

## Biomedical Update:

### Landfills linked to chromosome defects

New research suggests that babies born to mothers living near landfills have a 40 percent higher risk of congenital chromosomal abnormalities such as Down syndrome. The finding is of significant interest to autism researchers, because of high incidence of chromosome abnormalities in autistic individuals.

Martine Vrijheid and colleagues evaluated 245 individuals with chromosome anomalies and 2,412 individuals without such anomalies, in 23 different communities with landfill sites. The researchers compared individuals born to mothers living within three kilometers of landfills to those born to mothers living farther away, controlling for both maternal age and socioeconomic status. Their findings are similar to those of their previous study, which revealed a 33 percent increase in the risk of nonchromosomal defects, such as cleft palate and neural tube defects, in children born to mothers living near landfills.

"Chromosomal congenital anomalies and residence near hazardous waste landfill sites," M. Vrijheid, H. Dolk, B. Armstrong, L. Abramsky, F. Bianchi, I. Fazarinc, E. Garne, R. Ide, V. Nelen, E. Robert, J. E. S. Scott, D. Stone, and R. Tenconi, *The Lancet*, Vol. 359, No. 9303, January 26, 2002, 320-2. Address: Martine Vrijheid, Environmental Epidemiology Unit, Department of Public Health and Policy, London School of Hygiene and Tropical Medicine, Keppel Street, London WC1E 7HT, UK.

### Fatty acids reduce hyperactivity in children with learning problems

An increase in dietary fatty acids can markedly reduce hyperactivity and improve cognition in children with a variety of learning disabilities, according to a new study.

Alexandra Richardson et al. studied 41 children, all between the ages of 8 and 12, with specific learning disabilities (primarily dyslexia) and symptoms of hyperactivity. Half received supplements of highly unsaturated fatty acids (HUFAs) for 12 weeks, while the other half received a placebo.

The researchers say that while the groups' behavioral and learning scores did not differ at the beginning of the study, "after 12 weeks, mean scores for cognitive problems and general behavior problems were significantly lower for the group treated with HUFAs than for the placebo group."

Richardson says, "Abundant evidence points to the importance of specific fatty acids

in brain development. These fatty acids are often under-consumed or under-produced in children with behavioral and learning challenges."

HUFAs are present in oily fish, nuts, and green leafy vegetables, and also can be purchased as supplements. Previous research (see ARRI 13/1) indicates that they can dramatically reduce symptoms of bipolar disorder and schizophrenia, as well as hyperactivity. (See related article on page 2.)

"A randomized double-blind, placebo-controlled study of the effects of supplementation with highly unsaturated fatty acids on ADHD-related symptoms in children with specific learning difficulties," A. J. Richardson and B. K. Puri, *Progress in Neuro-Psychopharmacology and Biological Psychiatry*, Vol. 26, No. 2, February 2002, 233-9. Address: Alexandra Richardson, University Department of Physiology, Oxford University, Oxford, UK, alex.richardson@physiol.ox.ac.uk.

—and—

"Diet can ease problem behaviours," BBC News, February 13, 2002.

### Strep again linked to tics, compulsions

Scientists continue to link "strep" infections to the sudden onset of tics and obsessive-compulsive behaviors in many children, with a new study showing that immediate identification and treatment of the syndrome can eliminate psychiatric symptoms in two weeks.

In a prospective study, Michael Pichichero and Marie Lynd Murphy identified 12 patients over a three-year period whose symptoms met the criteria for PANDAS (an acronym for pediatric autoimmune neuropsychiatric disorders associated with Group A  $\beta$ -hemolytic strep infections). The children, between the ages of 5 and 11, experienced a dramatic onset of strep-linked obsessive-compulsive behaviors and tics, often developing symptoms literally overnight.

The researchers treated the children with antibiotics such as penicillin or a cephalosporin, and say that symptoms disappeared in an average of 14 days. Half of the children experienced at least one recurrence of PANDAS symptoms, and antibiotic therapy again treated the symptoms successfully. Because of the study's design, the researchers were able to show that the children's symptoms were due to active strep infections, and that they were not merely carriers of the disease.

PANDAS, originally described in 1996 by Susan Swedo and colleagues, has also been tentatively linked to some cases of autism. In research reported in 1999 (see ARRI 13/1), Eric Hollander and colleagues found

that an antibody "marker" for strep infection was present far more often in autistic subjects (78 percent) than in controls (21 percent).

"Strep A, neuropsychiatric disorders tie found" (conference report), Joan Stephenson, *Journal of the American Medical Association*, Vol. 287, No. 7, February 20, 2002, 828. Address: Michael Pichichero, University of Rochester, School of Medicine and Dentistry, 601 Elmwood Ave., Box 672, Rochester, NY 14642.

### Clozapine warning issued by Novartis

Novartis, the manufacturer of the drug clozapine (Clozaril)—a drug commonly used to treat schizophrenia, and sometimes used to treat autistic behavior problems—has sent a letter to physicians warning about a potentially fatal heart problem that can occur in people taking the drug.

According to the letter, 82 cases of myocarditis, an inflammation of the heart lining, have been reported in individuals taking clozapine, with the condition occurring most often during the first month of therapy. Thirty-one of these patients died.

Earlier, a study by David Coulter et al. noted a strong link between myocarditis and clozapine, and also warned that "associations between myocarditis or cardiomyopathy and lithium, chlorpromazine, fluphenazine, haloperidol, and risperidone need further investigation."

Early symptoms of myocarditis include fatigue, fever, and malaise.

"Company strengthens warning on schizophrenia drug," Lisa Richwine, Reuters, February 21, 2002.

—and—

"Antipsychotic drugs and heart muscle disorder in international pharmacovigilance: data mining study," David M. Coulter, Andrew Bate, Ronald H B Meyboom, Marie Lindquist, and I. Ralph Edwards, *British Medical Journal*, Vol. 322, May 19, 2001, 1207-9. Address: I. Ralph Edwards, ralph.edwards@who-umc.org.

#### SCHOOLS AND SERVICES LIST

The Autism Research Institute maintains a list of schools and services for autistic individuals. If your facility should be included on our list, and you believe it may not be, please send a self-addressed, stamped envelope to receive our referral list questionnaire.

ARI also maintains a list of physicians who are interested in the DAN! approach to diagnosis and treatment, and who use drugs only as a last resort. If you are a physician who wishes to be considered for that list, send a self-addressed, stamped envelope with a request for our "Doctor Referral List Questionnaire."