Biomedical update:

Is birth season a factor?

More autistic children are born in the spring and early summer than in other seasons, according to Canadian researchers (Konstantareas et al.). The researchers found that this seasonal pattern was only evident for male, nonverbal, low-functioning autistic individuals.

Because viral infections and nutritional deficiencies are more common in the winter, the researchers speculate that many vulnerable fetuses who would otherwise develop into low-functioning autistic children may die during the immediate prenatal or post-natal period in the winter.

"If our model is valid," the researchers said, "there is no seasonality of birth for the high-functioning subgroup of autistic individuals, possibly because of lower vulnerability."

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"Season of birth in infantile autism," M. M. Konstantareas, P. Hauser, C. Lennox and S. Homatidis; *Child Psych. and Human Development*, fall 1986, pp. 53-65. Address: M. Mary Konstantareas, Clarke Institute of Psychiatry, 250 College Street, Toronto, Ontario, M5T 1R8.

Asperger's Syndrome may be linked to metabolic disorder

Asperger's Syndrome is considered by many (but not all) professionals to be a separate disorder from autism. The two share many symptoms including an inability to relate normally to other people, naive and abnormal behavior, repetitive speech, reduced facial expression, monotonic voice, limited or inappropriate gesturing, strong attachments to certain possessions, dislike of change, and special abilities, particularly excellent rote memory.

The majority of individuals with Asperger's Syndrome have normal IQs. Clumsiness and poor coordination are common symptoms, and people with Asperger's are prone to cyclic episodes of severe depression, lethargy and regression.

S. W. Miles and P. Capelle recently reported the case of one 18-year-old boy with Asperger's Syndrome who was found to have a metabolic disorder, aminoaciduria. The boy's family (particularly the males) had a history of psychiatric disorders; while the siblings were not available for testing, an examination of the father revealed that he also exhibited aminoaciduria. The researchers speculate that this metabolic disturbance could have led to the neurological and behavioral disturbances of the boy and of other family members.

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"Asperger's Syndrome and aminoaciduria: a case example," S. W. Miles and P. Capelle; *British Journal of Psychiatry*, 150, 1987, pp. 397-400. Address: either author at Department of Psychiatry, Ward 10A, Auckland Hospital, Park Road, Grafton, Auckland, New Zealand.

Dopamine system defects implicated

Recent research has linked autism to abnormalities of several neurotransmitters, the chemical messengers that brain cells use to communicate with each other.

While most research has focused on the high levels of the chemical serotonin found in some autistic children (see related article on p. 6), new research has revealed possible defects in areas of the brain that use dopamine, a neurotransmitter which already has been linked to schizophrenia.

A recent Swedish study of 25 autistic children (Gillberg and Svennerholm) found that cerebro-spinal fluid concentrations of homovanillic acid (HVA) – a chemical formed by the metabolism of dopamine – were abnormally high in autistic children, indicating an abnormality in the brain's use of dopamine. Eighteen of 20 normal children in the study control group had lower HVA levels than autistic subjects matched for age and sex. *(Editor's note: see page 3 re study findings that vitamin B6 normalizes HVA levels.)*

The researchers say their data indicate that "dysfunction of central nervous system dopaminergic pathways might be important in autism and autistic-like conditions."

Related research by Deutsch et al. has indicated that autism may be linked to an under-sensitivity of nerve cells in the hypothalamus (a brain structure which regulates the release of hormones by the endocrine glands) to dopamine.

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"CSF monoamines in autistic syndromes and other pervasive dev. disorders of early childhood," C. Gillberg and L. Svennerholm; *British Jour. of Psychiatry*, No. 151, 1987, pp. 89-94. Address: either author at Dept. of Child Psychiatry, East Hospital, Univ. of Goteborg, Box 7284, S-402 35 Goteborg, Sweden.

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"Plasma growth hormone response to oral L-dopa in infantile autism," Stephen Deutsch, Magda Campbell, Edward Sachar, Wayne Green and Ralph David; *Jour. of Aut. and Dev. Disorders*, Vol. 15, No. 2, June 1985, pp. 205-212. Address: Magda Campbell, Dept. of Psych., N.Y. Univ. Med. Ctr., 550 1st Ave., New York, N.Y. 10016.

Herpes infection may cause autism in children, adults

"Full-blown" autism apparently can, in rare cases, develop in formerly normal children and adults following herpes simplex encephalitis (inflammation of the brain caused by the same herpes virus which causes fever blisters and cold sores).

Christopher Gillberg recently reported the case of a 14-year-old girl who developed typical symptoms of autism ten days after the onset of encephalitis. The girl, whose development was normal before she became ill, is now 24 years old and is still severely autistic.

A CT scan done at age 22 showed widespread, bilateral damage to the temporal lobes of the brain. EEGs also showed severe abnormalities on the left side of the brain.

Gillberg notes that a similar case involving an 11-year-old boy has been reported previously, and that autistic-like behaviors also have been reported in adults as a result of bilateral temporal lobe damage following herpes simplex encephalitis. He also cites research showing that monkeys develop autistic-like symptoms after bilateral removal of the temporal lobes.

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"Brief report: onset at age 14 of a typical autistic syndrome. A case report of a girl with herpes simplex encephalitis," Christopher Gillberg; *Journal of Autism and Dev. Disorders*, Vol. 16, No. 3, pp. 369-375, 1986. Address: Christopher Gillberg, Barn-och ungdomspsykiatriska kliniken, Box 7284, 40235 Goteborg, Sweden.

Williams, autism linked

Williams Syndrome, a rare disorder causing elf-like features, cognitive defects and heart problems, can occur in conjunction with autism.

Reiss et al. have seen two children with symptoms of both autism and Williams Syndrome. While the children had the elfin facial features and motor defects characteristic of Williams, they had poor social and language skills – symptoms not generally seen in Williams Syndrome children, who usually are very verbal and have been described as having a "cocktail party" manner of relating.

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"Autism associated with Williams Syndrome," A. Reiss, C. Feinstein, K. Rosenbaum, M. A. Borengasser-Caruso, and B. Goldsmith; *Jour. of Pediatrics*, Vol. 106, No. 2, Feb. 1985, pp. 247-249. Address: Carl Feinstein, Dept. of Psych., Children's Hosp. Nat'l. Med. Ctr., 111 Michigan Ave. N.W., Washington, D.C. 20010.