

Briefly...

MRI scans reveal autistic cerebellar defect

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Testosterone effect?

While much autism research has focused on abnormalities in the brain's left hemisphere, German researchers L. Hermle and G. Oepen recently reported a case involving a male patient with dysfunction primarily in the right hemisphere.

Because the patient appeared "hyper-masculine," the researchers speculate that abnormal testosterone levels in utero may have caused altered brain asymmetry and contributed to the subject's autism.

"Hemisphärenlateralität und früh-kindlicher autismus," L. Hermle and G. Oepen; *Nervenarzt*, Vol. 58, 1987, pp. 644-647. Address: L. Hermle, Psychiatrische Universitätsklinik, Hauptstraße 5, D-7800 Freiburg i. Br., West Germany.

Undressing technique useful

Yugoslavian educator Goran Dzingalasevic handled an autistic boy's insistence on keeping his hands inside his clothing by making him undress each time he refused to remove his hands from his clothes. This procedure was combined with time-out for aggression. Appropriate behavior was rewarded.

Before treatment, the boy never removed his hands from his clothing. After 20 days of the procedure, he kept his hands out of his clothing for two hours or more at a time.

"Using time-out and undressing with an aggressive and self-aggressive autistic child," Goran Dzingalasevic (unpublished). Address: Goran Dzingalasevic, Av. M. Drzica 76, 41000 Zagreb, Yugoslavia.

Anoxia a factor?

Ethiopian researcher Ayele Gebre-Mariam reports on a case involving a five-year-old boy with autism and arrested hydrocephalus; he speculates that asphyxia around the time of birth and resulting brain damage led to the child's autism.

He notes, however, that there is no clear evidence of an increased incidence of autism among children who suffer from asphyxiation around the time of birth, indicating that this may be just one of many factors contributing to autism.

"Infantile autism following hypoxic-ischaemic encephalopathy in an Ethiopian child," Ayele Gebre-Mariam, Addis Ababa University; *Ethiopian Medical Journal*, Vol. 24, 1986, pp. 179-182. Address: Ayele Gebre-Mariam, Department of Paediatrics and Child Health, Faculty of Medicine, Addis Ababa University, P.O. Box 1176, Addis Ababa, Ethiopia.

and induce autism, and in identifying any other brain areas that might be damaged as well.

Courchesne says the cerebellar defect may directly cause autistic symptoms, or may indirectly affect the functioning of other brain areas. A third possibility is that the cerebellar defect is not itself related to autistic symptoms, but occurs at the same developmental time as other, as yet undiscovered, defects. Four of Courchesne's subjects had no detectable cerebellar defects, indicating "in some portions of the spectrum of autism, disorders of the cerebellum may have a different expression or may not be involved."

Courchesne's results confirm those reported in his initial 1987 MRI study of one autistic patient. However, they differ somewhat from those of recent studies by Gary R. Gaffney et al.

The first study by Gaffney and colleagues found that the fourth ventricle (a fluid-filled brain area) in 13 autistic subjects was enlarged. However, they reported that while "the cerebellum was smaller in the autistic group . . . the difference was not statistically significant." Since Gaffney et al. measured the entire cerebellum (consisting of 10 lobules), their findings do not necessarily conflict with the Courchesne et al. study, which found only lobules VI and VII to be small.

A second study by Gaffney et al. did report the cerebellum to be smaller in six autistic patients than in a control group of 16 non-autistic individuals, but differences in methodology (coronal vs. sagittal images; whole vs. partial cerebellum studied) make the studies difficult to compare. In

general, the Gaffney et al. studies are consistent with the MRI and autopsy studies showing cerebellar defects in autism.

Editor's note: Some concern has been expressed regarding these findings: must evidence of brain malformation lead to pessimism regarding the autistic person's future? Not at all! First, we already know that some autistic individuals have a good outlook regardless of brain impairment. Second, we know that safe biomedical interventions can be of immense help in some cases (e.g., ARRI 1987, #4, pp. 2 and 3). Finally, Courchesne's results suggest that 99% of the brain appears unimpaired. That's a lot to work with!

"Hypoplasia of cerebellar vermal lobules VI and VII in autism," E. Courchesne, R. Yeung-Courchesne, G. A. Press, J. R. Hesselink, and T. L. Jernigan; *New England Journal of Medicine*, May 26, 1988; pp. 1349-1354. Address: Eric Courchesne, Neuropsychology Research Laboratory, Children's Hospital Research Ctr., 8001 Frost Street, San Diego, CA 92123.

-and-

"Midsagittal magnetic resonance imaging of autism," Gary R. Gaffney, Samuel Kuperman, Luke Y. Tsai, Susan Minchin and Khatab M. Hassanein; *British Journal of Psychiatry*, 1987, No. 151, 831-833; and "Cerebellar structure in autism," same authors without Hassanein; *Amer. Journal of Diseases of Children*, Vol. 141, Dec. 1987, pp. 1330-1332. Address for either: Gary R. Gaffney, Dept. of Psychiatry, Univ. of Kansas Medical Ctr., 39th and Rainbow Blvd., Kansas City, KS 66103.

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