

# AMERICAN ACADEMY OF PEDIATRICS

Committee on Children With Disabilities

## Auditory Integration Training and Facilitated Communication for Autism

**ABSTRACT.** This statement reviews the basis for two new therapies for autism—auditory integration training and facilitative communication. Both therapies seek to improve communication skills. Currently available information does not support the claims of proponents that these treatments are efficacious. Their use does not appear warranted at this time, except within research protocols.

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ABBREVIATIONS. AIT, auditory integration training; FC, facilitated communication.

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**A**uditory integration training (AIT) is a treatment for autism that was originally developed by Guy Berard in France in the 1960s and introduced into the United States in 1991. It has since become increasingly popular with parents of autistic children. The publication of a book<sup>1</sup> in 1991 that described the use of AIT in “curing” a child with autism after a 10-hour intervention program generated extensive interest, particularly among parents of autistic children who were frustrated by the lack of effective traditional medical therapy for autism.<sup>2</sup> AIT has been advocated for children and adults with a wide range of disorders other than autism, including learning disabilities, depression, migraine headaches, and epilepsy. It is important that pediatricians know about this intervention to respond to parents who may ask them for an opinion about its usefulness.<sup>a</sup>

The first step in AIT is to obtain a detailed audiogram, which determines auditory thresholds to a larger series of frequencies (octave and interactive frequencies) than are typically used for measuring hearing ability. An auditory training practitioner then examines the audiogram looking for evidence of hyperacusis,<sup>3</sup> which then is examined in relation to the clinical history of sound sensitivities and behavioral profile. If an individual is determined to be an appropriate candidate for AIT, the treatment program consists of 20 half-hour sessions during a 10- to 12-day period, with two sessions conducted daily. Treatment sessions consist of listening to music that has been computer-modified to remove frequencies to which the individual demonstrates hypersensitiv-

ities, and to reduce the predictability of the auditory patterns. A special device (an Audiokinotron) is used to modify the music for the treatment sessions. Audiograms are repeated midway and at the end of the training sessions, to document “progress” and to determine whether additional sessions are needed. Disciples of another proponent of AIT, Tomatis, generally recommend repeating the 20-session series of training sessions during a 4- to 12-month period.<sup>4</sup>

The limitations of the premises on which AIT is based were reviewed by Gravel.<sup>3</sup> She notes that current objective electrophysiologic measures such as auditory-evoked brainstem responses fail to demonstrate differences in hearing sensitivity between autistic and nonautistic children. Moreover, autistic children are extremely difficult to test using behavioral audiometry, because their responses are frequently inconsistent, often showing small (5-decibel) differences between frequencies generally considered within normal clinical variation. Although AIT practitioners declare the technique to be safe, there is some information about both the quality control characteristics of the equipment used and potentially unsafe sound levels produced by it.<sup>5</sup>

AIT practitioners report that individuals who have received AIT demonstrate many benefits: improved attention, improved auditory processing, decreased irritability, reduced lethargy, and improved expressive language and auditory comprehension. Unfortunately, little scientific documentation exists to support these assertions. Rimland and Edelson<sup>6</sup> recently conducted a pilot study of AIT in 17 autistic children aged 4 to 21 years. Eight children underwent AIT for 10 days and 9 children listened to unprocessed music under identical conditions, with evaluators and parents blinded to the treatment received. Although random assignment was not used, and the comparability of the two groups was not described, the authors reported decreases in repetitive behaviors, irritability, and hyperactivity, and improved attention noted by parents in the study group. In addition, Bettison<sup>7</sup> studied 80 children randomized to two groups, one received AIT and the other listened to unmodified music. Twelve months later both groups demonstrated significant improvements in behavior and verbal and performance IQ, suggesting that some aspect of listening to music may have some effect on features of autism. Further studies are underway to better document any effects of this controversial treatment.

Facilitated communication (FC) is a method of providing assistance to a nonverbal person in typing out words using a typewriter, computer keyboard, or

<sup>a</sup>Although there are several AIT methods, this statement addresses that which Berard introduced, for it is the only one that has been studied scientifically.

The recommendations in this statement do not indicate an exclusive course of treatment or serve as a standard of medical care. Variations, taking into account individual circumstances, may be appropriate.

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other communication device. FC involves supporting the individual's hand to make it easier for him or her to indicate the letters that are chosen sequentially to develop the communicative statement. This manual prompting, by a trained facilitator, is claimed to provide expressive language abilities to a wide range of individuals, including those with severe intellectual disabilities or autism. Originally applied to assist people with physical disabilities by Jacobson et al,<sup>8</sup> FC was brought to the United States by Biklen in 1989.<sup>9</sup> According to Biklen, this procedure often produces unexpected literacy and reveals normal or even superior intelligence and/or communicative ability that was "trapped in a wordless person."<sup>9,10</sup> FC is at the center of a growing controversy, because several scientific studies have suggested that facilitators may unintentionally influence the communication, perhaps to the extent of actually selecting the words themselves.<sup>11-14</sup> Yet proponents point to a series of nonexperimental reports that promote the use of FC and suggest that it is unethical to use a rigorous scientific method to study its efficacy.<sup>15</sup>

As reviewed by Jacobson et al,<sup>8</sup> FC has been the subject of many controlled studies with consistently negative findings, indicating that the technique is neither reliably replicable nor valid. Methods that have been used include single and double-blind procedures, repeated measures and self-controls, or passing messages about which the facilitator would have no prior information.

For example, Smith et al<sup>16</sup> studied 10 individuals with autism specifically to investigate the effects of facilitator influence and level of assistance on the results of FC. Each subject had six sessions, two with no help, two with partial assistance, and two with full assistance. Results showed that there were no cases of correct responses from the subject unless the facilitator knew the correct response. In addition, numerous responses were typed by the subjects to stimuli that were shown only to the facilitator, and not the subject. Similar results have been found by Regal et al<sup>17</sup> and Eberlin et al.<sup>18</sup>

A recently published study by Cardinal et al<sup>19</sup> attempted to support the ability of experienced FC users to transmit single words to a naive facilitator. They found that this only occurred with prolonged practice of the experimental task, and there were many inconsistencies in the responses, even after prolonged practice. They suggested that further research is needed, especially to develop methodologies to clearly separate facilitator influence from user communication.

Despite this evidence, some states have promoted and supported the use of FC for children and adults with autism and other disabilities, and even issued guidelines to promote technology transfer of FC. There has been widespread national media attention to this alternative therapy, and many parents are interested in exploring this option for their children; the attraction of unlocking the child's "hidden abilities" is a strong incentive for its use.

One complication of the use of FC has been the allegation of abuse, particularly sexual abuse, that has been obtained from individuals through the use of FC against third persons. This has generated ad-

verse publicity and caused severely negative consequences for families who may be unsure of the validity of the allegations. Because of legal mandates regarding reports of child abuse, this becomes a critical issue for teachers and pediatricians alike, who may find the credibility of the report highly questionable but are obligated to fulfill their legal responsibilities. Margolin<sup>20</sup> notes that although more than 50 such allegations have resulted in legal proceedings, most have terminated before trial. The ethical dilemmas posed by FC for practitioners have been reviewed by Jacobson et al.<sup>8</sup>

## RECOMMENDATIONS

AIT and FC are controversial treatment options for autism and other disorders. Although two investigations indicated AIT may help some children with autism,<sup>5,6</sup> as yet there are no good controlled studies to support its use. In the case of FC, there are good scientific data showing it to be ineffective.<sup>11-14</sup> Moreover, as noted before, the potential for harm does exist, particularly if unsubstantiated allegations of abuse occur using FC. Many families incur substantial expense pursuing these treatments, and spend time and resources that could be used more productively on behavioral and educational interventions. When controversial or unproven treatments are being considered by a family, the pediatrician should provide guidance and assistance in obtaining and reviewing information. The pediatrician should ensure that the child's health and safety, and the family's financial and emotional resources are not compromised. It is important for the pediatrician to obtain current data on both AIT and FC as they become available. Until further information is available, the use of these treatments does not appear warranted at this time, except within research protocols. Information on communicating with families who choose an alternative medical approach for their child with chronic illness and disability is also available in the literature.<sup>21</sup>

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#### REFERENCES

1. Stehli A. *The Sound of a Miracle*. New York, NY: Doubleday; 1991
2. Rapin I. Autism. *N Engl J Med*. 1997;337:97-103
3. Gravel JS. Auditory integrative training: placing the burden of proof. *Am J Speech Lang Pathol*. 1994;3:25-29
4. Silver LB. Controversial therapies. *J Child Neurol*. 1995;10:S96-S100
5. Rankovic CM, Rabinowitz WM, Lof GL. Maximum output intensity of the Audiokinotron. *Am J Speech Lang Pathol*. 1996;5:68-72
6. Rimland B, Edelson SM. Pilot study of auditing integration training on autism. *J Autism Dev Disord*. 1995;25:61-70
7. Bettison S. Long-term effects of auditory training on children with autism. *J Autism Dev Disord*. 1996;26:361-367
8. Jacobson JW, Mulick JA, Schwartz AA. A history of facilitated communication: science, pseudoscience, and antiscience. *Am Psychol*. 1995;50:750-765
9. Biklen D. Communication abound: autism and praxis. *Harv Educ Rev*. 1990;60:291-314
10. Biklen D, Morton M, Gold D, Berrigan C, Swaminathan S. Facilitated communication: implications for individuals with autism. *Top Lang Disord*. 1992;12:1-28
11. Bebko JM, Perry A, Bryson S. Multiple method evaluation of facilitated communication: II. Individual differences and subgroup results. *J Autism Dev Disord*. 1996;26:19-42
12. Bomba C, O'Donnell L, Markowitz C, Holmes DL. Evaluating the impact of facilitated communication on the communication competence of fourteen students with autism. *J Autism Dev Disord*. 1996;26:43-58
13. Green G. The quality of evidence. In: Shane HC, ed. *Facilitated Communication: A Clinical and Social Phenomenon*. San Diego, CA: Singular Publishing Group; 1994:157-226
14. Regal RA, Rooney JR, Wandas T. Facilitated communication: an experimental evaluation. *J Autism Dev Disord*. 1994;24:345-355
15. Biklen D. Facilitated communication. *Harvard Mental Health Newsletter*. 1993;10:5-7
16. Smith MD, Haas PJ, Belcher RG. Facilitated communication: the effects of facilitator knowledge and level of assistance on output. *J Autism Dev Disorder*. 1994;24:357-367
17. Regal RA, Rooney JR, Wandas T. Facilitated communication: an experimental evaluation. *J Autism Dev Disorder*. 1994;24:345-355
18. Eberlin M, McConnachie G, Ibel S, Volpe L. Facilitated communication: a failure to replicate the phenomenon. *J Autism Dev Disorder*. 1993;23:507-530
19. Cardinal DA, Hanson D, Wakeham J. Investigation of authorship in facilitated communication. *Ment Retard*. 1996;34:231-242
20. Margolin KN. How shall facilitated communication be judged? Facilitated communication and the legal system. In: Shane HC, ed. *Facilitated Communication: The Clinical and Social Phenomenon*. San Diego, CA: Singular Press; 1994:227-258
21. Nickel RE. Controversial therapies for young children with developmental disabilities. *Inf Young Children*. 1996;8:29-40

#### ERRATUM

In the policy statement entitled "Guidance for Effective Discipline" (April 1998; 101:723-728), the names of two former committee members whose contributions were crucial were not included in the list of authors. We apologize for not crediting the following individuals:

Martin T. Stein, MD, Chairperson, Committee on Psychosocial Aspects of Child and Family Health, 1992-1996

Ellen C. Perrin, MD, Member, Committee on Psychosocial Aspects of Child and Family Health, 1990-1996

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