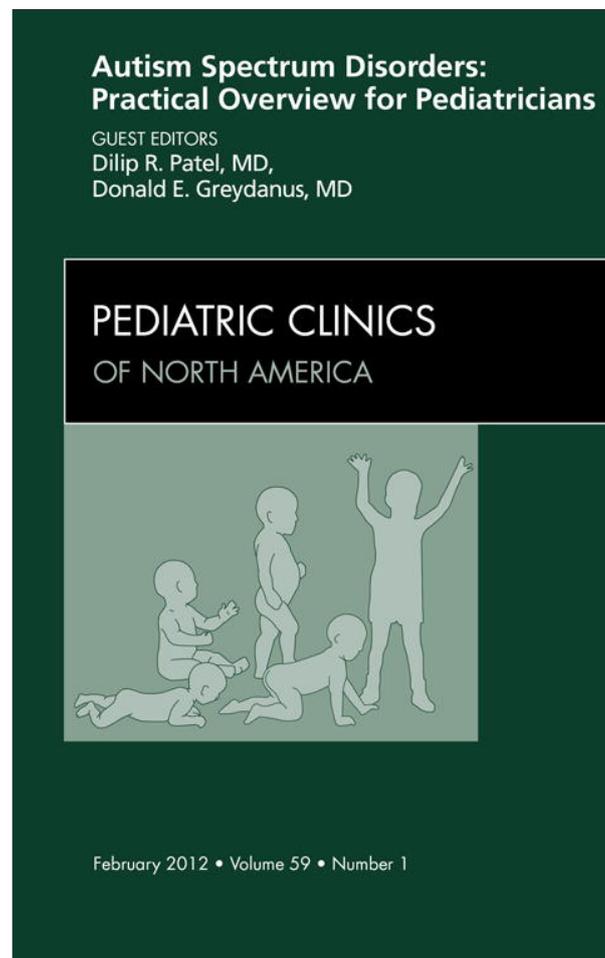


Provided for non-commercial research and education use.
Not for reproduction, distribution or commercial use.



This article appeared in a journal published by Elsevier. The attached copy is furnished to the author for internal non-commercial research and education use, including for instruction at the authors institution and sharing with colleagues.

Other uses, including reproduction and distribution, or selling or licensing copies, or posting to personal, institutional or third party websites are prohibited.

In most cases authors are permitted to post their version of the article (e.g. in Word or Tex form) to their personal website or institutional repository. Authors requiring further information regarding Elsevier's archiving and manuscript policies are encouraged to visit:

<http://www.elsevier.com/copyright>

Behavioral Interventions for Children with Autism Spectrum Disorders

Linda A. LeBlanc, PhD, BCBA-D*, Jennifer M. Gillis, PhD, BCBA-D

KEYWORDS

- Autism • Behavioral intervention • Consultation
- Evidence-based practice • Families

Pediatricians are now equipped with excellent tools and guidelines for screening young children for autism spectrum disorders (ASDs) as part of standard pediatric care (see the article by Patel and Pratt elsewhere in this issue).^{1,2} When those screenings suggest that a referral for a comprehensive evaluation is warranted, clinicians have psychometrically sound tools to assist with diagnosing a growing number of children with ASDs at early ages (see the article by Huerta and Lord elsewhere in this issue).³ Early identification is critically important to ensure that families have the opportunity to reap the many unique benefits that may arise from early intervention efforts. For example, intervention efforts that occur early during a child's development may have the advantage of increased brain plasticity, which may enhance outcomes.⁴ Intervention efforts that are designed to have both sustained and developmental trajectory-altering impacts have the greatest likelihood of eliminating developmental delays when they occur earlier in the developmental course.⁵ In addition, earlier intervention and family supports decrease the likelihood of the development of severe problem behaviors that often arise and negatively affect family functioning.^{6,7}

As the primary care provider, pediatricians are the first and best source of guidance for families who are seeking treatment services after the initial diagnosis of an ASD and as new problems arise throughout childhood and adolescence. Although excellent resources and practice guidelines have been disseminated to facilitate surveillance and screening of ASDs,^{1,8} fewer comprehensive resources exist to guide treatment selection. The currently available treatments for ASDs vary greatly with respect to the degree of dissemination and the degree to which their effectiveness is supported by well-controlled research.⁹ The only psychoeducational treatment that meets the

The authors have nothing to disclose.

Department of Psychology, 226 Thach Hall, Auburn University, Auburn, AL 36849-5214, USA

* Corresponding author.

E-mail address: leblanc@auburn.edu

Pediatr Clin N Am 59 (2012) 147–164

doi:[10.1016/j.pcl.2011.10.006](https://doi.org/10.1016/j.pcl.2011.10.006)

0031-3955/12/\$ – see front matter © 2012 Elsevier Inc. All rights reserved.

pediatric.theclinics.com

criteria as a well-established and efficacious intervention for ASD is behavioral treatment,^{10–12} which is often referred to as applied behavior analysis (ABA). In the National Autism Center guidelines, virtually all of the 11 interventions identified as established treatments are components of applied behavior analysis.¹³ However, families may be unaware of the existence of ABA services, unsure how to find a qualified provider to access the services, or may mistakenly think that there is only 1 version of ABA services (early intensive behavioral intervention [EIBI]) when other forms of behavioral treatment have proved effective for concerns across the lifespan and at lower intensities.^{12,14}

Families are likely to turn to their pediatrician for guidance about what sources are useful and trustworthy and what information should guide their selection of treatments and providers. This article provides information to guide recommendations to families in seeking behavioral treatment. The appendices are useful resources for pediatricians and are appropriate for distribution to families. Information is provided about the different models of behavioral intervention along with a review of the evidence for their effectiveness, including information about dosage effects and predictors of response to intervention, where available. In addition, this article provides information about what families should look for when seeking a provider of behavioral treatment services (ie, qualifications and credentials, indicators of quality programming), and recommendations about the types of collaboration and assistance pediatricians might expect from a behavior analyst who is serving one of their patients.

BEHAVIORAL TREATMENT

There are at least 3 critical features of all behavioral treatments. First, the procedures are derived directly from behavioral theory and research. Second, there is an emphasis on frequent measurement of observable indicators of progress. Third, all aspects of the child's functioning (eg, skills, deficits, problem behavior) are considered products of the interaction between children and influential aspects of their environments. After a careful examination of the interplay between the child and the environment (eg, people, events) reveals important interaction patterns, problematic interactions can be directly targeted using behavioral treatment procedures. Sometimes the interaction pattern is changed by teaching the child important new functional skills (ie, requests) and sometimes the interaction pattern is changed by altering some aspect of the environment (eg, availability of certain interactions, adult responses to problem behaviors). However, substantial differences exist in behavioral treatments related to the scope and goals of the therapy, the venue for delivering the services, and unique client characteristics (eg, age, clinical presentation). For example, a recently diagnosed 2.5-year-old with limited language, social, and cognitive skills may be a prime candidate for intensive instructional services. In contrast, an 8-year-old who attends general educational classes in school but has substantial anxiety and social skills deficits might benefit from behavioral consultation and less intensive outpatient services.

The terms commonly used for these different varieties of behavioral treatment are often foreign to families. For example, Ivar Lovaas coined the phrase discrete trial training (DTT) to refer to the first brand of intensive behavioral intervention for ASD, and that version of behavioral treatment is sometimes referred to as DTT, Lovaas therapy, or UCLA (University of California, Los Angeles) model behavioral treatment. Other terms for this specific application of ABA might be used depending on regional influences and provider preferences. [Appendix 1](#) provides a list of common terms and

definitions that a pediatrician might find useful or that could be directly disseminated to parents as they prepare to seek treatment services.

EIBI

The purpose of EIBI is to increase intellectual (ie, communication, cognitive, academic) skills and adaptive functioning (ie, social skills, self-care skills, safety) to prepare children with ASD to learn from, and succeed in, typical home and school environments with the fewest possible supports.^{15–18} These goals are achieved by creating a precise and sophisticated instructional environment for as many of the child's waking hours as possible, at the youngest age possible, to alter the developmental trajectory in all areas of functioning. Perhaps the most critical repertoires targeted are the learning-to-learn skills (eg, imitation, following instructions, initiating interactions) that allow children to learn from more typical environments in ways that are similar to their peers.^{17,18} Large and sustained improvements in specific skills and in overall functioning increase the likelihood that a child will continue to be able to succeed throughout life with less intensive behavioral supports.¹⁶

EIBI has several characteristic features that are critical to producing successful outcomes regardless of whether the services are provided in the family home or in a center-based clinic program. Families should be encouraged to evaluate their potential service options to determine the extent to which these characteristics are readily evident.¹⁷ First, the intervention model should focus on teaching small units of learning systematically and the targeted skills should be arranged in a carefully constructed behavior analytical curriculum. Children with ASDs do not readily learn complex skills from typical environments; thus, EIBI is designed to establish all of the component skills that evolve into complex skills.¹⁸ Any EIBI program should be using a well-established behavior analytical curriculum to guide programming, and several excellent ones have been published.^{19–22} Some provider agencies develop their own excellent proprietary curricula rather than using one that is commercially available; however, the agency should be willing and prepared to show that curriculum to a family that is considering their services. Second, the teaching procedures should be specified in great detail with respect to precise behavioral instructional procedures (ie, prompting strategies along with powerful rewards for every success). Third, the learning opportunities are repeated many times and in many environments until the child can perform all the skills independently across all natural settings (ie, generalized skills with all people, in all places, and in play contexts). Fourth, data are collected on performance during virtually all learning opportunities to examine progress in each area so that instruction can be modified as quickly as possible to ensure rapid progress. Furthermore, parents should expect a quality behavioral provider to collect data, to show them graphs of performance frequently, and to teach them how to collect data.

In addition to the characteristics of EIBI listed earlier, effective programs always include a substantial component of parent support and training designed to assist families in crafting a home environment that promotes optimal functioning for their child and minimize the likelihood of development of severe problem behavior.¹⁸ Providers teach parents how to play with their children in ways that feel natural, but are likely to promote better social interactions and more meaningful and appropriate play.^{18,23,24} They also learn how to prevent problem behavior or how to change their interactions with the child if problem behavior emerges, and how to teach daily living skills, communication, and social skills using behavioral instructional procedures.^{18,25}

Since the publication of the findings of the American Psychological Association's task force on empirically supported treatments for children and adolescents, the

Chambliss Criteria have been used to evaluate the degree of published empirical support for psychosocial interventions.²⁶ The category with the most stringent criteria and greatest evidence is Well-established and Efficacious, which requires multiple controlled trials of the intervention compared with various reasonable controls. Other categories include Probably Efficacious, Promising, and Not Supported, based on less rigorous evaluations, fewer evaluations, or lack of evidence of demonstrated effectiveness. Based on multiple meta-analyses and systematic reviews, EIBI is the only intervention for ASD that meets the criteria for the category Well-established and Efficacious.^{11,12,27,28}

The initial demonstration of the effectiveness of comprehensive EIBI indicated that about 40 hours per week of intervention at very young ages resulted in 47% of participants achieving best outcome, as opposed to 2% of participants in a treatment-as-usual control group.¹⁵ Best outcome was defined as an intelligence quotient (IQ) in the normal range and a full-inclusion first grade placement with ameliorated symptoms of ASD such that these children were indistinguishable from their peers. Although the common vernacular of recovered or recovery has been used with regard to this outcome, we do not recommend using this term with families because ASD is a lifelong neurobiological disorder rather than a fluctuating disease state.^{29,30} These individuals typically continue to experience some characteristic features of the ASD although their functioning is substantially improved, they are able to participate more fully in society, and they may be indistinguishable from their nonaffected peers. Families that view ASD as a lifelong serious condition tend to have better adjustment outcomes and are more likely to pursue scientifically validated treatments than families who view it as having an unpredictable timeline or course.³¹ Encourage families to view the goal of EIBI as producing the best possible functionality and happiness in life for their children with ASD, exactly as they would hope for any of their children who do not have ASD.

Using this best outcome standard, the effectiveness of EIBI for young children with ASD has been shown in several replications and extensions in the past decade.^{12,32–35} Recent research has identified important parameters of EIBI, including the level of intensity and duration of services, the age for which EIBI is most effective, and the qualifications of the most effective providers. The most positive child outcomes have been documented when EIBI is consistently delivered at a high dosage or intensity (ie, at least 25–40 hours per week and for a duration of 2–3 years).^{18,33–35} However, it is critical that the high volume of services consist of EIBI because, compared with equally intensive traditional or eclectic model special education services, EIBI consistently produces better outcomes.^{33,34,36} In addition, when the intensity of EIBI decreases to approximately 12 to 20 hours per week, children with ASDs show only modest gains in functioning, although these outcomes are better than those achieved with the other types of treatment discussed earlier.^{37,38}

Common to most replication studies is the young age at which children with ASDs receive EIBI: compared with children who entered EIBI programs after the age of 5 years, younger children are more likely to experience greater positive outcomes (eg, public school classroom placement).^{39,40} Older children (ie, 7 years old) do respond positively to intensive behavioral interventions, although to a limited degree compared with younger children.^{32,41} Smith and colleagues⁴² reported that EIBI was not effective with 3 girls initially diagnosed with autism and later identified as having Rett disorder, even though the services were provided at a young age and intensively. Rett disorder is slated to be removed from the category that will be referred to as ASD in the new diagnostic classification system, and these girls should not be considered exceptional candidates for EIBI as children with ASD are. Based on

the available literature, children should begin EIBI programs before the age of 5 years,¹² preferably before the age of 3 years⁴³; however, this will only occur if ASD screening occurs at recommended well-child visits.¹

In addition to starting an EIBI program at the youngest possible age, it is also important to have the services provided and supervised by quality behavior analytical professionals.^{12,18,44} In replication studies on the effects of EIBI, the training model and credentials of the supervisors was one of the few variables that predicted differential outcomes (ie, supervisors with higher credentials and certification produced better outcomes).^{12,27} One UK study found significantly poorer outcomes for children served in home-based EIBI programs coordinated by their parents and supervised intermittently by providers with varying degrees of training, compared with the published studies in which programming was coordinated and supervised by certified providers.⁴⁴

The international credentialing body for certifying behavior analysts is the Behavior Analyst Certification Board, which was established at the international level in 1998 and evolved from a previously established credentialing program in Florida.⁴⁵ The Behavior Analyst Certification Board (BACB) is accredited by the National Council for Certifying Agencies and is endorsed by the national and international professional organizations of behavior analysis in the United States and Europe.⁴⁵ This certification requires a passing score on an international content examination, documentation of supervised practical training, required coursework in behavior analysis, and ongoing continuing education in behavior analysis.^{45,46}

The BACB certifies 3 levels of providers and maintains an online directory of all currently certified behavior analysts by state and country.⁴⁵ The highest level of credential, the Board Certified Behavior Analyst-Doctoral (BCBA-D) requires a doctorate degree. The most common credential for direct providers and EIBI program supervisors is the Board Certified Behavior Analyst (BCBA) credential, which requires a minimum of a Master's degree. The Board Certified Assistant Behavior Analyst (BCaBA) is the credential for individuals with a Bachelor's degree and this credential requires ongoing supervision by a BCBA or BCBA-D during practice. Certification is considered the practice credential for individuals practicing behavior analysis, similar to the medical license for a physician. In addition to certification, some qualified providers have credentials pertinent to their degree specialization (eg, licensed psychologist, licensed social worker, certified teacher, certified speech-language pathologist) or for specific models of EIBI intervention programming (eg, UCLA model certification) in addition to the broader discipline of behavior analysis. Families seeking EIBI services should seek a provider with the BCBA practice credential because this is the basic standard for behavior analysis. Families are also encouraged to check the BACB Web site (www.bacb.com), which provides information for consumers about the guidelines for professional conduct for the field and about any prior or outstanding complaints and sanctions against credentialed providers.⁴⁶ In addition, most states or regions have an organization or association for behavior analysis that may be a good source of information about potential providers and statewide intervention resources.

As a family seeks EIBI services, they need to identify a qualified provider and determine how to manage the finances associated with pursuing this intervention. The costs of EIBI can be substantial over the course of 2 to 3 years of treatment, although the savings accrued by avoiding 16 to 18 years of special education costs and adult support services costs are substantial.^{47,48} In spite of the potential savings to government agencies, not all states have legislated funding mechanisms to cover these costs. In some states and Canadian provinces,^{49,50} the costs of EIBI services are

covered by governmental entities or are mandated as part of health insurance coverage up to a certain dollar amount. In other states, no such legislation and funding streams exist and families may encounter tens of thousands of dollars of out-of-pocket expenses per year. The advocacy organization, Autism Speaks, maintains an up-to-date accounting of the states that have mandated insurance coverage, which increased from 1 state to more than 25 states in just 5 years (see www.autismspeaks.org for current information).

In summary, EIBI is the treatment of choice for young children identified with ASDs. This form of behavioral treatment involves a highly structured curriculum and precise teaching methodologies to target skills that allow children to learn more effectively from typical environments. Multiple studies show the robust effects of EIBI for children with ASDs, particularly when services are provided at young ages, at a substantial level of intensity, and by highly qualified providers. Meta-analyses of these findings have confirmed that approximately 30% to 50% of children who receive EIBI achieve outcomes such as improved global functioning (eg, cognitive or intellectual functioning, adaptive behaviors, language) along with placement in regular education classrooms. The remaining children typically experience moderate to substantial increases in functioning compared with before treatment, but may not achieve typical intellectual functioning and full integration in subsequent schooling.^{27,28} Appendix 2 includes common questions of parents about behavioral treatment services and answers that could be directly distributed to families. Appendix 2 also includes a list of recommended books and Web site resources that could be distributed directly to families.

PROBLEM-FOCUSED OUTPATIENT AND CONSULTATIVE SERVICES

Similar to EIBI, behavioral outpatient or consultation services typically focus on decreasing problematic behaviors or developing specific skill sets or behavioral repertoires; however, the purpose and model of implementation differ from EIBI. Outpatient and consultative behavioral treatment services are typically short-term, focused interventions requiring less intensive contact with the provider (ie, 1–2 hours per week). The typical course of services involves targeted assessment of a few specific problems followed by development of a specific intervention plan. Subsequent implementation occurs either directly by the outpatient therapist or by the family or school personnel who have been trained by the therapist to provide the intervention.^{51,52} This model is appropriate for children or adolescents with milder forms of ASD such as Asperger disorder with no concomitant intellectual impairment, for children who have completed EIBI and are experiencing new clinical issues throughout their development, or when EIBI services or funding are unavailable.

Characteristics of behavioral consultation and therapy significantly overlap with those of EIBI, because the same theoretic approach is used for both forms of behavioral treatment. There are several critical features of successful behavioral consultation and outpatient therapy. First, the provider should be a qualified behavior analyst, psychologist, or member of another discipline (eg, speech-language pathologist, special educator, social worker) with appropriate training and expertise in the areas of behavioral treatment and ASD.⁵³ Second, the services should begin with well-validated behavioral assessment procedures (eg, functional analysis, preference assessment, skills assessments) that involve direct observation.⁵⁴ Third, the targets should be limited to 2 or 3 at any given time because of the limited hours of service, and interventions should focus on altering aspects of the environment that may maintain the problems and teaching functional skills using reinforcement-based

procedures. Fourth, there should be an emphasis on the importance of consistent and frequent implementation across all people and settings that are likely to affect the child or adolescent (eg, teachers, parents). Fifth, as in EIBI, regularly scheduled data collection should occur to facilitate clinical decision making regarding progress and intervention revision.

Behavioral consultation and outpatient therapy services are usually provided in the community (eg, private practice office, school) and often involve the development of a behavioral intervention plan for both home and school settings. Often the consultant or outpatient provider serve, as a member of a multidisciplinary team that establishes and implements the child's individualized education plan (IEP).⁵³ Some of the most common targeted skills for acquisition in this model include social skills, emotion regulation skills, and self-management skills.^{55–57} Common problematic behaviors referred for treatment include self-injury, noncompliance, tantrums and disruptive behavior,⁵⁴ and regulatory issues (eg, sleeping, feeding, and toileting issues),^{52,58,59} particularly for young children on the autism spectrum. Before and during adolescence, individuals with an ASD become increasingly affected by social difficulties including teasing and bullying, and present with an unusually high rate of comorbid mental health concerns such as anxiety⁶⁰ and depression.⁶¹

The same level of experimental rigor evident in the literature on EIBI has yet to be applied to the myriad of behavioral treatments listed in the appendices for children and adolescents with ASDs. However, several behavioral treatments listed do meet the criteria for established treatments according to the National Autism Center's National Standards Report.¹³ Research efforts to show the efficacy and effectiveness of behavioral treatments continues and most behavioral treatments show positive outcomes for children and adolescents with ASDs.^{13,62} The literature is too expansive for a comprehensive review of all areas in the current article, but the evidence for 2 clinical concerns is reviewed later to illustrate the general structure and components of behavioral interventions for concerns with older children and adolescents (eg, anxiety) and with younger children through adolescence (eg, sleep problems).

Mental health problems such as anxiety and depression are typically addressed using manualized cognitive behavior therapy (CBT) interventions delivered in an individual or group context or individual exposure therapy to address specific fears. Several case studies and small sample group designs have evaluated the effectiveness of CBT interventions for children and adolescents with ASD and comorbid anxiety disorders, with most of these studies documenting significant reduction of anxiety symptoms per parent report.^{63,64} These behavioral interventions can be delivered in individual or group therapy formats with positive outcomes.^{65,66} Usually these interventions are offered in outpatient settings and are delivered on a weekly basis for approximately 11 to 16 weeks and include substantial components of social skills training, self-management skills training, and interventions to target emotion regulation (eg, Multimodal Anxiety and Social Skills Intervention [MASSI]).^{62,63,65} Families and teachers are often involved to foster generalization of the treatment effects across settings. Moreover, it is generally recommended to incorporate specific interventions shown to be effective for individuals with ASDs, such as those grounded in ABA, in combination with the available evidence-based interventions shown to be effective for the comorbid disorder in child or adolescent populations.^{62,65–68} A similar approach would likely be used for depression, with or without medication, using modified manualized treatments developed for children or adolescents,^{69,70} although no clinical outcome studies have been conducted with individuals with ASD.

Behavioral treatment is likely to take a different form for targeted concerns that are common in early childhood and can persist into adolescence (eg, toileting, sleep,

feeding, problem behavior). With each of these concerns, there are multiple behavioral treatments with evidence to support their effectiveness and therapists use assessment procedures to determine which of those interventions are appropriate for the individual case. For example, children who exhibit tantrums, aggression, and self-injury need a functional assessment to indicate what environmental events are exacerbating the problem behavior.⁵⁴ That information is used to design the specific changes that are needed for the environment to decrease problem behavior and usually to increase some functional communication skill at the same time.⁷¹

Behavioral treatment of sleep difficulties provides an example of this process with a clinical problem that is prevalent in individuals with ASD and is often resistant to pharmacologic interventions. Children and adolescents with ASDs often experience sleep difficulties, with estimates of disordered sleep in 40% to 80% of the population with ASD.⁷²⁻⁷⁵ Common concerns include long latencies to sleep onset accompanied by bedtime resistance (ie, tantrums, refusal to stay in the bed) and poor sleep maintenance, which can be accompanied by safety issues caused by the lack of monitoring during the night.⁷² After a pediatrician has ruled out underlying medical conditions, a behavioral treatment provider typically assesses the pattern of sleep and wakefulness, any related problem behaviors, and the environmental events that could be changed to establish healthy sleep patterns, which often results in improvements in other daytime behaviors (eg, social skills, academic skills, mood, and emotionality) as overall sleep increases.⁷⁶

In the past decade, there has been more than a twofold increase in the number of behavioral sleep interventions for children with ASDs.⁷⁷ These behavioral interventions all include a component to promote a regular sleep/wake cycle by improving sleep hygiene. A recent review of the literature indicates that this is an effective intervention for children with ASDs.⁷² Sleep hygiene interventions usually include establishing a set bedtime with a positive bedtime routine that reduces environmental stimulation in the evening during the 20 minutes before the desired sleep time and altering various factors that can lead to wakefulness (eg, room temperature, diet and caffeine intake, sounds).⁷⁸⁻⁸⁰ Sleep hygiene is often supplemented with other behavioral interventions that have shown positive outcomes if it does not produce sufficient improvement as a solitary intervention.⁸⁰ Although no single or multicomponent behavioral intervention has met the criteria to be considered well established, 2 are considered possibly efficacious: (1) scheduled awakening for decreasing night terrors, and (2) extinction (ie, no longer responding as the parent used to respond) for decreasing night waking.⁷⁸

Families find the process of accessing outpatient and consultation services similar to the process for any other outpatient psychological services. That is, qualified providers hold the appropriate license or certification for their profession (eg, licensed psychologist, licensed social worker). In addition to requesting recommendations from the pediatrician, families should be encouraged to check with national and state professional organizations to obtain more information about behavioral treatment providers in their state who have expertise in ASD.⁵³ For example, the Association for Behavioral and Cognitive Therapies (www.abct.org) maintains a list of CBT therapists by geographic location and areas of specialization. Each profession's national organization provides public information about professional codes of conduct and ethical guidelines (eg, American Psychological Association, www.apa.org). The state board for the various service providers (eg, Psychology Licensure Board) maintains information about the current status of an individual provider's credentials, any ethical violations, and, at times, the area(s) of the provider's expertise. Funding for outpatient and consultation services is typically covered to some extent as part of a family's

mental health benefits in their health insurance plan and may also be funded by state agencies (eg, Medicaid, public school system) if the child qualifies under the pertinent guidelines.

COLLABORATION AND COORDINATION WITH BEHAVIORAL TREATMENT PROVIDERS

Child with ASD and their families are likely to benefit most when the pediatrician and behavioral treatment provider are able to communicate regularly and collaborate in ongoing interdisciplinary care.^{81,82} Behavioral treatment providers are often well situated to provide some potentially useful information for pediatricians as they provide ongoing pediatric medical care. Myers and Johnson⁸³ identify common areas that often require medical management (eg, tissue damage from self-injury, severe aggression, feeding problems, and failure to thrive) and often result in costs of care that are 4 times higher for children with ASD than other children.⁸⁴ A behavioral treatment provider often sees the child and family more frequently than a pediatrician and is usually already collecting data or asking the family to collect data that could be useful in evaluating medical interventions. The behavioral treatment provider may be able to track important indicators such as hours of sleep per night, daily rate of problem behavior, or total daily food consumption to inform the standard course of medical treatment.⁸⁵ In addition, the behavioral treatment provider may also be able to investigate whether presenting medical concerns are particularly susceptible to environmental influences with accompanying intervention recommendations. For example, Arvans and LeBlanc⁸⁶ describe an adolescent with ASD who presented with frequent and increasing complaints of severe migraines, particularly on school days. A functional assessment of school refusal and careful tracking of migraine complaints revealed that the adolescent frequently stayed home or returned home from school based on his complaints, with sudden remission of pain on departure from school. They were able to design a token economy-based incentive system for attending school for progressively longer periods each day and virtually eliminated migraine complaints.

Research suggests that behavioral treatment may be warranted either in place of or in conjunction with medical treatment of certain problems such as sleep disturbances and aggressive behavior, particularly when the adverse side effects of psychopharmacologic interventions are prohibitive (ie, agitation, weight gain).^{87–89} Behavioral interventions may also be used to address the side effects from medication (eg, an exercise program to address weight gain). As Myers and Johnson⁸³ point out, aggressive behavior that immediately increases in frequency or severity may be related to an underlying medication condition (eg, otitis media); however, if no underlying medical condition is identified or aggression continues after the medical condition is treated, consultation and referral for behavioral treatment might be warranted. In addition, behavioral treatment may prove useful in pediatric care settings if extreme behavior or noncompliance with medical procedures is interfering with the pediatrician's ability to provide care. For example, several studies with children with various disabilities and medical conditions show that behavioral treatments can be used to increase compliance with electroencephalographic procedures,⁹⁰ invasive medical procedures such as venipuncture,⁹¹ and neuroimaging procedures.⁹²

SUMMARY

Behavioral treatment in the form of EIBI is currently the only well-established treatment of young children with ASD.^{11,12,27,28} In addition to EIBI for young children, many other behavioral interventions are available in outpatient treatment and consultation

services that are effective for targeted concerns of children and adolescents with ASD.^{52,57,65,66,71,77,78,80,85,86,93,94} This article provides an overview of models of behavioral treatment and appendices that will prove useful to pediatricians in guiding families as they seek providers and participate in behavioral treatment services. We offer 4 specific recommendations for pediatricians as they interface with their patients about behavioral treatments. First, encourage families to pursue evidence-based practices such as those described in this article rather than treatments that have not been shown to produce powerful and replicable gains for children with ASD. Second, guide families to seek highly qualified providers of services using the information sources outlined in this article,^{45,46} because the skills and qualifications of the provider make an important difference in treatment outcomes.^{27,44,53} Third, help families to maintain optimistic but realistic expectations for outcomes for their children (ie, important skill improvements rather than recovery) and to have appropriate expectations about their role in achieving those outcomes (ie, importance of parent training, long-term planning, and consistent responding). Fourth, be creative about collaborations with your patients' behavioral treatment providers and ask them to assist with tasks such as evaluating the effects of medication trials, increasing compliance with necessary medical procedures, or determining whether seemingly medical issues might have mitigating environmental determinants, among others.

REFERENCES

1. Johnson CP, Myers SM. Identification and evaluation of children with autism spectrum disorders. *Pediatrics* 2007;120:1183–215.
2. Gura GF, Champagne MT, Blood-Siegfried JE. Autism spectrum disorder screening in primary care. *J Dev Behav Pediatr* 2011;32:48–51.
3. Luyster R, Gotham K, Guthrie W, et al. The autism diagnostic observation schedule – toddler module: a new module of a standardized diagnostic measure for autism spectrum disorders. *J Autism Dev Disord* 2009;39:1305–20.
4. Dawson G. Early behavioral intervention, brain plasticity, and the prevention of autism spectrum disorder. *Dev Psychopathol* 2008;20:775–803.
5. Guralnick MJ. Effectiveness of early intervention for vulnerable children: a developmental perspective. *Am J Ment Retard* 1997;102:319–45.
6. Hastings RP, Kovshoff H, Ward NJ, et al. Systems analysis of stress and positive perceptions in mothers and fathers of pre-school children with autism. *J Autism Dev Disord* 2005;35:635–44.
7. Davis NO, Carter AS. Parenting stress in mothers and fathers of toddlers with autism spectrum disorders: associations with child characteristics. *J Autism Dev Disord* 2008;38:1278–91.
8. Filipek PA, Accardo PJ, Ashwal S, et al. Practice parameter: screening and diagnosis of autism: report on the Quality Standards Subcommittee of the American Academy of Neurology and the Child Neurology Society. *Neurology* 2000;55:468–79.
9. Reichow B, Doehring P, Cicchetti DV, et al. Evidence-based practices and treatments for children with autism. New York: Springer; 2011.
10. US Department of Health and Human Services. Mental health: a report of the surgeon general. Rockville (MD): US Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, National Institutes of Health, National Institute of Mental Health; 1999.

11. Eldevik S, Hastings RP, Hughes JC, et al. Meta-analysis of early intensive behavioral intervention for children with autism. *J Clin Child Adolesc Psychol* 2009;38: 439–50.
12. Rogers SJ, Vismara LA. Evidence-based comprehensive treatments for early autism. *J Clin Child Adolesc Psychol* 2008;37:8–38.
13. National Autism Center. National Standards Report: The National Standards Project: addressing the need for evidence-based practice guidelines for autism spectrum disorders. National Autism Center website. November, 2009. Available at: <http://www.nationalautismcenter.org/pdf/NAC%20Standards%20Report.pdf>. Accessed July 11, 2011.
14. Vismara LA, Rogers SJ. Behavioral treatments in autism spectrum disorders: what do we know? *Rev Clin Psychol* 2010;6:447–68.
15. Lovaas OI. Behavioral treatment and normal educational and intellectual functioning in young autistic children. *J Consult Clin Psychol* 1987;55:3–9.
16. McEachin JJ, Smith T, Lovaas OI. Long-term outcome for children with autism who received early intensive behavioral treatment. *Am J Ment Retard* 1993;97: 359–72.
17. Green G. Early behavioral intervention for autism: what does the research tell us? In: Maurice C, Green G, Luce S, editors. *Behavioral interventions for young children with autism: a manual for parents and professionals*. Austin (TX): Pro-Ed; 1996. p. 29–44.
18. Lovaas OI, Smith T. Early and intensive behavioral intervention in autism. In: Kazdin AE, Weisz JR, editors. *Evidence-based psychotherapies for children and adolescents*. New York: Guilford Press; 2003. p. 325–40.
19. Lovaas OI. *Teaching individuals with developmental delays: basic intervention techniques*. Austin (TX): Pro-Ed; 2003.
20. Leaf R, McEachin J. *A work in progress: behavior management strategies and a curriculum for intensive behavioral treatment of autism*. New York: DRL Books; 1999.
21. Romanczyk RG, Lockshin S, Matey L. *Individualized goal selection curriculum*. 9th edition. Apalachin (NY): CBTA; 1996.
22. Koegel RL, Koegel LK. *Pivotal response treatments for autism: communication, social, and academic development*. Baltimore (MD): Paul H Brookes; 2006.
23. Koegel RL, O'Dell MC, Koegel LK. A natural language teaching paradigm for nonverbal autistic children. *J Autism Dev Disord* 1987;17:187–200.
24. Gillett JN, LeBlanc LA. Parent implemented natural language paradigm to increase language and play in children with autism. *Res Autism Spectr Disord* 2007;3:247–55.
25. Symon JBG, Boettcher MA. Family support and participation. In: Luiselli JK, Russo DC, Christian WP, et al, editors. *Effective practices for children with autism: educational and behavioral support interventions that work*. New York: Oxford University Press; 2008. p. 455–90.
26. Chambliss DL, Hollon SD. Defining empirically supported therapies. *J Consult Clin Psychol* 1998;66:7–18.
27. Reichow BR, Woolery M. Comprehensive synthesis of early intensive behavioral interventions for young children with autism based on the UCLA Young Autism Project model. *J Autism Dev Disord* 2009;39:23–41.
28. Eikeseth S. Outcome of comprehensive psycho-educational interventions for young children with autism. *Res Dev Disabil* 2009;30:158–78.
29. Minshew NJ, Sweeney JA, Bauman ML, et al. Neurologic aspects of autism. In: Volkmar FR, Paul R, Klin A, et al, editors. *Handbook of autism and pervasive*

- developmental disorders: volume one diagnosis, development, neurobiology and behavior. Hoboken (NJ): John Wiley; 2005. p. 473–514.
30. Seltzer MM, Shattuck P, Abbeduto L, et al. Trajectory of development in adolescents and adults with autism. *Ment Retard Dev Disabil Res Rev* 2004;10: 234–47.
 31. Al Anbar NN, Dardennes RM, Prado-Netto A, et al. Treatment choice in autism spectrum disorder: the role of parental illness perceptions. *Res Dev Disabil* 2010;31:817–28.
 32. Eikeseth S, Smith T, Jahr E, et al. Intensive behavioral treatment at school for 4- to 7-year-old children with autism: a 1-year comparison controlled study. *Behav Modif* 2002;26:49–68.
 33. Howard JS, Sparkman CR, Cohen HG, et al. Comparison of intensive behavior analytic and eclectic treatments for young children with autism. *Res Dev Disabil* 2005;26:359–83.
 34. Smith T, Groen AD, Wynn JW. Randomized trial of intensive early intervention for children with pervasive developmental disorder. *Am J Ment Retard* 2000;105: 269–85.
 35. Sallows GO, Graupner TD. Intensive behavioral treatment for children with autism: four year outcome and predictors. *Am J Ment Retard* 2005;110: 417–38.
 36. Cohen H, Amerine-Dickens M, Smith T. Early intensive behavioral treatment: replication of the UCLA model in a community setting. *J Dev Behav Pediatr* 2006;27: S145–55.
 37. Reed P, Osborne LA, Corness M. Relative effectiveness of different home-based behavioral approaches to early teaching intervention. *J Autism Dev Disord* 2007; 37:1815–21.
 38. Eldevik S, Eikeseth S, Jahr E, et al. Effects of low-intensity behavioral treatment for children with autism and mental retardation. *J Autism Dev Disord* 2006;36: 211–24.
 39. Fenske EC, Zalenski S, Krantz PJ, et al. Age at intervention and treatment outcome for autistic children in a comprehensive intervention program. *Anal Interv Dev Disabil* 1985;3:49–58.
 40. Harris SL, Handleman JS. Age and IQ at intake as predictors of placement for young children with autism: a four- to six-year follow-up. *J Autism Dev Disord* 2000;30:137–42.
 41. Granpeesah D, Dixon DR, Tarbox J, et al. The effects of age and treatment intensity on behavioral intervention outcomes for children with autism spectrum disorders. *Res Autism Spectr Disord* 2009;3:1014–22.
 42. Smith T, Klevstrand M, Lovaas OI. Behavioral treatment of Rett's disorder: ineffectiveness in three cases. *Am J Ment Retard* 1995;100:317–22.
 43. Howlin P, Magiati I, Charman T, et al. Systematic review of early intensive behavioral interventions for children with autism. *Am J Intellect Dev Disabil* 2009;114: 23–41.
 44. Bibby P, Eikeseth S, Martin NT, et al. Progress and outcomes for children with autism receiving parent-managed intensive interventions. *Res Dev Disabil* 2002;22:425–47.
 45. Shook GL, Johnston JM. Training and professional certification in applied behavior analysis. In: Fisher WW, Piazza CC, Roane HS, editors. *Handbook of applied behavior analysis*. New York: Guilford Press; 2011. p. 498–510.
 46. Shook GL, Favell JE. The Behavior Analyst Certification Board and the profession of behavior analysis. *Behav Anal Pract* 2008;1:44–8.

47. Chasson GS, Harris GE, Neely WJ. Cost comparison of early intensive behavioral intervention and special education for children with autism. *J Child Fam Stud* 2007;16:401–13.
48. Jacobson JW, Mulick JA, Green G. Cost-benefit estimates for early intensive behavioral intervention for young children with autism—general model and single state case. *Behav Interv* 1998;13:201–26.
49. Perry A, Cummings A, Geier JD, et al. Predictors of outcome for children receiving intensive behavioral intervention in a large, community-based program. *Res Autism Spectr Disord* 2011;5:592–603.
50. Perry A, Cummings A, Geier JD, et al. Effectiveness of intensive behavioral intervention in a large, community-based program. *Res Autism Spectr Disord* 2008;2: 621–42.
51. Stewart KK, Carr JE, LeBlanc LA. Evaluation of family-implemented behavioral skills training for teaching social skills to a child with Asperger's disorder. *Clin Case Stud* 2007;6:252–62.
52. LeBlanc LA, Carr JE, Crossett SE, et al. Intensive outpatient behavioral treatment of primary urinary incontinence of children with autism. *Focus Autism Other Dev Disabl* 2005;20:98–105.
53. Gillis JM, Beights R. New and familiar roles for clinical psychologists in the effective treatment for children for children with autism spectrum disorder. *Cogn Behav Pract* 2011. DOI: 10.1016/j.cbpra.2011.02.007.
54. Love JR, Carr JE, LeBlanc LA. Functional assessment of problem behavior in children with autism spectrum disorders: a summary of 32 outpatient cases. *J Autism Dev Disord* 2009;39:363–72.
55. White SW, Keonig K, Schaihl L. Social skills development in children with autism spectrum disorders: a review of the intervention research. *J Autism Dev Disord* 2007;37:1858–68.
56. Loveland KA. Social-emotional impairment and self-regulation in autism spectrum disorders. In: Nadel J, Muir D, editors. *Emotional development*. New York: Oxford University Press; 2005. p. 365–82.
57. Sofronoff K, Attwood T, Hinton S, et al. A randomized controlled trial of a cognitive behavioural intervention for anger management in children diagnosed with Asperger syndrome. *J Autism Dev Disord* 2007;37:1203–14.
58. Southall CM, Gast DL. Self-management procedures: a comparison across the autism spectrum. *Educ Train Autism Disabil* 2011;46:155–61.
59. Polimeni MA, Richdale AL, Francis AJ. A survey of sleep problems in autism, Asperger's disorder and typically developing children. *J Intellect Disabil Res* 2005;49:260–8.
60. Martins Y, Young RL, Robson DC. Feeding and eating behaviors in children with autism and typically developing children. *J Autism Dev Disord* 2008;38:1878–87.
61. Leyfer OT, Folstein SE, Bacalman S, et al. Comorbid psychiatric disorders in children with autism: interview development and rates of disorders. *J Autism Dev Disord* 2006;36:849–61.
62. White SW, Albano AM, Johnson CR, et al. Development of a cognitive-behavioral intervention program to treat anxiety and social deficits in teens with high-functioning autism. *Clin Child Fam Psychol Rev* 2010;13:77–90.
63. White SW, Ollendick T, Scahill L, et al. Preliminary efficacy of a cognitive-behavioral treatment program for anxious youth with autism spectrum disorders. *J Autism Dev Disord* 2009;39:1652–62.
64. Wood JJ, Fujii C, Renno P. Cognitive behavioral therapy in high-functioning autism: review and recommendations for treatment development. In: Reichow B,

- Doehring P, Cicchetti DV, et al, editors. Evidence-based practices and treatments for children with autism. New York: Springer; 2011. p. 197–230.
65. Wood JJ, Drahota A, Sze K, et al. Cognitive behavioral therapy for anxiety in children with autism spectrum disorders: a randomized, controlled trial. *J Child Psychol Psychiatry* 2009;50:224–34.
 66. Jennett H, Hagopian LP. Identifying empirically supported treatments for phobic avoidance in individuals with intellectual disabilities. *Behav Ther* 2008; 39:151–61.
 67. Sze KM, Wood JJ. Cognitive behavioral treatment of comorbid anxiety disorders and social difficulties in children with high-functioning autism: a case report. *J Contemp Psychother* 2009;37:133–43.
 68. El-Ghoroury NH, Krackow E. A developmental-behavioral approach to outpatient therapy with children with autism spectrum disorders. *J Contemp Psychother* 2011;41:11–7.
 69. Lusk P, Melnyk BM. The brief cognitive-behavioral COPE intervention for depressed adolescents: outcomes and feasibility of delivery in 30-minute outpatient visits. *J Am Psychiatr Nurses Assoc* 2011;17:226–36.
 70. Treatment for Adolescents With Depression Study (TADS) Team. The Treatment for Adolescents with Depression Study (TADS): outcomes over 1 year of naturalistic follow-up. *Am J Psychiatry* 2009;166:1141–9.
 71. Durand VM, Merges E. Functional communication training to treat challenging behavior. In: O'Donohue WO, Fisher J, editors. *Cognitive behavior therapy: applying empirically supported techniques in your practice*. 2nd edition. Hoboken (NJ): John Wiley; 2008. p. 222–9.
 72. Cortesi F, Giannotti F, Ivanenko A, et al. Sleep in children with autistic spectrum disorder. *Sleep Med* 2010;11:659–64.
 73. Malow BA, Marzec ML, McGrew SG, et al. Characterizing sleep in children with autism spectrum disorders: a multidimensional approach. *Sleep* 2006;29:1563–71.
 74. Richdale AL. Sleep problems in autism: prevalence, cause and intervention. *Dev Med Child Neurol* 1999;41:60–6.
 75. Ming X, Brimacombe M, Chaaban J, et al. Autism spectrum disorders: concurrent clinical disorders. *J Child Neurol* 2008;23:6–13.
 76. Schreck KA, Mulick JA, Smith A. Sleep problems as possible predictors of intensified symptoms of autism. *Res Dev Disabil* 2004;24:57–66.
 77. Vriend JL, Corkum PV, Moon EC, et al. Behavioral interventions for sleep problems in children with autism spectrum disorders: current findings and future directions. *J Pediatr Psychol* 2011;36(9):1017–29. DOI: 10.1093/jpepsy/jsr044.
 78. Richdale A, Wiggs L. Behavioral approaches to the treatment of sleep problems in children with developmental disorders. What is the state of the art? *Int J Behav Consult Ther* 2005;1:165–89.
 79. Wiggs L, Stores G. Sleep patterns and sleep disorders in children with autistic spectrum disorders: insights using parent report and actigraphy. *Dev Med Child Neurol* 2004;46:372–80.
 80. Durand VM. *Sleep better: a guide to improving sleep for children with special needs*. Baltimore (MD): Paul H Brookes; 1998.
 81. Carbone PS, Behl DD, Murphy NA. The medical home for children with autism spectrum disorders: parent and pediatrician perspectives. *J Autism Dev Disord* 2010;40:317–24.
 82. Vargas CM, Prelock PA. *Caring for children with neurodevelopmental disabilities and their families: an innovative approach to interdisciplinary practice*. Mahwah (NJ): Lawrence Erlbaum Associates; 2004.

83. Myers SM, Johnson CP. Management of children with autism spectrum disorders. *Pediatrics* 2007;120:1162–82.
84. Flanders SC, Engelhart L, Pandina GJ, et al. Direct health care costs for children with pervasive developmental disorders: 1996-2002. *Adm Policy Ment Health Ment Health Serv Res* 2007;34:213–20.
85. Tang B, Piazza C, Dolezal D, et al. Severe feeding disorder and malnutrition in 2 children with autism. *J Dev Behav Pediatr* 2011;32:264–7.
86. Arvans RK, LeBlanc LA. Functional assessment and treatment of migraine reports and school absences in an adolescent with Asperger's disorder. *Educ Treat Children* 2009;32:151–66.
87. Matson JL, Hess JA. Psychotropic drug efficacy and side effects for persons with autism spectrum disorders. *Res Autism Spectr Disord* 2011;5:230–6.
88. Hoekstra PJ, Troost PW, Lahuis BE, et al. Risperidone-induced weight gain in referred children with autism spectrum disorders is associated with a common polymorphism in the 5-hydroxytryptamine 2C receptor gene. *J Child Adolesc Psychopharmacol* 2010;20:473–7.
89. Nickels KC, Katusic SK, Colligan RC. Stimulant medication treatment of target behavior in children with autism: a population-based study. *J Dev Behav Pediatr* 2008;29:75–81.
90. Slifer KJ, Avis KT, Frutchey RA. Behavioral intervention to increase compliance with electroencephalographic procedures in children with developmental disabilities. *Epilepsy Behav* 2008;13:189–95.
91. Slifer KJ, Babbitt RL, Cataldo MD. Simulation and counterconditioning as adjuncts to pharmacotherapy for invasive pediatric procedures. *J Dev Behav Pediatr* 1995;16:133–41.
92. Slifer K, Cataldo M, Cataldo M, et al. Behavior analysis of motion control for pediatric neuroimaging. *J Appl Behav Anal* 1993;26:469–70.
93. Green G. Early intensive behavior analytic intervention for autism spectrum disorders. In: Mayville EA, Mulick JA, editors. *Behavioral foundations of autism treatment*. Cornwall-on-Hudson (NY): Sloan Publishing; 2011. p. 183–200.
94. Laud RB, Girolami PA, Boscoe JH, et al. Treatment outcomes for severe feeding problems in children with autism spectrum disorders. *Behav Modif* 2009;33:520–36.

APPENDIX 1: COMMON TERMS USED IN BEHAVIORAL TREATMENT OF ASDs

Term	Definition
ABA	The application of the principles and procedures from the science of behavior analysis (learning) to socially significant behavior
BCBA	The standard practice credential for direct providers of EIBI and ABA
CBT and behavior therapy	Short-term outpatient therapies designed to teach specific skills or change specific behaviors to lead to improvements in many areas, such as sleep, anxiety, depression, feeding, toilet training, and social skills
DTT	A highly structured teaching strategy commonly used in EIBI. DTT is implemented in a 1-to-1 setting and often is used to teach specific behaviors or skills necessary for learning more complex ones
EIBI	A behavioral treatment based on the principles of ABA that is delivered early (before age 5 years) and intensively (25–40 hours per week) usually over a span of 2–3 years. Currently, EIBI is the only current well-established treatment that produces positive outcomes for children with ASDs
Functional assessment	Various different assessment strategies that are initially used to determine the functions of a child's behavior (ie, why the behavior is occurring). Interviews, behavioral observations, checklists, and functional analyses are often used as part of a functional assessment
Functional analysis	A strategy used in functional assessment. It involves direct observation of behaviors in specific conditions created to test whether the suspected functions identified in other types of functional assessment are contributing to problem behavior
Lovaas/UCLA model	Originally developed by O. Ivar Lovaas at UCLA and referred to as the Young Autism Project. The UCLA model is a comprehensive behavioral treatment that has the most research evidence of all the EIBI or ABA treatment models
Parent training	An important component of behavioral intervention in which parents become actively involved in their child's intervention by learning to implement interventions consistently. Leads to more effective interactions with their child and increased learning opportunities for their child

APPENDIX 2: FREQUENTLY ASKED QUESTIONS ABOUT BEHAVIOR TREATMENT OF ASD AND RESOURCES FOR FAMILIES

Q: What is EIBI? A: EIBI is a behavioral treatment based on the principles of ABA that is delivered early (before age 5 years) and intensively (25–40 hours per week) usually over a span of 2–3 years. EIBI is designed to teach children how to learn and to equip them to be able to benefit from school-based services. To date, EIBI is the intervention with the most evidence of positive outcomes (improvement in IQ, adaptive behavior, best chance for regular education placements) for children with ASDs.

Q: When should I start EIBI? A: The optimal age to begin EIBI is shortly after your child is diagnosed with an ASD. Your child could begin as early as 18 months of age. When children begin before the age of 5 years, they are likely to experience positive outcomes.

Q: I have heard that EIBI involves parent training. What does that mean? A: Quality EIBI programs include both parent support and parent training designed to improve your child's quality of life at home.

Q: Are special education services or eclectic interventions the same as EIBI? A: No. Even when some behavioral programming is included as part of special education or autism-specific educational programming (ie, eclectic treatment approach), the services are typically less structured and less intensive and do not have the same level of documented outcomes compared with early and intensive services in multiple research studies.

Q: Who pays for EIBI? A: Some states have mandated health insurance companies to pay for EIBI treatment. In some states, governmental entities might also help to pay for EIBI services, such as county early intervention programs (for children <3 years of age) or local school districts (beginning at 3 years of age). It is important to contact your case coordinator (if your child is in early intervention) or school district representative for more information and seek information from your local or state article of the Autism Society of America. Autism Speaks (www.autismspeaks.org) maintains a list of states that have health insurance coverage for ABA services.

Q: Who is qualified to provide EIBI services and how do I find them? A: Seek services from a behavior analyst who is certified by the BACB, the national credentialing organization for this profession. You will want to find a BCBA-D or BCBA to coordinate your program, if possible. The BACB maintains a Certificant Registry on its Web site (www.bacb.com) to allow you to search for certified professionals in your area.

Q: Will an EIBI program be stressful to me as a parent? A: Parents of children with ASDs experience higher levels of stress overall compared with parents of children with various other special concerns; however, studies indicate that parents do not report increased stress caused by EIBI. However, the commitment to EIBI is important and should be carefully considered because of the effort involved; any family member experiencing stress or other difficulties associated with any aspect of managing an ASD should contact the primary care physician, a licensed psychologist, or mental health professional for screening and potential services.

Q: What are outpatient behavioral treatment services and for what types of problems would that option be good for my child? A: Outpatient services are usually more limited in scope. Your family might see a therapist once or twice a week for an hour to target specific concern such as problem behavior, social skills deficits, or anxiety or depression. These services are usually provided by a licensed psychologist under the mental health benefits of your insurance plan or by a school psychologist as part of your IEP and are sometimes called CBT or behavioral consultation.

BEHAVIORAL TREATMENT RESOURCES FOR FAMILIES

If you already have behavioral treatment provider, they can assist you with finding many of these resources. If you do not already have a provider, seek information from resources available to families in the local and national community, such as the Autism Society (local and national articles), Autism Speaks, and Web sites of behavioral organizations, as listed later.

Information about the Behavioral Treatment of ASD and Qualified Providers on the Web:

Several associations and organizations maintain up-to-date information on the behavioral treatment of ASD. We recommend these because not all Web sites have information that is equally science based. You are encouraged to check the following Web sites for accurate information about treatment and providers:

Association for Behavior Analysis: International (ABAI): www.abainternational.org
 Association for Behavioral and Cognitive Therapies (ABCT): www.abct.org
 Association of Professional Behavior Analysts (APBA): www.apbahome.net
 Association for Science in Autism Treatment (ASAT): www.asatonline.org
 Autism Society: www.autism-society.org/
 Autism Speaks: www.autismspeaks.org
 BACB: www.bacb.com
 Organization for Autism Research (OAR): www.researchautism.org

Resource Books for Parents:

1. Baker BL, Brightman AJ. Steps to independence: Teaching everyday skills to children with special needs (fourth edition). Baltimore: Paul Brookes; 2004.
2. Durand VM. Sleep better: a guide to improving sleep for children with special needs. Baltimore: Paul Brookes; 1998.
3. Freeman S. The complete guide to autism treatments. A parent's handbook: make sure your child gets what works! Langley, BC: SKF Books; 2011.
4. Harris SL, Weiss MJ. Right from the start: behavioral intervention for young children with autism. A guide for parents and professionals. Bethesda: Woodbine House; 1998.
5. Harris SL, Glasberg, BA. Siblings of children with autism: a guide for families. Bethesda: Woodbine House; 2003.
6. Maurice C, Green G, Luce SC. Behavioral intervention for young children with Autism. Austin: Pro-Ed; 1996.
7. Powers MP. Children with autism: a parent's guide, 2nd edition. Bethesda: Woodbine House; 2000.
8. Weiss MJ, Harris SL. Reaching out, joining in: teaching social skills to young children with autism. Bethesda: Woodbine House; 2001.
9. Luiselli JK, Russo DC, Christian WP, et al, eds. Effective practices for children with autism: educational and behavior support interventions that work. New York, NY: Oxford University Press; 2008.
10. Leaf R, McEachin J, Taubman M. Sense and nonsense in the behavioral treatment of autism: it has to be said. New York, NY: DRL Books; 2008.
11. Offit PA. Autism's false prophets: Bad science, risky medicine, and the search for a cure. New York: Columbia University Press; 2008.
12. Lovaas OI. Teaching individuals with developmental delays: basic intervention techniques. Austin: Pro-Ed; 2003.
13. Maurice C, Green G, Foxx RM, eds. Making a difference: behavioral intervention for Autism. Austin: Pro-Ed; 2001.