

Case Study – The Listening Program®

T, Age 3, Pervasive Developmental Disorder

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Name: T
Gender: Male
Chronological Age: 3 years 2 months
Clinical Diagnosis: Pervasive Developmental Disorder

BACKGROUND INFORMATION

T was born full term with no complications. He has not had any major illnesses and he has not taken any medications. T met his early gross motor milestones on time, including rolling over, sitting unsupported and walking. He babbled on time but did not develop words. T has a sister who is a year and a half older and his parents became concerned when he did not appear to be developing language and play skills as his sister did. T's parents contacted Early Intervention in October 2003. When he was 21 months old, T began receiving occupational therapy services twice a week for 30 minutes and ABA four times a week for 60 minutes. At 2 and a half he began attending a daycare/preschool program in the morning to give him more opportunities to interact socially with other children, and speech therapy was added to his IFSP (individualized family service plan) through Early Intervention.

When T first began receiving services he avoided eye-contact. He did not respond when he was called and showed little ability to understand language or communicate his needs or wants. T's play skills consisted of simply holding objects as he wandered around or repetitively dropping and spinning objects (cups, blocks, puzzle pieces, etc.). T also presented with many sensory processing difficulties. He was very resistant to handling, and very fearful of many movement activities such as being rolled and bounced on a large ball. He was very resistant to having his head or face touched and he could not tolerate touching many textures. Overall, T made tremendous progress during the time he received therapy through the Early Intervention program (services through EI ended when T turned three). He now makes and sustains eye contact when he is spoken to. He understands when he is spoken to and can follow many verbal directions. He will repeat word strings and will answer direct questions with single word answers. He will sing along with familiar songs and he will request items by saying "I want" His play skills have also improved greatly. T now plays with most toys appropriately. He is able to complete inset puzzles and shape sorting tasks independently, he can roll and bounce a ball with someone else, and he plays with toy cars appropriately. Although he continues to have sensitivities to many forms of sensory input, his tolerance has increased greatly. T is now able to handle most textures, he tolerates touch to his head and face, and enjoys being placed in most positions on a large ball. He now often initiates activities which provide him with deep touch and pressure input. T enjoys listening to all types of music and often seems happiest during activities that include music or singing. Because of T's interest in music as well as his continued delays in language development and sensory processing difficulties The Listening Program® was recommended. The primary goal T's parents hoped to realize through TLP was an increase in his receptive and expressive language. Additionally, it was hoped that T would also benefit by improving his balance, coordination, and attention span.

PROGRAM IMPLEMENTATION

Prior to beginning TLP, T had to be introduced to listening through headphones. This was difficult because he is very sensitive to having his head and face touched and dislikes wearing anything on his head. The headphones were first introduced during his occupational therapy sessions. Using one of his favorite music CDs, T first watched his therapist listen, smile and sway to the music. He was then shown that the music comes through the headphones by having one ear piece placed near but not on his ear. At first T only tolerated having the music near his left ear, then on his ear, and eventually he helped place the headphones over both ears. While T was learning to tolerate wearing headphones for fifteen minute intervals- (one TLP module) he was exposed to the Sensory Integration Kids1 CD played open air through speakers so he would become familiar with the music. Approximately two weeks after introducing the headphones T began four weeks of preparatory listening, listening to the SI Kids 1 CD, 1 module per day (tracks A, B, C) for 4 weeks (listening for 5 consecutive days then stopping for two). Four weeks was chosen due to the fact that T's family was moving and it was felt that during the transition from one home to another it was better to keep as much of T's life consistent including not beginning any new phase of his listening.

The SI Kids 1 CD was chosen for T's preparatory listening because it emphasizes the 0-750 Hz frequency range which most greatly affects the vestibular system. This range corresponds to the Tomatis Zone 1 or body zone. This frequency range is often used to stimulate and increase awareness of the body, and is considered the foundation for all higher frequencies. The SI Kids 1 CD is often used to improve balance and coordination while decreasing sensory defensiveness and improving emotional regulation. It was felt that using the SI Kids 1 CD T would be strengthening his body zone skills which would improve his ability to tolerate and benefit from exposure to the full TLP Classic Kit which includes the higher frequency ranges.

For the first week of his preparatory listening, T's mother reported that he often tried to take the headphones off, even when she tried to interest him in some of his toys. We discovered however that he kept them on happily if he was seated in front of a familiar baby music video with the sound off. This technique was implemented on an as needed basis for the first week and a half, after which T chose to cuddle with his mother while listening rather than watch or play. After a week of listening T began singing to himself and initiating singing with this therapist (prior to this point T always enjoyed singing, he would make eye-contact, and say/interject words during familiar songs).

T then began using the TLP Classic Kit following a Base schedule. This was followed for a few days, but then T started becoming upset when his mother tried to stop the music and remove the headphones after his module was complete. He was switched to a Condensed schedule (listening to two modules, one immediately after the other). This schedule was followed successfully for the remainder of T's first listening cycle and for his second cycle with the TLP Classic Kit.

SUMMARY OF CHANGES

The following are some observations made during T's occupational therapy sessions during his first TLP cycle:

- Week one: T appears happier, he is smiling and laughing more and repeating more words.
- Week two: T's quality of play appears to be improving (less scripted and ritualized, he tolerated therapist joining his car game and didn't become upset when the game changed). T tolerated and enjoyed being placed and moved on a large therapy ball for the first time. More words being repeated, more spontaneous single word utterances.

- Week three: T's mother reports that he has been screaming a lot more for no apparent reason. Language continues to improve. T is clenching his teeth and fists and seeking out bear hugs, demonstrating an increased need for deep pressure input.
- Week four: Screaming has decreased. T is less interested and less tolerant of movement on large ball, except when allowed to roll on his back with his head back.
- Week five and six: T is happy; he is repeating short word strings and using more spontaneous language.
- Week seven: T Runs to greet therapist then turns off the music he is listening to (without being asked) and sits down to play.
- Week eight: T is independently using two and three word strings during play.

Overall, T did very well during his first cycle. He appeared to have some difficulty around week three, possibly due to the higher frequency ranges he was being exposed to. T appears to have benefited in ways related to both Zone 1 (body) and Zone 2 (language) and a second full cycle of TLP was recommended. T's Zone 1 changes included an increase in tolerance for participation in movement activities, and his Zone 2 changes included an increase in his attention during joint attention tasks and an increase in spontaneous speech. T began a second cycle the week after finishing his first. Although T's mother reported some increased screaming and unhappy behavior around week three and four it is difficult to determine if he was again responding to his exposure to higher frequencies or if his deterioration in behavior was due to the difficult transition he was making from daycare and Early Intervention services at home to no home services and a new full day of school.

FOLLOW-UP RECOMMENDATIONS

T's twice a week OT sessions ended when he turned three along with his other early intervention services provided in his home. He now attends two half day school programs; an ABA based program in the morning and a social language based program in the afternoon. He is receiving occupational therapy services during the hours he attends school. T was seen by this therapist after his sixth week of his second cycle of TLP. He was friendly and happy to play. His spontaneous use of language (although still very delayed) has continued to improve. His tolerance for movement based sensory input has also improved with mom reporting he enjoyed going on rides during a recent family trip to Disney World. T's quality of playing and his flexibility has also improved. He happily read a book with this therapist, responding to direct questions by pointing and repeating words with no distress when his book was read differently than usual. T continues to enjoy listening while cuddling and relaxing with his mom who is thrilled to have something so special for them to share.

Recommendations for T's continued listening include two weeks of listening to the Speech and Language Kids 1 CD, following the same schedule of two modules a day for five days followed by two days off. If T demonstrates an increase in screaming or other negative behaviors, it is recommended that he go back to listening to the SI Kids 1 CD for two weeks then back to the Speech and Language CD. T's mother expressed that following the completion of this continued listening schedule it may be best to take a break from listening for a while. She does however feel that having T follow another set of two cycles may be beneficial in the future.

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End of Case Study