

## Case Study – The Listening Program®

### Alejandro, Age 2 years 6 months, Developmental Delays and Hypoxia

Submitted by: Ana Vazquez, OTR/L

Name: Alejandro

Gender: Male

Chronological Age: 2.5 years

Clinical Diagnosis: Developmental Delays, Hypoxia

#### BACKGROUND INFORMATION

Alejandro was born at 38 weeks of gestation by c-section. He suffered from seizures a few days after he was born. He started on medication, Tegretol after the first episode. Alejandro was delayed in his neurodevelopment milestones. He crawled on his stomach at his first year, but wasn't crawling or walking yet. Alejandro has been in therapy since 4 months of age. His attention span and concentration were poor. When Alejandro first began receiving treatment he wasn't responding when he was called. He wasn't reaching for objects, or holding objects. He wasn't bringing toys to mid line and wasn't accomplishing bilateral coordination movement. Alejandro presented with sensory processing difficulties; poor vestibular and proprioceptive processing. At the beginning of treatment he was avoiding eye contact and showed poor ability to understand language or communicate his needs. He didn't have the protective reaction present.

Alejandro made tremendous progress since he started treatment with The Listening Program® (TLP). He also received OT 2x/week, PT 2x/week and ST 2x/week. He is also a patient at the hyperbaric chamber at the center. At the time he started TLP he had finish the Oxygen treatment, reducing variables. Because of his continued delays in language and delays in neurodevelopment stages, he wasn't able to crawl. The Listening Program was recommended with the purpose of improving, attention span, concentration, language and sensory processing. The primary goal Alejandro parents hoped through TLP was an increase in his attention span and communication skills. It was hoped that Alejandro would also benefit by improving his balance, coordination and expressive communication.

#### PROGRAM IMPLEMENTATION

Prior to TLP implementation with the Classic Kit and due to the reason that he was, on the hyperbaric treatment also, he was placed on preparatory listening with TLP Sensory Integration (SI) Kids 1 on an Extended Schedule for 2 weeks, 1 module per day. The SI Kids 1 was chosen because it emphasizes the 0-750 Hz frequency range which most affects the vestibular system. This range corresponds to the Tomatis Zone 1 or the body zone. It also increases awareness of the body. The vestibular system is related to balance and coordination, decreasing sensory defensiveness and improving emotional regulation. It was expected that by using the SI Kids 1 CD he would be strengthening his body zone, balance and coordination.

On the first week he enjoyed the music, he was able to move to the rhythm of the music while in sitting position. He began to play and reach for objects. After the first two weeks he was changed to Full Spectrum Prelude 2 headphones as a continuous preparation to listening to the Classic Kit, one module a day for two weeks. Alejandro began to crawl in sitting position. He began to clap hands to the rhythm of the music.

After Full Spectrum Prelude 2 headphones, he continued the preparatory listening with Speech and Language (SL) Kids 1 headphones, in order to emphasize memory, concentration, speech and language, at a range of 750-4000 Hz. This corresponds to Tomatis Zone 2. An increased in activity level, attention span and focalization, was observed. By the time Alejandro had finished with the SL Kids 1 CD, he had also finished his treatment at the hyperbaric chamber. He was able to begin the TLP Classic Kit program. Since Alejandro was tolerating headphones and music a Base Schedule was prepared for him, listening to music 2x/per day with some time in between modules.

#### SUMMARY OF CHANGES

1. First week: On a large therapy ball, he was able to assume crawling position. He was able to reach for objects. He was smiling and attentive to music. In a sitting position he was able to relate and look for objects.
2. Second week: He was observed as sensitive. His sleep patterns became variable. His activity level increased. He attempted the quad position. His babbling increased. Since there was a change in sleeping patterns, we changed to an Extended Schedule.
3. Third week: More babbling, active. He began to eat chopped food.
4. Fourth week: His eye contact improved with more babbling like wanting to express himself to others. He began reaching for the bed and pulling himself to a kneeling position.
5. Fifth week: Alejandro assumes quad position and began to crawl. More active.
6. Sixth week: Began to be selective with his toys. He preferred radios, toys with music.
7. Seventh week: He is able to hold his bottle and feed himself with it. He began solid food. He began to play with his parents, he began saying syllables: ti, da, de, di. His weight bearing in standing position improved. He recognizes voices from grandparents and from parents.

Even when he starts babbling more, he still requires improvement with communicating his needs. His attention span has been improving also, but requires more tolerance to stay with a specific task and to finish an activity. His balance in a sitting position is good as well as during crawling and kneeling. He is able to stand up with fair balance and support.

Overall, Alejandro did great during his first cycle of TLP Classic Kit. Alejandro appeared to have some difficulties around week 2 possibly from a switch in frequency ranges. Alejandro appears to have benefited to Zone 1(body) and Zone 2 (language).

Alejandro now makes and sustains eye contact when he is spoken to. He is now able to reach for objects and play with purpose. He gets in quad position and crawls to reach for objects. Looking back at the client history information, Alejandro didn't like to be in prone position on his stomach, now he is crawling. He is sitting by himself and kneeling. His muscle tone increased. Alejandro tolerates different textures; he is modulating sensory inputs appropriately. Alejandro appears to enjoy music.

Zone 1 changes include: increase in motor planning and coordination.

Zone 2 changes include: an increase in his attention span, focus and increase in babbling.

#### FOLLOW-UP

OT 2x/week. Continue his last TLP Classic Kit CD #8 and begin a second cycle of TLP Classic Kit on a Base Schedule; 2 modules per day for 5 days. A second cycle of TLP Classic Kit is recommended.

## DISCUSSION

On this second cycle we are expecting to improve communication skills and improve in motor activity and balance skills. We are expecting that Alejandro will be able to make his needs known. Mom is very happy with the outcomes and willing to continue treatment with TLP Classic Kit, second cycle. Because he continues to need improvement on Zone 1 he will need to listen periodically to SI Kids 1. He will benefit from long term treatment on and off SI Kids 1 and SL Kids 1, two weeks on each CD.

End of Case Study

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