8.03.13	Sensory Integration Therapy and Auditory Integration Therapy		
Original Policy Date:	June 7, 2000	**Effective Date:**	May 1, 2024
Section:	8.0 Therapy	**Page:**	Page 1 of 14

Policy Statement

I. Sensory integration therapy and auditory integration therapy are considered **investigational**.

NOTE: Refer to Appendix A to see the policy statement changes (if any) from the previous version.

Policy Guidelines

Coding
See the Codes table for details

Description

Sensory integration therapy has been proposed as a treatment of developmental disorders in patients with established dysfunction of sensory processing, particularly autism spectrum disorder. Sensory integration therapy may be offered by occupational and physical therapists who are certified in sensory integration therapy. Auditory integration therapy uses gradual exposure to certain types of sounds to improve communication in a variety of developmental disorders, particularly autism.

Related Policies

- Cognitive Rehabilitation

Benefit Application

Benefit determinations should be based in all cases on the applicable contract language. To the extent there are any conflicts between these guidelines and the contract language, the contract language will control. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage of these services as it applies to an individual member.

Some state or federal mandates (e.g., Federal Employee Program [FEP]) prohibits plans from denying Food and Drug Administration (FDA)-approved technologies as investigational. In these instances, plans may have to consider the coverage eligibility of FDA-approved technologies on the basis of medical necessity alone.

Regulatory Status

Sensory integration therapy is a procedure and, as such, is not subject to regulation by the U.S. Food and Drug Administration. No devices designed to provide auditory integration therapy have been cleared for marketing by the FDA.

Rationale

Background
The goal of sensory integration therapy is to improve how the brain processes and adapts to sensory information, as opposed to teaching specific skills. Therapy usually involves activities that provide

An independent member of the Blue Shield Association

Reproduction without authorization from Blue Shield of California is prohibited

vestibular, proprioceptive, and tactile stimuli, which are selected to match specific sensory processing deficits of the child. For example, swings are commonly used to incorporate vestibular input, while trapeze bars and large foam pillows or mats may be used to stimulate somatosensory pathways of proprioception and deep touch. Tactile reception may be addressed through a variety of activities and surface textures involving light touch.

Auditory integration therapy (also known as auditory integration training, auditory enhancement training, audio-psycho-phonology) involves having individuals listen to music modified to remove frequencies to which they are hypersensitive, with the goal of gradually increasing exposure to sensitive frequencies. Although several methods of auditory integration therapy have been developed, the most widely described is the Berard method, which involves 2 half-hour sessions per day separated by at least 3 hours, over 10 consecutive days, during which patients listen to recordings. Auditory integration therapy has been proposed for individuals with a range of developmental and behavioral disorders, including learning disabilities, autism spectrum disorder, pervasive developmental disorder, and attention-deficit/hyperactivity disorder. Other methods include the Tomatis method, which involves listening to electronically modified music and speech, and Samonas Sound Therapy, which involves listening to filtered music, voices, and nature sounds.[1,]

Literature Review

Evidence reviews assess the clinical evidence to determine whether the use of a technology improves the net health outcome. Broadly defined, health outcomes are the length of life, quality of life, and ability to function including benefits and harms. Every clinical condition has specific outcomes that are important to patients and to managing the course of that condition. Validated outcome measures are necessary to ascertain whether a condition improves or worsens; and whether the magnitude of that change is clinically significant. The net health outcome is a balance of benefits and harms.

To assess whether the evidence is sufficient to draw conclusions about the net health outcome of a technology, 2 domains are examined: the relevance and the quality and credibility. To be relevant, studies must represent 1 or more intended clinical use of the technology in the intended population and compare an effective and appropriate alternative at a comparable intensity. For some conditions, the alternative will be supportive care or surveillance. The quality and credibility of the evidence depend on study design and conduct, minimizing bias and confounding that can generate incorrect findings. The randomized controlled trial (RCT) is preferred to assess efficacy; however, in some circumstances, nonrandomized studies may be adequate. Randomized controlled trials are rarely large enough or long enough to capture less common adverse events and long-term effects. Other types of studies can be used for these purposes and to assess generalizability to broader clinical populations and settings of clinical practice.

Promotion of greater diversity and inclusion in clinical research of historically marginalized groups (e.g., People of Color [African-American, Asian, Black, Latino and Native American]; LGBTQIA (Lesbian, Gay, Bisexual, Transgender, Queer, Intersex, Asexual); Women; and People with Disabilities [Physical and Invisible]) allows policy populations to be more reflective of and findings more applicable to our diverse members. While we also strive to use inclusive language related to these groups in our policies, use of gender-specific nouns (e.g., women, men, sisters, etc.) will continue when reflective of language used in publications describing study populations.

Sensory Integration Therapy

Clinical Context and Therapy Purpose

The purpose of sensory integration therapy in individuals who have developmental disorders is to provide a treatment option that is an alternative to or an improvement on existing therapies.

The following PICO was used to select literature to inform this review.

Reproduction without authorization from Blue Shield of California is prohibited.

Populations
The relevant population of interest is individuals with developmental disorders.

Interventions
The treatment being considered is the use of sensory integration therapy. The treatment sessions are often provided as part of a comprehensive occupational therapy or cognitive rehabilitation therapy and may last for more than 1 year.

Comparators
The following practices are currently being used to treat developmental disorders : specialized developmentally appropriate interventions for specific developmental disorders.

Outcomes
The general outcomes of interest are functional outcomes and quality of life. Follow-up of at least 6 months would be desirable to assess outcomes.
Schaaf et al (2014) published an overview of current measurement issues in sensory integration.[2,] These authors proposed several changes to the outcomes used in sensory integration research, as follows:

- "Additional measures … to ensure a comprehensive assessment of the sensory and motor factors that may be influencing function and participation";
- "Assessment measures … to address a wider age range"
- Neurophysiologic studies
- "Fidelity to the core principles of sensory integration therapy"
- "Studies … to evaluate the dosage of therapy to understand the best candidates for intervention and the appropriate intensity and frequency of intervention";
- "Outcomes that are meaningful to clients and sensitive to the changes observed after intervention."

The Sensory Processing Disorders Scientific Workgroup (2007) has also discussed the methodologic challenges of conducting intervention effectiveness studies of dynamic interactional processes, the lack of scientific evidence to support current practice, and methods for improving the quality of research in this area.[3,4,]

Study Selection Criteria
Methodologically credible studies were selected using the following principles:

a. To assess efficacy outcomes, comparative controlled prospective trials were sought, with a preference for RCTs;
b. In the absence of such trials, comparative observational studies were sought, with a preference for prospective studies.
c. To assess long-term outcomes and adverse events, single-arm studies that capture longer periods of follow-up and/or larger populations were sought.
d. Studies with duplicative or overlapping populations were excluded.

Review of Evidence
Systematic Reviews
Several systematic reviews have addressed the use of sensory integration therapy in various clinical conditions (Tables 1 and 2). Two of the 3 systematic reviews included in this evidence review pertain to studies evaluating sensory integration therapy for autism spectrum disorder (ASD),[5,6,] while 1 included studies in individuals with a broader range of developmental disabilities.[7,]

Table 1. Comparison of Studies Included in Systematic Reviews of Sensory Integration Therapy

Study	Weitlauf et al (2017)[5,]	Case-Smith et al (2015)[6,]	May-Benson et al (2010)[7,]
RCTs			

Reproduction without authorization from Blue Shield of California is prohibited.

Study	Weitlauf et al (2017)[5],	Case-Smith et al (2015)[6],	May-Benson et al (2010)[7],
Carte et al (1984)			

Reproduction without authorization from Blue Shield of California is prohibited.

RCTs: randomized controlled trials.

Table 2. Characteristics of Systematic Reviews of Sensory Integration Therapy

Study	Search Dates	Studies	Populations
Weitlauf et al (2017)[5,]	2010-2016	3 RCTs, 1 other design	ASD
Case-Smith et al (2015)[6,]	2000-2012	2 RCTs, 3 other design	ASD
May-Benson et al (2010)[7,]	1972-2007	13 RCTs, 14 other designs	Children with difficulty processing and integrating sensory information

ASD: autism spectrum disorder; RCT: randomized controlled trial.

In a systematic review conducted for the Agency for Healthcare Research and Quality (AHRQ), Weitlauf et al (2017) evaluated the effectiveness and safety of a variety of interventions targeting sensory challenges in ASD.[5,] The reviewers included 3 RCTs and 1 retrospective cohort study of sensory integration-based approaches, defined as interventions using combinations of sensory and kinetic components, such as materials with different textures, touch/massage, swinging and trampoline exercises, and balance and muscle resistance exercises. One study was rated low risk of bias, 1 moderate, and 2 high risk of bias. Significant heterogeneity across studies in interventions and outcome measures precluded meta-analysis. In 3 of 4 studies, sensory-related measures and motor skills measures improved for children receiving the sensory integration-based intervention, however the strength of this evidence was rated low due to small sample sizes and short study durations. The studies were also limited by a lack of blinding when parent-reported outcome measures were used. The reviewers concluded, "Although some therapies may hold promise and warrant additional study, substantial needs exist for continuing improvements in methodologic rigor in the field."

Case-Smith et al (2015) updated a systematic review on sensory processing interventions, including sensory integration therapy, which they defined as clinic-based interventions that use sensory-rich, child-directed activities to improve a child's adaptive responses to sensory experiences, and sensory-based interventions (defined as adult-directed sensory modalities applied to the child to improve behaviors associated with modulation disorders), for children with ASD with concurrent sensory processing problems.[6,] This review was designed to focus on interventions that activate the somatosensory and vestibular systems for patients with ASD with co-occurring sensory processing problems. Nineteen studies published since 2000 were included, 5 of which evaluated sensory integration therapy in patients with ASD and sensory processing disorders. Two studies reviewed were RCTs; both were small (n=20 and n=17 in the sensory integration therapy groups). Reviewers noted the studies showed low or low-to-moderate effects and concluded that "It is premature to draw conclusions as to whether sensory integration therapy for children with ASD, which is designed to support a child's intrinsic motivation and sense of internal control, is ultimately effective."
May-Benson and Koomar (2010) published a systematic review of sensory integration therapy, identifying 27 research studies (13 randomized trials) that met their inclusion criteria.[7,] Most studies had been performed with children who had learning or reading disabilities. There were 2 case reports/small series on the effect of sensory integration therapy in children with ASD. Reviewers concluded that although the sensory integration approach might result in positive outcomes, findings were limited because of small sample sizes, variable intervention dosages, lack of fidelity to interventions, and selection of outcomes that might not be meaningful or might not change with the treatment provided.

Randomized Controlled Trial

The SENsory Integration Therapy for sensory processing difficulties in children with Autism spectrum disorder (SenITA) RCT was published more recently and not included in the systematic reviews discussed above (Table 3). The trial was funded by the National Institute for Health and Care Research (UK) and reported by Randell et al (2022).[8,] A total of 138 children ages 4 to 11 years with an autism diagnosis or sensory processing difficulties were randomized to Ayres Sensory Integration®

Reproduction without authorization from Blue Shield of California is prohibited.

therapy delivered in 26 1-hour sessions over 26 weeks (intensive phase), followed by 2 sessions per month for 2 months and then 1 telephone session per month for 2 months (tailoring phase). The comparator was usual care, which was defined as awaiting services or receiving sensory-based intervention not meeting fidelity criteria for sensory integration. Outcomes were measured at 6 and 12 months post randomization. The primary outcome was irritability/agitation (as measured by the corresponding Aberrant Behavior Checklist subscale), indicative of challenging behavior, at 6 months. Secondary outcomes included other problem behaviors, adaptive behaviors and functioning, socialization, caregiver stress, and quality of life. Outcome assessors were blinded to treatment allocation. Study limitations are shown in Tables 4 and 5.

Sensory integration therapy did not demonstrate clinical benefit above standard care (adjusted mean difference between groups on the primary outcome 0.40 [95% CI -2.33 to 3.14; p=.77]). No main intervention effects were observed, and sensitivity analyses did not alter the interpretation of results. Subgroup analyses suggest that sensory integration therapy may work better for boys and those with a comorbid diagnosis of ADHD. However, these subgroup analyses were exploratory and not powered to detect effects.

Table 3. Randomized Controlled Trial of Sensory Integration Therapy in Children with Autism and Sensory Processing Difficulties- Characteristics

Study	Location	Inclusion/Exclusion Criteria	Intervention	Comparator	Main Results
Randell et al (2022)[8,]	England and Wales	Children ages 4 to 11 years with a diagnosis of autism or probable or likely autism (defined as undergoing assessment); in mainstream primary education; definite or probable SPDs Exclusions: currently undergoing or had previously undergone SIT or applied behavior analysis therapy Recruitment via services and self-referral	n=69 Ayres Sensory Integration therapy delivered in 26 1-hour sessions over 26 weeks 2 sessions per week for 10 weeks (intensive phase), followed by 2 sessions per month for 2 months and then 1 telephone session per month for 2 months (tailoring phase)	n=69 Usual care, defined as awaiting services or receiving sensory-based intervention not meeting fidelity criteria for sensory integration	Primary Outcome (irritability/agitation at 6 months on Aberrant Behavior Checklist): Mean score: Usual care 18.8 (SD 10.48) Intervention 18.5 (SD 9.33) Adjusted mean difference between groups 0.40 (95% CI, -2.33 to 3.14; p=.77) Conclusions from primary analyses unaffected by sensitivity analyses accounting for missing data, intervention receipt (i.e. dose), or the COVID-19 pandemic. No evidence of meaningful intervention effects was found at 6 or 12 months across behavioral, adaptive functioning, socialization, caregiver stress, health utility, or quality-of-life measures.

CI: confidence interval; SD: standard deviation; SPD: sensory processing difficulties.

Table 4. Study Relevance Limitations

Study	Population[a]	Intervention[b]	Comparator[c]	Outcomes[d]	Duration of Follow-up[e]
Randell et al (2022)[8,]	4. The population was representative of children within autism	5. Delivery of the intervention varied across regions			

Reproduction without authorization from Blue Shield of California is prohibited.

Study	Population[a]	Intervention[b]	Comparator[c]	Outcomes[d]	Duration of Follow-up[e]
	services, although girls and minority ethnic boys were likely to be under-represented in both the current study and the wider population of children diagnosed with autism				

The study limitations stated in this table are those notable in the current review; this is not a comprehensive gaps assessment.
[a] Population key: 1. Intended use population unclear; 2. Study population is unclear; 3. Study population not representative of intended use; 4, Enrolled populations do not reflect relevant diversity; 5. Other.
[b] Intervention key: 1. Not clearly defined; 2. Version used unclear; 3. Delivery not similar intensity as comparator; 4. Not the intervention of interest (e.g., proposed as an adjunct but not tested as such); 5: Other.
[c] Comparator key: 1. Not clearly defined; 2. Not standard or optimal; 3. Delivery not similar intensity as intervention; 4. Not delivered effectively; 5. Other.
[d] Outcomes key: 1. Key health outcomes not addressed; 2. Physiologic measures, not validated surrogates; 3. Incomplete reporting of harms; 4. Not establish and validated measurements; 5. Clinically significant difference not prespecified; 6. Clinically significant difference not supported; 7. Other.
[e] Follow-Up key: 1. Not sufficient duration for benefit; 2. Not sufficient duration for harms; 3. Other.

Table 5. Study Design and Conduct Limitations

Study	Allocation[a]	Blinding[b]	Selective Reporting[c]	Data Completeness[d]	Power[e]	Statistical[f]
Randell et al (2022)[8,]				7. Caregiver-reported goal performance not measured in control arm		

The study limitations stated in this table are those notable in the current review; this is not a comprehensive gaps assessment.
[a] Allocation key: 1. Participants not randomly allocated; 2. Allocation not concealed; 3. Allocation concealment unclear; 4. Inadequate control for selection bias; 5. Other.
[b] Blinding key: 1. Participants or study staff not blinded; 2. Outcome assessors not blinded; 3. Outcome assessed by treating physician; 4. Other.
[c] Selective Reporting key: 1. Not registered; 2. Evidence of selective reporting; 3. Evidence of selective publication; 4. Other.
[d] Data Completeness key: 1. High loss to follow-up or missing data; 2. Inadequate handling of missing data; 3. High number of crossovers; 4. Inadequate handling of crossovers; 5. Inappropriate exclusions; 6. Not intent to treat analysis (per protocol for noninferiority trials); 7. Other.
[e] Power key: 1. Power calculations not reported; 2. Power not calculated for primary outcome; 3. Power not based on clinically important difference; 4. Other.
[f] Statistical key: 1. Analysis is not appropriate for outcome type: (a) continuous; (b) binary; (c) time to event; 2. Analysis is not appropriate for multiple observations per patient; 3. Confidence intervals and/or p values not reported; 4. Comparative treatment effects not calculated; 5. Other.

Section Summary: Sensory Integration Therapy

The most direct evidence related to outcomes from sensory integration therapy comes from randomized trials and systematic reviews of these trials. Although certain studies demonstrated some improvements on subsets of the outcomes measured, the studies were limited by small sample sizes, heterogeneous patient populations, and variable outcome measures. A RCT of 138 children ages 4 to 11 years published in 2022 found that sensory integration therapy for children with autism and sensory processing difficulties did not demonstrate clinical benefit above standard care. As a

Reproduction without authorization from Blue Shield of California is prohibited.

result, the evidence is not sufficiently robust to draw conclusions about the effects of, and the most appropriate patient populations for, sensory integration therapy.

Auditory Integration Therapy

Clinical Context and Therapy Purpose

The purpose of auditory integration therapy in patients who have developmental disorders is to provide a treatment option that is an alternative to or an improvement on existing therapies.

The following PICO was used to select literature to inform this review.

Populations

The relevant population of interest is individuals with developmental disorders. Although auditory integration therapy has been proposed as a therapy for a number of neurobehavioral disorders, the largest body of evidence, including systematic reviews, relates to its use in ASD.

Interventions

The treatment being considered is the use of auditory integration therapy. Auditory integration therapy involves having individuals listen to music modified to remove frequencies to which they are hypersensitive, with the goal of gradually increasing exposure to sensitive frequencies.

Comparators

The following practices are currently being used to treat developmental disorders: specialized interventions for specific developmental disorders.

Outcomes

The general outcomes of interest are functional outcomes and quality of life. Follow-up of at least 6 months would be desirable to assess outcomes.

Study Selection Criteria

Methodologically credible studies were selected using the following principles:

a. To assess efficacy outcomes, comparative controlled prospective trials were sought, with a preference for RCTs;
b. In the absence of such trials, comparative observational studies were sought, with a preference for prospective studies.
c. To assess long-term outcomes and adverse events, single-arm studies that capture longer periods of follow-up and/or larger populations were sought.
d. Studies with duplicative or overlapping populations were excluded.

Review of Evidence

Systematic Reviews

In their systematic review of sensory interventions conducted for AHRQ, Weitlauf et al (2017) included 4 RCTs of auditory integration therapy.[5,] Two small, short-term RCTs with moderate risk of bias reported no significant differences between auditory integration and control groups in language outcomes assessed on parent, teacher, and clinician observation measures.[9,10,] Two other RCTs, reported in a single publication, reported some parent-rated improvement in hearing sensitivity, spontaneous speech, listening, and behavioral organization, but no difference in other behavioral domains rated.[11,] Overall, the reviewers concluded that there is low strength evidence that auditory integration-based approaches do not improve language outcomes.

A Cochrane review (2011) evaluated auditory integration therapy along with other sound therapies for ASD.[1,] Included were 6 RCTs on auditory integration therapy and 1 on Tomatis therapy, comprising a total of 182 subjects (age range, 3 to 39 years). For most trials, the control condition was listening to unmodified music for the same amount of time as the active treatment group. Allocation concealment was inadequate for all trials, and 5 trials had fewer than 20 participants. Meta-analyses

Reproduction without authorization from Blue Shield of California is prohibited.

could not be conducted. Three studies did not demonstrate any benefit of auditory integration therapy over control conditions, and 3 studies had outcomes of questionable validity or outcomes that were not statistically significant. Reviewers found no evidence that auditory integration therapy is an effective treatment for ASD; however, evidence was insufficient to prove that it is not effective. In the systematic review examining complementary and alternative therapies for ASD, Brondino et al (2015; described above)[Brondino N, Fusar-Poli L, Rocchetti M, et al. Comp.... 5; 2015: 258589. PMID 26064157] identified the same 6 RCTs of auditory integration therapy included in the 2011 Cochrane review. Like the Cochrane review, Brondino et al (2015) concluded that the largest studies did not report improvements with auditory integration therapy.

Section Summary: Auditory Integration Therapy

The largest body of evidence on the use of auditory integration therapy relates to treatment of ASD. A 2011 Cochrane review found that studies of auditory integration therapy failed to demonstrate meaningful clinical improvements. No subsequent comparative studies of auditory integration therapy were identified.

Supplemental Information

The purpose of the following information is to provide reference material. Inclusion does not imply endorsement or alignment with the evidence review conclusions.

Practice Guidelines and Position Statements

Guidelines or position statements will be considered for inclusion in 'Supplemental Information' if they were issued by, or jointly by, a US professional society, an international society with US representation, or National Institute for Health and Care Excellence (NICE). Priority will be given to guidelines that are informed by a systematic review, include strength of evidence ratings, and include a description of management of conflict of interest.

American Academy of Pediatrics

A 2012 policy statement by the American Academy of Pediatrics on sensory integration therapy for children with developmental and behavioral disorders stated that "occupational therapy with the use of sensory-based therapies may be acceptable as one of the components of a comprehensive treatment plan. However, parents should be informed that the amount of research regarding the effectiveness of sensory integration therapy is limited and inconclusive."[12,] The American Academy of Pediatrics indicated that these limitations should be discussed with parents, along with instructions on how to evaluate the effectiveness of a trial period of sensory integration therapy.

American Occupational Therapy Association

The 2015 American Occupational Therapy Association (AOTA) guidelines stated: "American Occupational Therapy Association (AOTA) recognizes sensory integration as one of several theories and methods used by occupational therapists and occupational therapy assistants working with children in public and private schools...to "enhanc[e] a person's ability to participate in life through engagement in everyday activities....When children demonstrate sensory, motor, or praxis deficits that interfere with their ability to access the general education curriculum, occupational therapy using a sensory integration approach is appropriate."[13,]

In 2011, the American Occupational Therapy Association (AOTA) published evidence-based occupational therapy practice guidelines for children and adolescents with challenges in sensory processing and sensory integration.[14,] The AOTA gave a level C recommendation for sensory integration therapy for individual functional goals for children, for parent-centered goals, and for participation in active play in children with sensory processing disorder, and to address play skills and engagement in children with autism. A level C recommendation is based on "...weak evidence that the intervention can improve outcomes, and the balance of the benefits and harms may result either in a recommendation that occupational therapy practitioners routinely provide the intervention ... or in no recommendation because the balance of the benefits and harm is too close to justify a general

Reproduction without authorization from Blue Shield of California is prohibited.

recommendation." Specific performance skills evaluated were motor and praxis skills, sensory-perceptual skills, emotional regulation, and communication and social skills. There was insufficient evidence to recommend sensory integration therapy for academic and psychoeducational performance (e.g., math, reading, written performance).

American Speech-Language-Hearing Association

In 2002, the American Speech-Language-Hearing Association Work Group on Auditory Integration Therapy concluded that auditory integration therapy has not met scientific standards for efficacy that would justify its practice by audiologists and speech-language pathologists.[15,]

U.S. Preventive Services Task Force Recommendations

Not applicable.

Medicare National Coverage

There is no national coverage determination. In the absence of a national coverage determination, coverage decisions are left to the discretion of local Medicare carriers.

Ongoing and Unpublished Clinical Trials

A search of ClinicalTrials.gov in February 2024 did not identify any studies that would likely influence this review.

References

1. Sinha Y, Silove N, Hayen A, et al. Auditory integration training and other sound therapies for autism spectrum disorders (ASD). Cochrane Database Syst Rev. Dec 07 2011; 2011(12): CD003681. PMID 22161380
2. Schaaf RC, Burke JP, Cohn E, et al. State of measurement in occupational therapy using sensory integration. Am J Occup Ther. 2014; 68(5): e149-53. PMID 25184475
3. Mailloux Z, May-Benson TA, Summers CA, et al. Goal attainment scaling as a measure of meaningful outcomes for children with sensory integration disorders. Am J Occup Ther. 2007; 61(2): 254-9. PMID 17436848
4. Parham LD, Cohn ES, Spitzer S, et al. Fidelity in sensory integration intervention research. Am J Occup Ther. 2007; 61(2): 216-27. PMID 17436844
5. Weitlauf AS, Sathe N, McPheeters ML, et al. Interventions Targeting Sensory Challenges in Autism Spectrum Disorder: A Systematic Review. Pediatrics. Jun 2017; 139(6). PMID 28562287
6. Case-Smith J, Weaver LL, Fristad MA. A systematic review of sensory processing interventions for children with autism spectrum disorders. Autism. Feb 2015; 19(2): 133-48. PMID 24477447
7. May-Benson TA, Koomar JA. Systematic review of the research evidence examining the effectiveness of interventions using a sensory integrative approach for children. Am J Occup Ther. 2010; 64(3): 403-14. PMID 20608272
8. Randell E, Wright M, Milosevic S, et al. Sensory integration therapy for children with autism and sensory processing difficulties: the SenITA RCT. Health Technol Assess. Jun 2022; 26(29): 1-140. PMID 35766242
9. Corbett BA, Shickman K, Ferrer E. Brief report: the effects of Tomatis sound therapy on language in children with autism. J Autism Dev Disord. Mar 2008; 38(3): 562-6. PMID 17610057
10. Mudford OC, Cross BA, Breen S, et al. Auditory integration training for children with autism: no behavioral benefits detected. Am J Ment Retard. Mar 2000; 105(2): 118-29. PMID 10755175
11. Porges SW, Bazhenova OV, Bal E, et al. Reducing auditory hypersensitivities in autistic spectrum disorder: preliminary findings evaluating the listening project protocol. Front Pediatr. 2014; 2: 80. PMID 25136545
12. Zimmer M, Desch L, Rosen LD, et al. Sensory integration therapies for children with developmental and behavioral disorders. Pediatrics. Jun 2012; 129(6): 1186-9. PMID 22641765

Reproduction without authorization from Blue Shield of California is prohibited.

13. Occupational Therapy for Children and Youth Using Sensory Integration Theory and Methods in School-Based Practice. Am J Occup Ther. 2015; 69 Suppl 3: 6913410040p1-6913410040p20. PMID 26713950
14. Watling R, Koenig KP, Davies PL, et al. Occupational therapy practice guidelines for children and adolescents with challenges in sensory processing and sensory integration. Bethesda, MD: American Occupational Therapy Association Press; 2011.
15. American Speech-Language-Hearing Association, Working Group in AIT. Auditory Integration Training [Technical Report:]. 2004; https://www.asha.org/policy/ps2004-00218/. Accessed February 26, 2024.

Documentation for Clinical Review

- No records required

Coding

This Policy relates only to the services or supplies described herein. Benefits may vary according to product design; therefore, contract language should be reviewed before applying the terms of the Policy.

The following codes are included below for informational purposes. Inclusion or exclusion of a code(s) does not constitute or imply member coverage or provider reimbursement policy. Policy Statements are intended to provide member coverage information and may include the use of some codes for clarity. The Policy Guidelines section may also provide additional information for how to interpret the Policy Statements and to provide coding guidance in some cases.

Type	Code	Description
CPT®	97533	Sensory integrative techniques to enhance sensory processing and promote adaptive responses to environmental demands, direct (one-on-one) patient contact, each 15 minutes
HCPCS	None	

Policy History

This section provides a chronological history of the activities, updates and changes that have occurred with this Medical Policy.

Effective Date	Action
06/07/2000	BCBSA Medical Policy adoption
04/01/2001	Policy revision without position change
01/11/2008	Policy reviewed, updated with BCBSA; no change in position
10/01/2010	Policy revision without position change
08/23/2013	Policy revision without position change. Policy placed on No Further Routine Literature Review and Update status.
06/30/2015	Coding update
05/01/2016	Policy title change from Sensory Integration Therapy Policy revision without position change
05/01/2017	Policy revision without position change
05/01/2018	Policy revision without position change
05/01/2019	Policy revision without position change
05/01/2020	Annual review. No change to policy statement. Literature review updated.

Reproduction without authorization from Blue Shield of California is prohibited.

Effective Date	Action
05/01/2021	Annual review. No change to policy statement. Policy guidelines and literature review updated.
05/01/2022	Annual review. No change to policy statement. Literature review updated.
05/01/2023	Annual review. No change to policy statement. Literature review updated.
05/01/2024	Annual review. No change to policy statement. Policy guidelines and literature review updated.

Definitions of Decision Determinations

Medically Necessary: Services that are Medically Necessary include only those which have been established as safe and effective, are furnished under generally accepted professional standards to treat illness, injury or medical condition, and which, as determined by Blue Shield, are: (a) consistent with Blue Shield medical policy; (b) consistent with the symptoms or diagnosis; (c) not furnished primarily for the convenience of the patient, the attending Physician or other provider; (d) furnished at the most appropriate level which can be provided safely and effectively to the patient; and (e) not more costly than an alternative service or sequence of services at least as likely to produce equivalent therapeutic or diagnostic results as to the diagnosis or treatment of the Member's illness, injury, or disease.

Investigational/Experimental: A treatment, procedure, or drug is investigational when it has not been recognized as safe and effective for use in treating the particular condition in accordance with generally accepted professional medical standards. This includes services where approval by the federal or state governmental is required prior to use, but has not yet been granted.

Split Evaluation: Blue Shield of California/Blue Shield of California Life & Health Insurance Company (Blue Shield) policy review can result in a split evaluation, where a treatment, procedure, or drug will be considered to be investigational for certain indications or conditions, but will be deemed safe and effective for other indications or conditions, and therefore potentially medically necessary in those instances.

Prior Authorization Requirements and Feedback (as applicable to your plan)

Within five days before the actual date of service, the provider must confirm with Blue Shield that the member's health plan coverage is still in effect. Blue Shield reserves the right to revoke an authorization prior to services being rendered based on cancellation of the member's eligibility. Final determination of benefits will be made after review of the claim for limitations or exclusions.

Questions regarding the applicability of this policy should be directed to the Prior Authorization Department at (800) 541-6652, or the Transplant Case Management Department at (800) 637-2066 ext. 3507708 or visit the provider portal at www.blueshieldca.com/provider.

We are interested in receiving feedback relative to developing, adopting, and reviewing criteria for medical policy. Any licensed practitioner who is contracted with Blue Shield of California or Blue Shield of California Promise Health Plan is welcome to provide comments, suggestions, or concerns. Our internal policy committees will receive and take your comments into consideration.

For utilization and medical policy feedback, please send comments to: MedPolicy@blueshieldca.com

Disclaimer: This medical policy is a guide in evaluating the medical necessity of a particular service or treatment. Blue Shield of California may consider published peer-reviewed scientific literature, national guidelines, and local standards of practice in developing its medical policy. Federal and state law, as well as contract language, including definitions and specific contract provisions/exclusions, take precedence over medical policy and must

Reproduction without authorization from Blue Shield of California is prohibited.

be considered first in determining covered services. Member contracts may differ in their benefits. Blue Shield reserves the right to review and update policies as appropriate.

Reproduction without authorization from Blue Shield of California is prohibited.

Appendix A

POLICY STATEMENT (No changes)	
BEFORE	**AFTER**
Sensory Integration Therapy and Auditory Integration Therapy 8.03.13 **Policy Statement:** I. Sensory integration therapy and auditory integration therapy are considered **investigational**.	**Sensory Integration Therapy and Auditory Integration Therapy 8.03.13** **Policy Statement:** I. Sensory integration therapy and auditory integration therapy are considered **investigational**.

Reproduction without authorization from Blue Shield of California is prohibited