Sensory Integration Therapy and Auditory Integration Training (for New Mexico Only)

Policy Number: CS108NM.B
Effective Date: November 1, 2024

Instructions for Use

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Related Policies
None

Application

This Medical Policy only applies to the state of New Mexico.

Coverage Rationale

For sensory integration therapy, refer to the New Mexico Managed Care Policy Manual.

Auditory Integration training is unproven and not medically necessary for treating any condition due to insufficient evidence of efficacy.

Applicable Codes

The following list(s) of procedure and/or diagnosis codes is provided for reference purposes only and may not be all inclusive. Listing of a code in this policy does not imply that the service described by the code is a covered or non-covered health service. Benefit coverage for health services is determined by federal, state, or contractual requirements and applicable laws that may require coverage for a specific service. The inclusion of a code does not imply any right to reimbursement or guarantee claim payment. Other Policies and Guidelines may apply.

CPT Code	Description
97533	Sensory integrative techniques to enhance sensory processing and promote adaptive responses to environmental demands, direct (one-on-one) patient contact, each 15 minutes

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Description of Services

Auditory Integration Training (AIT)

AIT was developed as a technique for improving abnormal sound sensitivity in individuals with behavioral disorders or autism spectrum disorders (Sinya et al., 2011). The Berard AIT protocol requires that a participant listen to modulated music on a specific device using high quality headphones for a total of 10 hours, over 10 or 12 consecutive days under the supervision of a professionally trained AIT practitioner (AIT Institute, 2018).

Clinical Evidence

Auditory Integration Training (AIT)

There is limited published literature regarding AIT. Much of the literature consists of uncontrolled studies with small numbers of participants, and treatment protocols have not been standardized. Review of older randomized controlled trials (RCTs) are not consistently supportive of a benefit. Supportive findings from two recent RCTs with important design limitations performed in China and Egypt need to be confirmed independently in US populations, considering the potential cultural component of the intervention. Furthermore, safety concerns have been raised as this treatment may cause distress and/or damage hearing (American Academy of Audiology 2010). The efficacy and safety of this training has not been demonstrated by larger studies with comparison groups using standardized protocols.

Fu et al. (2024) conducted a cross-sectional and longitudinal study to evaluate the effectiveness of TOMATIS® auditory stimulation therapy as a possible intervention for autism spectrum disorder (ASD). A total of 90 children ages 3 to 8 years, who met the eligibility criteria were initially screened to assign 33 in the cross-sectional study and 57 in the longitudinal study. In the cross-sectional study, the children were then paired according to their sex, chronological age, and severity of ASD (measured with CARS and ABC). Finally, within each pair, children were randomly assigned to one of two groups by random draw: participants were randomly assigned to the experimental (17) and control (16) groups, who received either two sessions of TOMATIS training or intervention training with placebo music over 34 days. The final analyses excluded two participants who did not undergo a completed TOMATIS® training assessment after random assignment and one participant who did not have baseline Childhood Autism Rating Scale (CARS) and Autism Behavior Scale (ABC) scores. In the longitudinal study, participants received at least six phases of intervention training over 7.5 months (90 weeks). Thirty-two participants were excluded because of loss or missing data, and a total of 25 participants ultimately completed the trial. In the cross-sectional study, the experimental group showed improvement in symptoms after TOMATIS® training compared to the control group of children with ASD. The results validated the effect of TOMATIS® treatment for ASD-related deficits, including perceptual-motor, attentional, social, and emotional issues. Analysis of the TOMATIS® listening ability curves revealed that, compared to the control group, participants in the experimental group had better quality of completion at the end than in the first training period after two training periods, participants' cooperation increased, audiometric curve index scores improved, left- and right-ear curve balance improved and became more symmetrical, the slopes of the curves in the frequency bands flattened, spatial localization errors decreased, and left- and right-ear laterality was reduced. ASD's auditory hypersensitivity hampers social information processing, but TOMATIS® enhances cochlear frequency selectivity, aiding in capturing relevant auditory stimuli. In addition, the longitudinal study confirmed these findings, which revealed TOMATIS® training to be effective in clinically treating ASD. This study focused on audiometric indicators and behavioral improvement, elucidating the mechanisms behind the training's success. Behavioral improvements might stem from TOMATIS® frequency selectivity, reshaping auditory organ-cortical feedback loops to filter interference and focus on valid information. The authors concluded by stating that the rationale behind TOMATIS® music training is not yet fully understood, but the results of this study suggest that the brain's unique patterns in various frequency bands may be associated with improvements in behavioral disorders. This study has several limitations. The study discusses the improvement of therapy on the behavior of children with ASD, but future research is necessary to explore the mechanisms involved in TOMATIS® in depth using electrophysiological means. In the future, the sample and intervention period should be increased, and physiological tests such as auditory evoked potentials, electroencephalography, and MRI should be combined to explore the robust effects of TOMATIS®. Secondly, TOMATIS® training is mainly for children, and it is prudent to generalize the effects of the training to adults with ASD. Other limitations include exclusion of participants after randomization, which could have introduced biases, and questionable generalizability to US populations.

El-Tellawy et al. (2022) conducted a prospective, open label, randomized interventional clinical trial to evaluate the efficacy of hyperbaric oxygen therapy (HBOT) and TOMATIS® sound therapy (TST) in an Egyptian cohort of children with autism spectrum disorder (ASD). One hundred forty-six children with ASD with no previous rehabilitation therapy were enrolled in this study. participants were randomly divided into four groups: the first group received hyperbaric oxygen therapy, the second group received TOMATIS® sound therapy, the third group received a combination of both modalities, and the fourth group, the control group, received no intervention. The authors found that the combination of TOMATIS® sound therapy with hyperbaric oxygen therapy had a superior effect in improving autism symptoms than each intervention alone (CARS after therapy 35.04 ±13.38 versus 49.34 ±17.54 before the intervention, $p < 0.001$). The authors concluded that the combination of both modalities may be helpful for children with ASD. The most distinctive evidence that supports the use of combination therapy for ASD is still controversial; however, the study provided some evidence of the benefit of combination therapy for children with ASD. Future studies should use a more sophisticated research design and begin by finding a consistent baseline measure that can be used to evaluate the effects of these therapies for ASD. Limitations of this study include inconsistent baseline measure, lack of control for baseline values, and absence of double-blinded

evaluation. Well-designed, adequately powered, prospective, controlled clinical trials are needed to further describe safety and clinical outcomes.

The Agency for Healthcare Research and Quality (AHRQ) published an updated comparative review on interventions targeting sensory challenges in children with autism spectrum disorder (ASD). Inclusion criteria were studies comparing interventions incorporating sensory-focused modalities with alternative treatments or no treatment, and inclusion of at least 10 children with ASD ages 2-12 years. The authors extracted and summarized data qualitatively because of the significant heterogeneity, as well as the strength of evidence (SOE). In regard to auditory integration-based approaches which included evidence in 4 small RCTs (2 moderate and 2 high risk of bias), they concluded that these did not improve language outcomes (low SOE) (Weitlauf et al., 2017).

Sokhadze et al. (2016) conducted a study using Berard's technique of auditory integration training (AIT) to improve sound integration in children with autism. It was proposed that exposure to twenty 30-min AIT sessions (total 10 h of training) would result in improved behavioral evaluation scores, improve profile of cardiorespiratory activity, and positively affect both early [N1, mismatch negativity (MMN)] and late (P3) components of evoked potentials in auditory oddball task. Eighteen children with autism spectrum disorder (ASD) participated in the study. A group of 16 typically developing children served as a contrast group in the auditory oddball task. The study reflected a linear increase of heart rate variability measures and respiration rate. Comparison of evoked potential characteristics of children with ASD versus typically developing children revealed several group difference findings, more specifically, a delayed latency of N1 to rare and frequent stimuli, larger MMN: higher P3a to frequent stimuli, and at the same time delayed latency of P3b to rare stimuli in the autism group. Parental questionnaires demonstrated improvements in behavioral symptoms such as irritability, hyperactivity, repetitive behaviors, and other important behavioral domains. The authors concluded that the results of the study propose that more controlled research is necessary to document behavioral and psychophysiological changes resulting from Berard AIT and to provide explanation of the neural mechanisms of how auditory integration training may affect behavior and psychophysiological responses of children with ASD. The findings of this study need to be validated by larger, well-designed studies.

Sinha et al. (2011) conducted a systematic review to evaluate AIT and included 6 RTCs with 171 individuals with autism. Three RTCs did not demonstrate the benefit of AIT over control conditions. The remaining trials identified improvements at 3 months for the AIT group based on improvements of total mean scores for the Aberrant Behavior Checklist, which is of questionable validity. There were no reported significant adverse effects of AIT. The reviewers concluded that more research is needed to determine the effectiveness of AIT for autism.

Clinical Practice Guidelines

American Academy of Audiology (AAA)

A 2010 position statement by the AAA Task Force on Auditory Integration Training (AIT) concludes that AIT (by any name) is investigational. The Academy believes that prospective, systematic research of this technique is needed to demonstrate its efficacy.

American Speech-Language-Hearing Association (ASHA)

The ASHA prepared an evidenced-based technical report regarding AIT (ASHA, 2004). They noted that, despite approximately one decade of practice, this method has not met scientific standards for efficacy and safety that would justify its inclusion as a mainstream treatment for a variety of communication, behavioral, emotional, and learning disorders.

National Institute for Health and Care Excellence (NICE)

In a guidance document for the support and management of autism spectrum disorder in patients under 19 years of age, NICE (2013; updated 2021) states that auditory integration training to manage speech and language problems in children and young people with autism should not be used.

U.S. Food and Drug Administration (FDA)

This section is to be used for informational purposes only. FDA approval alone is not a basis for coverage.

The equipment used for sensory integration therapy and auditory integration training is not considered medical in nature, and therefore, not regulated by the FDA.

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Policy History/Revision Information

Date	Summary of Changes
11/01/2024	**Supporting Information** • Updated *Clinical Evidence* and *References* sections to reflect the most current information • Archived previous policy version CS108NM.A

Instructions for Use

This Medical Policy provides assistance in interpreting UnitedHealthcare standard benefit plans. When deciding coverage, the federal, state or contractual requirements for benefit plan coverage must be referenced as the terms of the federal, state or contractual requirements for benefit plan coverage may differ from the standard benefit plan. In the event of a conflict, the federal, state or contractual requirements for benefit plan coverage govern. Before using this policy, please check the federal, state or contractual requirements for benefit plan coverage. UnitedHealthcare reserves the right to modify its Policies and Guidelines as necessary. This Medical Policy is provided for informational purposes. It does not constitute medical advice.

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