

Biomedical/Educational Update:

More on alpha interferon

A recent ARRI (8/4) reported on the beneficial effects the drug AZT had on one autistic child in a study by Gene Stubbs. The drug, which can be highly toxic and is not currently recommended as an autism treatment, was used because it lowers levels of the natural body chemical alpha interferon.

Stubbs has now reported the results of a pilot study on 10 autistic children, which found that levels of alpha interferon are significantly elevated in autistic children, compared with levels in nondisabled subjects. He notes that prenatal disturbances in alpha interferon, which is involved in cell growth and activity, can lead to abnormal development.

Stubbs also notes that alpha interferon is 8,000 times as potent an analgesic as morphine, which could explain the high pain thresholds of autistic children.

"Interferonemia and autism" (letter), Gene Stubbs; *Journal of Autism and Dev. Disorders*, Vol. 25, No. 1, Feb. 1995, pp. 71-73. Address: Gene Stubbs, Health Sciences, University of Portland, Portland, OR 97207-0574.

Reaching the gifted student with autism

Noting that approximately 20% of autistic students are not retarded, and that "an increasing number of these youngsters...are being recognized as gifted or talented," educators Julie Donnelly and Reuben Altman have called on teachers to foster autistic students' special abilities.

Donnelly and Altman note that the talents of gifted autistic students tend to be narrow, and that "these individuals are not necessarily capable of spontaneous application of those skills for practical purposes." They say that teachers of gifted students need to identify the interests of gifted autistic students—for instance, savant skills in mathematics or languages—and broaden these abilities into useful areas. A particularly useful strategy, they say, is the use of an adult mentor in a field related to the autistic individual's interests.

Traditionally, Donnelly and Altman say, gifted autistic students have been placed in programs focussed on their weaknesses. While such students need help in overcoming social problems and other difficulties related to autism, they say, "the chance afforded in gifted education programs to associate with other bright peers can in itself motivate social growth, and the recognition of their talents can boost their self-esteem."

Donnelly and Altman note that the needs of autistic individuals and other gifted students often overlap, because gifted students as a group tend to be isolated, and are frequently rejected by their peers.

"The autistic savant: recognizing and serving the gifted student with autism," Julie A. Donnelly and Reuben Altman, *Roepers Review*, Vol. 16, No. 4, June 1994. Address not listed.

Color me hyperactive

New evidence from a double-blind, placebo-controlled study reported in the *Journal of Pediatrics* strongly suggests that the Feingold diet, an additive-free diet praised by many parents of behavior-disordered children but frowned on by many mainstream physicians, can indeed alleviate behavior problems in hyperactive children.

Katherine and Kenneth Rowe studied three groups of children: 23 hyperactive children whose parents believed the children were sensitive to food colorings, 11 hyperactive children whose parents were not sure if they were sensitive, and 20 children with no behavior problems. All of the children received a diet free of synthetic colorings and then were given, on a randomized basis, either tartrazine (yellow dye #5) in varying dosages, or a placebo. Parents unaware of the test conditions rated their children's behavior during the tests.

Parents identified 24 children (19 of the 23 "reactors," 3 of 11 "uncertain reactors," and two control subjects) who clearly exhibited more behavior problems when ingesting the dye than during the placebo condition. Behavior problems included crying, tantrums, irritability, restlessness, sleep disturbance, lack of control, and distractibility.

All of the children who reacted to the dye had a history of asthma, eczema or allergies, and all but two (one of whom was adopted) also had a family history of migraine in at least one first-degree relative.

The Rowes conclude that "behavioral changes in irritability, restlessness, and sleep disturbance are associated with the ingestion of tartrazine in some children." They report that parents noticed symptoms in children even at the lowest doses of the dye administered (1 mg), although behavior disruptions lasted longer at higher doses.

The Rowes say previous studies which found no link between food additives and behavior problems suffered from design flaws. Their own study, they say, used each child as his or her own control subject because "idiosyncratic reactions to a substance may not be noted if responses are treated as group effects."

"Synthetic food coloring and behavior: A dose response effect in a double-blind, placebo-controlled, repeated-measures study," Katherine S. Rowe and Kenneth J. Rowe, *Journal of Pediatrics*, Nov. 1994, pp. 691-696. Address: Katherine S. Rowe, MBBS, Dept. Pediatrics, Univ. of Melbourne, Royal Children's Hospital, Parkville, Victoria 3052, Australia.

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Sensory integration therapy: does it work?

When you pick a rose, your brain instantly processes many sensory messages: the smell of the flower, its color, the prick of its thorns, even the pull of gravity on your body. "Sensory integration" is the act of putting all of these messages together into coherent information.

While this process is automatic for most of us, it appears to be seriously disturbed in autistic children; many, for instance, react violently to normal sounds, or refuse to eat textured foods. Such children often receive sensory integration therapy, a technique designed to improve the nervous system's ability to organize sensory information. The tools of this therapy include swings, balls, trampolines, toys, soft brushes and cloths for rubbing the skin, fragrant extracts, massages, colored lights, and objects with unusual textures. But do these tools work?

Perhaps not, according to a recent article by Bridget Shore, who suggests that research on the topic has been inadequate and poorly controlled. Shore cites a study by S. A. Mason and Brian Iwata, who concluded that "much of the research on sensory integrative therapy has been characterized by inadequate measurement and assessment of reliability," and that few studies have been adequately controlled. She notes that another review article, by R. E. Arendt et al., concluded that "experimental design and statistical procedures were...inadequate to support the use of this therapy on an empirical basis."

Others note, however, that anecdotal evidence supports the use of sensory integration therapy. For instance, Temple Grandin, a highly accomplished autistic woman who runs her own business, credits deep pressure therapy, a technique frequently used in sensory integration therapy, with allowing her to deal effectively with stress and anxiety.

In addition, a number of studies—although most lack adequate controls—indicate that sensory integration therapy is an effective technique. For instance, a 1990 study by J. Brocklehurst-Woods found that tactile and vestibular stimulation significantly reduced stereotypical behaviors in two retarded subjects, and a controlled study by Dura et al. in 1988 found that vestibular stimulation significantly reduced self-injury in one subject.

Editor's Note: There is a growing controversy over the effectiveness of sensory integration therapy. The issue is an important one, as about a quarter of all programs for autistic children use this approach. However, we have been able to locate very little recent research on the topic. We would appreciate hearing from readers with information or research studies relating to this issue.

"Sensory-integrative therapy," Bridget A. Shore; *Self-Injury Abstracts & Reviews*, Vol. 3, No. 1, 1994. Address not listed.