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Risperidone study: symptoms reduced in autistic adults

Increasing evidence indicates that the relatively new drug risperidone (Risperdal) is as effective as many other drugs used to treat autistic symptoms, while causing significantly fewer side effects.

Earlier this year (see ARRI 12/2), Rob Nicolson and colleagues reported that risperidone reduced the symptoms of autistic children while causing few adverse effects. A new study, this time of risperidone's effects on adults, reports that over half of subjects showed significant behavioral improvements, and none experienced significant short-term side effects.

McDougle and colleagues found that risperidone reduced repetitive behaviors, aggression, anxiety, depression, irritability, and other symptoms of autism.

In the new study, a 12-week, double-blind, placebo-controlled, crossover trial, Christopher McDougle et al. tested risperidone (average dosage 2.9 mg/day) or a placebo on 31 adults with autism or pervasive developmental disorder. Subjects taking the placebo during the first phase of the study were later switched to risperidone for 12 weeks. The researchers report that 8 of the 14 subjects receiving risperidone in the first part of the study, and 9 of the 15 subjects taking the drug in the second part of the study, improved significantly.

"Risperidone was superior to placebo in reducing repetitive behavior, aggression, anxiety or nervousness, depression, irritability, and the overall behavioral symptoms of autism," the researchers note. However, no changes were seen in social behavior or language.

McDougle et al. also report that the drug was well tolerated by study subjects, and that side effects (which included temporary sedation, dry mouth, agitation, weight gain, digestive problems, and bed-wetting) were generally mild. They note that their adult subjects, while gaining weight in some cases, did not experience the marked weight increases sometimes seen in younger individuals taking risperidone.

Risperidone appears to work by altering both serotonin and dopamine systems in the brain. Although few side effects have been reported in studies of risperidone to date, physicians using risperidone to treat patients have reported some severe reactions including liver and cardiac abnormalities. McDougle et al. also note that there have been reports of tardive dyskinesia (a neurological disorder that causes uncontrollable muscle movements—see page 5) occurring in patients treated with risperidone, and say that "continued close monitoring of the drug and longer-term follow-up studies are warranted."

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"A double-blind, placebo-controlled study of risperidone in adults with autistic disorder and other pervasive developmental disorders," C. J. McDougle, J. P. Holmes, D. C. Carlson, G. H. Pelton, D. J. Cohen, and L. H. Price; *Archives of General Psychiatry*, Vol. 55, No. 7, July 1998, pp. 633-641. Address: Christopher J. McDougle, Department of Psychiatry, Indiana University School of Medicine, Indianapolis, IN 46202-5200.

'Hug machine' reduces autistic anxiety

Temple Grandin, a highly successful autistic businesswoman, author, and lecturer, credits a device called a "hug machine" (or "squeeze machine") with helping control her anxiety and hypersensitivity. "At eighteen, while visiting my aunt's ranch, I noticed that cattle sometimes relaxed when they were held in a squeeze chute for veterinary work," she explained in the *Harvard Mental Health Letter*. "I built a squeeze machine for myself, lined with foam rubber and powered by an air cylinder that allowed me to change the pressure by pushing the lever. Its hold was firm but soothing and comforting."

Edelson says, "It appears that there may be a 'threshold' of arousal needed for deep pressure to have a calming effect on the nervous system of individuals with autism."

Recently, Meredyth Goldberg Edelson conducted an experiment to see if other autistic individuals would benefit from this type of therapy. Edelson enlisted 12 participants, ranging in age from 4 to 13, who used the hug machine twice a week for six weeks. A group of control subjects rested in the machine twice a week for six weeks, but did not apply any pressure.

Edelson asked parents to evaluate their children's tension, anxiety, and restlessness and/or hyperactivity before, during, and after the treatment, using the Conners Parent Rating Scales. In addition, she measured subjects' galvanic skin response before and after each session. The higher this reading, the greater a subject's nervous system arousal.

"Results indicated that those participants in the hug machine condition displayed decreases in all three Conners subscales during the course of the study, compared to the control group," Edelson reports. "The decrease over time was statistically significant for the Tension subscale, and marginally significant for the Anxiety subscale."

For the group as a whole, there were no significant differences in galvanic skin response before and after therapy. However, Edelson reports, the greatest improvement in behavior and galvanic skin response was seen in subjects who were the most physiologically aroused before the treatment. "It appears that there may be a 'threshold' of arousal needed for deep pressure to have a calming effect on the nervous system of individuals with autism," she says.

Edelson concludes that "the results from the present study are encouraging and suggest that deep pressure may be beneficial for at least a subset of individuals with autism, perhaps those who are most anxious."

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"Assessing the efficacy of Grandin's hug machine: a pilot study," Meredyth Goldberg Edelson, presentation at the Annual Meeting of the Autism Society of America, Las Vegas, June 1998. Address: Meredyth Goldberg Edelson, Willamette University, 900 State Street, Salem, OR 97301. (See Editor's Note, page 6.)