the device had at least a 20 percent reduction in the number of seizures per day, and a quarter of patients had a reduction of more than 50 percent. About 20 percent of patients, however, actually had more seizures after the device was implanted. All patients continued to take anticonvulsants while using the device.

Researchers say long-term studies indicate that the improvements seen in patients using the device are lasting. In addition, there is some evidence that in people for whom the device works, the treatment becomes more effective with continued use.

Side effects of vagus nerve stimulator treatment include hoarseness, voice changes, cough, throat pain, and shortness of breath. However, physicians can adjust the device's settings to alleviate these problems. "Overall," according to the Rush Epilepsy Center, "patients tolerate this non-pharmacological form of treatment well" with over 90% of patients still opting to use the device after a year. At least one study also found that the device did not cause any potentially dangerous changes in vital signs or electrocardiographic activity.

Researchers do not fully understand why stimulation of the vagus nerve can control seizures in some patients. This nerve runs from the brain to the abdomen, branching into most major organs, and conducts impulses both to and from the brain. One theory is that the device increases the number of inhibitory neurotransmitters, and decreases the output of stimulatory neurotransmitters, in the brain.

"Vagus nerve stimulator," *Medical Sciences Bulletin*, No. 240, September 1997.

"An update on vagus nerve stimulation (VNS)," Ruzica K. Ristanovic, *Rush Epilepsy Center Newsletter*, Vol. 4, No. 1, Winter 1997.

"New device for treating epilepsy," *NEJM HealthNews*, August 26, 1997.

'Autism gene' discovery: a false lead?

Earlier this year (see ARRI 11/2), Edwin Cook, Jr., and colleagues reported preliminary evidence of the first specific gene linked to autism. Cook et al. found that a shortened form of the serotonin transporter gene, which codes for a protein that reabsorbs the brain chemical serotonin into neurons after it is released, tended to be inherited by autistic children.

A new study by S. M. Klauck et al., however, casts doubt on Cook et al.'s findings. Klauck and coworkers actually found that the long, not the short, version of the gene tended to be inherited by autistic children.

"Overall," Klauck et al. report, "we were not able to replicate the findings of the first study... and instead observed a tendency for association of the opposite genetic variant of the gene with the disorder."

Researchers have suspected a link between serotonin and autism, because about

one third of autistic individuals have high plasma levels of the neurotransmitter.

"Serotonin transporter (5-HTT) gene variants associated with autism?," S. M. Klauck, F. Poustka, A. Benner, K. P. Lesch, and A. Poustka; *Human Molecular Genetics*, Vol. 6, No. 13, December 1997, pp. 2233-2238. Address not listed.

Aspartame warning

ARRI 6/2 alerted readers to sound sensitivity and other problems that the artificial sweetener aspartame (NutraSweet) might cause. We recently learned of an incident in which researchers were forced to abort a study in which 40 persons with mood disorders were to be given aspartame. The study was halted after only 13 of the subjects participated, because of the severity of reactions in patients with histories of depression. The researchers concluded that individuals with mood disorders may be sensitive to aspartame, and should avoid it.

"Adverse reactions to aspartame," R. G. Walton, R. Hudak, and R. J. Green-Waite, *Biological Psychiatry*, Vol. 34, No. 1-2, July 1-15, 1993.

Mrs. Ann C. Johnson has made a generous memorial donation to the Autism Research Institute in honor of her late daughter, Gina Johnson. On behalf of the many autistic children and adults who will benefit from this donation, we express our heartfelt thanks to Mrs. Johnson.

Visit The
AUTISM RESEARCH
INSTITUTE WEB SITE
at
<http://www.autism.com/ari/>