

Biomedical/Education Update:

Deep pressure tested

A young autistic girl's disruptive self-stimulating behaviors—including hitting surfaces and hitting one hand on the other—were reduced by "deep pressure" therapy, according to a report by occupational therapist Lenore Zissemann.

Zissemann first used gloves (made from pantyhose) that covered the girl's arms from the bases of the fingers and thumbs to just above the elbows. Observations over a two-month period indicated "an overall decrease of 46% in self-stimulating behaviors . . . when the gloves were on."

Next, Zissemann tested a Jobst vest, normally used to apply pressure on healing burns. The sleeved vest, which came to the girl's wrists, was used for nine weeks. During that time, the girl's hand slaps decreased by 54%, although her hitting of surfaces increased slightly.

Zissemann says both animal and human studies indicate that deep pressure can reduce anxiety and perhaps even alter physiological states such as heart rate. The use of deep pressure therapy has gained in popularity since the publication of *Emergence: Labeled Autistic*, in which author Temple Grandin—a recovered autistic woman—described the devices she built to satisfy her own cravings for deep pressure.

"The effects of deep pressure on self-stimulating behaviors in a child with autism and other disabilities," Lenore Zissemann, *American Journal of Occupational Therapy*, June 1992, Vol. 46, No. 6, pp. 547-551. Address: Lenore Zissemann, 1214 NW 202nd St., Seattle, WA 98177.

Autism seen in fetal alcohol syndrome cases

The long list of known or suspected causes of autism includes such diverse factors as genetic abnormalities, prenatal rubella, and industrial pollution. Now researcher J. L. Nanson adds another suspected culprit: fetal alcohol syndrome, or FAS.

Nanson studied a database of 326 individuals confirmed as having FAS, and found six of these individuals—or one in 54—also had autism. This is "a surprisingly high incidence," Nanson says, noting that no other researchers have mentioned any FAS cases with autism.

"It may be," he says, "that for some individuals, a diagnosis of FAS tends to preclude secondary diagnoses, such as autism . . . [or that] children diagnosed as autistic may not be investigated as possibly having FAS."

Compared to the non-autistic FAS children, Nance says, "the autistic FAS children demonstrated a trend toward more persistent growth retardation and had a

greater absolute number of major anomalies, suggesting that these children may have suffered greater prenatal insult than did the non-autistic children."

Magnetic resonance imaging studies of autistic individuals by Eric Courchesne and other researchers have revealed defects of the cerebellum; similar defects, Nance says, have been reported in animal studies of FAS.

Fetal alcohol syndrome, first described in 1968, is one of the leading causes of mental retardation. In addition, FAS causes hyperactivity, reduced weight and growth, skull or brain malformations, neurological abnormalities, impulsiveness, poor coordination, speech and hearing impairment, and characteristic facial features including short eye openings, a thin upper lip, and an elongation and flattening of the groove in the middle of the upper lip.

While maternal alcohol abuse may cause a small percentage of cases of autism, studies have not noted any increased incidence of drinking in mothers of autistic children compared with the general population.

"Autism in Fetal Alcohol Syndrome: a report of six cases," J.L. Nanson, *Alcoholism: Clinical and Experimental Research*, 1992, Vol. 16, No. 3, pp. 558-565. Address: J.L. Nanson, Alvin Buckwold Centre, Royal University Hospital, Saskatoon, SK Canada S7N 0W0.

Clomipramine: more positive results reported

Four of five autistic young adults showed "significant improvement in social relatedness, obsessive-compulsive symptoms, and aggressive and impulsive behavior" when treated with the drug clomipramine, according to new research by Christopher McDougle and colleagues.

Dosages used in the study ranged from 75 to 250 mg/day. No adverse effects of the drug were seen, except for mild dry mouth in two cases.

Clomipramine, a tricyclic antidepressant, prevents the reuptake of the messenger chemical serotonin by neurons. Research implicates abnormal serotonin function in autism, as well as in obsessive-compulsive and aggressive behaviors and social deficits.

"Clomipramine in autism: preliminary evidence of efficacy," Christopher J. McDougle, Lawrence H. Price, Fred R. Volkmar, Wayne K. Goodman, Deborah Ward-O'Brien, Jeffrey Nielsen, Joel Bregman, and Donald J. Cohen; *Journal of the American Academy of Child and Adolescent Psychiatry*, July 1992, 31:4, pp. 746-750. Address: Christopher McDougle, Department of Psychiatry, Yale University, 34 Park Street, New Haven, CT 06508.

Self-management increases responding

A new study indicates that "self-management"—one of the newest and most promising approaches in behavior management—can rapidly increase the social responding of autistic children.

Lynn Kern Koegel and colleagues worked with four autistic children who, in spite of having expressive and receptive language scores at or above the three-year-old level, were unresponsive to other people's verbal initiations. Researchers taught the children to distinguish between correct and incorrect responses to verbal comments from others, and to record correct responses on inexpensive sports wrist counters. "Typically, within the first 30-minute session, the child acquired this chain of responding," the researchers note.

Children were reinforced for recording correct responses, but to make the procedure easier to use without supervision, the level of reinforcement was gradually reduced until the children were earning large numbers of points before receiving reinforcers. (In addition, children were taught to ask for their reinforcers when they earned enough points.) Once the children were proficient, the self-management procedure was started in the community, at home, and in school.

The researchers found that when self-management procedures were started, "all four children showed relatively rapid improvement (typically within a few sessions) in the clinic." Similar increases in social responding occurred when the self-management procedure was introduced in other settings. In addition, the researchers note, "collateral reductions in disruptive behavior occurred when the children's responsivity improved," indicating that conversational interactions "were very likely much less aversive, and less likely to be associated with escape- or avoidance-driven disruptive behavior." Three of the children also began initiating conversations during non-treatment times when the counters were not worn.

The researchers note that self-management offers the autistic individual more independence, reduces staffing needs, can be natural and unobtrusive, can be taught in a relatively short time, and appears to result in rapid improvements. They add that it should be easy to fade out the use of the self-monitoring device.

"Improving social skills and disruptive behavior in children with autism through self-management," Lynn Kern Koegel, Robert L. Koegel, Christine Hurley, and William D. Frae; *Journal of Applied Behavior Analysis*, No. 2, Summer 1992, 25, pp. 341-353. Address: Lynn Kern Koegel, Autism Research Center, Counseling/Clinical School/psychology Program, Graduate School of Education, University of California, Santa Barbara, CA 93106-9490.