Biomedical update:

Drug symptoms, stereotyped behavior hard to differentiate

Even experienced doctors have difficulty differentiating between the stereotypical behaviors of autistic individuals—blinking, mouth movements, etc.—and side effects caused by anti-psychotic drugs, according to a new study by Karen Meiselas et al.

The researchers asked two psychiatrists experienced with medication side effects, and one psychiatrist familiar with autistic children, to examine videotapes of 20 autistic children. Sixteen of the children had never been treated with drugs but had various stereotyped behaviors. Four other tapes were of children with mild to moderate dyskinesia, involuntary muscle movements which occurred following long-term use of the anti-psychotic drug Haldol.

Meiselas and colleagues found that the doctors "tended to overdiagnose the finding with which they had expertise." The research psychiatrists overdiagnosed dyskinesia, while the clinical psychiatrist missed three of the four cases of drug-induced dyskinesia.

Meiselas says the study points out the need to keep meticulous records about stereotyped behaviors which exist before medication is started, especially since "stereotypies may be suppressed by neuroleptic medication, and their re-emergence after [drug] withdrawal may be misdiagnosed as withdrawal dyskinesias."

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"Differentiation of stereotypies from neuroleptic-related dyskinesias in autistic children," Karen D. Meiselas, Elizabeth K. Spencer, Richard Oberfield, Eric D. Peselow, Burton Angrist, and Magda Campbell; *Journal of Clinical Psychopharmacology*, Vol. 9, No. 3, June 1989, pp. 207-209. Address: Magda Campbell, Division of Child and Adolescent Psychiatry, New York University Medical Center, 550 First Avenue, New York, NY 10016.

How do autistic children see faces?

Normal infants and children spend much of their time looking at other people's faces, while autistic children appear uninterested in making eye contact or even avoid it. This almost universal symptom of autism has led some researchers to speculate that areas of the brain responsible for face recognition may be defective in people with autism.

Japanese researcher Teruko Miyashita recently tested this theory using line drawings of faces and of geometrical shapes. She found that the autistic children in her study recognized faces only in terms of their component parts, rather than as a whole. By contrast, Miyashita found, the children were not impaired in similar tests using geometric shapes.

Different findings were reported by Fred Volkmar and colleagues, who used puzzles to test facial perception. Autistic children and teens, and a control group of mentally retarded subjects, assembled simple and complex puzzles of 1) unfamiliar and familiar faces, and 2) normally configured and "scrambled" faces. Volkmar et al. found that both groups were better at simple than complex puzzles, better at assembling puzzles of familiar faces than unfamiliar faces, and better at assembling normally configured than "scrambled" faces. They note that "the autistic subjects would often attempt to produce a normally configured face even when the puzzle depicted a scrambled one . . . . Similarly, subjects in both groups often identified the face of a familiar adult."

The autistic individuals in this study, they conclude, "did not exhibit specific deficits in perception of faces."

The researchers caution that their subjects' age might be a factor since earlier research by Langdell indicated that younger autistic subjects use an unusual face recognition strategy, focusing only on the lower features of faces.

Animal research indicates that there may be a specific brain area which recognizes faces, according to Canadian researcher John Fotheringham.

Fotheringham notes that there is preliminary evidence of such facial recognition cells in the temporal cortexes of sheep (according to research by Keith Kendrick and B. A. Baldwin) and in monkeys. He theorizes that damage to related areas in humans, or to their connections to other brain regions, could cause facial perception problems as well as other autistic symptoms.

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"Discrimination of facial components in autistic children," Teruko Miyashita, *The Japanese Journal of Psychology*, Vol. 59, No. 4, 1988, pp. 206-212. Address: Osaka Prefectural Institute of Public Health, Higashinari-ku, Osaka 537, Japan.

—and—

"Facial perception in autism," Fred R. Volkmar, Sara S. Sparrow, Richard D. Rende and Donald J. Cohen; *Journal of Child Psychology and Psychiatry*, Vol. 30, No. 4, 1989, pp. 591-598. Address: F. R. Volkmar, Child Study Center, Yale University, New Haven, CT 06510.

—and—

"Facial recognition cells and autism" (letter), John B. Fotheringham, *Science*, Vol. 238, Dec. 11, 1987. Address: John Fotheringham, Mental Retardation Division, Dept. of Psychiatry, Queen's University, Kingston, Ontario, Canada K7L 1G1.

Recurrence: how high?

Large-scale studies have consistently found that the recurrence risk for autism (in other words, the risk that an autistic child's sibling will also be autistic) is very low—about 2.5 percent. (The risk of having additional autistic children is even lower if there is no family history of Fragile X syndrome.) Both earlier studies (Rimland, 1971; Rimland and Coleman, 1976) and recent data strongly support this low risk figure.

In their extensive review, Smalley et al. (1988; ARRI 3/2) cited six newer studies which strongly confirmed the Rimland and Coleman findings. These studies, based on 285 families with multiple autistic children, yielded an average recurrence rate of 2.7%.

However, a recent report by Edward Ritvo et al. states that autism is 215 times more frequent among the siblings of autistic patients than in the general population. Their survey of cases of autism in Utah, Ritvo and colleagues say, reveals that the chance that each sibling born after an autistic child will develop autism is 8.6% (7% if the autistic child is male, and 14.5% if the child is female). Ritvo et al. explain their divergent findings as a result of their methods of diagnosis and statistical analysis.

Editor's Note: This study, based on a sample of only 20 multiple-incidence families (a sample only 1/14th as large as the six pooled samples in Smalley's report), drawn from a very limited geographic area, and producing results widely at variance with a large body of pre-existing data, must be regarded with great skepticism.

The Ritvo et al. study was given high visibility by the New York Times ***(Aug. 24). This is unfortunate, since many thousands of parents and siblings of autistic children may have altered their childbearing plans upon being misinformed that the chances of having an autistic child are nearly four times as high as they had previously been told. The story caused alarm and dismay in many families.***

The findings are suspect not only because of the small sample and because of their disparity from previous larger studies, but because the data are from Utah. Physicist Ernest Sternglass reports, in his book Secret Fallout, ***that residents of Utah have received massive doses of radiation from aboveground nuclear testing. Utah children received 10 to 100 times the government's maximum yearly limit from just one nuclear test. The SAT scores of Utah children born during the period of maximum exposure showed a 26-point drop, compared to just two points for Ohio schoolchildren.***

The NYT is incorrect in stating "The data offer clear-cut guidance for genetic counseling."

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"The UCLA-University of Utah epidemiologic survey of autism: recurrence risk estimates and genetic counseling," E. R. Ritvo, L. B. Jorde, A. Mason-Brothers, B. J. Freeman, C. Pingree, M. B. Jones, W. M. McMahon, P. B. Petersen, W. R. Jenson, and A. Mo; *American Journal of Psychiatry*, 146:8, August 1989, pp. 1032-1036. Address: Edward Ritvo, NPI, 760 Westwood Plaza, Los Angeles, CA 90024.