Cigna Medical Coverage Policy

Subject **Sensory and Auditory Integration Therapy - Facilitated Communication**

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Coverage Policy

Sensory integration therapy is specifically excluded under many health benefit plans. In addition, many benefit plans specifically exclude behavioral training and services, training, educational therapy or other nonmedical ancillary services for learning disabilities, developmental delays, autism or mental retardation.

Cigna does not cover sensory integration therapy (SIT), auditory integration therapy (AIT) or facilitated communication (FC) therapy for any indication because they are considered experimental, investigational or unproven.

Note: This Coverage Policy does not address sensory desensitization therapy.

General Background

Sensory Integration Therapy (SIT)

Sensory integration therapy (SIT) has been proposed as a method to improve the way the brain processes and organizes external stimuli, such as touch, movement, body awareness, sight and sound. SIT is usually performed by an occupational therapist. Sensory stimulation is provided in combination with muscle activities, theoretically in order to improve how the brain processes and organizes sensory information. The therapeutic techniques may include deep brushing, swings for vestibular input, textures, bounce pads, scooter boards, weighted vests and other clothing, ramps and generally increasing or decreasing sensory diet depending on the

needs of the child (Shaw, 2002). SIT was originally developed as a treatment for learning disabilities and subsequently has been proposed as treatment for autism, mental retardation, Down syndrome, and developmental delays. Definitive patient selection criteria have not been established for SIT.

Sensory integration is the process where individuals register, modulate and discriminate sensations received through the sensory system to produce purposeful, adaptive behaviors in response to the environment (American Occupational Therapy Association [AOTA], 2008a). Sensory integration dysfunction, or disorder, is a condition that includes an imbalance among the primary sensations of sight hearing, touch, taste, or smell; the sense of movement and/or the positional sense (Eide, 2003).

Literature Review for Sensory Integration Therapy

The Agency for Healthcare Research and Quality (AHRQ) published a comparative effectiveness review of therapies for children with autism spectrum disorders. The review was prepared by the Vanderbilt Evidence-based Practice Center (Warren, et al., 2011). Among the allied health therapies in the review were sensory and auditory integration therapy. The research provided little support for their use. Specifically, all studies of sensory integration and music therapy were of poor quality.

Pfeiffer et al. (2011) reported on a randomized study to address the effectiveness of sensory integration (SI) intervention in children with autism spectrum disorders. The children were randomized to SI intervention or fine motor intervention and received three sessions per week for six weeks. The study included 21 children diagnosed with autism and 16 with pervasive developmental disorder-not otherwise specified (PDD-NOS). Pretests and posttests measured social responsiveness, sensory processing, functional motor skills, and social–emotional factors. Results identified significant positive changes in Goal Attainment Scaling scores for both groups; more significant changes occurred in the SI group, and a significant decrease in autistic mannerisms occurred in the SI group. No other results were significant. The results are preliminary and further research is needed.

May-Benson, et al. (2010) reported on a systematic review of literature on the effectiveness of sensory integration (SI) interventions on the ability of children with difficulty processing and integrating sensory information to engage in desired occupations and to apply these findings to occupational therapy practice. The review included 27 studies and the results indicated that the SI approach may result in positive outcomes in sensorimotor skills and motor planning; socialization, attention, and behavioral regulation; reading-related skills; participation in active play; and achievement of individualized goals. It appeared that gross motor skills, self-esteem, and reading gains may be sustained from three months to two years. Studies were limited by small sample sizes, variable intervention dosage, lack of fidelity to intervention, and selection of outcomes that may not be meaningful to clients and families or may not change with amount of treatment provided. The authors note that replication of findings with methodologically and theoretically sound studies is needed to support the current findings.

A review of SI outcomes research in relation to faithfulness of intervention to underlying therapeutic principles or fidelity was performed (Parham, et al., 2007). The review included 34 studies which were analyzed for consistency of intervention descriptions with the following elements: structural (e.g., equipment used, therapist training) and therapeutic process categories. The reviewers made the following findings:

- Most studies described structural elements related to therapeutic equipment and interveners' profession.
- Only one of the 10 process elements, presentation of sensory opportunities, was addressed in all studies. Most studies described fewer than half of the process elements.

Intervention descriptions in 35% of the studies were inconsistent with one process element, therapist-child collaboration. The authors note that the validity of SI outcomes studies is affected by weak fidelity in regard to the therapeutic process.

Dawson and Watling (2000) conducted a systematic review of the research regarding the effectiveness of interventions for sensory and motor abnormalities in autism. The interventions included SIT and auditory integration training (AIT). Four studies on the effectiveness of sensory integration therapy in autism that utilized objective measures of behavior to assess outcome were found. All but one had sample size of fewer than six subjects and none of the studies had a comparison group. One study that had a larger sample size and better design found no change in vocal behavior following brief participation in sensory activities. The review concluded that although sensory and motor impairments are commonly found in autism, the interventions

developed to address them have not been well validated. In the case of SIT, it was noted, “there exist so few studies that conclusions cannot be drawn” (Dawson and Watling, 2000). In the case of AIT, it is noted that “there is no, or at best equivocal support for this intervention approach based on the available controlled studies” (Dawson and Watling, 2000).There is little known regarding which ages or subgroups of individuals are most likely to benefit from therapies addressing sensory and motor difficulties, and further research is recommended.

A meta-analysis was conducted for the purpose of determining whether existing studies of treatment using sensory integration approaches support the efficacy of this method (Vargas, et al., 1999). Sixteen studies were used to compare SIT with no treatment, and 16 studies were used to compare SIT with alternative treatments. The review noted that there was a significant difference between the average size of effect of the earlier studies compared to the more recent studies. The authors concluded that in the SIT and no treatment studies, the recent studies did not demonstrate an overall positive effect and that the sensory integration methods were found to be as effective as various alternative treatment methods.

Several studies have been published that examined the effectiveness of SIT. While some of the studies indicated that there may be some effect noted with treatment with SIT, many of these studies involve small number of children and short follow-up time periods (Schaaf, et al,. 2012; Wuang, et al., 2009; Fazlioglu, et al., 2008; Miller, et al., 2007; Watling and Dietz, 2007; Smith, et al., 2005).

The peer-reviewed literature fails to demonstrate that SIT, compared with other treatments or with no treatment, provides clinically relevant, long-term improvements in outcomes in children with learning disabilities, Down syndrome, developmental disorders or SI disorders. Studies of SIT in children with cerebral palsy or autism are also lacking, and therefore the evidence is insufficient to evaluate SIT for these indications as well.

Professional Societies/Organizations for Sensory Integration Therapy
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. These guidelines are found at the AACAP website, are noted to be in press and not yet published. Recommendations for treatment state that studies of sensory oriented interventions, such as auditory integration training and sensory integration therapy, have contained methodological flaws and have yet to show replicable improvements (AACAP, 2013).

*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.

American Academy of Pediatrics (AAP): The AAP published a policy statement regarding sensory integration therapies for children with developmental and behavioral disorders. Recommendations include the following: states “Pediatricians should recognize and communicate with families about the limited data on the use of sensory-based therapies for childhood developmental and behavioral problems” (AAP, 2012).

The AAP Committee on Children with Disabilities published a clinical report for prescribing therapy services for children with motor disabilities. The report notes that “Scientific legitimacy has also not been established for sensory integration intervention for children with motor disabilities” (Michaud, et al., 2004/2007).

The AAP Council on Children with Disabilities published guidelines for the management of children with autism spectrum disorders. Regarding sensory integration therapy, the guidelines note “Sensory integration (SI) therapy often is used alone or as part of a broader program of occupational therapy for children with ASDs [autism spectrum disorders]. The goal of SI therapy is not to teach specific skills or behaviors but to remediate deficits in neurologic processing and integration of sensory information to allow the child to interact with the environment in a more adaptive fashion. Unusual sensory responses are common in children with ASDs, but there is not good evidence that these symptoms differentiate ASDs from other developmental disorders, and the efficacy of SI therapy has not been demonstrated objectively. Available studies are plagued by methodologic limitations, but proponents of SI note that higher-quality SI research is forthcoming.” (Myers, et al., 2007; Reaffirmed Dec 2010).

The American Occupational Therapy Association (AOTA) recognizes sensory integration (SI) as one of several theories and methods used by occupational therapists and occupational therapy assistants working with children in public and private schools to improve a child's ability to access the general education curriculum and to participate in school-related activities (Roley, et al., 2009). The AOTA notes that SI methods are used within occupational therapy when sensory-related issues are suspected to affect a child's ability to access the general and special education curriculum, behave adaptively, and participate in activities at school. The organization notes that when children demonstrate sensory-related deficits that interfere with their ability to access the general education curriculum, occupational therapy using a sensory integrative approach is appropriate.

Auditory Integration Therapy (AIT)
Auditory integration therapy or training (AIT) refers to listening to music that has been computer modified to remove frequencies to which an individual demonstrates hypersensitivities and to reduce the predictability of auditory patterns. A special device is used to modify the music for the treatment sessions. The treatment program consists of 20 half-hour sessions during a 10- to 12-day period, with two sessions daily. Auditory thresholds are determined via audiograms. The audiogram is then reviewed for evidence of hyperacusis (i.e., an abnormal sensitivity to sound). A clinical history of sound sensitivities and behavior is also reviewed. Audiograms are repeated midway and at the end of the training session to document progress and to determine whether further treatment sessions are necessary. AIT is usually provided by a speech-pathologist or audiologist. This treatment has been proposed for improving abnormal sound sensitivity in individuals with behavioral disorders, including autism spectrum disorders.

Literature Review for Auditory Integration Therapy
The Agency for Healthcare Research and Quality (AHRQ) published a comparative effectiveness review of therapies for children with autism spectrum disorders. The review was prepared by the Vanderbilt Evidence-based Practice Center (Warren, et al., 2011). Among the allied health therapies in the review were sensory and auditory integration therapy. The research provided little support for their use. Specifically, two fair-quality studies of auditory integration showed no improvement associated with treatment.

A Cochrane review was conducted with the objective of determining the effectiveness of AIT or other methods of sound therapy in individuals with autism spectrum disorders (Sinha, et al., 2004). Six randomized controlled trials of AIT were identified, including one crossover trial. Four trials had fewer than 20 patients involved in the study. Seventeen different outcome measures were used. It was noted in the review that due to the high heterogeneity or presentation of data in unusable forms, a meta-analysis was not possible. It was noted that three studies did not demonstrate the benefit of AIT over the control conditions. Three trials reported improvements at three months for the AIT group with the Aberrant Behavior Checklist (ABC), which is of questionable validity. The reviewers concluded, “Further research is needed to determine the effectiveness of sound therapies. In the absence of evidence, the treatment must be considered experimental and care must be taken not to risk hearing loss” (Sinha, et al., 2004). Sinha et al. published a systematic review in 2006. This review incorporated the same studies and findings that were included in the 2004 Cochrane review. There were no additional studies included. The authors concluded that at the present time there is not sufficient evidence to support the use of AIT (Sinha, et al., 2006). In 2011, Sinha published an update to the 2004 Cochrane review of AIT and other methods of sound therapy. There were no additional randomized studies of AIT included in this review. The authors conclude that there is no evidence that auditory integration therapy or other sound therapies are effective as treatments for autism spectrum disorders.

Mudford et al. (2000) performed a crossover study for the purpose of evaluating the benefits of auditory integration training for children with autism. There were 16 children who had been diagnosed with autism involved in the study, with all children receiving both treatments. There were at least four months between treatments. The control treatment was conducted by the auditory integration training providers in an identical room with identical procedures, with the difference being that the headphones used were nonfunctional. The measures included parent and teacher ratings of behavior, direct observational recordings, IQ, language, and social/adaptive tests. It was noted that significant differences tended to show that the control condition was superior on parent-rated measures of hyperactivity and on direct observational measures of ear-occlusion, and no difference was detected on teacher-rated measures. The children’s IQ and language comprehension did not increase; however, adaptive/social behavior scores and expressive language quotients decreased. The authors concluded that no children could be identified as benefiting from AIT clinically or educationally to any significant degree.

The published peer-reviewed scientific literature does not support the efficacy of AIT for the treatment of patients with learning disabilities, autism, and other behavioral disorders.

Professional Societies/Organizations for Auditory Integration Therapy
American Academy of Pediatrics (AAP): The AAP published a statement regarding two treatments proposed for autism (i.e., AIT and facilitated communication) (AAP, 1998/2006/2010). They noted that, as yet, there are no good controlled studies to support the use of AIT for children with autism. It is also noted that, until further information is available, the use of these treatments does not appear warranted at this time, except within research protocols.

American Speech-Language-Hearing Association (ASHA): 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.

Educational Audiology Association (EAA): The EAA issued a position statement regarding AIT (EAA, 1997). They stated that "Auditory integration therapy has not been proven to be a viable treatment for any disability. Only inconsistent, uncontrolled, anecdotal evidence has been provided to support claims of changes in auditory performance." In addition, the position statement noted that without controls to protect against excessively loud auditory stimuli, AIT may cause harm to the auditory system.

Facilitated Communication (FC)
Facilitated Communication (FC) is a method of providing assistance to a nonverbal person by typing out words using a typewriter, computer keyboard, or other communication device. FC involves supporting the individual's hand to make it easier for him or her to indicate the letters that are chosen sequentially to develop the communicative statement. Proponents claim that this manual prompting by a trained facilitator provides expressive language abilities to a wide range of individuals, including those with severe intellectual disabilities or autism. FC has been at the center of a growing controversy, because several scientific studies have suggested that facilitators may unintentionally influence the communication, perhaps to the extent of actually selecting the words themselves. There is insufficient evidence found in the medical literature regarding the effectiveness of this therapy.

Professional Societies/Organizations for Facilitated Communication
American Academy of Child & Adolescent Psychiatry (AACAP): The AACAP published a policy statement regarding facilitated communication that states, "Studies have repeatedly demonstrated that FC is not a scientifically valid technique for individuals with autism or mental retardation. In particular, information obtained via FC should not be used to confirm or deny allegations of abuse or to make diagnostic or treatment decisions" (AACAP, 1993/2008).

American Academy of Pediatrics (AAP): The AAP has published a statement regarding two treatments proposed for autism: AIT and facilitated communication. According to the AAP, there is good scientific data showing FC to be ineffective; therefore, its use does not appear warranted at this time (AAP, 1998/2006/2010).

American Psychological Association (APA): The APA has adopted the position that facilitated communication is a controversial and unproven communicative procedure with no scientifically demonstrated support for its efficacy (APA, 1994).

Use Outside of the US
National Institute for Health and Clinical Excellence (NICE): NICE published guidelines for the management and support of children and young people on the autism spectrum (NICE, 2013). The recommendations for treatment addresses interventions that should not be used for autism in children and young people including auditory integration training to manage speech and language.

In 2012, NICE published clinical guidelines for the recognition, referral, diagnosis and management of adults on the autism spectrum. The guideline recommendations for psychosocial interventions for the core symptoms of autism state to not provide facilitated communication for adults with autism.

Academy of Medicine Singapore-Ministry of Health (AMS-MOH): The AMS-MOH published clinical practice guidelines for autism spectrum disorders in pre-school children (AMS-MOH, 2010). The recommendations for management under interventions states:

- There is no single language or communication intervention for an individual child with ASD. The optimal communication intervention depends on the needs of that particular child (Grade D, Level 4).
- Sensory integration intervention is not recommended as standard therapy in management of children with ASD but may be considered where child has sensory difficulties that affect daily functioning (Grade D Level 3)

The complementary alternative therapy, facilitated communication, is not recommended in pre--school children with ASD because of potential for harm or adverse effects.

Grade of recommendation:
A: At least one meta-analysis, systematic review of RCTs, or RCT rated as 1+ + and directly applicable to the target population; or A body of evidence consisting principally of studies rated as 1+, directly applicable to the target population, and demonstrating overall consistency of results
B: A body of evidence including studies rated as 2++, directly applicable to the target population, and demonstrating overall consistency of results; or Extrapolated evidence from studies rated as 1+ + or 1+
C: A body of evidence including studies rated as 2+, directly applicable to the target population and demonstrating overall consistency of results; or Extrapolated evidence from studies rated as 2+ +
D: Evidence level 3 or 4; or Extrapolated evidence from studies rated as 2+
GPP: (good practice points) Recommended best practice based on the clinical experience of the guideline development group.

Levels of evidence:
1+ +: High quality meta-analyses, systematic reviews of randomized controlled trials (RCTs), or RCTs with a very low risk of bias.
1+: Well conducted meta-analyses, systematic reviews of RCTs, or RCTs with a low risk of bias.
1-: Meta-analyses, systematic reviews of RCTs, or RCTs with a high risk of bias
2+ +: High quality systematic reviews of case control or cohort studies. High quality case control or cohort studies with a very low risk of confounding or bias and a high probability that the relationship is causal
2+: Well conducted case control or cohort studies with a low risk of confounding or bias and a moderate probability that the relationship is causal
2-: Case control or cohort studies with a high risk of confounding or bias and a significant risk that the relationship is not causal
3: Non-analytic studies, e.g. case reports, case series
4: Expert opinion

The Scottish Intercollegiate Guidelines Network (SIGN): The SIGN national clinical guideline on assessment, diagnosis and clinical interventions for children and young people with autism spectrum disorders states that facilitated communication should not be used as a means to communicate with children and young people with ASD (2007, 2011).

Summary
Evidence in the published, peer-reviewed scientific literature is not sufficient to support the efficacy of sensory integration therapy (SIT), auditory integration therapy (AIT) or facilitated communication (FC) for autism, mental retardation, developmental delays, behavioral disorders, or any other indications. The peer-reviewed literature fails to demonstrate that these interventions, compared with other treatments or with no treatment, provides clinically relevant, long-term improvements in health outcomes. The role of these interventions in the management of these conditions or other indications is not known at this time.

Coding/Billing 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.

Experimental/Investigational/Unproven/Not Covered:

CPT* Codes	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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