Physical, behavioral changes seen

Vitamin B6/magnesium study shows significant benefits

A new French study (Martineau et al.) supports earlier findings that vitamin B6 and magnesium can cause significant behavioral improvement in many autistic individuals, and may help normalize some neurological and metabolic functions.

In this study, eleven "B6-sensitive" autistic children (already shown in an earlier study to respond to B6 and magnesium) were given eight weeks of vitamin B6/magnesium treatment, followed by a four-week period of no treatment. Daily dosage was 30 mg. of B6 and 10 mg. of magnesium per kilogram of body weight. A second group of autistic children received no treatment during any phase of the study.

The researchers report that:

• No adverse reactions or side effects were seen in any of the patients during B6/magnesium administration.

• Behavior problems decreased significantly in the experimental group during the first two weeks of B6/magnesium administration, and this improvement lasted over the course of treatment. After treatment was stopped, behaviors gradually returned to baseline levels. No significant change in behavior was seen in the control group.

• A significant drop in levels of the neurotransmitter dopamine occurred during treatment. Auditory evoked potential tests, which measure the brain's response to sound stimuli, showed a "trend toward normalization" during treatment. Levels of homovanillic acid, also tested, dropped initially and then returned to baseline and "rebounded" to levels above baseline.

This is the thirteenth published study showing positive effects in autism of B6 or B6 combined with magnesium. No negative studies or adverse effects have been reported in these studies.

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"Brief report: an open middle-term study of combined vitamin B6-magnesium in a subgroup of autistic children selected on their sensitivity to this treatment," J. Martineau, C. Barthelemy, C. Cheliakine, and G. Lelord; *Journal of Autism and Developmental Disorders*, Vol. 18, No. 3, 1988, pp. 435-447. Address: J. Martineau, Explorations Fonctionnelles Psychopathologiques, Service du Pr. Lelord, CHU Bretonneau, 2, Boulevard Tonnelle, 37044 Tours Cedex, France.

Computers lend a hand in the classroom

Autistic and retarded children can learn skills using computerized teaching programs, according to a new study.

A three-screen, interactive computer teaching aid called MISS STIM (developed by ITX Laboratories) was tested in classroom settings by Steve Edelson et al. They found that the system–which uses lessons developed by the Los Angeles Unified School District–was highly effective with mentally retarded and developmentally delayed children, but was also useful with autistic children. It was least effective with children with the lowest IQs, self-help skills, and communication skills.

MISS STIM has one touch-sensitive video screen which the child uses to respond to questions, and two additional screens in front of the child which present information using true-to-life sounds and pictures. The system addresses each child by name and provides verbal and visual reinforcement or correction.

An earlier study by Anthony Plienis and Raymond Romanczyk found that children with severe learning and behavior problems did equally well on tasks, and exhibited fewer disruptive behaviors, when taught by a computer rather than by an adult.

The 17 children in this study (six autistic, and 11 with retardation or behavior disorders) learned a visual discrimination task while alternating between a human teacher and a sophisticated computer program using a high-quality speech synthesizer. While the students appeared to do better with the computer program than with live instruction, the researchers stress that "it is clear that the computer cannot substantially supplant teachers" but rather can be an effective supplemental tool.

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"Report of the evaluation-to-date of the MISS STIM tutorial system," by ITX Laboratories; and "The ability of mentally handicapped children to attend and imitate video images presented by an interactive videodisc learning system," Stephen Edelson, Curt Knoppel, Susan Kelso, Elizabeth Raygoza and Rachel Firemark (conference presentation, 1988). Address for both: Stephen Edelson, Dept. of Psychology, Pitzer College, Claremont, CA 91711.

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"Analyses of performance, behavior, and predictors for severely disturbed children: a comparison of adult vs. computer instruction," Anthony J. Plienis and Raymond Romanczyk; *Analysis and Intervention in Developmental Disabilities*, Vol. 5, pp. 345-356, 1985. Address: Anthony J. Plienis, Department of Psychiatry, Marshall University School of Medicine, Huntington, West Virginia 25701.

Fenfluramine: effectiveness, safety questioned

According to a double-blind, placebo crossover study by Coggins et al., fenfluramine appeared to have no effect on the IQ scores or language abilities of five autistic individuals,

While the drug did lower the subjects' blood levels of serotonin—a neurotransmitter present in abnormally high levels in 30 to 40% of autistic people—the researchers say their findings "do not support the hypothesis that reduction in serotonin is likely to improve the cognitive and communicative deficits in autistic children."

The researchers found that subjects' serotonin levels quickly returned to normal when fenfluramine was stopped after four months of administration.

Risk of brain damage?

In related research, a team of scientists reports that MDMA, the ingredient in several street drugs, causes damage to the serotonin-producing neurons in the brains of monkeys. They warn that "caution may be warranted in the use of fenfluramine, a ring-substituted amphetamine that is closely related to MDMA and is currently prescribed for obesity and autism."

This warning is echoed by Bernt and Marianne Sjoholm, who cite a Swedish conference report of depression, psychoses, coma and convulsions occurring as withdrawal effects in humans taking fenfluramine, as well as other reports of fenfluramine-induced brain damage in animals.

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"Does fenfluramine enhance the functioning of autistic children?", Truman E. Coggins, Colleen Morisset, Lori Krasney, Robert Frederickson, Vanja A. Holm, and Vidmantas A. Raisys; *Journal of Autism and Developmental Disorders*, Vol. 18, No. 3, 1988, pp. 425-434. Address: Truman E. Coggins, Univ. of Washington, Seattle, WA.

—and—

"(±)3,4-methylenedioxymethamphetamine selectively damages central serotonergic neurons in nonhuman primates," George A. Ricaurte, Lysia S. Forno, Mary A. Wilson, Louis E. DeLanney, Ian Irwin, Mark E. Molliver, and J. William Langston; *Journal of the American Medical Association*, Vol. 260, July 1, 1988, pp. 51-55. Address: George A. Ricaurte, Department of Neurology, Francis Scott Key Medical Center, The Johns Hopkins Health Center, 4940 Eastern Avenue, Baltimore, MD 21224.

—and—

"Adverse effects of fenfluramine," Bernt and Marianne Sjoholm; *Journal of Autism and Developmental Disorders*, Vol. 18, No. 3, pp. 461-462, September 1988. Address: Bernt or Marianne Sjoholm, Ruutikellarintie 2 A 3, SF-02600 Espoo, Finland.