

Improving Communication Skills in Children With Allergy-related Autism Using Nambudripad's Allergy Elimination Techniques: A Pilot Study

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Abstract

Background: Autism prevalence increased more than 50% between 2002 and 2006. We hypothesized that major contributors to the development and symptoms of autism include food and nutrient sensitivities. Desensitization to multiple allergens forms the basis of the Nambudripad Allergy Elimination Techniques (NAET) treatment for autism.

Subjects and Intervention: Sixty children (2.5-10 years old) with autism were randomly assigned to treatment or control groups. The treatment group (26 boys and four girls) received NAET treatments (combining acupressure and kinesiology) for 50 key allergens for 1 year. The nonblinded control group (25 boys and five girls) did not receive any NAET treatments. Each group was allowed to continue with any other therapies they had been receiving. Neuromuscular Sensitivity Testing (NST, kinesiology and muscle testing) was used to determine which substances triggered sensitivity reactions in each child, and NAET acupressure treatments were then used to eliminate the sensitivities.

Outcome Measures: Status for each participant was determined at the beginning and end of the 1-year study using the following tools: Autism Research Institute Autism Treatment

Evaluation Checklist (ARI-ATEC), Childhood Autism Rating Scale (CARS), NST, and Allergy Symptom Rating Scale (ASRS).

Results: A total of 56 children (NAET, 26 children; control, 30 children) completed the study. After 1 year, the children receiving NAET treatments demonstrated significant improvements in performance compared with the control group, determined with the ARI-ATEC score (mean decrease: NAET, 68%; control, 0.8%; $P < .0001$), CARS (mean improvement: NAET, 47%; control, 0.4%; $P < .0001$), NST (mean improvement: NAET, 66%; control, 0%; $P < .0001$), and ASRS (total decrease: NAET, 85%; control, 2%; $P < .0001$). The NAET treatment resulted in statistically significant improvements in 30 of the 35 symptoms assessed using the ASRS. In the NAET group, 23 of the 30 children returned to regular school classes with healthy, nonautistic peers after treatment, but all of the children in the control group continued to require special education.

Conclusions: The NAET treatment is effective and well tolerated for children with allergy-related autism.

Trial registration

This trial was registered at ClinicalTrials.gov: Registration # NCT00247156.

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Autism is an early childhood developmental disorder characterized by difficulties with social interactions and communication and stereotyped patterns of behavior. Autism was present in less than 1% (1/110) of American 8-year-old children in 2006, having increased in prevalence by more than 50% between 2002 to 2006.¹ With pharmaceutical treatment options producing only limited success, there is an urgent need for effective therapies for this debilitating disorder. Decreased severity of autism may be noted after treating nutritional, toxin-related, and infectious problems that may be associated with autism, and further research in these areas is needed.

Most children with autism exhibit symptoms of food and other sensitivities. In a previous study of 153 autistic children treated over 5 years, 101 (66%) had clinical symptoms and findings on Neuromuscular Sensitivity Testing (NST)² that were consistent with the presence of food allergies or sensitivities. NST has been described in detail elsewhere² and looks

for a drop in muscle strength when the person is holding a substance he or she is allergic or sensitive to. Muscle weakness is looked for by having the patient resist when applying downward pressure to an outstretched arm while the patient is holding an allergen.^{3,4}

With the Nambudripad Allergy Elimination Technique (NAET), it has been hypothesized that a food sensitivity may result from an imbalance or reactivity between the energy fields of an individual (as described by traditional Chinese medicine and acupuncture) and of a particular substance or group of substances. Such imbalances can be identified with the application of Neuromuscular Sensitivity Testing (NST).²⁻⁴ We hypothesized that eliminating detectable sensitivities in autistic children would improve their ability to function.

NAET is a noninvasive therapy that combines aspects of Oriental medicine, traditional Chinese medicine, nutritional therapy, and applied kinesiology.²⁻⁶ NAET may cause improved function by desensitizing the individual to foods and environmental toxins such as heavy metals. In affected children, this may improve neurologic function.²⁻⁶ The NAET hypothesis² is supported by unpublished clinical data collected over the past 24 years that suggest the NAET approach can substantially reduce many of the physiological and physical symptoms associated with childhood autism.⁶ This study was undertaken to evaluate the use of NAET treatments in children with autism.

MATERIALS AND METHODS

Subjects

The participants in the study were selected from volunteers who responded to a study announcement published in the NAET Newsletter,⁷ the NAET Web site⁸ (<http://www.NAET.com>), local newspapers, local school flyers, and the <http://ClinicalTrials.gov> Web site.⁹

Inclusion Criteria

Study participants were included based on five criteria.

- 1) A previous diagnosis of autism made by their physician: Participants also had to satisfy the criteria for the diagnosis of autistic disorder as described in Diagnostic and Statistical Manual of Mental Disorders, 4th Edition¹⁰ based on

clinical observation documented on videotape.

2) Participants had to be between the ages of 2.5 and 10 years.

3) A history suggestive of food sensitivities had to be present. In our experience, allergy/sensitivity symptoms commonly seen in autistic children include those associated with gastrointestinal disorders (such as indigestion, abdominal bloating, foul smelling gas, abdominal pain, constipation, and/or diarrhea), skin problems (including rashes and eczema), insomnia, or hyperirritability triggered by eating or drinking. Patients had at least one of these symptoms.

4) Participants had to have ratings of ≥ 30 on the Childhood Autism Rating Scale (CARS; range of possible scores, 0 [least impaired] to 60 [most impaired])^{11,12} and

5) a score ≥ 15 on the Autism Research Institute Diagnostic Checklist (Form E2).¹³

Exclusion Criteria

Potential study participants were excluded if they had a history of previous major surgery or congenital deformities, malignant tumors, chronic infections such as human immunodeficiency virus, or any physically debilitating physical or mental disorder that is not part of autism such as Down syndrome or anaphylaxis.

All parents of the participants gave informed consent, and the study was approved by the Nambudripad Allergy Research Foundation (NARF) Institutional Review Board and conducted at the NARF facility.

The study was not blinded because of the difficulties associated with attempting to perform sham acupuncture and muscle testing. Therefore, the control group continued to receive standard care except without NAET.

A total of 60 eligible children were randomly assigned to either NAET treatment (n = 30) or control (n = 30) groups. The children who were accepted into the study were screened for the presence of allergy symptoms using the Allergy Symptom Rating Scale (ASRS) questionnaire.¹⁴ This questionnaire examined 35 allergy-related symptoms. Each symptom was scored from 0 to 10, with higher scores indicating greater perceived discomfort. The presence and severity of a suspected

TABLE 1
Groups of Related Allergens Subjected to Neuromuscular Sensitivity Testing^a

Egg mix	Animal fats, vegetable fats, and fatty acids	Fabric mix	Radiation (computer, microwave, sun, cellular phone)
Calcium mix	Amino acids	Nuts	Pets
Vitamin C mix	Hormones	Bacteria mix	Books/school material/ crayon/coloring material
Vitamin B complex mix	Food colorings	Virus mix	Exhaust (CO ₂ , CO, gasoline, smog)
Sugar mix	Food additives	Parasite mix	Body secretions (blood, saliva, urine)
Vitamin A mix	Nightshade vegetables	Spice mix 1 and 2	
Iron mix	Other hormones	Gelatin	
Salt mix	Heavy metals	Gum mix	
Mineral mix	Pesticides	Phenolics/plastics	
Grain mix	Vaccines and immunizations	Dust mix	
Yeast mix	Starch mix	Pollen mix	
Stomach acids	Alcohol	Grass mix, weed mix	
Intestinal enzymes	Formaldehyde	Nicotine/smoke mix	
Caffeine	Chemical mix	Animal epithelia/dander	
Chocolate		Insect mix	

^aDetailed components of each mix can be found in the NAET Guidebook.³

allergy to 50 groups of allergens (Table 1) was determined using NST (range, 0 to 3; higher scores indicated more severe muscle weakness associated with sensitivity to the substance tested).^{15,16}

Randomization

The names of all 60 subjects were placed on individual pieces of paper in a bowl. A 5-year-old boy who could not see the names removed the first 30 name slips, and these subjects were assigned to the treatment group. The remaining 30 subjects were assigned to the control group.

Treatment

Testing began in October 2004. Treatments began in November 2004 and were completed in December 2005. During a period of 1 year, the NAET-treated children received NAET treatments twice per week (total, 100 treatments) for 50 basic allergens. This treatment has been described elsewhere in detail²⁻⁶ and consists of applying pressure to acupuncture points along the spine (from the neck to the sacrum) and on the hands and feet while the patient is holding the allergen. After the acupuncture procedure, the participant continues to hold the sample for 20 more minutes. Then the participant is tested via NST. If the arm continues to be strong on NST in the presence of the allergen, the treatment is said to be satisfactory. The participant is sent home with the instruction to avoid the treated item for the following 25 hours. At the follow-up visit, the participant is retested for the treated item using NST. The children in the control group received no NAET treatments. In both groups, parents were instructed to continue any medical treatments the child was receiving prior to enrollment in the study.

Outcome Measures

The primary outcome measures of the effectiveness of NAET treatments in improving the core features of autism were scores on the Autism Research Institute Autism Treatment Evaluation Checklist (ARI-ATEC).¹³ The ARI-ATEC consists of a total score on four subscales of

- 1) speech/language/communication (range 0-28),
- 2) sociability (range 0-40),
- 3) sensory/cognitive awareness (range 0-36), and
- 4) health/physical/behavior (range 0-75).

The score for each subscale was based on ratings provided by the parent or primary caretaker. For all subscales, greater scores were interpreted to reflect greater impairment.

The checklist was designed to measure treatment effectiveness in autism. Lacking such a scale, previous researchers had resorted to using scales such as the CARS, the Gilliam Autism Rating Scale (GARS), or the Autism Behavior Checklist, which were all designed to diagnose autism and not to measure treatment effectiveness. Several secondary outcome measures also were evaluated, including CARS,^{11,12} NST,^{3,4,15-17} and ASRS.¹⁴

CARS is a validated test combining parent reports and

direct observation by the attending health care professional, offers a combination of practicality and research support, and is a commonly used outcome measure in treatment trials.^{11,12}

NST is similar to Muscle Response Testing, which was developed in 1960 by George Goodheart, DC, and has been used by chiropractors, kinesiologists, and other holistic medical practitioners for many years. NST adds a few steps to balance the energetic status of the subject before beginning the testing procedure.^{3,4,15}

The ASRS form asks clients to rate symptoms that may be associated with food and other sensitivities. Each symptom is rated on a scale from 0 to 10 (no discomfort, 0; mild discomfort, 1-3; moderate discomfort, 4-6; severe discomfort, 7-10).

Statistical Analyses

The mean changes in the outcome variables were compared using an unpaired t-test with a 2-sided α of .05 (Number Cruncher Statistical System, version 5.03, NCSS, Kaysville, Utah).

RESULTS

There were 23 NAET-treated children who improved to the extent that they were able to function in regular school classes instead of special education classes. There were four children in the NAET-treated group who dropped out of the study after receiving 25 (range, 20-30) NAET treatments because their families moved out of the area; in the opinions of both the parents and NAET practitioners, these children had clinically meaningful improvements before dropping out. There were three children who received NAET treatments who did not have clinically and functionally significant improvement, for unknown reasons. Another patient (one girl) improved markedly in most characteristics except for speech, but her continued inability to speak despite treatment was caused by vocal cord dysfunction (she is now otherwise much improved and doing well in regular school). No adverse reactions to NAET treatments were observed during the study.

None of the children in the control group improved or were able to function in regular school classes. None of the control patients dropped out before completion of the study.

At the beginning of the study, the two groups did not exhibit any clinically significant differences (Table 2). After 1 year of NAET treatments, there were statistically significant decreases in mean severity scores for all four of the ARI-ATEC subtests: speech/language/communication (mean decrease: 82.1%; 95% confidence interval [CI]: 63.4, 100.7); sociability (64.7%; 95% CI: 48.2, 80.6); sensory/cognitive awareness (63.5%; 95% CI: 49.4, 77.5), and health/physical/behavior (66.0%; 95% CI: 52.8, 79.7), but scores for these subtests did not change in the control group (Table 3).

After 1 year of NAET treatments, there was a statistically significant decrease by 68.4% (95% CI: 57.0, 79.9) in the mean total of the severity scores for the four subtests, while the mean total score did not change in the control group (Table 3). For each of the four ARI-ATEC subtests and the total ARI-ATEC score, the mean improvement in the NAET-treated group

TABLE 2
Baseline Characteristics of Autistic Children Selected to Participate in Nambudripad’s Allergy Elimination Techniques Efficacy Pilot Study

	NAET (N = 30)		CONTROL (N = 30)	
	n	(%)	n	(%)
Males	26	(87%)	25	(83%)
Age (y)	mean	(range)	mean	(range)
	4.8	(2.5-10)	5.4	(3-10)
ARI-ATEC Subtests	mean	±SD	mean	±SD
	Speech/language/communication	15 ±8	16	±9
	Sociability	17 ±7	18	±7
	Sensory/cognitive/awareness	18 ±6	18	±7
	Health/physical/behavior	21 ±10	27	±13
Total ARI-ATEC Score	71	±25	79	±26
Childhood Autism Rating Scale Score	50	±8	50	±7
Neuromuscular Sensitivity Testing Score	2.9	±0.1	2.8	±0.1
Allergy Symptom Rating Scale Total Score	127	±16	113	±11

Abbreviations: NAET, Nambudripad’s Allergy Elimination Techniques; ARI-ATEC, Autism Research Institute Autism Treatment Evaluation Checklist; SD, standard deviation.

TABLE 3
Change In Autism Research Institute Autism Treatment Evaluation Checklist Rating Scores After 1 Year of Nambudripad’s Allergy Elimination Techniques Treatment

ARI-ATEC Subtest	Change After 1 Y						
	NAET		CONTROL		NAET VS CONTROL		
	mean	95% CI	mean	95% CI	mean	95% CI	P<
Speech/language/communication	-11.9	(-14.6 to -9.2)	-0.1	-0.3, 0.1	-11.8	-14.5, -9.2	.0001
Sociability	-11.0	-13.7, -8.2	-0.2	-0.4, 0.1	-10.8	-13.5, -8.1	.0001
Sensory/cognitive awareness	-11.3	-13.8, -8.8	-0.1	-0.3, 0.1	-11.2	-13.6, -8.8	.0001
Health/physical/behavior	-14.0	-16.9, -11.2	-0.3	-0.8, 0.3	-13.8	-16.6, -10.9	.0001
Total score	-48.2	-56.3, -40.2	-0.6	-1.2, -0.1	-47.6	-55.5, -39.7	.0001

Abbreviations: ARI-ATEC, Autism Research Institute Autism Treatment Evaluation Checklist; NAET, Nambudripad’s Allergy Elimination Techniques; CI, confidence interval.

TABLE 4
Change After 1 Year: Childhood Autism Rating Scale, Neuromuscular Sensitivity Testing, and Allergy Symptom Rating Scale Ratings

Scale	Change After 1 Y							
	NAET		CONTROL		NAET VS CONTROL			P<
	mean	95% CI	mean	95% CI	mean	95% CI		
Childhood Autism Rating Scale	-23.5	-27.4, -19.5	-0.2	-0.6, 0.2	-23.2	-27.1, -19.4	.001	
Neuromuscular Sensitivity Testing	-1.9	-2.0, -1.9	0.0	0.0, 0.0	-1.9	-2.0, -1.9	.001	
Allergy Symptom Rating Scale	-107.9	-114.7, -101.0	-2.6	-3.1, -2.0	-105.3	-112.0, -98.6	.001	

Abbreviations: NAET, Nambudripad's Allergy Elimination Techniques; CI, confidence interval.

was significantly greater than the mean improvement in the control group (Table 3).

Consistent with these findings, 1 year of NAET treatments was associated with a significant mean decrease of 47.4% (95% CI: 39.3, 55.2) in the mean CARS score, while mean CARS scores did not change significantly in the control group (Table 4). The mean improvement in the NAET-treated group was significantly greater than the mean improvement in the control group.

Similarly to the findings reported above, 1 year of NAET treatments reduced the responses during NST by an average of 65.5% (95% CI: 65.5, 69.0), but no reduction was experienced by the children in the control group (Table 4). After 1 year, most NAET-treated children had become desensitized to all of the test allergens (as reflected in the results of NST testing). In addition, the NAET-treated children responded to 1 year of treatment with a significant mean 85.0% decrease (95% CI: 79.6, 90.4) in total ASRS scores, while the children in the control group improved only an average of 2.3% (95% CI: 1.8, 2.8; Table 4). The mean improvement in the NAET-treated group was significantly greater than the mean improvement in the control group ($P < .0001$).

There were no clinically significant differences among the 35 individual baseline ASRS scores (Table 5). After 1 year of NAET treatment, 30 of these individual scores were improved significantly (Table 6).

The most marked improvements (more than 5 rating points greater than the average improvements exhibited by the children in the control group) were seen in abdominal bloating, attention deficit hyperactivity disorder, anger, autism, fatigue, joint pain, and sinusitis. In contrast, the severity of mood swings increased by a statistically significant 29% in the NAET-treated children. Though the cause of this is not clear, it is possible that this occurred because of metabolic shifts occurring as part of the process of recovery or occurred as the children improved enough to become aware of their

disability. It is important to be aware that this may be part of the recovery response. Backache, cough, poor weight gain, and seizures were not responsive to NAET treatment (Table 6). Except for cough, all of the individual symptoms that were associated with average NAET-produced improvements that exceeded 1 rating point were significantly greater than any improvements in the corresponding symptoms in the children in the control group.

After the conclusion of the study, the children in the control group were offered complimentary NAET sessions (as received by the children in the treatment group).

CASE REPORT

Patient 13 was a 3.5-year-old male autistic child. He was described as nervous, irritable, paying no attention to his surroundings, sometimes aggressive, and pinching peers in his "special needs" preschool. He was unable to use two words at a time, and his teacher described him as unable to communicate verbally. He called almost everyone "Mama."

After desensitization to egg mix, he began to speak more and then became very calm after desensitization to the sugar mix. After he received desensitization treatments for approximately ten of the 50 allergen groups, he began speaking in short sentences. After 6 months of treatment, he became toilet trained and qualified to receive speech therapy at school; he had previously been ineligible for this support because of limited speaking ability. His parents felt that he became much more normal for his age after being desensitized to diphtheria-pertussis-tetanus vaccine. He later told us that he had a "best friend" at school.

At completion of the study, his ARI-ATEC rating for the speech/language/communication subtest decreased from 26 to 0, and his total ARI-ATEC score decreased from 84 to 4. This allowed him to be placed in regular kindergarten after graduation from preschool. Although he still had some difficulty with conventional speech, he was doing well and was improved

TABLE 5
Baseline Allergy Symptom Rating Scale Scores

Allergy Symptom Rating Scale Scores	NAET (N = 30)		CONTROL (N = 30)	
	mean	SD	mean	SD
Abdominal bloating	8.2	0.8	7.2	1.1
Achy feet	0.9	2.0	0.7	1.9
Acne	1.5	2.8	0.6	1.3
Attention Deficit Hyperactivity Disorder	7.3	1.2	6.6	2.1
Anger	7.3	2.9	7.2	2.4
Asthma	1.9	2.1	1.1	2.0
Autism	7.8	1.6	7.4	3.1
Backache	0.2	0.7	0.1	0.3
Body ache	4.7	2.8	1.9	2.8
Canker sore	4.7	3.9	4.6	1.1
Constipation	4.7	3.9	3.7	0.9
Cough	1.9	1.7	2.6	1.7
Depression	1.8	2.7	3.5	1.9
Dermatitis	3.8	1.6	1.8	1.6
Diarrhea	3.5	1.2	3.4	1.7
Drowsiness	3.8	2.4	2.8	2.1
Eczema	3.5	1.5	5.6	2.6
Fatigue	6.2	1.6	3.3	1.7
Fever	2.7	2.8	2.4	1.6
Flatulence	5.2	2.0	3.8	1.6
Headache	2.1	2.6	2.0	2.2
Hives	5.4	2.4	0.0	0.0
Hypertension	0.0	0.0	0.0	0.0
Indigestion	4.0	1.8	4.1	1.5
Insomnia	4.0	2.0	3.4	1.8
Itchy eyes	2.2	1.0	3.8	1.1
Itchy throat	4.3	1.1	3.6	1.1
Joint pain	6.2	2.2	6.5	1.3
Mood swing	2.2	0.9	1.6	0.9
Nervousness	3.3	0.8	3.3	1.5
Poor weight gain	0.4	0.9	0.3	0.8
Seizure	0.5	1.0	0.5	1.4
Sinusitis	5.6	1.6	5.2	1.8
Thirst	4.2	1.2	3.4	1.8
Throat swelling	0.5	1.1	0.0	0.0
Total	126.9	12.6	112.6	11.3

Abbreviations: NAET, Nambudripad's Allergy Elimination Techniques; SD, standard deviation.

enough to be eligible for supportive speech therapy.

DISCUSSION

Children who received 100 twice-weekly NAET treatments for 50 allergens exhibited highly significant improvements in the area of speech, language, communication skills, and other autistic behaviors compared with the subjects in the control group who received conventional care. The children receiving NAET treatments also had marked clinical improvement, and

23 of the 30 treated children (77%) were able to be included in regular schools. This outcome provides a very encouraging measure of the degree of improvement that can be achieved in young autistic children during 1 year of NAET treatments.

Limitations of this study include the concern about the evaluation of the effectiveness of acupressure (a key facet of NAET therapy) because of the paucity of double-blind, placebo-controlled studies of that therapeutic modality. It may be difficult to eliminate the potential confounding effects of

TABLE 6
Change After 1 Year Allergy Symptom Rating Scale Symptom Ratings

Symptom	MEAN CHANGE		MEAN DIFFERENCE	95% CI	P <
	NAET n = 30	Control n = 30			
Abdominal bloating	-8.0	0.0	-8.0	-8.3 to -7.6	.0001
Achy feet	-0.5	0.0	-0.5	-1.1 to 0.0	.04
Acne	-1.4	0.0	-1.4	-2.4 to -0.4	.01
Attention Deficit Hyperactivity Disorder	-6.6	0.0	-6.6	-7.2 to -6.0	.0001
Anger	-5.1	0.0	-5.1	-6.1 to -4.0	.0001
Asthma	-1.8	0.0	-1.8	-2.6 to -1.0	.0002
Autism	-7.0	0.0	-7.0	-7.6 to -6.4	.0001
Backache	-0.2	0.0	-0.2	-0.4 to 0.1	NS
Body ache	-4.4	0.2	-4.6	-5.7 to -3.6	.0001
Canker sore	-4.6	-0.2	-4.3	-5.8 to -2.8	.0001
Constipation	-4.6	0.0	-4.6	-6.0 to -3.1	.0001
Cough	-1.8	-2.0	0.2	-0.7 to 1.1	NS
Dermatitis	-3.8	0.0	-3.8	-4.4 to -3.2	.0001
Depression	-1.7	0.0	-1.7	-2.8 to -0.8	.002
Diarrhea	-3.5	0.0	-3.5	-3.9 to -2.9	.0001
Drowsiness	-2.8	0.0	-2.8	-3.8 to -1.9	.0001
Eczema	-3.4	0.0	-3.4	-4.0 to -2.9	.0001
Fatigue	-5.2	0.0	-5.2	-5.7 to -4.6	.0001
Fever	-2.6	0.0	-2.6	-3.2 to -2.0	.0001
Flatulence	-4.1	0.0	-4.1	-4.9 to -3.3	.0001
Headache	-1.4	0.0	-1.4	-2.1 to -0.7	.0003
Hypertension	0.0	0.0	0.0	0.0 to 0.0	NS
Hives	-3.7	0.0	-3.7	-4.5 to -2.8	.0001
Indigestion	-3.8	0.0	-3.8	-4.5 to -3.1	.0001
Insomnia	-3.7	-0.1	-3.6	-4.3 to -2.9	.0001
Itchy eyes	-1.7	0.0	-1.7	-2.1 to -1.3	.0001
Itchy throat	-3.4	-0.2	-3.2	-3.7 to -2.7	.0001
Joint pain	-5.8	0.0	-5.8	-6.6 to -4.8	.0001
Mood swing	0.7	-0.1	0.8	0.4 to 1.1	.0002
Nervousness	-1.9	0.1	-2.0	-2.5 to -1.6	.0001
Poor weight gain	-0.2	0.0	-0.2	-0.4 to 0.0	NS
Seizures	-0.4	-0.1	-0.3	-0.7 to 0.0	.07
Sinusitis	-5.2	0.0	-5.2	-5.7 to -4.6	.0001
Thirst	-3.8	-0.1	-3.8	-4.1 to -3.4	.0001
Throat swelling	-0.3	0.0	-0.3	-0.6 to -0.0	.03
Total	-107.9	-2.6	-105.3	-112.0 to -98.6	.0001

Abbreviations: NAET, Nambudripad's Allergy Elimination Techniques; CI, confidence interval; NS, not significant (P > .05).

applying pressure to an acupuncture point. Similar to studies of acupressure, studies using NST also are very difficult to perform in a blinded manner. Therefore, conducting placebo-controlled studies of NAET is difficult, and a potential placebo effect may have occurred because patients and families received more attention associated with treatment. The marked degree of recovery, however, suggests that a treatment effect beyond a placebo effect had occurred.

Applied kinesiology (muscle testing used in NST), although not yet accepted by many in the conventional medical community, has been reported by many kinesiologists, chiropractors, and other health care professionals to be very helpful in assessing the reactivity of an individual to a particular substance, and NAET practitioners have found this technique to be helpful and safe in the identification of candidate substances for desensitization. In addition, NST has been reported to produce agreement in interpretation among examiners,¹⁵ and the results of NST and measured plasma concentrations of immunoglobulins G and E following exposure to antigens are significantly correlated.¹⁶

An additional limitation is that this study was limited to children aged 2.5 to 10 years. The benefits of NAET treatments may be different when applied to older children. Clinically, we have observed that children <10 years may respond better than older children. In addition, the number of girls participating in the study was small, in part because most children with autism are male. The ARI-ATEC data obtained from the NAET-treated girls (not shown) and clinical experience suggest that NAET can benefit girls, but a stronger effect in the boys suggests that further study of the sex-based differences in this illness may be helpful.

Although the complete NAET program for autism requires approximately 75 to 100 office visits over 1 to 2 years, most children with severe difficulty communicating begin to improve after only 15 to 20 treatments. These children usually exhibit increased visual contact, more masterful verbal and nonverbal communication, greater social interaction, and a decrease in stereotypic behavior. General health also may improve. Many of the more than 175 autistic children who have been treated at the NAET clinic (Buena Park, California) over the past 24 years are now leading normal lives and are attending regular classes in high schools, colleges, and professional schools (unpublished data). This study offers hope to autistic children and their parents for this difficult and devastating condition.

CONCLUSION

NAET treatment provides an effective treatment modality for children with autism to decrease autistic traits and improve their speech, language, communication skills, social interactions, sensory and cognitive awareness, and overall physical health and behavior.

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