PARENT INFORMATION

Auditory Processing Disorders
APD-What is it?

Auditory processing refers to how the brain uses the auditory information provided by the ear. For people with normal hearing,the ear delivers three acoustic features-loudness, pitch and timing- to the ear in a very precise manner. The brain needs to make sense of this acoustic information by analyzing and interpreting the acoustic message. Taken together, an auditory processing evaluation assesses how the ear encodes the acoustics of speech and how the brain makes use of this information. An auditory processing disorder is " a deficit in the processing of auditory input." Central auditory processes which can be evaluated include: temporal ordering and sequencing, binaural integration, binaural separation, auditory closure and auditory figure ground. , *The auditory processing test battery your child will be given focuses on those areas where meaningful intervention can be provided. Focus is upon differential diagnosis.*

Who can diagnose an auditory processing disorder?
There are three different professions which use the term auditory processing: psychologists, speech language pathologists and audiologists. Each profession uses the term auditory processing differently, which can lead to confusion. Audiologists are the only professionals trained to diagnose an auditory processing disorder. When psychologists use the term auditory processing, they are referring to the type of learner your child is, and how the child absorbs, retains and mentally manipulates information, whether it is auditory or visual. When speech language pathologists use the term auditory processing, they are referring to the auditory processing of language. This strategy has been called a top-down processing approach, meaning from the brain down to the ear. When audiologists use the term auditory processing, we are referring to the central mechanisms responsible for encoding and interpreting auditory information. This strategy has been called a bottom up approach meaning from the ear to the brain.

Audiologist's Assessment
The bottom up theory of auditory processing investigates whether the brain is receiving the auditory signal in its integrity from the bottom, i.e., ear, up to the brain. All of spoken language is composed of three acoustic elements: intensity, pitch and timing. Intensity, or loudness of the stimulus is important, since we must hear the signal in its entirety to process it. Since the peripheral auditory system feeds the central auditory system, persons with hearing loss have auditory processing problems because they don't completely hear all of the message. Pitch and timing combine and help us discriminate and recognize words and syllables. Hearing the difference between /ba/ and /pa/ is based upon the interaction of pitch and timing, or duration, characteristics of the auditory signal. Assessment using non-linguistic stimuli (tones) provides information regarding purely "auditory" processing skills. Dichotic tests tell us about auditory processing in the right and left hemispheres, as well as the communication between the

hemispheres. Taken together, the audiologist's assessment seeks to determine the neurobiological basis for an auditory processing disorder which can be reflected in the following: an inter-hemishperic transfer deficit, atypical hemispheric asymmetry, decreased central inhibition, and inappropriate hemispheric lateralization.

Speech Language Perspective
Top down auditory processing reflects how the brain is processing or interpreting the signal it receives. This strategy has greater influence upon speech perception from a linguistic basis which is why speech language pathologists evaluate this area. We use what we know about language to facilitate our perception of speech. For example, in the sentence, For your birthday, I baked a _____., the listener knows the last word is cake, simply because of their top down auditory language processing skills.

Procedure

Dr. Abramson is an expert in the area of auditory processing, and has served on the California Speech and Hearing Task Force regarding auditory processing. She is an expert witness in the field and has written a treatment program for auditory processing disorders. An assessment of auditory thresholds is prerequisite to an APD evaluation. Either normal or hyperacute hearing qualifies children to continue. Please call our office for the referral criteria to make sure that your child is a suitable candidate for an auditory processing evaluation. Occasionally, an exception is made, but this must be discussed with Dr. Abramson prior to your appointment. After your appointment has been made, please send to the office the most recent copy of your child's speech and language evaluation as well as the psycho-educational evaluation (if you have either of these).

Results

On the day of testing, you will be given information whether or not your child has an auditory processing problem. On the date of testing the information given includes whether or not your child has an auditory processing disorder and what interventions or accommodations are appropriate.

Can an auditory processing disorder be remediated?

Yes, there are effective treatments for auditory processing depending on what is identified. Treatment exists for weaknesses with temporal ordering and sequencing, binaural integration, binaural separation, auditory closure and auditory figure ground skills. There is definitely help available to those with central auditory processing disorders. Dr. Abramson is well aware of therapy programs which treat auditory processing disorder. With what we know about early intervention and neural plasticity, there is no advantage to waiting and every advantage to obtaining a correct diagnosis which leads to effective treatment.

Thank you very much for choosing Abramson Audiology. We want you and your child to feel comfortable and welcomed here. Our goal is that the information obtained be of value in helping your child.