

## Case Study – The Listening Program®

### Rebecca, Age 8, Generalized Anxiety Disorder and Sensory Integration Dysfunction

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Name: Rebecca  
Gender: Female  
Chronological Age: 8 years, 7 months  
Clinical Diagnosis: Generalized Anxiety Disorder and Sensory Integration Dysfunction

#### BACKGROUND

Rebecca's birth history was complicated only by the cord wrapped around her neck but breathing occurred simultaneously. She developed normally and reached developmental milestones on time with the exception of some mild articulation and mild fine motor weaknesses. Rebecca had her first of three speech evaluations at age 3 and it was found that her expressive language skills were within normal limits. Speech/language therapy was not recommended. Rebecca's mother noticed that she would turn up the volume when she watched TV. Her hearing was checked when she was 3 years, 9 months and the audiology report came back negative. At age 4 she had an ENT evaluation that showed adenoid enlargement with secondary ear infections. Also, at age 4, she had her second speech/language evaluation. Again, it was determined that she did not need speech therapy despite continuing articulation problems. She was frequently treated with antibiotics for the numerous ear and sinus infections she had from 1 to 4 years old.

During kindergarten, Rebecca would cry every day after school. She had her third speech therapy evaluation in June of 2000, to rule out central auditory processing disorder- CAPD. At this time, she was diagnosed with anxiety disorder related to sensory integration dysfunction. The therapist said that although she did not have CAPD, she did have some weaknesses. Some of the weaknesses included difficulty with answering "wh" questions, remembering individual unrelated words in sequence, and discriminating sound differences in all positions of words.

Rebecca was seen for a Children's Audiological Evaluation, Distortion Product Otoacoustic Emissions testing, and a Central Auditory Processing test battery on April 11, 2002, shortly before beginning The Listening Program®. This testing was performed by an Audiologist. It was determined that Rebecca has difficulty processing sound when there are other noises around her.

#### BEHAVIORAL HISTORY

Self calming and self regulation were always difficult skills for Rebecca to achieve. Rebecca would attempt to make decisions asking for help, then argue with the helper. She could not tolerate being given a "no" response and would perseverate on the topic, resist resolution, and whine. Getting to sleep was a continuous problem and at one time a physician suggested her mother try melatonin to help her sleep. Rebecca continued to often ask for a direction or comment to be repeated. She had difficulty initiating homework assignments even when they included skills already mastered. Sensory processing deficit issues included hypersensitivity to sound, e.g. covering her ears when water was running, intolerance to toothpaste, many smells and tactile experiences. Rebecca self calmed with quiet play but definitely craved motion and heavy pressure activities.

## TREATMENT

At age four Rebecca began to receive treatment from an occupational therapist, two times per month for the next two years. In occupational therapy, Rebecca worked on equipment to help challenge her sensory systems as well as specific tasks to improve her fine motor skills. She has continued on and off over the years with great results. She has also received counseling with a pediatric social worker because of her multiple fears. She has been afraid of witches, monsters, thunderstorms, lightning, etc. In spite of these difficulties, she has always been an above average learner.

Rebecca began a sound stimulation program called Therapeutic Listening™ which included SAMONAS, EASe, and Mozart for Modulation in November of 1999 and continued through April of 2000. Prior to beginning her first listening protocol, Rebecca was described as ritualistic and having a great deal of difficulty self-regulating, getting to sleep, (she would often sleep on a blanket in the hallway), and waking and cooperative behaviors were problematic. Rebecca's mother reported many positive changes with the initial listening protocol. Goals met on the first protocol included initiating homework, a greater ability to compromise, being more affectionate, decreased nightmares, and staying in bed all night for the first time. However, there were times when Rebecca refused to listen. She was very sensitive to many of the CDs, particularly EASe. Following a trip to Florida, melt downs and regression in behavior occurred and additional listening was considered in May, 2000.

We discussed The Listening Program protocol and the decision was made to change to TLP following CAPD testing. Rebecca is in third grade and is presently on a 504 plan at school because her sensory processing deficits and auditory difficulties. At the time she began The Listening Program, she was not involved in any other intervention.

## PROGRAM IMPLEMENTATION

Rebecca started The Listening Program Extended Schedule on May 29, 2002, for 15 minutes once a day, 5 days per week, for 16 weeks. Her second daily listening session was with the TLP Sensory Integration CD that she listened to over speakers rather than headphones. She listened from Wednesday through Sunday and would always know where to stop and start daily and when to end the week.

Weeks 1-4: No changes were noted in week one. Rebecca's behavior was better in school the second week. She was starting to be in a good mood on awakening. At the end of week two, she asked to do her listening. On her non-listening days, her behavior was not good; she was sassy and whiny.

Weeks 5-8: At the beginning of week five, Rebecca turned the volume down on the TV, which was unusual, as she would usually blast the volume. She was not perseverating as much. Previously she was unable to take "no" for an answer and would repeatedly ask the same thing. This was always managed by Mom offering a compromise. By week seven, her mother noted that Rebecca could now take "no" for an answer. Her behavior was not as good during the eighth week.

Weeks 9-12: During this period the family moved into a new house. Rebecca had a severe temper tantrum and her behavior declined the following week. Her mother felt that this was probably due to the stress and anxiety of the move.

Weeks 13-16: Rebecca's behavior was better overall compared to before she began listening to TLP, but not as good as the first eight weeks. Her listening skills were better and she did not always ask, "What did you say?" Rebecca started third grade in her new school. After a few weeks she told her mother that she was hearing better in school this year.

## PRE/POST TLP

### SCAN-C, Test for Auditory Processing Disorders in Children

	Pre TLP	Post TLP
Filtered Words Subtest	10	7
Auditory Figure Ground Subtest	4	6
Competing Words Subtest	9	13
Competing Sentences Subtest	11	12
SCAN-C Composite	90	96
Pitch Pattern Sequence:	Unable to Complete	90% right ear, 80% left ear

## SUMMARY OF PRE AND POST TEST SCORES

Rebecca showed an increase in standard scores on all subtests of the SCAN-C except the Filtered Words Subtest. Her composite score from all subtests rose 14%, from 25% to 39%, showing improvement in most areas. Rebecca was now able to successfully complete the Pitch Pattern Sequence test.

## SUMMARY OF CHANGES

Reported by Mom: We achieved the goals we set when we started The Listening Program:

Improved auditory figure ground ability

Increased baseline performance on BrainBuilder® auditory activities

Reduced need to say "what?"

Reduced auditory hypersensitivity

Improved behavior and ability to remain regulated with less external structure

Rebecca no longer cries after school. She now takes "no" for an answer and she no longer perseverates. She is sleeping better and 99% of the time she wakes up in a good mood in the morning. Rebecca is less sensitive to noise. She is not as fearful. She is now falling asleep even if her brothers are not upstairs with her. She has been asleep by 9:30 pm, which is early for her.

Rebecca no longer says, "I'm tired" all the time. Her energy level is much higher. Before, her endurance was a problem but now she has been running one-mile races with her brother. She has even run cross country and comes in the top 20% in her age group. She finished the season with a time of nine minutes for the mile race.

The other day, Rebecca told me that she forgot her ballet shoes. Then she explained it was a joke. She said she needed to laugh, because she hadn't laughed all day at school. In fact, she giggles and giggles now. She typed in "I love you" on my palm pilot. Rebecca regularly takes the initiative to do her homework on her own. She recently completed two extra credit projects. Peer interactions are also improved. She is willing to compromise when playing with her friends and is attentive to their needs.

Rebecca is a happier child and our household is a much happier place. I would like to express my sincere thanks to all the therapists who have worked with Rebecca. JoAnn Granke and Barrie Galvin are exceptional occupational therapists who not only do outstanding work with the children they treat, they are supportive of parents of special needs – often lending an ear and providing suggestions so that parents can cope better.

## FOLLOW-UP RECOMMENDATIONS

Rebecca has learned that periodically she needs to listen to TLP to function and to avoid overload. It is likely that TLP will continue to be a useful tool for her throughout her life.

End of Case Study

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