

Biomedical Update (continued):

Seizure surgery effects studied

A new report indicates that temporal lobectomy, a surgical procedure performed on some individuals with intractable seizures, is highly effective and generally safe. The procedure involves removing small amounts of brain tissue in the temporal lobe, and is performed only on patients whose seizures cannot be treated by drugs and whose seizures originate in a single brain region.

Michael Sperling and colleagues followed 89 patients for five years after the patients' temporal lobectomies, and found that 62 of the patients remained seizure-free. Eight patients had seizures on less than three days a year, and 10 had a greater than 80% reduction in seizure frequency, while five had a less marked reduction in seizures. Four patients died of causes not related to their surgeries.

Noting that intractable seizures are associated with an elevated risk of sudden death, Sperling commented in *Science News* that "the effectiveness of the surgery extends well beyond helping with seizures. Epilepsy surgery saves lives." He also noted that all of the patients who died during the course of his study had continued to have seizures after their surgeries.

A separate study of 248 patients, by Barbara Vickrey, revealed a similar success rate. Vickrey found that the surgery was effective even for patients who had suffered seizures for more than a decade.

Editor's note: While the patients in this study were not autistic, researcher Christopher Gillberg recently reported (see ARRI 10/2) that similar surgery on two autistic patients not only reduced or eliminated seizures, but also improved the children's behavior.

"Temporal lobectomy for refractory epilepsy," Michael R. Sperling, Michael J. O'Connor, Andrew J. Saykin, and Carrie Plummer; *Journal of the American Medical Association*, Vol 276, No. 6, 1996. Address: Michael R. Sperling, Comprehensive Epilepsy Center, Graduate Hospital, 1800 Lombard St., Philadelphia, PA 19146.

"Controversial surgery benefits epileptics," S. Sternberg; *Science News*, Vol. 150, No. 7, 1996.

Related disorders common in autism

A quarter or more of autistic children may suffer from other, related medical conditions, according to a research review by Christopher Gillberg and Mary Coleman.

Comparing data from seven studies, Gillberg and Coleman found that "the average rate of [possibly] associated medical disorders across these seven population-based studies was 24.5%." The highest rates were found in studies that included extensive medical, neurological and biochemical

evaluations. Associated medical conditions were more common in studies including a high proportion of mentally retarded autistic individuals.

Gillberg and Coleman conclude that "there is clearly a need for a comprehensive medical examination" of children determined to be autistic. "Several of the medical disorders that are now known to be sometimes associated with autism can be diagnosed only by extensive examination," they say, recommending that such examinations include a careful physical examination (particularly for neurocutaneous disorders such as neurofibromatosis), neuro-imaging studies, chromosomal culture and gene analysis, EEGs, blood and urine tests for metabolic disorders, cerebrospinal fluid examination (to rule out encephalitis and progressive encephalopathy), and visual and auditory evaluations.

The researchers note that some conditions associated with autism—for instance, subclinical seizures—can be treated, while others, such as Fragile X or tuberous sclerosis, should be identified so that families can receive genetic counseling.

Ann Swillen et al., in Belgium, agree with Gillberg and Coleman about "the importance and the need for a thorough medical and clinical genetic evaluation in all children and adults with autism or autism-spectrum disorders." The Belgian researchers recently studied 21 adolescents and adults with autism or pervasive developmental disorder, and uncovered a surprising number of genetic syndromes in their subjects.

"In 13 of the 21 individuals," the researchers report, "a precise etiological diagnosis could be made: a Mendelian inherited disorder in 12 individuals and [a translocation] in one other." Surprisingly, four of the subjects had X-linked mental retardation with body builds characteristic of Marfan's syndrome, a condition only rarely linked to autism in previous research. Two other subjects had a rare genetic disorder called Shprintzen velocardiofacial syndrome.

"Autism and medical disorders: a review of the literature," Christopher Gillberg and Mary Coleman; *Dev. Medicine and Child Neurology*, 38, 1996, pp. 191-202. Address: C. Gillberg, Dept. Child and Adol. Psychiatry, University of Goteborg, Annedals Clinics, S-413 45, Goteborg, Sweden.

"Autism and genetics," Ann Swillen et al., *American Journal of Medical Genetics*, 67, 1996, pp. 315-316. Address: Jean-Pierre Fryns, Ctr. for Human Genetics, Herestraat 49, B-3000, Leuven, Belgium.

Is Borna virus a culprit in brain disorders?

Scientists know that the Borna virus, which infects animals ranging from cattle and sheep to cats and tree shrews, can cause bizarre behavior. But new evidence suggests that the virus can cause brain dysfunction in humans as well.

German researcher Liv Bode and colleagues isolated the Borna virus in three patients diagnosed with mood disorders. When they injected the virus from the human patients into laboratory animals, the animals developed behavioral problems. Researcher R. Michael Hendry told *Science News* that "this is the first solid clue that an infectious agent may be linked to mental illness."

Bode et al. say the strain of Borna virus they isolated in their patients is distinct from animal strains of Borna. In animals, the virus causes aggression, hyperactivity, apathy, eating disorders, and/or disrupted social interactions. Little is known about how the virus affects humans, but antibodies to Borna have been reported to be present in up to a third of patients with schizophrenia and obsessive-compulsive disorder, compared to only two percent of nondisabled populations. (*To ARRI's knowledge, no research has been done to determine what percentage of autistic children, if any, may show antibodies to this virus.*)

In 1995, Bode et al. reported that the presence of markers for Borna virus infection in humans "seems to coincide with acute episodes of mood disorders," adding that "the markers disappear during recovery or at least during a significant decrease of symptoms, thus pointing to a new human virus infection possibly threatening mental health." Bode and colleagues suggest that Borna virus infection may cause depression by altering neurons in the limbic system, a brain area implicated in many psychiatric disorders.

"Is mental illness infectious?," *Science News*, Vol. 150, No. 7, August 17, 1996.

"Virus may trigger some mood disorders," Bruce Bower, *Science News*, Vol. 147, No. 9, March 4, 1995.

"A borna virus cDNA encoding a protein recognized by antibodies in humans with behavioral diseases," Susan VandeWoude et al., *Science*, Vol. 250, No. 4985, November 30, 1990.

HOLIDAY SHOPPING REMINDER:

*A subscription to the ARRI is an excellent gift for a friend,
relative,
or teacher interested in autism!*