

# What Parents Need to Know About Auditory Processing Disorders

## Definition

Auditory processing disorder interferes with an individual's ability to analyze or make sense of information taken in through the ears. This is different from problems involving hearing per se, such as deafness or being hard of hearing. Difficulties with auditory processing do not affect what is heard by the ear. The "disorder" part of auditory processing disorder means that something is adversely affecting the processing or interpretation of the information (National Institute on Deafness and Other Communication Disorders, 2005).

### Diagnostic Symptoms

***Diagnostic symptoms of individuals with APD include (Gertner, 2003, Ciocchi, 2002):***

- 1) difficulty with some or all listening activities
- 2) particular problems when the activities occur in less than ideal listening environments
- 3) problems with sound discrimination
- 4) errors when speaking on a one to one basis especially when there is competing background noise or speech
- 5) difficulty understanding information when speakers talk rapidly
- 6) difficulty understanding information when they are not devoting their complete attention to the listening task
- 7) difficulty with the discussion topic when it is unfamiliar to them
- 8) difficulty performing or remembering several verbal tasks in a row
- 9) exhibit weak phonemic systems (speech sound memories used in phonics, reading, and spelling)
- 10) often appear as though they do not hear well
- 11) Frequently say, "what?" or "huh?" in response to questions.
- 12) not always intimately in touch with the sounds in the environment, hence they do not always grasp exactly what has been said
- 13) History of middle ear infection
- 14) often have lower academic performance
- 15) need more time to process information
- 16) difficulties with reading comprehension, vocabulary, and spelling
- 17) may display behavior problems

## Further Key Points

An auditory processing disorder can interfere directly with speech and language, but can affect all areas of learning, especially reading and spelling. When instruction in school relies primarily on spoken language, the individual with an auditory processing disorder may have serious difficulty understanding the lesson or the directions. (The National Center for Learning Disabilities, 2004)

Auditory Processing Disorder is a complex condition and is sometimes misunderstood because many of the behaviors also appear in other conditions such as learning disability (LD), attention deficit hyperactivity disorder (ADHD), and even depression. Symptoms of APD can range from mild to severe, and can take many different forms. Trained professionals, such as speech-language pathologists and audiologists who specialize in APD, can determine if a child has a central auditory processing disorder (Gray, 2003).

## Types of Auditory Processing Disorders

### *Auditory association type*

#### **Definition**

Auditory association type refers to the ability to relate to material (words and concepts) presented orally in a meaningful way (Learning Disabilities Association of Georgia, 2004).

#### **Symptoms**

An individual with this disorder will have difficulties organizing and associating aurally presented material in a meaningful way.

#### **Example**

For example, when speaking to this child, he/she does not appear to understand what is being said, needs you to repeat information, and frequently asks “what did you say? Or could you repeat that?”

#### **Associated Features**

It should be noted that medical problems associated with this child's hearing have been ruled out as a primary cause of the child's difficulties. The difficulties are in the internal processing of information, not due to a hearing impairment.

### **Auditory blending type**

An individual with this disorder will exhibit difficulties in processing or putting together phonemes (the smallest phonetic unit in a language that is capable of conveying a distinction in meaning) to form words. For example, the individual phonemes "c", "a", and "t" are blended to form the word, "cat" (National Center for Learning Disabilities, 2004). The child with an Auditory Blending type of disorder cannot tie the letters together in order to form a complete word. So, even though he/she knows the “c” sound, the “a” sound, and the “t” sound, the child cannot put them together as a whole to form the word cat. ?” It should be noted that medical problems associated with this child's hearing have been ruled out as a primary cause of the child's difficulties. The difficulties are in the internal processing of information, not due to a hearing impairment.

### **Auditory closure type**

An individual with this disorder will be unable to combine sounds that are presented orally to make words (Terry, 2001). Auditory Closure difficulties can lead to difficulties sounding out words, discriminating between sounds, attending to auditory stimuli, and filling in the gaps when they miss parts of words or conversations. For example a child with this disorder will be unable to take “ele” and “phant” and combine them and sound out the word “elephant.” It should be noted that medical problems associated with this child's hearing have been ruled out as a primary

cause of the child's difficulties. The difficulties are in the internal processing of information, not due to a hearing impairment.

### **Grammatical Closure subtype**

This disorder occurs when a student has trouble producing grammatically correct language, understanding and applying verb tenses, plurals, etc. It should be noted that medical problems associated with this child's hearing have been ruled out as a primary cause of the child's difficulties. The difficulties are in the internal processing of information, not due to a hearing impairment.

### **Auditory discrimination type**

Individuals with this disorder will have difficulties recognizing differences in phonemes (sounds). This includes the ability to identify words and sounds that are similar and those which are different (Terry, 2001). Auditory Discrimination difficulties can lead to difficulties acquiring, understanding, and using spoken language. They will have trouble telling the difference between similar sounds, such as "th" and "f" or "m" and "n"; hearing "seventeen" instead of "seventy"; , finger instead of ringer, boat instead of bat; or hearing an angry rather than a joking tone of voice. It should be noted that medical problems associated with this child's hearing have been ruled out as a primary cause of the child's difficulties. The difficulties are in the internal processing of information, not due to a hearing impairment.

Kelly, (1999), feels that auditory discrimination is an area that is underestimated in terms of its importance in the classroom. It impacts on following directions as well as spelling, reading, writing, and phonology skills.

### **Auditory figure ground type**

An individual with this disorder will be unable to isolate speech sounds or a particular environmental sound from background noise, i.e. being unable to hear the telephone ring when one is listening to the radio, or having difficulty hearing someone talking at a party when music is playing (Terry, 2001). Auditory Figure Ground difficulties can lead to problems with instruction for students because, when presented with oral instructions, they may not be able to separate the instruction from background conversations. For example, as a teacher, you may be informing students to take out their pens and open to page 152. The student with Auditory Figure Ground disorder may not process this information not because he is not paying attention, but rather because he is focused on the background noise of a fan in the room or the ticking of a clock. It should be noted that medical problems associated with this child's hearing have been ruled out as a primary cause of the child's difficulties. The difficulties are in the internal processing of information, not due to a hearing impairment.

### **Auditory language classification type**

An individual with this disorder will be unable to classify objects by category when presented with them orally (Terry, 2001). Auditory Language Association and Classification difficulties can lead to difficulties with holding two or more concepts in relationship to each other, identify and verbalize concepts, learn to classify or categorize concepts. For example, Would "bat" go with "ball" or "mitten", would "bird" go with "airplane" or "car?" or the child is unable to classify words when presented with such examples as, "How are a dog and a cat alike?" It should be noted that medical problems associated with this child's hearing have been ruled out as

a primary cause of the child's difficulties. The difficulties are in the internal processing of information, not due to a hearing impairment.

### **Auditory long term-memory type**

An individual with this disorder will be unable to retain and recall general and specific long-term auditory information. In general terms, long term memory refers to our memory system that can hold information over lengthy periods of time. From long-term memory you can recall general information about the world that you learned on previous occasions, memory for specific past experiences, specific rules previously learned, and the like (Learning Disabilities Online, 2004). In terms of the education environment this can span from one minute to the entire school year. For example a child may not be able to retain orally presented information learned on Monday for a test on Friday. It should be noted that medical problems associated with this child's hearing have been ruled out as a primary cause of the child's difficulties. The difficulties are in the internal processing of information, not due to a hearing impairment.

### **Auditory memory to motor expression type**

An individual with this disorder will have difficulties reproducing orally presented material or experiences in writing. For example, when a child is asked to orally spell the word "cat", he/she will have no problem saying the letters are c-a-t. However, when asked to spell cat by writing the word on paper, the student has tremendous difficulty. It should be noted that medical problems associated with this child's hearing have been ruled out as a primary cause of the child's difficulties. The difficulties are in the internal processing of information, not due to a hearing impairment.

### **Auditory sequential memory type**

An individual with this disorder will have difficulty recalling in correct sequence and detail prior auditory information. Further, the individual will be unable to remember or reconstruct the order of items in a list or the order of sounds in a word or syllable. One example is saying or writing "ephelant" for "elephant" (National Center for Learning Disabilities, 2004). Or when given the numbers 3-4-7-9 and asked to repeat them, the child may either not remember the numbers or give them to you in the incorrect order, such as 7-3-9-4. It should be noted that medical problems associated with this child's hearing have been ruled out as a primary cause of the child's difficulties. The difficulties are in the internal processing of information, not due to a hearing impairment.

### **Auditory short-term memory type**

An individual with this disorder will be unable to retain and recall general and specific short-term auditory information. Short-term memory is the part of the memory system where information is stored for roughly 30 seconds. When you are trying to recall a telephone number that was heard a few seconds earlier, the name of a person who has just been introduced, or the substance of the remarks just made by a teacher in class, you are calling on short-term memory, or working memory (Learning Disabilities Online, 2004). As a result, the child may not be able to follow instructions given verbally or may have trouble recalling information from a story read aloud. Auditory short-term memory difficulties can lead to difficulties retaining or recalling auditory experiences or directions. Some find it hard to recognize auditory stimuli they have heard before; others remember hearing the stimuli, but cannot reproduce it accurately. It should be noted that medical problems associated with this child's hearing have been ruled out as a

primary cause of the child's difficulties. The difficulties are in the internal processing of information, not due to a hearing impairment.

**Auditory visual integration type**

An individual with this disorder will be unable to accurately relate an auditory sound with a visual symbol (Terry, 2001). For example, a child hears a bell ringing but cannot tell you that it is a bell making the sound when presented with the picture of a bell and several other objects. Auditory Visual Integration difficulties can lead to difficulties primarily with spelling; putting the correct letter with the sound. It should be noted that medical problems associated with this child's hearing have been ruled out as a primary cause of the child's difficulties. The difficulties are in the internal processing of information, not due to a hearing impairment.

**Auditory vocal expression type**

An individual with this disorder will have difficulty verbally reproducing orally presented material or experiences. For example a child will have difficulty repeating a series of words, sentences, instructions, or learned information when asked by the teacher. However, the same child will be able to reproduce this information when asked to do so in writing. It should be noted that medical problems associated with this child's hearing have been ruled out as a primary cause of the child's difficulties. The difficulties are in the internal processing of information, not due to a hearing impairment.