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Intensive Behavioral Interventions

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Related Coverage Resources

Attention-Deficit/Hyperactivity Disorder (ADHD):

Assessment and Treatment

Autism Spectrum Disorders/Pervasive Developmental

Disorders: Assessment and Treatment.

INSTRUCTIONS FOR USE

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Overview

This Coverage Policy addresses intensive behavioral interventions (e.g., adaptive behavior treatment, applied behavior analysis) for treatment of autism spectrum disorders.

Coverage Policy

Some states mandate coverage of intensive behavioral interventions and/or treatment of autism spectrum disorders (ASD) for benefit plans regulated under state law. For example, New York law requires regulated benefit plans to provide coverage for the screening, diagnosis and treatment of ASD, including applied behavioral analysis.

Please refer to the applicable benefit plan document to determine terms, conditions and limitations of coverage.

Medically Necessary

Criteria for Assessment to receive Applied Behavior Analysis (ABA) services

An assessment for ABA is considered medically necessary when ALL of the following criteria are met:

Diagnosis

- The individual has a confirmed diagnosis of autism spectrum disorder (ASD); (ICD-10-CM Diagnosis
 Codes F84.0 F84.9, with the exception of F84.2, Rett syndrome) based on the criteria in the Diagnostic
 and Statistical Manual of Mental Disorders, Fifth Edition, Text Revision (DSM-5-TR) by a healthcare
 professional who is licensed to practice independently and whose licensure board considers diagnostics
 to be within their scope of practice and BOTH of the following must be provided:
 - > The name, credentials, and type of licensure of the individual who made the diagnosis
 - The date on which the diagnosis was made

Assessment

- The assessment will be performed by a Board Certified Behavior Analyst (BCBA), Licensed Behavior Analyst (LBA), or a mental health clinician who is licensed to practice independently and who has documented training in ABA.
- The full and comprehensive ABA assessment will include ALL of the following:
 - Administration of a reliable, valid, and standardized assessment instrument that measures the individual's functioning in the domains included in the diagnostic criteria for ASD in the DSM-5-TR: social communication and social interaction; and restricted, repetitive patterns of behavior, interests, or activities.
 - > ALL the following must apply in relation to the assessment instrument:
 - o must be completed in its entirety and as designed
 - the reliability and validity have been established for use with members of the population tested (e.g., age, language preference, etc.)
 - o completed by an individual who has been trained to administer the assessment tool and interpret the results
 - the instrument used represents the most current version, and does not represent obsolete editions of the assessment (e.g., must be the Vineland-3 vs. Vineland-II)
 - > The assessment must involve the primary caregivers

Criteria for Initiation of Treatment with Applied Behavior Analysis (ABA)

ABA is considered medically necessary when ALL the following criteria are met:

Diagnosis

- The individual has a confirmed diagnosis of ASD (F84.0–F84.9, with the exception of F84.2, Rett's syndrome) based on the criteria in the DSM-5-TR by a healthcare professional who is licensed to practice independently and whose licensure board considers diagnostics to be within their scope of practice and BOTH of the following must be provided:
 - > The name, credentials, and type of licensure of the person who made the diagnosis
 - > The date on which the diagnosis was made

Assessment

A full and comprehensive ABA assessment must have been completed that includes all of the criteria
from the Assessment for ABA section above regarding the specifications of the assessment tool, as well
as ALL of the following criteria:

- > Standardized scores and score tables and/or scoring grids/figures must be provided, when applicable.
- > Administration of the assessment instrument must have been completed within 60 days prior to the start of treatment.
- The results of the reliable and valid, standardized assessment instrument utilized indicates deficits in areas measuring the domains included in the diagnostic criteria for ASD as defined by the DSM-5-TR: social communication and social interaction; and restricted, repetitive patterns of behavior, interests, or activities.
- The assessment must have been performed by a BCBA, LBA, or a mental health clinician who is licensed to practice independently and who has documented training in ABA.
- In the event the reliable and valid, standardized assessment was completed by a professional other than the requesting provider BOTH of the following criteria are met:
 - There is clear and documented evidence of collaboration and coordination with the administering professional by the requesting provider.
 - > There is documentation that the assessment results accurately reflect the individual's current functioning and correspond with the requesting provider's direct observation of the individual.
- A complete developmental history has been obtained including:
 - Relevant co-morbid conditions
 - Vision and hearing evaluations
 - Current medications
- Consideration of family/caregivers, including language or cultural factors that may impact treatment has been documented.

Treatment Plan/Plan of Care

- An individualized treatment plan/plan of care has been developed and provided that includes ALL of the following:
 - Clearly defined and measurable goals designed to target specific behaviors and skills across all settings/environments where treatment will occur (e.g., home, clinic, school, community setting, etc.).
 - Treatment goals have been identified and individualized for intervention based on the details and results gathered through the full and comprehensive ABA Assessment (as noted in the sections above), and the individual's current level of functioning.
 - Treatment goals are directly related to the symptoms of ASD and their effects as defined by the DSM-5-TR.
 - > Baseline data have been obtained and provided, with dates recorded, for all behaviors and skills identified for intervention across all settings/environments in which treatment will occur.
 - When service initiation has occurred greater than 60 days prior to the date of the submission of the authorization request, baseline, interim and current data have been obtained and provided, with dates on which data were collected, for all of the behaviors and skills identified for intervention across all settings/environments in which treatment will occur/has occurred.
 - ➤ Each goal includes clearly defined mastery criteria indicating the standards for determining whether a goal/objective has been/will be met that are consistent with the units of measurement identified within the goal as well as the data collection method utilized to report baseline, interim and current data.
 - If group treatment is planned, the treatment plan/plan of care must include clearly defined, measurable goals for the group therapy that are specific to the individual and their targeted behaviors and skills-and have been identified for intervention based on the details and results gathered through the full and comprehensive ABA Assessment (as noted in the sections above).

- > There is a clear plan to ensure maintenance and generalization of acquired skills across all settings/environments where treatment will occur.
- > There is a clearly defined, measurable, individualized, and realistic transition plan that includes a plan for fading services across all settings/environments where treatment will occur.
- There are individualized discharge criteria that are clearly defined, measurable, realistic, and are directly related to the symptoms of ASD and their effects as defined by the DSM-5-TR.
- The planned intensity of treatment reflects the severity of the impairments, goals of treatment, and response to treatment across all settings/environments where treatment will occur.
- There is a clear and documented plan to coordinate care with all other medical and mental health providers, and with government mandated/school services.
- Case supervision will be performed by a BCBA, LBA or a mental health professional who is licensed to
 practice independently and who has documented training in ABA and includes ALL of the following:
 - Direct case supervision (occurs concurrently with the delivery of direct treatment to the client and consists of BCBA face-to-face with the individual and either the Registered Behavior Technician [RBT] or the Board Certified Assistant Behavior Analyst [BCaBA]) and indirect case supervision is consistent with the general accepted standard of care of one to two hours per ten hours of direct treatment.
 - > Direct case supervision time accounts for 50% or more of case supervision. When direct treatment is 10 hours per week or less, a minimum of two hours per week of case supervision is provided.
 - Supervisory services requested/provided coincide with Current Procedural Terminology (CPT) code descriptions as identified by the American Medical Association (AMA).
 - > The name and credentials of the individual who will provide supervision must be documented.
- Stakeholder (e.g., parent/caregiver, relative, teacher, and/or other impacted/invested party) training will be conducted by a BCBA, LBA, or a mental health professional who is licensed to practice independently and who has documented training in ABA and includes ALL of the following:
 - There are clearly defined, measurable stakeholder goals that are individualized to the stakeholder(s) and the individual client's needs designed to teach all relevant stakeholder(s) the basic behavioral principles of ABA and how to continue behavioral interventions in the home and community, as well as across all relevant settings/environments.
 - If group stakeholder training is planned, there are clearly defined, measurable stakeholder training goals for the group training that are individualized to the stakeholder(s) and the individual's needs.
 - Baseline data have been obtained and provided, with dates recorded, for all stakeholder behaviors and skills identified for intervention across all settings/environments in which treatment will occur.
 - There is a clear plan to collect data to demonstrate the stakeholder(s) are making progress toward meeting identified stakeholder training goals.
 - The name and credentials of the individual who will provide stakeholder training must be documented.
- Services must meet the definition of active treatment regardless of location and includes ALL of the following:
 - Direct service provision consists entirely of active ABA treatment aimed at ameliorating the symptoms of ASD and their effects as defined by diagnostic criteria in DSM-5-TR across all settings/environments where treatment will occur.
 - The therapist must remain in line of sight, direct engagement, and within close enough proximity to the individual to allow for consistent presentation of learning opportunities that relate to the goals and objectives identified within the plan of care/treatment plan (this does not apply to telehealth services, when applicable).
 - For services that are focused primarily on addressing, preventing or responding to maladaptive behavior(s), the identified behavior(s) must be occurring at a frequency and/or severity (as

- documented through data collection methods noted above) that requires active intervention throughout the time the therapist is with the individual.
- ABA services are not utilized to replace or replicate activities that are the responsibility of the setting/environment where services occur (e.g., classroom aide, 1:1 teacher, tutor, vocational assistant/coach, respite services, etc.).

Other Factors

- ABA services delivered by multiple ABA providers during the same authorization period are not considered medically necessary unless ALL of the following are present and documented:
 - > Providers are addressing substantially different skills.
 - There is a clear plan to coordinate care across providers, to ensure the services are not duplicative, and are consistent with clinical needs of the individual based on documentation and data collection.
 - > Behavioral intervention strategies used across providers are consistent and not contradictory.
- When the goals of treatment include feeding conditions and toileting concerns, BOTH of the following must be met:
 - > The treatment plan/plan of care includes specific safety measures and protocols.
 - > Consultation with medical and/or dietary/nutritional professionals has occurred prior to the initiation of the intervention, will be continued on an ongoing basis, and is specifically documented.
- When the goals of treatment are implemented as part of Severe Behavior Programs and/or include severe behavior, ALL of the criteria from initiation of treatment section (and continued treatment section as applicable) are currently met, as well as ALL of the following must be met:
 - A complete treatment history is obtained and documented including relevant co-morbid conditions, current medications, previous treatment/intervention (including participation in higher levels of care as applicable), and any currently implemented treatment/intervention.
 - A complete history of the targeted severe behavior(s) is obtained and documented (e.g., involvement of emergency services, bodily injury, collateral damage, property destruction, distance/duration of elopement, etc.).
 - Response to previous and/or current treatment is documented indicating necessity of participation in Severe Behavior Program.
 - Administration of the assessment instrument must have been completed by the requesting provider or by a professional other than the requesting provider (see above Assessment sections for criteria) within 60 days prior to the start of treatment.
 - ➤ Baseline (interim and current as applicable) data (e.g., rate, duration, intensity, and/or episodic severity) of targeted behavior have been obtained, and provided, with dates on which data were collected, for all behaviors and skills identified for intervention as obtained through consultation/coordination with current ABA provider (as applicable) and/or direct observation by the requesting Severe Behavior Program provider.
 - > Data presented in relation to target behavior meet the definition of Severe Behavior.
 - > The treatment plan/plan of care includes specific safety measures and protocols.
 - > Consultation with medical and/or mental health professionals has occurred prior to the initiation of the intervention, will be continued on an ongoing basis, and is specifically documented.
- When authorization requests involve coverage of services conducted retrospectively, ALL of the criteria
 from initiation of treatment section (and continued treatment section as applicable) are met, coinciding
 with the dates of service identified within the request.

Criteria for Continued Treatment with ABA

Continued treatment with ABA is considered medically necessary when: (1) the first bullet in the above section for initiation of treatment section was met at the time treatment was initiated; (2) ALL of criteria from initiation of treatment section above are currently met and (3) ALL of the following criteria are met:

- The treatment plan/plan of care has been updated to address the current identified skill deficits and maladaptive behaviors, as well as progress made across all targeted areas.
- Baseline, interim and current data have been obtained, and provided, with dates on which data were
 collected, for all behaviors and skills identified for intervention across all settings/environments where
 treatment has been provided or will occur.
- The data indicate that there has been ongoing and sustained progress toward mastering the treatment goals.
- There is evidence of measurable and ongoing improvement in targeted behaviors and skills as
 demonstrated with the use of a reliable and valid, standardized assessment instrument completed no
 more than one year from the start date of the continued treatment request.
- When progress toward mastering treatment and/or stakeholder goals, or evidence of measurable and
 ongoing improvement is not demonstrated, barriers toward progress have been identified, and there is a
 specific and documented plan to address barriers and evidence of interventions being adjusted through
 protocol modification, with continued data monitoring and assessment for effectiveness by the provider.
- When behaviors and skills have been identified for new and/or proposed intervention (e.g, goals and objectives), baseline data have been obtained and provided, with dates recorded across all settings/environments in which treatment will occur and are updated as necessary to have been collected within no more than 30 days prior to the implementation of the intervention associated with the identified behavior and skill.
- Administration of a reliable and valid, standardized assessment instrument is completed following any break in treatment greater than 60 calendar days.
- Updated/current data have been collected with dates on which data was collected, for all behaviors and skills identified for intervention across all setting/environments in which treatment will occur following any break in treatment greater than 60 calendar days.
- Baseline, interim and current data related to stakeholder training goals have been obtained and
 provided, with dates on which data were collected, indicating all relevant stakeholders continue to
 actively participate in the treatment and that they are making sustained and ongoing progress toward
 mastering the stakeholder goals.

Experimental, Investigational or Unproven

ABA is considered experimental, investigational or unproven for all non-ASD indications.

Intensive behavioral interventions other than ABA are considered experimental, investigational or unproven.

Not Medically Necessary

Services that are considered primarily educational or vocational in nature, or related to academic or work performance are considered not medically necessary.

Provision of ABA treatment is considered not medically necessary when delivered to the same individual, at the same time as any other treatment modality (e.g., ABA and speech therapy, or ABA and occupational therapy).

General Background

Glossary of Terms

TERM	DEFINITION
Active Treatment	Treatment is performed in a manner in which the interventionist is within close enough
/ touvo modument	proximity to the customer to allow for direct engagement in presenting, creating and/or
	contriving consistent learning opportunities based on structured, planned and intentional
	intervention strategies or naturally occurring environmental stimuli. Active treatment
	involves regular engagement of customers and their significant others (Association of
	Professional Behavior Analysts [APBA], 2017), and may include both systematic and
	naturalistic techniques across both individual and group settings (Pellecchia, et al.,
	2015).
Applied Behavior	The science in which tactics derived from the principles of behavior are applied
Analysis	systematically to improve socially significant behavior and experimentation is used to
	identify the variables responsible for behavior change (Cooper, et al., 2020).
Assessment	A developmentally appropriate evaluation tool to ascertain areas of relative strength and
	deficit across relevant domains, and informs the development of an individualized
	treatment plan/plan of care, including recommendations for areas of focus, goals of
	treatment, intensity of service, and mode of service delivery (Council of Autism Service
December 5	Providers [CASP], 2020).
Baseline Data	Quantifiable information regarding performance of skill development and behavior
	reductive targets (as applicable) collected prior to implementation of the independent variable identified as intervention/treatment from which areas of treatment focus and
	intervention can be identified, the effects of the independent variable can be recognized,
	and comparative progress can be determined (see Demonstration of Progress).
	Reporting of baseline data includes dates on which the information was collected
	(Cooper, et al., 2020).
Clearly Defined	Specifically indicates the target behaviors and expectations included for measurement
Goals	within the treatment goal. Identifies the method in which progress will be measured.
Coalo	Operationally defines the behavioral expectation of the customer and degree of
	independence necessary for mastery of the goal/objective.
Clinical Note	Requirements for written record of documentation for each CPT code billed that includes
Cirrical Hoto	the start date and time for each service, the end date and time for each service, location
	of service, the focus of service, a detailed description of what was conducted by the
	provider during the time of service demonstrating ABA treatment was performed, who was
	present/who participated in the service, and who rendered the service. Signatures and
	time stamps of when the note was completed are included. May also be referred to as
	"Progress Note," "Psychotherapy Note," or "Session Note" (United States, The Health
	Insurance Portability and Accountability Act, 2004).
Comprehensive	ABA treatment of multiple affected developmental domains, which may also include
ABA	reduction of maladaptive behaviors (CASP, 2020).
Continued	An ABA treatment authorization request when, regardless of funding source, the customer
	,
Treatment with	has participated in ABA services with the requesting provider within 90 days from the date
ABA Authorization	the authorization request was made.
Request	A may also marked a management of a set of standard and a second with a first and the second of the
Criterion	A psychometric property of a standardized assessment that relates to some unit of
Referenced	measure based on the test taker's performance on a set of standard criteria. Scores on
Assessments	criterion referenced assessments are developed by demonstration of a particular skill,
	milestone or measurable outcome, and are not impacted by other test takers'
	performances (Patten & Newhart, 2018).
Current Data	Quantitative information regarding performance generally collected within one month
	prior to when the treatment plan/plan of care is submitted, which includes dates on which
	the information was collected.
Data	The identification of some dimension of behavior, as collected through measurement
	procedures and presented in a quantifiable format (Cooper et al., 2020).

TERM	DEFINITION
Demonstration of Progress	Quantitative information regarding performance as demonstrated through current data in relation to treatment goals/objectives and/or formally administered assessment results, indicating comparable, measurable and meaningful behavior change in relation to quantifiable baseline and/or interim data. Demonstration of progress indicates practical importance when altering of the behavior produces socially significant and socially important change (Baer et al., 1968).
	Tracking of progress of goals and within delivered treatment services should be demonstrated through measurement systems that are individualized to the customer, the treatment environment, and the context within which services are conducted (CASP, 2020).
Diagnosis	A diagnosis of autism spectrum disorder (ASD) is confirmed when the diagnosis has been made based on the criteria in the DSM-5-TR. A confirmed diagnosis of ASD may also be termed a "medical diagnosis" of ASD when the diagnosis is made by a healthcare professional who is licensed to practice independently and whose licensure board considers diagnostics to be within their scope of practice.
	By contrast, educational identification or meeting educational eligibility for services related to autism through the Individuals with Disabilities Education Act (IDEA) may not meet criteria as a formal diagnosis of ASD, unless the above mentioned specifications have also been met. Similarly, a diagnosis is not considered confirmed when it has been termed "provisional," "proposed," "potential," "at risk of," "rule out" or any other term used by the diagnosing clinician to indicate that more information may be necessary prior to confirming the diagnosis.
Direct Case	Occurring concurrently with direct treatment, the BCBA is face-to-face with the customer
Supervision	and the technician (e.g., RBT or the BCaBA) delivering the direct treatment. This can include direct observation of treatment by technician, clinical direction on new and revised treatment protocols, and/or monitoring integrity (CASP, 2020).
Discharge Criteria	Clearly defined, measurable, realistic, and individualized criteria indicating the point at which services are appropriate for discontinuation and/or transfer to alternative or less intrusive levels of care. Criteria should identify quantifiable skill development and behavior reductive targets considered necessary and socially significant, specific to the customer, and be related to the current course of treatment identified through the customer's treatment plan/plan of care. Discharge criteria should be identified at initiation of treatment, and reviewed and adjusted as appropriate throughout the course of services (ABA Coding Coalition, 2022; CASP, 2020).
Focused ABA	ABA treatment provided directly to the customer for a limited number of behavior targets (CASP, 2020).
Generalization	Behavior change that is durable over time, appears in a wide variety of possible environments, can be demonstrated across individuals, or spreads to a wide variety of related behaviors (Baer, et al., 1968).
Goals/Objectives	Specific, clearly and operationally defined, measurable, realistic and individualized description of the precise skill development and behavior reductive targets that represent the focus of intervention within the treatment plan/plan of care. Treatment goals/objectives are based on the areas of deficit identified through the assessments/evaluations administered, and include data collection procedures that are consistent with mastery criteria and allow for frequent evaluation. Treatment goals/objectives indicate the number of targets required toward meeting mastery criteria (when applicable), and are consistent with the intensity and setting of service provision. New treatment goals/objectives are considered on a consistent basis (CASP, 2020).
Indirect Case Supervision	Case supervisory activities occurring outside of the treatment setting and/or without contact with the client or relevant stakeholders. This can include development of treatment goals, protocols, and data collection systems, analysis of data, evaluation of

TERM	DEFINITION
	progress, coordination of care activities with other professionals, meetings with direct
	staff outside of the treatment setting or without the client present (CASP, 2020).
Initiation of	An ABA treatment authorization request when the customer has not participated in ABA
Treatment with	services with the requesting provider within 90 days from the date the authorization
ABA Authorization	request was made.
Request	Out of the time in formation and another an artificial and the control of the con
Interim Data	Quantitative information regarding performance from the period of time between when
	the goal was introduced into treatment and one month prior to the time the treatment plan/plan of care was submitted for review. Reporting of interim data includes dates on
	which information was obtained. At a minimum, interim data should include the data point
	as collected for the previous review period.
Maintenance	The extent to which the customer continues to perform the target behavior after a portion
Walltonario	or all of the intervention has been terminated (Cooper, et al., 2020).
Mastery Criteria	Socially validated performance criteria (Cooper, et al., 2020) that includes quantitative
	and measurable conditions and standards that are clearly defined, based on collected
	data that identifies when a particular target, goal, objective, skill set or behavior has been
	achieved/accomplished and no longer requires focused and targeted
	treatment/intervention. Mastery criteria should be consistent with the units of
	measurement identified within the goal indicating the standards for determining when a
	goal/objective has been/will be met, and specifies the number of targets required to meet
	the goal/objective (when applicable).
Measurable Goals	Indicates the method in which data will be collected as a means of demonstrating
	progress toward mastery of the treatment goal. Includes an operational description of the
	target behavior using quantifiable terms. Measurable goals incorporate quantitative data
	collection that coincides with data collection methods used for identifying baseline data, interim data and description of progress through current data.
Multiple	Regardless of the funding source, multiple providers bill for services rendered to the
Procedures	same individual when those services occur at the same time. Also referred to as
1100044100	concurrent billing (American Medical Association [AMA], 2019).
Norm Referenced	A psychometric property of a standardized assessment that is designed to compare and
Assessments	rank test takers in relation to the general population. Norm referenced assessments
	allow for appraisal of the test taker to a hypothetical average test taker, which is
	determined by comparing scores against the performance results of a statistically
	selected group of test takers, typically of the same age or grade level (Patten & Newhart,
	2018).
Observational	Treatment is performed in a manner in which the interventionist does not present
Treatment	consistent learning opportunities (related to reduced proximity and/or limited occasion),
	and engagement with the customer and their significant others is inconsistent, infrequent,
Operational	irregular and unreliable. Clearly stated description of the behavior characteristics that is observable, measurable,
Definition	repeatable and agreeable (Alberto & Troutman, 2013).
Qualitative Data	Categorized based on traits and characteristics (e.g., anecdotal accounts, descriptive
Saananvo Data	reports, etc.) (Kazdin, 2011).
Quantitative Data	Counted or measured and reported using numbers (e.g., rate, frequency, percent of
	opportunities, cumulative mastered targets, percent of momentary time sampling, etc.)
	(Kazdin, 2011).
Reliable	An assessment instrument that produces consistent results across administrations, and
Assessments	when implemented by different people (Patten & Newhart, 2018).
Retrospective	A retrospective authorization request is any request made after a specific amount of time
Treatment with	for both initial and continued stay requests. A retrospective authorization request for ABA

TERM	DEFINITION
ABA Authorization	is any request made when more than 90 days have passed since the start date of the
Request	requested authorization, or any time after the customer has discharged.
Severe Behavior	Behaviors occur at a rate, duration, intensity and/or episodic severity that directly interferes with autonomy and independence, as well as participation in available learning
	opportunities presented both through the natural environment and applied treatment
	programs (as applicable). Behaviors are destructive and disruptive to daily life, may
	result in a risk of harm, and are considered dangerous to the individual, those in direct vicinity of the individual, and/or property (Salvatore, et al., 2022).
Severe Behavior	Provide treatment focused with individuals who engage in Severe Behavior. Participation
Program	in treatment is often short-term and directed specifically toward analysis, evaluation, remediation, replacement and/or reduction of severe behavior (Fisher, et al., 2021).
Socially	Behaviors that have immediate and long-lasting effects for the person and for those who
Significant	interact with that person (Cooper, et al., 2020).
Behaviors	
Stakeholder(s)	An individual, other than the person directly receiving services, who is impacted and
	invested in the intervention provided (e.g., parent/caregiver, relative, teacher, etc) (BACB, 2021).
Standardized	Requires all test takers to answer the same questions or meet the same criteria. Tests
Assessments	are administered and scored in a similar manner across participants to allow for
	comparison of performance across administrations and with other test takers (Patten & Newhart, 2018).
Transition Plan	Written plan with treatment targets that must be achieved for each step of a gradual step down in services (CASP, 2020).
Treatment Plan /	Submitted documentation outlining the course and direction of intervention that guides
Plan of Care	procedures, and determines recommendations for areas of focus, goals of treatment,
	intensity of service, and mode of service delivery (Luiselli, 2006). Treatment plans / plans
	of care include information to substantiate that the medical necessity criteria for Applied
	Behavior Analysis as outlined in Cigna Medical Coverage Policy #0499 Intensive
V - P - I	Behavioral Interventions are met.
Valid	An assessment instrument that has been psychometrically tested for reliability (see
Assessments	Reliable Assessments), validity (refers to the test's ability to measure what it is intended to measure), and sensitivity (the probability that the assessment will accurately identify
	and distinguish test taker's performance in meeting set criteria) (Patten & Newhart,
	2018).

Autism Spectrum Disorder (ASD) is a mixed group of neurodevelopmental disorders with diverse etiologies but are characterized by impairments in reciprocal social interaction, social communication, and behavior (restricted, repetitive patterns of behavior, interests, and activities). Clinical presentations often include speech/language delays in the first two years of life, plateau of social skills after normal early development and lack of interest in socializing (Weissman, 2022).

Children with a less severe phenotype may present in kindergarten or later with behavior disturbances or with symptoms of other neurodevelopmental conditions (Augustyn & von Hahn, 2021).

Neurodevelopmental conditions that are associated with ASD include:

- Anxiety disorder
- Attention deficit hyperactivity disorder (ADHD)
- Oppositional defiant disorder and other disruptive behavior disorders
- Depression and other mood disorders
- Learning difficulty

The precise etiology of ASD is unknown, although there appears to be a high heritability associated with it. The etiology can be identified for between 15% and 20% of individuals with autism; in the others the cause remains unknown. This is a field of active research.

Associations between ASD and a number of other medical conditions have been proposed. Other medical conditions include:

- · Epilepsy or seizure disorder
- Tuberous sclerosis
- Fragile X syndrome
- Intellectual disability

The American Academy of Child & Adolescent Psychiatry (AACAP) 2022 Policy Statement on Autism and Vaccines states "Multiple studies conducted in several different countries have demonstrated that there is no causal association between vaccines or their preservatives and ASD. Further, vaccines do not change the timing of the onset of ASD symptoms, nor do they affect the severity of ASD symptoms. Even in families who have a greater risk for ASD, such as those who already have a child with ASD, there is no increased likelihood that the second child will have ASD if vaccinated."

Diagnostic criteria for Autism Spectrum Disorder from: Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5-TR)

- A. Persistent deficits in social communication and social interaction across multiple contexts, as manifested by all of the following, currently or by history (examples are illustrative, no exhaustive; see text of DSM-5-TR)
 - 1. Deficits in social-emotional reciprocity, ranging, for example, from abnormal social approach and failure of normal back-and-forth conversation; to reduced sharing of interests, emotions, or affect; to failure to initiate or respond to social interactions.
 - 2. Deficits in nonverbal communicative behaviors used for social interaction, ranging for example, from poorly integrated verbal and nonverbal communication; to abnormalities in eye contact and body language or deficits in understanding and use of gestures; to a lack of facial expressions and nonverbal communication.
 - 3. Deficits in developing, maintaining, and understanding relationships, ranging for example, from difficulties adjusting behavior to suit various social contexts; to difficulties in sharing imaginative play or in making friends; to absence of interest in peers.

Specify current severity:

Severity is based on social communication impairments and restricted, repetitive patterns of behavior.

- B. Restricted, repetitive patterns of behavior, interests, or activities, as manifested by at least two of the following, currently or by history (examples are illustrative, no exhaustive; see text of DSM-5):
 - 1. Stereotyped or repetitive motor movements, use of objects, or speech (e.g., simple motor stereotypies, lining up toys or flipping objects, echolalia, idiosyncratic phrases).
 - 2. Insistence on sameness,, inflexible adherence to routines, or ritualized patterns of verbal or nonverbal behavior (e.g., extreme distress at small changes, difficulties with transitions, rigid thinking patterns, greeting rituals, need to take same route or eat same food every day).
 - 3. Highly restricted, fixated interests that are abnormal in intensity or focus (e.g., strong attachment to or preoccupation with unusual objects, excessively circumscribed or perseverative interests).
 - 4. Hyper- or hyporeactivity to sensory input or unusual interest in sensory aspects of the environment (e.g., apparent indifference to pain/temperature, adverse response to specific sounds or textures, excessive smelling, or touching of objects, visual fascination with lights or movement).

Specify current severity:

Severity is based on social communication impairments and restricted, repetitive patterns of behavior.

Diagnostic criteria for Autism Spectrum Disorder from: Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5-TR)

- C. Symptoms must be present in the early developmental period (but may not be fully manifest until social demands exceed limited capacities, or may be masked by learned strategies in later life.
- D. Symptoms cause clinically significant impairment in social, occupational or other important areas of current functioning.
- E. These disorders are not better explained by intellectual disability (intellectual developmental disorder) or global developmental delay. Intellectual disability and autism spectrum disorder frequently co-occur; to make comorbid diagnosis of autism spectrum disorder and intellectual disability, social communication should be below that expected for general developmental level.

The DSM-5-TR notes that individuals with a well-established DSM-IV diagnosis of autistic disorder, Asperger's disorder, or pervasive developmental disorder not otherwise specific should be given the diagnosis of autism spectrum disorder. Individuals who have marked deficits in social communication, but whose symptoms do not otherwise meet criteria for autism spectrum disorder, should be evaluated for social (pragmatic) communication disorder.

There are no medical interventions that are effective in achieving a cure for autism; however, the condition may be managed through a combination of behavioral, pharmacological and educational interventions.

CDC surveillance data published in 2014 revealed that white, non-Hispanic children were approximately 20% more likely to be identified with ASD before the case review than were non-Hispanic African American children and were about 50% more likely to be identified with ASD than were Hispanic children. Recent prevalence data reveal increasing rates of ASD in Hispanic and African American children. This may reflect more widespread awareness of the symptoms among parents, schools, and health care providers and improved rates of screening in health supervision care. Studies examining the effects of race and ethnicity on age at diagnosis are conflicting, but earlier diagnosis of ASD is associated with higher socioeconomic status and access to services. African American and Hispanic children diagnosed with ASD by age 4 years were more likely to have coexisting intellectual disability than were white, non-Hispanic children, suggesting that some African American and Hispanic children with ASD and average to above-average intelligence may not have been identified (Hyman, et al., 2020).

Intensive behavioral interventions are comprehensive treatment programs that utilize a combination of interventions with the aim of improving cognitive and intellectual function, social and adaptive skill development and behavior problems. They have been proposed to treat autism spectrum disorders as well as other conditions that involve behavioral difficulties. The programs emphasize early intervention, individualization of treatment and an intensive approach. The programs may also be referred to as early intensive behavior intervention (EIBI), intensive behavior intervention (IBI) or early intensive behavioral treatment (EIBT). At times, the terms EIBI, IBI, EIBT are used interchangeably with applied behavior analysis (ABA), Lovaas therapy or Lovaas University of California Los Angeles (UCLA) Program. The term intensive behavioral interventions is used in this coverage policy, but this aligns with adaptive behavior treatment that is referenced in Current Procedural Terminology (CPT®) codes section.

There is a formal credentialing process of professional behavior analysts through the Behavior Analyst Certification Board® (BACB). The BACB credentials and recognizes practitioners at four levels:

- Board Certified Behavior Analyst–Doctoral[™]
- Board Certified Behavior Analyst® (BCBA)
- Board Certified Assistant Behavior Analyst® (BCaBA)
- Registered Behavior Technician[™] (RBT)

Practitioners credentialed at the BCBA-D and BCBA levels are defined by the BACB as Behavior Analysts. The BACB requires that BCaBAs, or Assistant Behavior Analysts, work under the supervision of a BCBA-D or BCBA. RBTs must work under the supervision of a BCBA-D, BCBA, or BCaBA

The BACB provides clinical guidelines regarding the delivery of ABA services as a treatment for ASD.

A Licensed Behavior Analyst (LBA) is a behavior analyst credential that is particular to a specific state to provide ABA.

The programs are intensive and range from 15 to 40 hours per week, delivered over a long period of time. The intensive behavior programs focus on identifying behaviors that interfere with normal developmental processes, understanding the relationship between a behavior and the child's environment and modifying those behaviors in such a way so as to improve the child's functional capacity. Treatment goals focus on improving adaptive behavior, language/communication skills, decreasing problem behaviors, as well as improving cognitive/intellectual status and academic/developmental achievements. Treatment can be delivered in a different settings, including residential treatment facilities, inpatient and outpatient programs, homes, schools, transportation, and places in the community.

The main characteristics of ABA should be apparent throughout all phases of assessment and treatment and include the following (Council of Autism Service Providers (CASP), 2020):

- An objective assessment and analysis of the individual's condition by observing how the environment
 affects the client's behavior, as evidenced through appropriate data collection.
- Importance given to understanding the context of the behavior and the behavior's value to the individual, the family, and the community.
- Utilization of the principles and procedures of behavior analysis such that the individual's health, independence, and quality of life are improved.
- Consistent, ongoing, objective assessment and data analysis to inform clinical decision-making.

There are two treatment models that exist on a continuum, Focused or Comprehensive ABA treatment. Focused ABA treatment may involve increasing socially appropriate behavior or reducing problem behavior. Individuals who need to acquire skills (e.g., communication, tolerating change in environments and activities, self-help, social skills) are appropriate for Focused ABA. Focused ABA may be delivered individually or as part of a small-group format. Key functional skills can include, establishing instruction-following, social communication skills, compliance with medical and dental procedures, sleep hygiene, self-care skills, safety skills, and independent leisure skills (e.g., appropriate participation in family and community activities). Severe problem behaviors that may require focused intervention can include, but are not limited to, self-injury, aggression, threats, pica, elopement, feeding disorders, stereotypic motor or vocal behavior, property destruction, noncompliance and disruptive behavior, or dysfunctional social behavior (CASP, 2020).

There are times when an individual with ASD has co-occurring severe destructive behavior disorders that require focused treatment in more intensive settings, such as Severe Behavior Programs that have specialized intensive-outpatient, day-treatment, residential, or inpatient programs. The ABA services delivered in Severe Behavior Programs often require higher staff-to-client ratios with close on-site direction from the Behavior Analyst. Additionally, such treatment programs often have specialized treatment environments (for example, treatment rooms designed for observation and to keep the individual and the staff as safe as possible). Participation in severe behavior treatment is often short-term and directed specifically toward analysis, evaluation, remediation, replacement and/or reduction of severe behavior. An assessment should include the following: complete treatment history, which includes previous evaluations, diagnoses, and interventions, as well as a complete history of the targeted severe behavior(s) with response to current and/or previous treatment. Goals should be outcome oriented with clearly defined goals for each patient. Treatment decisions should be based on objective and ongoing measures of the individual's destructive behavior (Fisher, et al., 2021; CASP, 2020).

Comprehensive ABA is treatment of the affected developmental domains, such as cognitive, communicative, social, emotional, and adaptive functioning. Maladaptive behaviors, such as noncompliance, tantrums, and stereotypy are the focus of treatment. These programs tend to range from 30–40 hours of treatment per week (plus direct and indirect supervision and caregiver [stakeholder] training). Initially, this treatment normally involves 1:1 staffing and gradually includes small-group formats. Comprehensive treatment can be appropriate for older individuals diagnosed with ASD, particularly if they engage in severe or dangerous behaviors across environments (CASP, 2020).

The assessment process for developing an individualized ABA treatment plan includes medical record review for the individuals' medical status, prior assessment results, response to prior treatment and other relevant information may be obtained via file review and incorporated into the development of treatment goals and intervention. Individuals, caregivers, and other stakeholders are included when setting treatment goals, developing protocols, and evaluating progress. Additionally, direct assessment and data collection are needed to identify pretreatment levels of functioning, developing and adapting treatment protocols on an ongoing basis, and evaluating response to treatment and progress toward goals. Behavior should be directly observed in a variety of relevant naturally occurring settings and structured interactions (CASP, 2020).

ABA treatment goals are identified based on the assessment process. Each goal should be defined in a specific, measurable way to allow frequent evaluation of progress toward a specific mastery criterion. Each goal and objective must be individualized and include (CASP, 2020):

- Current level (baseline)
- Behavior parent/caregiver is expected to demonstrate, including condition under which it must be demonstrated and mastery criteria (the objective or goal)
- Date of introduction
- Estimated date of mastery
- Specify plan for generalization
- Report goal as met, not met, modified and include explanation

Case supervision activities can be described as those that involve contact with the client or caregivers (direct supervision) and those that do not (indirect supervision). Direct case supervision occurs at the same time as the delivery of direct treatment to the individual. Direct supervision typically accounts for 50% or more of case supervision and be responsive to individual client needs. The general standard is two hours for every 10 hours of direct treatment. When treatment is less than 10 hours per week a minimum of two hours per week of case supervision is required (CASP, 2020).

Stakeholder (e.g., parent/caregiver, relative, teacher, and/or other impacted/invested party) training is a part of both Focused and Comprehensive ABA treatment models. Training involves a systematic, individualized curriculum on the basics of ABA. Treatment plans include multiple objectives and measurable goals for parents and the stakeholder. Training involves an individualized behavioral assessment, a case formulation, and then customized educational presentations, modeling and demonstrations of the skill, and practice for each specific skill (CASP, 2020).

Transition and discharge planning should be individualized and include a written plan with specific details of monitoring and follow-up. Parents, community caregivers, and other involved professionals should be consulted as the planning process accelerates with three to six months prior to the first change in service. Discharge and transition planning involve a gradual step down in services and can require six months or longer (CASP, 2020).

Literature Review: The Agency for Healthcare Research and Quality (AHRQ) published a comparative effectiveness review of the effects of available interventions on adolescents and young adults with ASD (ages 13 to 30) (Lounds, et al., 2012). The review focused on the following outcomes: core symptoms of ASD (impairments in social interaction, communication, and repetitive behavior); medical and mental health comorbidities; functional behaviors and independence; the transition to adulthood; and family outcomes. The studies assessed interventions falling into the broad categories of behavioral, educational, adaptive/life skills, vocational, medical, and allied health approaches. The comparators included no treatment, placebo, and comparative interventions or combinations of interventions. Intermediate outcomes included changes in core ASD symptoms and in common medical and mental health comorbidities as well as effects on functional behavior, the transition process, and family outcomes. Long-term outcomes included changes in adaptive/functional independence, academic and occupational attainment or engagement, psychological well-being, and psychosocial adaptation. Harms were also assessed.

Across all categories of interventions, most studies (n=27) were of poor quality, and none was good quality. Five randomized controlled trials (RCT) were fair quality: four that investigated pharmacologic agents and one allied health study that assessed a leisure/recreation program. Although positive results may be reported in individual studies, the poor quality of the studies and the lack of replication of the intervention studies mean that the

strength of evidence for the body of evidence around any specific intervention is currently insufficient. Findings for the interventions included:

Behavioral:

- Individual or group-based social skills training: Four poor-quality studies, with two reporting on manualized (i.e., has a published treatment manual) intervention. Some gains in social skills on largely parent-reported measures in short-term studies. Two studies lacked comparison groups; diagnostic approach, participant characteristics, treatment fidelity not clearly reported.
- Computer-based social skills training: Three poor-quality, short-term studies. Some improvements in emotion recognition in treated participants; no differences in measures of generalization. Systematic diagnostic approach not reported within studies; concomitant interventions and treatment fidelity not reported.
- Intensive behavioral treatment: One poor-quality case series with diverse participants. Some gains in adaptive behavior reported. Intervention not clearly described; treatment fidelity and concomitant interventions not reported; assessors not masked.

Adaptive/Life Skills:

- Specific life/transitional skills: Three, poor-quality, short-term studies assessing highly specific skills and
 unique interventions (e.g., shoe lacing, digital device use, rotating classroom schedule). Some gains
 seen in individual studies but most lacked comparison groups. Systematic diagnostic approach not
 reported within studies; participants often not clearly characterized; differences in concomitant
 interventions and treatment fidelity often not reported.
- Treatment and Education of Autistic and related Communication Handicapped Children (TEACCH)-based model: One poor-quality cohort study; desirability of living situation and use of programming rated more highly for TEACCH than other conditions; group homes rated more desirable than institutions. Nonrandom assignment to groups; systematic diagnostic approach not reported within study; inclusion/exclusion criteria not clearly stated; interventions not fully described; assessors not masked.

In 2014, the AHRQ published a systematic review that updated the behavioral intervention portion of the comprehensive review of therapies for children with ASD that was published in 2011 (Weitlauf, et al., 2014).the review included 65 studies comprising 48 randomized trials and 17 nonrandomized comparative studies (19 good, 39 fair, and 7 poor quality) published since the prior review. The quality of studies improved compared with the earlier review; however, the assessment of the strength of evidence (SOE), confidence in the stability of effects of interventions in the face of future research, remains low for many intervention/outcome pairs. The authors concluded that a growing evidence base suggests that behavioral interventions can be associated with positive outcomes for children with ASD; however, despite improvements in the quality of the included literature, a need remains for studies of interventions across settings and continued improvements in methodologic rigor. Substantial scientific advances are needed to enhance understanding of which interventions are most effective for specific children with ASD and to isolate elements or components of interventions most associated with effects.

There have been several systematic reviews of intensive behavioral interventions for individuals with ASD (Reichow, et al., 2018; Roth,et al., 2014; Bishop-Fitzpatrick, et al., 2013; Strauss, et al., 2013; Reichow, et al., 2012; Warren, et al., 2011b; Peters-Scheffer, et al., 2011; Virués-Ortega, 2010; Makrygianni, et al., 2010; Spreckley, et al., 2009; Seida, et al., 2009; Eldevik, et al., 2009; Howlin, et al., 2009; Reichow and Wolery, 2009). While the reviews do note that are some limitations in the literature that includes small sample size, length of follow-up, and reliance on data from non-randomized studies, that overall the reviews report positive benefits of the treatment.

There are several published studies regarding children with ASD (Mohammadzaheri, et al., 2014; Fernell, et al., 2011; Zachor, et al., 2010; Smith, et al., 2010; Remington, et al., 2007; Ben-Itzchak and Zachor, 2007; Magiati, et al., 2007; Eikeseth, et al., 2007; Sallows and Graupner, 2005; Howard, et al., 2005; Sheinkopf and Siegel, 1998). Although many of the studies are limited by the small sample size and the length of time of treatment and follow-up time there is a demonstrated improvement in functional and social adaptation, and cognitive skills including language and communication skills, intellectual function, or other measures for children with ASD.

Other Intensive Intervention Programs

Intensive intervention programs other than those that focus on behavior analytic treatment have also been developed. The published evidence is preliminary and does not support the efficacy of these programs. These include, but are not limited to:

- TEACCH program: The TEACCH program (Treatment and Education of Autistic and Related Communication Handicapped Children) is an educational intervention focused on improving motor coordination and cognitive skills and has been implemented in many special education programs for autistic children. It includes behavioral analytic approaches for some skills but uses other interventions as well.
- Denver Model: The focus of the Colorado Health Sciences program (Denver Model) is learning through
 play based on Piaget and object relations theories. Behavior analytic techniques are included for
 behavior management.
- Rutgers program: The Rutgers program is known as the Douglas Developmental Disabilities Center (based at Rutgers University), has three programs small-group segregated preschool, and integrated preschool and intensive home-based intervention, and uses ABA techniques and similarities to the Lovaas program. Families are trained in the program and provide the treatment when they are available and or hire staff trained in the program.
- Learning Experiences and Alternative Program (LEAP): LEAP program includes both a preschool
 program and a behavioral skill training program for parents, as well as national outreach activities. The
 program includes an individualized curriculum that targets goals in social, emotional, language, adaptive
 behavior, cognitive, and physical developmental areas.
- Relationship Development Intervention (RDI): RDI is a program designed to empower and guide parents
 of children, adolescents and young adults with ASD and similar developmental disorders to function as
 facilitators for their children's mental development (Gutstein, 2009). RDI is based on instructing the
 parents to have an important role in improving critical emotional, social and meta-cognitive abilities
 through carefully graduated, guided interaction in daily activities.
- Floortime: this is also referred to as DIR® (Developmental, Individual Difference, Relationship-based model), DIR® Floortime, or Greenspan Floor-Time Model. This is a developmentally-based, one-on-one treatment program delivered 10 to 25 hours per week. The primary intervention method used in this model is intensive interactive "floor-time" play sessions, in which an adult follows a child's lead in play and interaction. The program consists of three components: home-based play sessions, individual therapies, and early education programs.

Intensive Behavioral Interventions for Other Conditions

Although intensive behavioral interventions were developed initially to treat children with autism spectrum disorders (ASD) they have been proposed to treat children with other conditions, including Down syndrome, learning disabilities and Attention-Deficit/Hyperactivity Disorder (ADHD. There is a lack of scientific evidence to support the efficacy of the programs for other conditions.

ABA has been proposed to treat individuals with Down syndrome. The behavior and psychiatric problems associated with Down syndrome Assessment should include evaluation of the problem at school and at home, behavior management techniques, and medication as needed (Ostermaier, 2022). The role of ABA in treatment of this condition is unproven and not supported in the published medical literature.

Professional Societies/Organizations

American Academy of Child and Adolescent Psychiatry (AACAP): The AACAP updated their practice parameters for the assessment and treatment of children and adolescents with autism spectrum disorders. The guidelines include the following regarding treatment (Volkmar, et al., 2014):

The clinician should help the family obtain appropriate, evidence-based and structured educational and behavioral interventions for children with ASD (evidence base: CS).

The guidelines note that, "Structured educational and behavioral interventions have been shown to be effective for many children with ASD and are associated with better outcome. As summarized in the National Research Council (NRC) report, the quality of the research literature in this area is variable, with most studies employing group controls or single-subject experimental methods. In general, studies employing more rigorous randomized group comparisons are sparse, reflecting difficulties in random assignment and control comparisons. Other

problems include lack of attention to subject characterization, generalization of treatment effects, and fidelity of treatment implementation. Despite these problems, various comprehensive treatments approaches have been shown to have efficacy for groups of children, although none of the comprehensive treatment models has clearly emerged as superior."

Regarding behavioral interventions, the guidelines note that, "Behavioral interventions such as Applied Behavioral Analysis (ABA) are informed by basic and empirically supported learning principles. A widely disseminated comprehensive ABA program is Early Intensive Behavioral Intervention (EIBI) for young children, based on the work of Lovaas. EIBI is intensive and highly individualized with up to 40 hours per week of one to one direct teaching, initially using discrete trials to teach simple skills and progressing to more complex skills such as initiating verbal behavior. A meta-analysis found EIBI effective for young children, but stressed the need for more rigorous research to extend the findings. Behavioral techniques are particularly useful when maladaptive behaviors interfere with provision of a comprehensive intervention program. In such situations a functional analysis of the target behavior is performed, in which patterns of reinforcement are identified and then various behavioral techniques are used to promote a desired behavioral alternative. ABA techniques have been repeatedly shown to have efficacy for specific problem behaviors, and ABA has also been found to be effective as applied to academic tasks, adaptive living skills, communication, social skills, and vocational skills. Because most children with ASD tend to learn tasks in isolation, an explicit focus on generalization is important."

*evidence base for practice parameters:

Recommendations for best assessment and treatment practices are stated in accordance with the strength of the underlying empirical and/or clinical support, as follows:

Clinical Standard (CS) is applied to recommendations that are based on rigorous empirical evidence (e.g., meta-analyses, systematic reviews, individual randomized controlled trials) and/or overwhelming clinical consensus.

Use Outside of the US

National Institute for Health and Clinical Excellence (NICE): NICE published clinical guidelines for the management and support of children and young people on the autism spectrum. The guidelines include the following recommendations for specific interventions for core features of autism (NICE, 2013; updated 2021):

Psychosocial interventions

- Consider a specific social-communication intervention for the core features of autism in children and young people that includes play-based strategies with parents, carers and teachers to increase joint attention, engagement and reciprocal communication in the child or young person. Strategies should:
 - > be adjusted to the child or young person's developmental level
 - ➤ aim to increase the parents', carers', teachers' or peers' understanding of, and sensitivity and responsiveness to, the child or young person's patterns of communication and interaction
 - > include techniques of therapist modeling and video-interaction feedback
 - > include techniques to expand the child or young person's communication, interactive play and social routines
- The intervention should be delivered by a trained professional. For pre-school children consider parent, carer or teacher mediation. For school-aged children consider peer mediation.

Medicare Coverage Determinations

	Contractor	Determination Name/Number	Revision Effective Date
NCD		No Determination found	
LCD		No Determination found	

Note: Please review the current Medicare Policy for the most up-to-date information.

(NCD = National Coverage Determination; LCD = Local Coverage Determination)

Coding Information

Note: 1) This list of codes may not be all-inclusive.

2) Deleted codes and codes which are not effective at the time the service is rendered may not be eligible for reimbursement.

Considered Medically Necessary when criteria in the applicable policy statements listed above are met:

CPT	Description
Codes	
97151	Behavior identification assessment, administered by a physician or other qualified health care professional, each 15 minutes of the physician's or other qualified health care professional's time face-to-face with patient and/or guardian(s)/caregiver(s) administering assessments and discussing findings and recommendations, and non-face-to-face analyzing past data, scoring/interpreting the assessment, and preparing the report/treatment plan
97152	Behavior identification-supporting assessment, administered by one technician under the direction of a physician or other qualified health care professional, face-to-face with the patient, each 15 minutes
97153	Adaptive behavior treatment by protocol, administered by technician under the direction of a physician or other qualified health care professional, face-to-face with one patient, each 15 minutes
97154	Group adaptive behavior treatment by protocol, administered by technician under the direction of a physician or other qualified health care professional, face-to-face with two or more patients, each 15 minutes
97155	Adaptive behavior treatment with protocol modification, administered by physician or other qualified health care professional, which may include simultaneous direction of technician, face-to-face with one patient, each 15 minutes
97156	Family adaptive behavior treatment guidance, administered by physician or other qualified health care professional (with or without the patient present), face-to-face with guardian(s)/caregiver(s), each 15 minutes
97157	Multiple-family group adaptive behavior treatment guidance, administered by physician or other qualified health care professional (without the patient present), face-to-face with multiple sets of guardian(s)/caregivers, each 15 minutes
97158	Group adaptive behavior treatment with protocol modification, administered by physician or other qualified health care professional, face-to-face with multiple patients, each 15 minutes
0362T	Behavior identification supporting assessment, each 15 minutes of technicians' time face-to-face with a patient requiring the following components: administration by the physician or other qualified health care professional who is on site; with the assistance of two or more technicians; for a patient who exhibits destructive behavior; completion in an environment that is customized to the patient's behavior
0373T	Adaptive behavior treatment with protocol modification, each 15 minutes of technicians' time face-to-face with a patient, requiring the following components: administration by the physician or other qualified health care professional who is on site; with the assistance of two or more technicians; for a patient who exhibits destructive behavior; completion in an environment that is customized to the patient's behavior

^{*}Current Procedural Terminology (CPT®) ©2022 American Medical Association: Chicago, IL.

References

1. ABA Coding Coalition. Model Coverage Policy for Adaptive Behavior Services. September 2020, Second edition January 2022. Accessed November 1, 2022. Available at URL address: https://abacodes.org/wp-content/uploads/2022/01/Model-Coverage-Policy-for-ABA-01.25.2022.pdf

- 2. ABA Coding Coalition. Reporting CPT Codes for Telehealth Delivery of Adaptive Behavior (ABA) Services. April 2020. Accessed November 1, 2022. Available at URL address: https://abacodes.org/wp-content/uploads/2020/05/ABACC-Reporting-CPT-Telehealth-Delivery.pdf
- 3. ABA Services Workgroup Steering Committee. Supplemental Guidance on Interpreting and Applying the 2019 CPT® Codes for Adaptive Behavior Services. January 2019. Accessed November 1, 2022. Available at URL address: https://abacodes.org/wp-content/uploads/2019/06/CPT_SupplementalGuidance190109.pdf
- 4. Alberto PA, Troutman AC. Applied Behavior Analysis for Teachers: Ninth Edition. Upper Saddle River, New Jersey: Pearson, 2012.
- 5. American Academy of Child & Adolescent Psychiatry (AACAP). Policy Statements. Autism and Vaccines. Approved by Council March 2016. Revised June 2022. Accessed September 2022. Available at URL address: https://www.aacap.org/AACAP/Policy_Statements/Home.aspx?hkey=8f5b049b-5f86-4030-8191-e96c5fa6958b
- 6. American Psychiatric Association: Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5). Arlington, VA. American Psychiatric Association, 2013.
- 7. American Psychiatric Association (APA). Diagnostic and Statistical Manual of Mental Disorders, Firth Edition Text Revision. DSM-5-TR™. Arlington, VA. American Psychiatric Association, 2022. Revised edition.
- 8. American Medical Association. CPT® Assistant, Vol. 28 Issue 11. Chicago: 2018, November.
- 9. American Medical Association. AMA CPT® Professional 2020. Chicago: 2019.
- Association of Professional Behavior Analysts. Identifying Applied Behavior Analysis Interventions. 2017.
 Accessed November 1, 2022. Available at URL address: https://abacodes.org/wp-content/uploads/2019/06/APBAwhitepaperABAinterventions.pdf
- 11. Augustyn M, von Hahn LE. Autism spectrum disorder: Clinical features. In: UpToDate, Voigt RG, Patterson MC (Eds), UpToDate, Waltham, MA. Literature review current through: October 2022; Topic last updated August 2, 2021. Accessed November 9, 2022.
- 12. Baer DM, Wolf MM, Risley TR. Some current dimensions of applied behavior analysis. J Appl Behav Anal. 1968 Spring;1(1):91-7.
- Behavior Analyst Certification Board. Professional and Ethical Compliance Code for Behavior Analysts. 2014; Ver. March 18, 2019. Accessed November 1, 2022. Available at URL address: https://www.bacb.com/wp-content/uploads/2020/05/BACB-Compliance-Code-english_190318.pdf
- 14. Behavior Analyst Certification Board. RBT® Ethics Code 2.0. 2021. Accessed November 1, 2022. Available at URL address: https://www.bacb.com/wp-content/uploads/2022/01/RBT-Ethics-Code-220316-2.pdf
- 15. Behavior Analyst Certification Board. About Behavior Analysis. Accessed November 1, 2022. Available at URL address: https://www.bacb.com/about-behavior-analysis/
- 16. Behavioral Analyst Certification Board & Association of Professional Behavior Analyst. Clarifications Regarding Applied Behavior Analysis Treatment of Autism Spectrum Disorder: Practice Guidelines for Healthcare Funders and Managers (2nd ed.). 2019. Accessed November 1, 2022. Available at URL address: https://cdn.ymaws.com/www.apbahome.net/resource/collection/1FDDBDD2-5CAF-4B2A-AB3F-DAE5E72111BF/Clarifications.ASDPracticeGuidelines.pdf

- 17. Ben-Itzchak E, Zachor DA. The effects of intellectual functioning and autism severity on outcome of early behavioral intervention for children with autism. Res Dev Disabil. 2007 May-Jun;28(3):287-303.
- 18. Bishop-Fitzpatrick L, Minshew NJ, Eack SM. A systematic review of psychosocial interventions for adults with autism spectrum disorders. J Autism Dev Disord. 2013 Mar;43(3):687-94.
- 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 Apr;27(2 Suppl):S145-55.
- 20. Cooper JO, Heron T, Heward W. Applied Behavior Analysis, 3rd. Edition. Pearson, 2020.
- 21. Council of Autism Service Providers (CASP). Applied Behavior Analysis Treatment of Autism Spectrum Disorder: Practice Guidelines for Healthcare Funders and Managers (2nd ed.). 2020. Accessed November 1, 2022. https://casproviders.org/wp-content/uploads/2020/03/ABA-ASD-Practice-Guidelines.pdf
- 22. Dawson G, Rogers S, Munson J, Smith M, Winter J, Greenson J, et al. Randomized, controlled trial of an intervention for toddlers with autism: the Early Start Denver Model. Pediatrics. 2010 Jan;125(1):e17-23.
- 23. DIR® Floortime. The Interdisciplinary Council on Developmental & Learning Disorders. Accessed November 1, 2022. Available at URL address: http://www.icdl.com/home
- 24. Du L, Shan L, Wang B, Li H, Xu Z, Staal WG, Jia F. A Pilot Study on the Combination of Applied Behavior Analysis and Bumetanide Treatment for Children with Autism. J Child Adolesc Psychopharmacol. 2015 Sep;25(7):585-8.
- 25. Eikeseth S, Smith T, Jahr E, Eldevik S. Outcome for children with autism who began intensive behavioral treatment between ages 4 and 7: a comparison controlled study. Behav Modif. 2007 May;31(3):264-78.
- 26. Eikeseth S, Smith T, Jahr E, Eldevik S. Intensive behavioral treatment at school for 4- to 7-year-old children with autism. A 1-year comparison controlled study. Behav Modif. 2002 Jan;26(1):49-68.
- 27. Eldevik S, Eikeseth S, Jahr E, Smith T. Effects of low-intensity behavioral treatment for children with autism and mental retardation. J Autism Dev Disord. 2006 Feb;36(2):211-24.
- 28. Eldevik S, Hastings RP, Hughes JC, Jahr E, Eikeseth S, Cross S. Meta-analysis of Early Intensive Behavioral Intervention for children with autism. J Clin Child Adolesc Psychol. 2009 May;38(3):439-50.
- 29. Estes A, Munson J, Rogers SJ, Greenson J, Winter J, Dawson G. Long-Term Outcomes of Early Intervention in 6-Year-Old Children With Autism Spectrum Disorder. J Am Acad Child Adolesc Psychiatry. 2015 Jul;54(7):580-7.
- 30. Fabiano GA, Pelham WE Jr, Coles EK, Gnagy EM, Chronis-Tuscano A, O'Connor BC. A meta-analysis of behavioral treatments for attention-deficit/hyperactivity disorder. Clin Psychol Rev. 2009 Mar;29(2):129-40.
- 31. Feeley K, Jones E. Strategies to address challenging behaviour in young children with Down syndrome. Downs Syndr Res Pract. 2008 Oct;12(2):153-63.
- 32. Feeley KM, Jones EA. Addressing challenging behaviour in children with Down syndrome: the use of applied behaviour analysis for assessment and intervention. Downs Syndr Res Pract. 2006 Sep;11(2):64-77.
- 33. Fernell E, Hedvall Å, Westerlund J, Höglund Carlsson L, Eriksson M, Barnevik Olsson M, et al. Early intervention in 208 Swedish preschoolers with autism spectrum disorder. A prospective naturalistic study. Res Dev Disabil. 2011 Nov-Dec;32(6):2092-101.

- 34. Fisher WW, Piazza CC, Fuhrman AM. Developing a severe behavior program: A toolkit. Autism Speaks Though Leadership Summit on Challenging Behaviors. Autism Speaks, Princeton, NJ. 2021. Accessed November 3, 2022. Available at URL address: https://www.autismspeaks.org/clinician-guide/business-plan
- 35. Granpeesheh D, Tarbox J, Dixon DR. Applied behavior analytic interventions for children with autism: a description and review of treatment research. Ann Clin Psychiatry. 2009 Jul-Sep;21(3):162-73.
- 36. Greenspan Floortime Approach™. Accessed November 1, 2022. Available at URL address: http://www.stanleygreenspan.com/
- 37. Gutstein SE, Burgess AF, Montfort K. Evaluation of the relationship development intervention program. Autism. 2007 Sep;11(5):397-411.
- 38. Gutstein SE. Empowering families through Relationship Development Intervention: an important part of the biopsychosocial management of autism spectrum disorders. Ann Clin Psychiatry. 2009 Jul-Sep;21(3):174-82.
- 39. Hayward D, Eikeseth S, Gale C, Morgan S. Assessing progress during treatment for young children with autism receiving intensive behavioural interventions. Autism. 2009 Nov;13(6):613-33.
- 40. Hoffmann AN, Contreras BP, Clay CJ, Twohig MP. Acceptance and Commitment Therapy for Individuals with Disabilities: A Behavior Analytic Strategy for Addressing Private Events in Challenging Behavior. Behav Anal Pract. 2016 Jan 26;9(1):14-24.
- 41. Hourston S, Atchley R. Autism and Mind-Body Therapies: A Systematic Review. J Altern Complement Med. 2017 May;23(5):331-339.
- 42. Howlin P, Magiati I, Charman T. Systematic review of early intensive behavioral interventions for children with autism. Am J Intellect Dev Disabil. 2009 Jan;114(1):23-41.
- 43. Howard JS, Sparkman CR, Cohen HG, Green G, Stanislaw H. A comparison of intensive behavior analytic and eclectic treatments for young children with autism. Res Dev Disabil. 2005 Jul-Aug;26(4):359-83.
- 44. Hyman SL, Levy SE, Myers SM; Council on Children with Disabilities, Section on Developmental and Behavioral Pediatrics. Identification, Evaluation, and Management of Children with Autism Spectrum Disorder. Pediatrics. 2020 Jan:145(1):e20193447.
- 45. Ichikawa K, Takahashi Y, Ando M, Anme T, Ishizaki T, Yamaguchi H, Nakayama T. TEACCH-based group social skills training for children with high-functioning autism: a pilot randomized controlled trial. Biopsychosoc Med. 2013 Oct1;7(1):14.
- 46. Jobin A. Varied treatment response in young children with autism: A relative comparison of structured and naturalistic behavioral approaches. Autism. 2020 Feb;24(2):338-351.
- 47. Kazdin AE. Single-Case Research Designs: Second Edition. New York, NY: Oxford University Press, 2011.
- 48. Kovshoff H, Hastings RP, Remington B. Two-year outcomes for children with autism after the cessation of early intensive behavioral intervention. Behav Modif. 2011 Sep;35(5):427-50.
- 49. LeBlanc LA, Gillis JM. Behavioral interventions for children with autism spectrum disorders. Pediatr Clin North Am. 2012 Feb;59(1):147-64, xi-xii.
- 50. Lounds Taylor J, Dove D, Veenstra-VanderWeele J, Sathe NA, McPheeters ML, Jerome RN, Warren Z. Interventions for Adolescents and Young Adults With Autism Spectrum Disorders [Internet]. Rockville

- (MD): Agency for Healthcare Research and Quality (US); 2012 Aug. Accessed November 1, 2022. Available from URL address: http://www.ncbi.nlm.nih.gov/books/NBK107275/
- 51. Lovaas OI. Behavioral treatment and normal educational and intellectual functioning in young autistic children. J Consult Clin Psychol. 1987 Feb;55(1):3-9.
- 52. Luiselli JK. Antecedent Assessment and Intervention. Baltimore, MD. Paul H. Brookes Publishing Co. 2006.
- 53. Magiati I, Charman T, Howlin P. A two-year prospective follow-up study of community-based early intensive behavioural intervention and specialist nursery provision for children with autism spectrum disorders. J Child Psychol Psychiatry. 2007 Aug;48(8):803-12.
- 54. Maglione MA, Gans D, Das L. Timbie J, Kasari C, For the Technical Expert Panel, and HRSA Autism Intervention Research Behavioral (AIR-B) Network. Nonmedical Interventions for Children With ASD: Recommended Guidelines and Further Research Needs. Pediatrics 2012; 130:Supplement 2 S169-S178.
- 55. Makrygianni MK, Reed P. A meta-analytic review of the effectiveness of behavioural early intervention programs for children with autism spectrum disorders. Res Autism Spectr Disord. 2010;4:577-593.
- 56. McEachin JJ, Smith T, Lovaas OI. Long-term outcome for children with autism who received early intensive behavioral treatment. Am J Ment Retard. 1993 Jan;97(4):359-72; discussion 373-91.
- 57. Mohammadzaheri F, Koegel LK, Rezaee M, Rafiee SM. A randomized clinical trial comparison between pivotal response treatment (PRT) and structured applied behavior analysis (ABA) intervention for children with autism. J Autism Dev Disord. 2014 Nov;44(11):2769-77.
- 58. National Institute for Health and Clinical Excellence (NICE). Autism: recognition, referral, diagnosis and management of adults on the autism spectrum. London (UK): National Institute for Health and Clinical Excellence (NICE); 2012 Jun; updated June 2021. (NICE clinical guideline; no. 142). Accessed November 1, 2022. Available at URL address: http://guidance.nice.org.uk/CG142
- 59. National Institute for Health and Clinical Excellence (NICE). Autism: the management and support of children and young people on the autism spectrum. London (UK): National Institute for Health and Clinical Excellence (NICE); 2013 Aug; updated June 2021. (NICE clinical guideline; no. 170). Accessed November 1, 2022. Available at URL address: https://www.nice.org.uk/guidance/cg170
- 60. Neil N, Amicarelli A, Anderson BM, Liesemer K. A Meta-Analysis of Single-Case Research on Applied Behavior Analytic Interventions for People With Down Syndrome. Am J Intellect Dev Disabil. 2021 Mar 1;126(2):114-141.
- 61. Odom SL, Boyd BA, Hall LJ, Hume K. Evaluation of comprehensive treatment models for individuals with autism spectrum disorders. J Autism Dev Disord. 2010 Apr;40(4):425-36.
- 62. Oono IP, Honey EJ, McConachie H. Parent-mediated early intervention for young children with autism spectrum disorders (ASD). Cochrane Database Syst Rev. 2013 Apr 30;4:CD009774.
- 63. Ospina MB, Krebs Seida J, Clark B, Karkhaneh M, Hartling L, Tjosvold L, et al. Behavioural and developmental interventions for autism spectrum disorder: a clinical systematic review. PLoS One. 2008;3(11):e3755.
- 64. Ostermaier K. Down syndrome: Management. In: UpToDate, Firth HV, Drutz JE (Eds), UpToDate, Waltham, MA. Literature review current through: October 2022. Topic last updated: October 6, 2022. Accessed November 2, 2022.

- 65. Pahnke J, Lundgren T, Hursti T, Hirvikoski T. Outcomes of an acceptance and commitment therapy-based skills training group for students with high-functioning autism spectrum disorder: a quasi-experimental pilot study. Autism. 2014 Nov;18(8):953-64.
- 66. Pajareya K, Nopmaneejumruslers K. A pilot randomized controlled trial of DIR/Floortime[™] parent training intervention for pre-school children with autistic spectrum disorders. Autism. 2011 Sep;15(5):563-77.
- 67. Patten ML, Newhart M. Understanding Research Methods: An Overview of the Essentials. New York, NY: Taylor & Francis, 2018.
- 68. Pellecchia M, Connell JE, Beidas RS, Xie M, Marcus SC, Mandell DS. Dismantling the Active Ingredients of an Intervention for Children with Autism. J Autism Dev Disord. 2015 Sep;45(9):2917-27.
- 69. Peters-Scheffer N, Didden R, Korzilius H, et al. A meta-analytic study on the effectiveness of comprehensive ABA based early intervention programs for children with Autism Spectrum Disorders. Res Autism Spectr Disord. 2011;5:60-69.
- 70. Reed P, Osborne LA, Corness M. Brief report: relative effectiveness of different home-based behavioral approaches to early teaching intervention. J Autism Dev Disord. 2007 Oct;37(9):1815-21.
- 71. Reichow B, Wolery 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 Jan;39(1):23-41.
- 72. Reichow B. Overview of Meta-Analyses on Early Intensive Behavioral Intervention for Young Children with Autism Spectrum Disorders. J Autism Dev Disord. 2011 Mar 15. [Epub ahead of print]
- 73. Reichow B, Barton EE, Boyd BA, Hume K. Early intensive behavioral intervention (EIBI) for young children with autism spectrum disorders (ASD). Cochrane Database Syst Rev. 2012 Oct 17;10:CD009260.
- 74. Reichow B, Hume K, Barton EE, Boyd BA. Early intensive behavioral intervention (EIBI) for young children with autism spectrum disorders (ASD). Cochrane Database Syst Rev. 2018 May 9;5:CD009260.
- 75. Remington B, Hastings RP, Kovshoff H, degli Espinosa F, Jahr E, Brown T, et al. Early intensive behavioral intervention: outcomes for children with autism and their parents after two years. Am J Ment Retard. 2007 Nov;112(6):418-38.
- 76. Rogers SJ, Estes A, Lord C, Vismara L, Winter J, Fitzpatrick A, et al. Effects of a Brief Early Start Denver Model (ESDM)-Based Parent Intervention on Toddlers at Risk for Autism Spectrum Disorders: A Randomized Controlled Trial. J Am Acad Child Adolesc Psychiatry. 2012 Oct;51(10):1052-65.
- 77. Roth ME, Gillis JM, DiGennaro R. A meta-analysis of behavioral interventions for adolescents and adults with autism spectrum disorders. Journal of Behavioral Education. 2014;23(2):258-286.
- 78. Sallows GO, Graupner TD. Intensive behavioral treatment for children with autism: four-year outcome and predictors. Am J Ment Retard. 2005 Nov;110(6):417-38.
- 79. Salvatore GL, Simmons CA, Tremoulet PD. Physician Perspectives on Severe Behavior and Restraint Use in a Hospital Setting for Patients with Autism Spectrum Disorder. J Autism Dev Disord. 2022 Oct;52(10):4412-4425.
- 80. Seida JK, Ospina MB, Karkhaneh M, Hartling L, Smith V, Clark B. Systematic reviews of psychosocial interventions for autism: an umbrella review. Dev Med Child Neurol. 2009 Feb;51(2):95-104.
- 81. Shea V. A perspective on the research literature related to early intensive behavioral intervention (Lovaas) for young children with autism. Autism. 2004 Dec;8(4):349-67.

- 82. Sheinkopf S, Siegel B. Home-based behavioral treatment of young children with autism. J Autism Devel Disord. 1998 Feb;28(1):15-23.
- 83. Shi B, Wu W, Dai M, Zeng J, Luo J, Cai L, Wan B, Jing J. Cognitive, Language, and Behavioral Outcomes in Children With Autism Spectrum Disorders Exposed to Early Comprehensive Treatment Models: A Meta-Analysis and Meta-Regression. Front Psychiatry. 2021 Jul 26;12:691148.
- 84. Smith IM, Flanagan HE, Ungar WJ, D'Entremont B, Garon N, den Otter J, et al. Comparing the 1-year impact of preschool autism intervention programs in two Canadian provinces. Autism Res. 2019 Apr;12(4):667-681.
- 85. Smith T, Groen A, Wynn J. Randomized trial of intensive early intervention for children with pervasive developmental disorder. Am J Ment Retard. 2000 Jul;105(4):269-85. Erratum in: Am J Ment Retard 2000 Nov;105(6):508. Am J Ment Retard 2001 May;106(3):208.
- 86. Smith IM, Koegel RL, Koegel LK, Openden DA, Fossum KL, Bryson SE. Effectiveness of a novel community-based early intervention model for children with autistic spectrum disorder. Am J Intellect Dev Disabil. 2010 Nov;115(6):504-23.
- 87. Solomon R, Necheles J, Ferch C, Bruckman D. Pilot study of a parent training program for young children with autism: the PLAY Project Home Consultation program. Autism. 2007 May;11(3):205-24.
- 88. Spreckley M, Boyd R. Efficacy of applied behavioral intervention in preschool children with autism for improving cognitive, language, and adaptive behavior: a systematic review and meta-analysis. J Pediatr. 2009 Mar;154(3):338-44.
- 89. Strauss K, Mancini F; SPC Group, Fava L. Parent inclusion in early intensive behavior interventions for young children with ASD: a synthesis of meta-analyses from 2009 to 2011. Res Dev Disabil. 2013 Sep;34(9):2967-85.
- 90. United States. The Health Insurance Portability and Accountability Act (HIPAA). Washington, DC: U.S. Department of Labor, Employee Benefits Security Administration. 2004.
- 91. Virués-Ortega J. Applied behavior analytic intervention for autism in early childhood: meta-analysis, meta-regression and dose-response meta-analysis of multiple outcomes. Clin Psychol Rev. 2010 Jun;30(4):387-99. Epub 2010 Feb 11.
- 92. Virues-Ortega J, Julio FM, Pastor-Barriuso R. The TEACCH program for children and adults with autism: a meta-analysis of intervention studies. Clin Psychol Rev. 2013 Dec;33(8):940-53.
- 93. Volkmar F, Siegel M, Woodbury-Smith M, King B, McCracken J, State M; American Academy of Child and Adolescent Psychiatry (AACAP) Committee on Quality Issues (CQI). Practice parameter for the assessment and treatment of children and adolescents with autism spectrum disorder. J Am Acad Child Adolesc Psychiatry. 2014 Feb;53(2):237-57.
- 94. Volkmar FR, Lord C, Bailey A, Schultz RT, Klin A. Autism and pervasive developmental disorders. J Child Psychol Psychiatry. 2004 Jan;45(1):135-70.
- 95. Vorgraft Y, Farbstein I, Spiegel R, Apter A. Retrospective evaluation of an intensive method of treatment for children with pervasive developmental disorder. Autism. 2007 Sep;11(5):413-24.
- 96. Warren Z, Veenstra-VanderWeele J, Stone W, Bruzek JL, Nahmias AS, Foss-Feig JH, et al. Therapies for Children With Autism Spectrum Disorders. Comparative Effectiveness Review No. 26. (Prepared by the Vanderbilt Evidence-based Practice Center under Contract No. 290-2007-10065-I.) AHRQ Publication No. 11-EHC029-EF. Rockville, MD: Agency for Healthcare Research and Quality. April 2011a. Accessed

- November 1, 2022. Available at URL address: https://effectivehealthcare.ahrq.gov/products/autism/research/
- 97. Warren Z, McPheeters ML, Sathe N, Foss-Feig JH, Glasser A, Veenstra-Vanderweele J. A systematic review of early intensive intervention for autism spectrum disorders. Pediatrics. 2011b May;127(5):e1303-11.
- 98. Weitlauf AS, McPheeters ML, Peters B, Sathe N, Travis R, Aiello R, Williamson E, et al. Therapies for Children With Autism Spectrum Disorder: Behavioral Interventions Update. Comparative Effectiveness Review No. 137. (Prepared by the Vanderbilt Evidence-based Practice Center under Contract No. 290-2012-00009-I.) AHRQ Publication No. 14-EHC036-EF. Rockville, MD: Agency for Healthcare Research and Quality; August 2014. Accessed November 1, 2022. Available at URL address: https://effectivehealthcare.ahrq.gov/topics/autism-update/research/.
- 99. Weissman L. Autism spectrum disorder in children and adolescents: Overview of management. In: UpToDate, Augustyn M, Patterson MC (Eds), UpToDate, Waltham, MA. Literature review current through: September 2022; Topic last updated: Dec 19, 2019. Accessed November 1, 2022.
- 100. Weissman L. Autism spectrum disorder: Surveillance and screening in primary care. In: UpToDate, Augustyn M (Ed), UpToDate, Waltham, MA. Literature review current through: October 2022; Topic last updated: May 5, 2022. Accessed November 9, 2022.
- 101. Zachor DA, Itzchak EB. Treatment approach, autism severity and intervention outcomes in young children. Research in Autism Spectrum Disorders, 2010 4(3), pp. 425-432.

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