

Auditory Processing

Our Neurodevelopment Program and Auditory Program for children and teens uses exercises, activities, and processes that effectively contribute to the brain's recognition of frequencies for proper development and maturation.

For the adult population our Auditory Programs identify frequencies that may not be received appropriately by the brain and retrains the brain to not only recognize those signals, but also process those auditory signals. It trains the brain to process auditory input appropriately and receive all auditory frequencies.

With a thorough listening evaluation, specific listening and processing problems can be pinpointed and identified... and then specifically treated. CrossRoads Programs for Children with Auditory Processing:

When looking at an individual's ability to process auditory information we take into account several factors.

- Neurodevelopment of the short term memory
- The auditory cortex
- The language centers
- Word recognition ability
- Learned listening personality traits

Our listening habits develop around our auditory abilities and the perceived effectiveness of this ability. For example, when we measure short term memory both auditorily and visually, we often find the individual tends to favor visual input over auditory input if there is a difference of even one increased digit span in the visual component. Under moments where there is "extreme" pressure, that individual will be able to capture the auditory information, but may not fully process or interpret the information. This individual may appear to not be listening or paying attention to the conversation, which in turn interferes with communication.

At Crossroads Institute, children, adolescents, and adults are placed on programs designed to break up neuro-inhibitors in feedback pathways. Once the neuro-inhibitors are reduced or eliminated, natural volitional, autonomic, and expressive responses can take place. Our approach to hearing and listening issues consists of first assessing the individual's

developmental age (which often differs from physical age). Next we assess listening skills.

Crossroads Institute then works with the neuro-pathways that support the ability to comprehend what has been said and how the brain processes this information. We measure language comprehension activity as it occurs and how the individual discriminates and processes auditory vs. visual information.

As part of our BrainyArcade, Brain WorkOut, BrainMax, BrainRecovery and 1-2-3 Grow Program, we have various programs that will aid the child, adolescent, and adult in developing listening abilities. The program activities consist of computer assisted programs that exercise the neuro-motor pathways that promote clear listening comprehension and critical cognitive thinking.

Our Auditory Processing Programs are designed to aid proper development of:

- Auditory cortex
- Auditory memory
- Neuro-pathways that provide connections from the auditory cortex to all other areas within the brain.

ADD/ADHD Mimics

Often those who come into our program labeled as ADD/ADHD are not...rather they have auditory processing issues such as auditory discrimination or auditory blending issues which can interfere with the attentional processes. **Hearing and Listening...What is the difference?**

Hearing is the ability of the ears to take in sound. The ear's mechanics or structure is capable of responding to sound.

Listening is the result of our auditory cortex processing and interpreting the sounds received from the ear. In other words....our understanding.

Listening Style is the learned behavior and how we prefer to listen.

Auditory Processing is the ability to make sense of the sound that comes into the ear and to process or interpret what is heard.

Difficulty with auditory processing does not mean the ear is not hearing, but rather indicates difficulty with how this information is interpreted or processed by the brain. Auditory processing affects how we understand the spoken word and therefore affects how we view the world.

Auditory discrimination is the ability to recognize differences in phonemes (sounds). This includes the ability to identify words and sounds that are similar and those which are different. Auditory memory is the ability to store and recall information given verbally. An individual with difficulties in this area may not be able to follow instructions given verbally or may have trouble recalling information from a story read aloud.

Auditory sequencing is the ability to remember or reconstruct the order of items in a list or the order of sounds in a word or syllable. For instance, the word "task" may be heard by the brain as the word "tacks" because the order of the s and k were processed in reverse order, much like some individuals will see letters in reverse order, some hear or process sound in reverse order. Auditory blending is the process of putting together phonemes to form words. For example, the

individual phonemes "c", "a", and "t" are blended to form the word, "cat". Some individuals will process these sounds out of order and repeat the word as "tac". Or they may omit the first sound or last sound and repeat the word as "at" or "ca".

An auditory processing deficit can interfere directly with speech and language and can affect learning, reading, comprehension and spelling. When instruction and communication relies primarily on spoken language, the individual with an auditory processing deficit may have serious difficulty understanding the information, lesson or directions.