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Autism is on the rise, and with it comes more heartache for parents and higher costs for the school system. Statistics from a 1999 state report from California showed a nearly 300 percent increase in cases reported from 1987 to 1998.<sup>1</sup> Researchers estimate as many as one in 200 children are affected by the disorder.<sup>2</sup>

*Editor's note: Since this article was originally published, a study in the Archives of General Psychiatry (September 2006) revealed that babies born to men between the ages of 40 and 49 are nearly six times more likely to develop autism than children born to men under 30, regardless of the mother's age.*

Researchers are scrambling to uncover causes and put a halt to this increase, along with addressing the symptoms of autism, including abnormal response to sensory stimuli, limited attention span, excessive off-task behavior and touch aversion.<sup>3</sup>

Autism is a brain disorder, usually diagnosed by age 2, in which the child fails to develop language and normal social interaction skills. Withdrawal from social contact and aberrant behavior are common. Within the classroom, educators have used behavior modification, structured settings and social skills conditioning with minimal effect. And in the home, some parents have tried the gamut of treatments, conventional and alternative, in an attempt to restore what many experts postulate may be a permanently damaged brain. Moderate success has been achieved with vitamin B6 supplements, sometimes resulting in improvement in speech, behavior and physiological measures.<sup>4</sup>

Clinical trials have also shown massage therapy as a viable complementary treatment positively impacting some of the characteristic behaviors of autism. Two important studies have emerged in this area within the past few years, both from the Touch Research Institute (TRI) in Miami, Fla.

### **Massage in the Classroom Setting**

In 1997, a study team at TRI, led by Tiffany Field, Ph.D., published results of its first project involving autistic children. Building on the success of previous studies demonstrating anxiety reduction and increased attention span using massage therapy for children, the team surmised touch therapy may be beneficial in reducing the autistic behaviors of inattentiveness, touch aversion and withdrawal.<sup>5</sup>

The 22 autistic children included in this study were recruited from a special preschool they had been attending for two years. Averaging 4.5 years of age and from middle socioeconomic-level families, the 12 boys and 10 girls were randomly assigned to a touch therapy or touch control group. In a series of developmental assessments, it was determined the two groups were equivalent in intelligence, speech

and language skills, and behavioral adaptation. Additionally, all of the students had been diagnosed as autistic by two independent clinicians.<sup>6</sup>

Several instruments were used on the first and last day of the study to determine effectiveness of the treatment. Classroom observation by psychology graduate students included notation of "touch aversion, off-task behavior, orienting to irrelevant sounds and stereotypic behaviors" over a 30-minute time period. Teachers, blinded to group assignment, documented their observations on the Autism Behavior Checklist (ABC), and the Early Social Communication Scales (ESCS) were administered by graduate students, also blinded to group assignment.<sup>7</sup>

A specific massage protocol, administered by a volunteer student, was followed for each child in the touch therapy group and included moderate pressure and smooth stroking movements to the head and neck, arms and hands, torso, and legs and feet. These 15-minute sessions were conducted twice weekly for four weeks. Within the same time protocol, children in the touch control group sat on the lap of a volunteer student who had her arms around the child, and were engaged in a game selecting toys of different color, shape and form.<sup>8</sup>

Given that autistic children have been reported to be averse to physical contact, one of the most interesting findings of the study is observation of improvement in touch aversion for both groups. Researchers said this response may be related to the one-on-one attention and predictability of the contact in the study, as compared to a more generalized social touch. Similarly, these factors may account for the improvement in off-task behavior noted in both groups. Overall, both groups seemed to benefit, but the touch therapy group exhibited more significant beneficial effects for orienting to irrelevant sounds and stereotypic behaviors, and scores on the ABC and ESCS. Researchers surmised these increased effects may be credited to the "more active physical contact and relaxation involved in the touch therapy." Additionally, activity to the vagus nerve (key cranial nerves) enhanced by touch therapy could also account for increased attentiveness in the classroom.<sup>9</sup>

### **Massage at Home**

Expanding on encouraging results from the 1997 study, researchers at TRI embarked on a second trial of massage therapy for autistic children, this time using parents to administer massage at home. This way children could receive daily treatments at no cost. The study team surmised greater improvements

might be seen with more frequent massage administered by a familiar person. In addition to benefits previously documented, it was hoped nightly massage could improve sleep disturbances common to autistic children.<sup>10</sup>

Twenty children between the ages of 3 and 6 were recruited from a school for autistic children. All had been diagnosed within one to three years previously and were determined, through a series of assessments, to be homogeneous with regard to adaptive behavior and language skills. In addition, they came from the same developmental-level classrooms. The children were randomly assigned to either a massage group or attention control group, and parents were told that "reading stories and massaging might increase relaxation and sleep in children."<sup>11</sup>

Treatment in both groups was conducted over a one-month period, with the protocol being administered for 15 minutes just prior to bedtime. Parents in the massage group were trained by a massage therapist to use the same procedure outlined in the 1997 study. In the control group, parents were asked to read a Dr. Seuss story during the 15-minute evening period. It's important to note that on conclusion of the study, these parents were also offered instruction in massage therapy, affording their children an opportunity to experience the same benefits as the massage group.<sup>12</sup>

As with the 1997 study, assessments were made on the first and last days of treatment using much the same measures, but with the addition of sleep diaries completed by the parents. Parents and teachers recorded observations on five sub-scales of the revised Conners Scales which rated such factors as hyperactivity, attentiveness, restless-impulsive behaviors and emotional state. Teachers were blinded to group assignment, as were other behavioral observers in the classroom and on the playground. Sleep diaries included a record of fussing and restlessness, crying, self-stimulating behaviors and number of times the child attempted to leave the bed.<sup>13</sup>

The massage group showed a clear benefit in sleep as reported by parents, with the above behaviors diminishing during the treatment period. However, as noted by researchers, the parents were obviously not blinded to group assignment and their response to providing massage for their children was enthusiastic and positive. Despite this non-blinding, the ratings may hold true. In a previous study of depressed children, TRI researchers using videotape rather than parent ratings documented improvement in sleep following massage therapy. Whether or not improved sleep patterns also

influenced a significant finding of improved classroom performance is unknown. But the team did find the massage group became more attentive at school, showed increased on-task behavior and were observed to have a decrease in stereotypical behaviors both in the classroom and on the playground.<sup>14</sup>

### **Touch and Autism**

Researchers from the United Kingdom, in a study published in 2002, used a similar format to that of the TRI parent study. In this trial, a group of parents with autistic children was trained to administer touch therapy to their children. When interviewed prior to the program, the parents (primarily mothers) reported feeling "hurt in response to the aloof nature of autism" and also felt hindered in their spontaneous parenting instincts, such as cuddling. The Touch Therapy project, which included 12 children, was conducted for an eight-week period.

Not only did the children accept their parents' touch, parents also reported more cooperative behavior with daily tasks such as dressing and a higher level of relaxation in their children overall. At the conclusion, the study team noted, "Parents reported feeling closer to their children and felt that the touch therapy had opened a communication channel between themselves and their children."<sup>15</sup>

These are exciting results, given the tremendous challenge autism presents to both parents and teachers. Autism, as we now know it, is incurable and the behaviors associated with the disorder are pervasive throughout the individual's lifetime. One of the most heartbreaking aspects of this disorder is the block in communication between parent and child. The most basic of intimate human interactions -- hugs, words of love and facial responses of pleasure -- typically do not emanate from an autistic child. Recent research has debunked the long-held belief that autistic children are incapable of forming attachment.

We now know they do attach to their parents and show a preference for interaction with their family. But they remain incapable of acting on that attachment or responding appropriately to the interaction. The results of these studies show promise that massage and other touch therapies will emerge as a building block in bridging that gap.

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