

*This issue of INSIGHTS takes a look at the positive changes that we have seen as a result of Samonas Sound Therapy. It also gives a brief overview of auditory processing and the effects a weak auditory system can have on an individual.*

### **What if you found a program for students that would result in:**

- Better articulation
- Improved sleep
- Better ability to follow directions
- Improved auditory comprehension
- Improved vocal quality
- Better organization
- Improved social interaction
- Increased balance and coordination
- Improved language
- Increased attention
- Improved communication
- Reduced sound sensitivity
- Increased frustration tolerance

Believe it or not, these are just a few of the results we are seeing from the sound simulation program, Samonas Sound Therapy, that we have added to our “therapy toolbox”.

Sound has a profound effect on living systems. **Unlike light, which bounces off the body, sound goes directly in.** The vagus nerve, which connects the ear to the brain, also **connects the ear to nearly every organ in the body.** The brain needs sound. A diet of healthy sound can have amazing effects on our learning, communication, emotions, relationships, sleep, coordination, creativity, organization, and general sense of well being.

### **A Look at Auditory Processing (The Technical Process)**

In order to think about and understand language, an auditory stimulus (sound) has to be received by the outer ear and channeled through the middle and inner ear to the auditory nerve. The ear’s job at this point is **hearing**. Once the signal is transferred from the inner ear to the eighth auditory nerve, it goes on a journey through the brainstem and the brain on its way to the cortex where language is processed. The Central Auditory Nervous System (CANS), where this journey takes place, is an intricate system dedicated to dealing with auditory information. When the signal gets to an area of the brain called Heschl’s Gyrus the transition from **auditory processing to language processing** begins. It is at this point that the brain begins to process speech and language from the auditory signal. The final leg of the journey sends the language signals to the cortex where the information is coded, organized, interpreted, and understood.

A **central auditory processing disorder** (CAPD) occurs when the auditory signal is received accurately by the ear, but becomes distorted, confused, or compromised in some way before it is received by the language area of the brain.

## **It's Hard to Get the Message When You Have a Bad Connection**

Perhaps the best way to understand a central auditory processing disorder in our "modern age" is to think about what it is like to be in an important conversation with a bad cell phone connection. You are having to listen extremely hard, and any extra noise around (i.e. kids, traffic, etc.) becomes extremely irritating and hard to block out.

Because the signal is not clear, you miss part of what the speaker is saying and you find yourself saying, "What did you say?" and struggling to fill-in the gaps.

You're not exactly sure what the speaker said, but you don't want to sound stupid or uninterested, so you make what you think is an appropriate response. Oops! That backfired. Now you have to explain about the bad connection and why you misinterpreted what they said and made an "off-the-wall" response.

You're not quite understanding the speaker, yet when you have a clear connection you really don't have a comprehension problem.

It's taking so much energy to keep up with this conversation, that you find your attention drifting. You're feeling distracted and frustrated, and doggone it, important or not, you just want to get off the phone.

Luckily for cell phone users, the way to a better connection is to hang-up and dial again. But for students with CAPD, this is life.

## **Leading the Sensory Team**

The auditory system is like the quarterback or the "captain" of the sensory team. It is the first system to function in utero and it is the system that allows the sensory team to work efficiently. When the auditory system is weak, it can affect the interaction of information being fed to the brain and the nervous system by the other senses.

An inefficient auditory system can inhibit the development of strong listening skills. There is a difference between hearing and listening. Hearing is passive. **Listening is active and conscious and has a huge impact on learning.** Inadequately developed listening skills can cause problems with information processing, attention, memory, concentration, relationships, motor coordination, language learning and communication.

The ear is tied in to the vestibular system (balance and movement), so **coordination, posture, and sensory motor integration can be affected by a weak auditory system.** Through improved listening, we see improved spatial awareness which supports organization; better body control for sitting in a chair and posture; improved eye-hand coordination for writing and improved motor coordination and performance in sports.

A well-functioning ear is like a battery which changes sound waves into electrical waves. These electrical waves stimulate the cortex (the thinking and learning part of the

brain). **Healthy sounds are nutrients** that can stimulate the middle ear and **charge the nervous system.**

Because the auditory system has strong interconnections on multiple levels across both sides of the brain and throughout the body, it can impact how energized or de-energized we feel, how well we process information for learning, and how alert and organized we are. Just as a healthy diet contributes to physical and mental health, healthy sound makes healthier, more available learners.

## **Common Symptoms of Central Auditory Processing Deficit**

In more clinical terms, here are some symptoms that most literature on CAPD include:

- About 75% are male
- Normal hearing acuity
- Difficulty following oral directions
- Inconsistent response to auditory stimuli (the signal isn't always confused, just sometimes.)
- Short attention span; fatigues easily during auditory tasks.
- Poor long and short term memory
- Difficulty with phonics, reading, or spelling; mild speech-language problems
- Says "Huh?" or "What?" or often asks for things to be repeated
- History of ear infections

## **Music and Sound Therapy**

At Fredericksburg Learning Enhancement Center, we are always looking for tools to meet the needs of our students. We have found Samonas Sound Therapy to be an excellent tool for opening the door to learning and communication.

The therapeutic use of music has long been scientifically supported. In the mid-1900's, Dr. Alfred Tomatis began his work with the therapeutic application of sound to treat specific symptoms and behaviors.

Samonas Sound Therapy was developed by German sound engineer, Ingo Steinbach. With his background in physics and music, Steinbach combined the principles of Dr. Alfred Tomatis with advances in technology and physics to develop the Samonas recordings.

Samonas Sound Therapy is a music and sound stimulation method that focuses on re-educating the ear and auditory pathways for increased attention, communication, listening, and sensory integration. This is accomplished through the use of specially modified classical music and nature sounds that stimulate the hearing mechanism to take in a full spectrum of sound. Because sound frequencies literally vibrate through our entire body, auditory retraining can result in positive changes physically, emotionally, and mentally. As listening skills and the auditory system improve, many positive changes take place.

Auditory stimulation and training has been effective in treating a variety of disorders, including auditory processing disorders, speech and language disorders, learning disabilities, autism and spectrum disorders, attention deficit disorders, and reading and spelling disorders.

We have found Samonas Sound Therapy to be a tremendous tool in aiding in the development of communication and learning with students of all ages with a variety of learning challenges. We are seeing dramatic changes occur in the lives of children, teens, and adults.

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