Intensive Early Intervention using Behavior Therapy is the Single Most Widely Accepted Treatment for Autism.

It is No Longer to be Considered either an Experimental or an Investigative Treatment.

In fact, it is the only evidence-based treatment available for autism.


Executive Summary.

Intensive Early Intervention using Behavior Therapy is the only extensively researched and validated form of treatment of autism. In this research it is the only proven form of treatment for young children who suffer from autism. This paper summarizes the consensus of many independent review panels that Intensive Early Intervention is sufficiently evidence-based to be covered for families who seek effective treatment for their children. One of the most thorough and well regarded independent reviews is the report commissioned by the National Research Council (2001). Commenting on the specific question of whether this treatment is investigational, the Council reported: “However, there is substantial research supporting the effectiveness of many specific therapeutic techniques and of comprehensive programs in contrast to less intense, nonspecific interventions.” Independent panels continue to make even stronger conclusions regarding the evidence for the effectiveness of intensive early intervention. The American Academy of Pediatrics stated in 2007: “The effectiveness of ABA-based intervention in ASDs has been well documented through 5 decades of research by using single-subject methodology and in controlled studies of comprehensive early intensive behavioral intervention programs in university and community settings. Children who receive early intensive behavioral treatment have been shown to make substantial, sustained gains in IQ, language, academic performance, and adaptive behavior as well as some measures of social behavior, and their outcomes have been significantly better than those of children in control groups.”

Introduction.

Many fad-like interventions have been attempted to treat people who suffer from autism, but most have had little or no tangible results. Therefore it is not surprising that insurance companies and government agencies are hesitant to extend benefits to young children who suffer from autism. It is quite reasonable for such funders to wait for appropriate research to be conducted. In response, University researchers in the field of Applied Behavior Analysis have been evaluating intensive early intervention for autism for 45 years. During this time the treatment has been critiqued as still investigational, or poorly researched. And indeed, up until the late 1990’s there was little consensus over interpretations of this large body of research.
However, in 1987, amidst over 308 research studies conducted at University centers throughout the world by many researchers in the field of autism, the UCLA Young Autism Project, under the direction of O. Ivar Lovaas, Ph.D., was able to publish a long-term outcome study showing that 47 percent of the children treated were able to fully recover from autism. The treatment that was proven effective was Intensive Early Intervention, using Behavior Therapy, as researched in the field of Applied Behavior Analysis. By all published accounts, these results were unprecedented. Subsequently an additional 19 research studies by independent laboratories around the world, has continued to replicate these profound results and empower families to effectively treat their children. Since the year 2000, 5 additional well-controlled studies have been published in peer-reviewed journals. In the years 2005 and 2006 alone, three more were published and other substantial studies are currently submitted for publication. If anything, the substantial support for early intervention is accelerating. Further, the magnitude of effect of these results is greater than is the average efficacy of common surgeries and drug treatments for major illnesses such as cancer and heart disease. Given the high cost of the comparable medical treatments, the return on investment in the early intervention is also greater.

As a result of the findings, and the extreme expense required, over the past six years, 22 professional, state and federal agencies and independent review panels have investigated and found that the findings, have been bona fide. In 1999, task forces of the New York State Department of Health and the Maine Administrators of Services for Children with Disabilities each stringently applied scientific standards of proof to the program and found that it alone, of all possible treatments for children with autism, had been proven effective. Also in 1999, U.S. Surgeon General David Satcher promoted the results of the program in his report on Mental Health. (The National Institutes of Mental Health have funded research on this program for over 30 years.) Professional associations such as the American Academy of Child and Adolescent Psychiatry, the American Academy of Neurology, and the American Academy of Pediatrics also followed suit in their development of practice standards. These independent professional review panels are reporting that the intensive early intervention is highly effective in meeting the needs of the children. Each of these agencies have no vested interest in these services, and the panel members have largely been experts in the field who themselves are not treatment providers. Every single independent review has found that the research is substantial, and the outcomes are undoubtedly effective. However, various funders have continued to rely on proprietary reviews that repeat the earlier conclusions that the treatment is inadequately researched. The scholarship of these reports is extremely low. But why do they persist? Because the treatment is expensive, but unlike a drug, a drug company can not trademark it, so they do not spend large sums of money lobbying for it. Also, it is easy to put forth overly simplistic critiques of the research. The difficulties of conducting such research are daunting. In order to be effective, the behavior therapy program must be intensive and must be delivered in early childhood. In effect, a family who chooses this therapy must organize their household into a 24-hour therapeutic environment for three years, in order to remediate all of the symptoms of autism. To do so, they require 40 hours per week of direct home-based treatment to the child, and 15 hours per week of extensive, specialized consultation to the family for 50 weeks per year. Such long-term research has been difficult to conduct and poorly funded (because again there is no financial interest in investing in treatment that can’t be trademarked).

One premise of the simplistic critiques of ABA-based treatment is that funding should await the use of full random assignment, double-blind clinical trials, before funding such treatment. However, the insurmountable research problems in such studies are: 1) parents won’t subject their children to random assignment for such a high-stake, three-year program of therapy, and 2) because this therapy is so invasive, it certainly won’t be double blind (it is impossible for a parent not to know that they had been assigned to the group with 40 hours a week of behavior therapy in their own home for three years’ time). Because of the reluctance of funders to pay for the treatment, most of the families studied have privately paid for the cost of therapy. As a result, it has been even more difficult to subject these consumers to random assignment.

Another premise of the simplistic critiques is that “total cure” is not as well proven as is the fact that ABA-based treatment is very effective in treating the clinically significant symptoms, and reducing the cost of autism to families and society. Such a state of affairs (total cure vs. effective treatment) is typical of all medical interventions for all medical diseases. The total cure rates and effective treatment rates for early intervention for autism are comparable to those of most medically accepted treatments.
A final source of the simplistic critiques is especially ironic. Applied Behavior Analysis is the only field of research in early intervention. Cursory reviewers have used the fact that the field is conducting research to conclude that it is experimental. However, traditional treatments that have never been researched escape this criticism, and continue to be funded.

The families who weren’t wealthy have also steadily litigated with their governments, schools, and insurance companies for funding, and many have succeeded. However, these expensive actions have polarized the payors and the advocates. And this polarization has led to even more self-serving statements on the subject, in order to support the funders’ in-house wish that the treatment is experimental. However, these industry papers cite very few scientific papers, and in their place, cite a handful of opinion pieces. The level of scholarship is easily impeached by an expert who is competent in Applied Behavior Analysis.

Despite the self-serving controversies, the scholarly conclusions that are made by public, expert review panels is that the research is substantial, that it has been conducted according to the highest feasible standards, and that the outcomes are valid. In fact the primary conclusion of these panels is that an easily accessible funding stream needs to be set up to help these families.

Actual statements from these published reports are quoted below. Where the meaning of the quotes seems ambiguous, the reader is directed to the original source, where it will be found that the citations provided are largely to seminal papers from the field of Applied Behavior Analysis; the most commonly cited paper being Lovaas (1987). For example, in the American Association of Pediatrics paper quoted below, all (every single one) of the references of effective treatment are to ABA studies. Because the papers below are objective reports, they will responsibly contain both supportive and critical comments regarding the effectiveness of the treatment, but upon closer inspection of the references, the cited effective outcomes are all reports of ABA treatments, while the critiques do not cite research reports. The opinion papers are balanced by both positive and negative opinions, such as the Surgeon General’s, who typified Lovaas’ 1987 report as "a well designed study."

Finally, there is no research to be found that suggests that behavior therapy is not effective. Negative statements only come from ill-informed opinion, offered by professionals who are not competent in Applied Behavior Analysis. It is clearly self-serving, when a funder claims that these interventions are still experimental, when in fact, intensive early intervention with behavior therapy is the only treatment for autism that has been widely validated and accepted by the professional community.

Independent Reviews of Intensive Early Intervention Using Behavior Therapy.


In this Clinical Report, the overall impact is inescapable: Children with autism are best treated by continuous, integrated behavior therapy throughout their daily lives, and can make great gains when treated so. The definitive research cited is for the ABA research. By contrast this report also clearly cites the nonbehavioral interventions that have insufficient evidence to support them, or may even be harmful. The report also clearly reviews the critical variables of effective intensive early intervention. For example, the AAP makes the following central statement about Applied Behavior Analysis (ABA) and Behavior Therapy:

“The effectiveness of ABA-based intervention in ASDs has been well documented through 5 decades of research by using single-subject methodology and in controlled studies of comprehensive early intensive behavioral intervention programs in university and community settings. Children who receive early intensive behavioral treatment have been shown to make substantial, sustained gains in IQ, language, academic performance, and adaptive behavior as
well as some measures of social behavior, and their outcomes have been significantly better than those of children in control groups. (pg. 1164)”

Then, regarding specific behavioral interventions, the AAP makes the following statements:

“DTT methods are useful in establishing learning readiness by teaching foundation skills such as attention, compliance, imitation, and discrimination learning, as well as a variety of other skills. (pg. 1164)”

“Naturalistic behavioral interventions, such as incidental teaching and natural language paradigm/ pivotal response training, may enhance generalization of skills. (pg. 1164)”

“Functional assessment is a rigorous, empirically based method of gathering information that can be used to maximize the effectiveness and efficiency of behavioral support interventions. (pg. 1164)”

“A variety of approaches have been reported to be effective in producing gains in communication skills in children with ASDs. Didactic and naturalistic behavioral methodologies (eg, DTT, verbal behavior, natural language paradigm, pivotal response training, milieu teaching) have been studied most thoroughly. (pg. 1165)”

“Traditional, low-intensity pull-out service delivery models often are ineffective, and speech-language pathologists are likely to be most effective when they train and work in close collaboration with teachers, support personnel, families, and the child’s peers to promote functional communication in natural settings throughout the day. (pg. 1165)”

“There is some objective evidence to support traditional and newer naturalistic behavioral strategies and other approaches to teaching social skills. (pg. 1165)”

“Proponents of behavior analytic approaches have been the most active in using scientific methods to evaluate their work, and most studies of comprehensive treatment programs that meet minimal scientific standards involve treatment of preschoolers using behavioral approaches. (pg. 1166)”

“Three studies that compared intensive ABA programs (25–40 hours/week) to equally intensive eclectic approaches have suggested that ABA programs were significantly more effective. (pg. 1166)”

“It is now recognized that parents play a key role in effective treatment. Physicians and other health care professionals can provide support to parents by educating them about ASDs; providing anticipatory guidance; training and involving them as cotherapists; (pg 1174)”


National Research Council: Educating Children with Autism:

The United States Department of Education commissioned the National Research Council to provide input into the controversy circling around the press for school funding for behavior therapy and early intervention. In turn the National Research Council engaged the services of a large number of respected researchers in the field of autism. The resulting report clearly focused on ABA-based interventions. For example, the chapter on “comprehensive programs” identifies ten “well-known model approaches,” all of which are ABA-based. A sample of the many statements, upon which it can be fairly said that the primary focus of the book is on ABA-based treatment, are offered here:

“Early research on the benefits of applied behavior analysis by Lovaas and his colleagues (1973) showed that children with autism who returned to a home prepared to support their learning
maintained their treatment gains better than children who went to institutional settings that failed to carry over the treatment methods. (page 35)"

“Outcomes of discrete trial approaches have included improvements in IQ scores, which are correlated with language skills, and improvements in communication domains of broader measures, (page 53)”

“There is now a large body of empirical support for more contemporary behavioral approaches using naturalistic teaching methods that demonstrate efficacy for teaching not only speech and language, but also communication. (page 53)”

“Behavioral interventions use the powerful tools of operant learning to treat symptoms of autism spectrum disorders. (page 68)”

“Some advantages of the behavioral research on teaching social skills have been the measurement of generalization and maintenance, attention to antecedents and consequences, and use of systematic strategies to teach complex skills by breaking them down into smaller, teachable parts. Some drawbacks of traditional behavioral approaches are the complex data systems that often accompany them and that may impede their use in more typical settings, as well as the lack of training in their use that most staff members on early childhood teams receive. (page 72)”

The conclusions and recommendations of the report revolve around how to set up easily accessible funding and training for more teachers. While the report clearly endorses school department funding for intensive early intervention with behavior therapy, it also suggests that health-care based funding, such as the U.S. Medicaid program would also be appropriate:

“A state fund for intensive intervention, or more systematic use of Medicaid waivers or other patterns of funding currently in place in some states, should be considered. (page 224)”


**Report of the Maine Administrators of Services for Children with Disabilities:**

While the above reports focused on ABA methods, two earlier state committees (Maine and New York) endeavored to compare all of the potential treatments, both behavioral and nonbehavioral for scientific merit. Both clearly found that only the ABA-based intensive early interventions have sufficient research behind them to be endorsed. Sample statements from the state of Maine report follow:

“Over 30 years of rigorous research and peer review of applied behavior analysis’ effectiveness for individuals with autism demonstrate ABA has been objectively substantiated as effective based upon the scope and quality of science. (page 29)”

“Early interventionists should leverage early autism diagnosis with the proven efficacy of intensive ABA for optimal outcome and long-term cost benefit. (page 29)”

“The importance of early, intensive intervention for children with autism cannot be overstated. (page 6)”

“Furthermore, early, intensive, effective intervention offers the hope of significant cost/benefit. (page 6)”

Clinical Practice Guideline Report of the Recommendations for Autism and Pervasive Developmental Disorders by the New York State Department of Health:

The New York State Department of Health published a three-volume report based upon its extensive analysis of the available treatments. It also found that only ABA-based treatments had sufficient scientific support to merit endorsement. The three volumes include “The Technical Report,” which contains the most complete information, including all the evidence tables from the articles reviewed, a full report of the research process, and the full text of all the recommendations. “The Report of the Recommendations” gives the background information, the full text of all the recommendations and a summary of the supporting evidence. “The Quick Reference Guide” gives a summary of background information and a summary of the major recommendations, and is also written in a less technical manner. Sample statements from the Quick Reference Guide follow:

“Based upon strong scientific evidence, it is recommended that principles of applied behavior analysis and behavior intervention strategies be included as an important element of any intervention program for young children with autism.”

“Based upon the panel consensus opinion, it is recommended that all professional and paraprofessionals who function as therapists in an intensive behavioral intervention program receive regular supervision from a qualified professional with specific expertise in applied behavioral approaches.”

“Based upon strong scientific evidence, it is important to include parents as active participants in the intervention team to the extent of their interests, resources, and abilities.”

“Based upon strong scientific evidence, it is recommended that training of parents in behavioral methods for interacting with their child be extensive and ongoing and include regular consultation with a qualified professional.”


Mental Health: A Report of the U.S. Surgeon General:

The U.S. Surgeon General published an extensive report on mental health in general. In the section on autism, the Surgeon General reported:

“Thirty years of research demonstrated the efficacy of applied behavioral methods in reducing inappropriate behavior and in increasing communication, learning, and appropriate social behavior. (page 164)”

“A well-designed study of a psychosocial intervention was carried out by Lovaas and colleagues. Nineteen children with autism were treated intensively with behavior therapy for 2 years and compared with two control groups. Follow-up of the investigational group in first grade, in late childhood, and in adolescence found that nearly half the investigational group but almost none of the children in the matched control group were able to participate in regular schooling. (page 164)”


Practice Parameters Consensus Panel of the following Professional Organizations and Agencies:

(American Academy of Neurology
American Academy of Family Physicians

Eric V. Larsson, Ph.D.
American Academy of Pediatrics
American Occupational Therapy Association
American Psychological Association
American Speech-Language Hearing Association
Society for Developmental and Behavioral Pediatrics
Autism Society of America
National Alliance for Autism Research
National Institute of Child Health & Human Development
National Institute of Mental Health):

A large number of major professional organizations formed a practice parameters consensus panel on the
diagnosis of autism because:

“The press for early identification comes from evidence gathered over the past 10 years that
intensive early intervention in optimal educational settings results in improved outcomes in most
young children with autism, including speech in 75% or more and significant increases in rates of
developmental progress and intellectual performance.”

While the focus of this report was on diagnosis, the panel made a number of significant statements about
the need for early and intensive treatment. For example:

“However, these kinds of outcomes have been documented only for children who receive 2 years
or more of intensive intervention services during the preschool years. (page 440)”

“Autism must be recognized as a medical disorder, and managed care policy must cease to deny
appropriate medical or other therapeutic care under the rubric of “developmental delay” or
“mental health condition. (page 472)”

“Existing governmental agencies that provide services to individuals with developmental
disabilities must also change their eligibility criteria to include all individuals on the autistic
spectrum, whether or not the relatively narrow criteria for Autistic Disorder are met, who
nonetheless must also receive the same adequate assessments, appropriate diagnoses, and
treatment options as do those with the formal diagnosis of Autistic Disorder. (page 472)”

and Developmental Disorders. 29, 439-484.

Practice Parameters for Autism by the American Academy of Child and Adolescent
Psychiatry:

This committee also clearly depended upon the ABA literature for its major findings, for example:

“At the present time the best available evidence suggests the importance of appropriate and
intensive educational interventions to foster acquisition of basic social, communicative, and
cognitive skills related to ultimate outcome. (page 475)”

“Early and sustained intervention appears to be particularly important, regardless of the
philosophy of the program, so long as a high degree of structure is provided. Such programs have
typically incorporated behavior modification procedures and applied behavior analysis. (page
475)”

“These methods build upon a large body of research on the application of learning principles to
the education of children with autism and related conditions. (page 475)”

“It is clear that behavioral interventions can significantly facilitate acquisition of language, social,
and other skills and that behavioral improvement is helpful in reducing levels of parental stress.
(page 476)”

Eric V. Larsson, Ph.D.
“Considerable time (and money) is required for implementation of such programs, and older and more intellectually handicapped individuals are apparently less likely to respond. (page 515)”


Decision of the Supreme Court of British Columbia:

In an extensive report on the facts of litigation by parents who were seeking health-care funding in British Columbia, the Supreme Court made the following conclusions. In a subsequent ruling, the Court found that it was more appropriate for the executive to set policy than to have it imposed upon them by the courts, but its conclusions on the facts remain:

“What children experience in their early years will shape the rest of their lives. We now know from research in a variety of sectors, that children's early brain development has a profound effect on their ability to learn and on their behaviour, coping skills and health later in life.”

“Research also indicates that intensive early behavioural intervention with children with autism can make a significant difference in their ability to learn and keep pace with their peers. With the intervention many children with autism will make considerable gains by grade one.”

“[1] These words embody the philosophy underlying the Ontario Government’s "Intensive Early Intervention Program For Children With Autism" commenced in 1999, and numerous programmes undertaken in other provinces, the United States and several countries.”

“[156] The Crown discriminates against the petitioners contrary to s. 15(1) by failing to accommodate their disadvantaged position by providing effective treatment for autism. It is beyond debate that the appropriate treatment is ABA or early intensive behavioural intervention.”


Policy Statement of the American Academy Of Pediatrics: The Pediatrician's Role in the Diagnosis and Management of Autistic Spectrum Disorder in Children:

The AAP regularly issues policy statements to guide and define the child health care system. The more recent AAP Clinical Report is cited above, but this one from 2001 is included to help illustrate that the general professional consensus on the evidence for intensive early intervention had begun to turn by this earlier date. This policy statement is accompanied by a lengthy technical report. In both papers, the AAP clearly defines accepted treatments as behavioral interventions, and draws heavily on the ABA literature to support their findings. For example, in the introduction to the treatment section, the AAP makes two central statements, as follows:

“Currently accepted strategies are to improve the overall functional status of the child by enrolling the child in an appropriate and intensive early intervention program that promotes development of communication, social, adaptive, behavioral, and academic skills; decrease maladaptive and repetitive behaviors through use of behavioral and sometimes pharmacologic strategies; (page 1223)”

“Early diagnosis resulting in early, appropriate, and consistent intervention has also been shown to be associated with improved long-term outcomes. (page 1223)”

Then, among many other specific behavioral recommendations, the AAP makes such statements as:

“Behavioral training, including communication development, has been shown to be effective in reducing problem behaviors and improving adaptation. (page 1223)”
In the more detailed technical report, the AAP states:

“There is a growing body of evidence that intensive early intervention services for children in whom autism is diagnosed before 5 years of age may lead to better overall outcomes. (page 8)"

The most heavily emphasized treatment strategy in the technical report is “behavioral management,” about which the AAP states:

“One of the mainstays of the management of ASD in children at any age is the implementation of behavioral training and management protocols at home and at school. Behavioral management must go hand-in-hand with structured teaching of skills to prevent undesirable behavior from developing. Behavioral training, including teaching appropriate communication behaviors, has been shown to be effective in decreasing behavior problems and improving adaptation. (page 10)"


Resulting State Action.

As a result of these independent reviews, many states have already initiated formal funding for this treatment. The states of Maine, Massachusetts, Vermont, Connecticut, New York, Pennsylvania, Maryland, South Carolina, Nebraska, North Carolina, Minnesota, and Wisconsin, as well as the provinces of Ontario, Manitoba, and Alberta, have formal state-wide programs that fund the services, most of which use Medicaid funds. In California, the Regional Centers administer Medicaid funds, and several regions have formal Medicaid funding streams for the program.

Summary.

One of the most thorough and well regarded independent reviews is the report commissioned by the National Research Council (2001). Commenting on the specific question of whether this treatment is investigational, the Council reported: "However, there is substantial research supporting the effectiveness of many specific therapeutic techniques and of comprehensive programs in contrast to less intense, nonspecific interventions.” Independent panels continue to make even stronger conclusions regarding the evidence for the effectiveness of intensive early intervention. The American Academy of Pediatrics stated in 2007: “The effectiveness of ABA-based intervention in ASDs has been well documented through 5 decades of research by using single-subject methodology and in controlled studies of comprehensive early intensive behavioral intervention programs in university and community settings. Children who receive early intensive behavioral treatment have been shown to make substantial, sustained gains in IQ, language, academic performance, and adaptive behavior as well as some measures of social behavior, and their outcomes have been significantly better than those of children in control groups.” It is important to keep in mind that this form of treatment is the only extensively researched and validated form of treatment of autism. Intensive Early Intervention using Behavior Therapy is the only proven, evidence-based treatment for young children who suffer from autism.
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