

# New Research on Therapeutic Listening®

There is a new peer-reviewed article on the effectiveness of Therapeutic Listening in the March/April 2007 special issue on Sensory Integration in the *American Journal of Occupational Therapy*.

Therapeutic Listening has always been embedded in the sensory integration framework. This article provides new evidence for the wisdom of that approach.

## The Effect of Sound-Based Intervention on Children With Sensory Processing Disorders and Visual-Motor Delays

Leah Hall, Jane Case-Smith

### KEY WORDS

- pediatric
- sensory integration
- sensory processing
- sensory processing disorder (SPD)
- sound
- visual-motor

This study investigated the effects of a sensory diet and therapeutic listening intervention program, directed by an occupational therapist and implemented by parents, on children with sensory processing disorders (SPD) and visual-motor delays. A convenience sample was used of 10 participants, ages 5 to 11 years, with SPD and visual-motor delays. In the first phase, each participant completed a 4-week sensory diet program, then an 8-week therapeutic-listening and sensory diet program. The Sensory Profile was completed by the participants' parents before and after both study phases. The Draw-A-Person test, Developmental Test of Visual Motor Integration (VMI), and Evaluation Tool of Children's Handwriting (ETCH) were administered before and after each phase. Over 12 weeks, the participants exhibited significant improvement on the Sensory Profile, increasing a mean of 71 points. Parents reported improvements in their children's behaviors related to sensory processing. Scores on the VMI visual and ETCH legibility scales also improved more during the therapeutic listening phase. Therapeutic listening combined with a sensory diet appears effective in improving behaviors related to sensory processing in children with SPD and visual-motor impairments.

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Music has long been known to have therapeutic value (Ferguson & Voll, 2004; Sacks, 2006). In recent years, occupational therapists, speech-language pathologists, and psychologists have adopted the use of music and sounds as therapy, and a variety of auditory intervention techniques have become available. Occupational therapists use music as preparation for therapeutic activities on the basis of the belief that sensory input through the auditory and vestibular systems can be calming and organizing to children (Ayres, 1979; Frick & Hacker, 2001). The purpose of this study was to investigate the effectiveness of a therapeutic-listening home program in combination with a sensory diet on children with sensory processing disorders (SPDs) and visual-motor delays.

### Sound-Based Interventions

The originator of sound-based treatment was French physician Alfred Tomatis, who in the mid-1900s developed the use of electronically altered music as a treatment modality for adults and children with differing conditions, including attention deficit disorders, developmental delays, autism, head injury, multiple sensory system disorder, and learning disabilities. Tomatis believed that the main role of the ear is to function as the "integrator," facilitating organization at all levels of the nervous system (Thompson & Andrews, 2000).

Studies on the Tomatis method have yielded mixed results. Neysmith-Roy (2001) found that 3 out of 6 boys with severe autism experienced major improvements in behavior. After the Tomatis treatment, 1 boy no longer met the criteria

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## Quotes from Hall & Case-Smith\*

"The present study produced encouraging findings to support the use of Therapeutic Listening as part of an overall sensory integrative approach to occupational therapy in elementary school-age children. Therapeutic Listening, along with sensory diet strategies, can be effective in reducing many behaviors associated with sensory integration disorder" (p. 215).

"One child's ADHD medication was reduced after 1 month of Therapeutic Listening because his behavior and attention had improved dramatically" (p. 213).

"[My son] is now interacting with classmates. He [now] talks about [his friends]. His teacher said he used to walk outside the play area with his head down to avoid the other kids. Now he is playing beside the other kids. Eye contact has improved" (p. 214).

## Study Overview

- 10 children ages 5 - 11
- All children had Definite Difference in at least 3 subtests on Sensory Profile
- All children had at least 1 SD below norm on VMI
- Phase I: 4-week sensory diet
- Phase II: 8-week sensory diet + Therapeutic Listening
- Each child acted as his or her own control

\* Hall L. & Case-Smith, J. (2007). The effect of sound-based intervention on children with sensory processing disorders and visual-motor delays. *American Journal of Occupational Therapy, 61* (2), 209-215.

## Statistical Findings

Mean scores for ETCH Total Legibility showed significant improvement during Therapeutic Listening phase.

Mean scores for VMI Visual subtest showed significant improvement during Therapeutic Listening phase.

Over 12 weeks there was a significant improvement on the Total Sensory Profile Score (mean change = 71 points) plus a significant improvement in 8 of 14 subtests including:

- Auditory Processing\*\*
- Touch Processing
- Multi-sensory Processing
- Oral Sensory Processing
- Body Position & Movement
- Emotional Responses
- Emotional/Social Responses
- Behavioral Outcomes\*\*

\*\* Indicates areas of greatest change

## Qualitative Findings

### Parents reported improvements in:

- Attention
- Interaction with peers
- Transitions
- Listening
- Self-awareness
- Communication
- Sleep patterns
- Following directions

### Parent reports:

- 4 of 5 children with auditory hypersensitivity had improved tolerance of noise
- All 4 children who had tantrums on a regular basis showed a marked decrease
- 5 of 6 children with very high energy were calmer
- 3 children had improved eye contact
- 4 children had improved school reports during the Therapeutic Listening phase

### Handwriting Scores:

Two children were receiving services for handwriting skills during the study. In both cases, handwriting performance jumped when Therapeutic Listening was implemented.

Child	Pretest	Post Sensory Diet	Post Sensory Diet + Therapeutic Listening
#1	3%	5%	17%
#2	40%	48%	61%