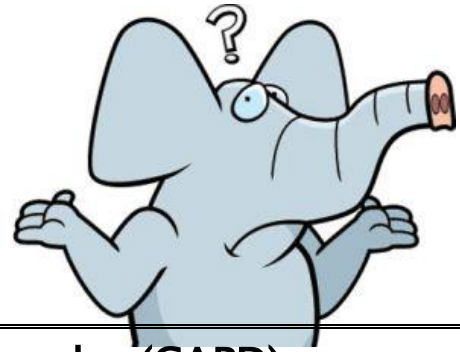




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## Central Auditory Processing Disorder (CAPD)

### Definition of CAPD

Auditory processing is what the brain does with what the ears hear. When a child has CAPD, they have difficulty correctly analyzing and processing the sounds and the words that they hear. A child that has CAPD does not have a hearing loss.

### Difficulties that a child with CAPD may have

- Asks to repeat often
- Has difficulty hearing in noise or in difficult listening conditions (for example: on the phone)
- Has difficulty understanding long and complex instructions, and executing them in the right order
- Is distracted or seems inattentive
- Has difficulty following a conversation, especially when people speak fast
- Confuses words that sound alike
- Has difficulty learning basic information (for example: learning the months of the year)
- Answers questions with a delay

**It should be noted:** A child that has CAPD should not experience difficulties in an ideal listening environment, i.e. in a one-to-one conversation in a quiet space.

### What is the difference between CAPD and hearing loss?

Hearing loss affects the “first part” of the hearing system, or “peripheral hearing” (outer, middle or internal ear). It results in an inability to detect sound signals: the child does not hear well. Children with CAPD can hear (detect). They rather have difficulty treating, decoding, organizing, analyzing and memorizing the information that they hear. This all takes place in the hearing area of the brain.

### What is the difference between CAPD and Attention Deficit/Hyperactivity Disorder (ADHD)?

AD(H)D is a global disorder that is not specific to any sensory modality, while CAPD is a disorder specific to the hearing modality. A child with AD(H)D will have difficulty concentrating even when the information is transmitted visually. Moreover, a child with AD(H)D will often have to be asked to get back into the task, while a child with CAPD won't have to, once he understands the instructions. However, the signs of these two disorders can be

similar in everyday life. It is with the help of other professionals (e.g. psychologists, doctors) that we will be able to differentiate the two disorders. It should be noted that a child can have both AD(H)D and CAPD. If the audiologist suspects that the child's attention is not adequate during the evaluation, they will offer an active break or another appointment to complete the assessment in better conditions. If medication was prescribed to your child for AD(H)D, it is important that they take it on the day of the evaluation.

### **What is the difference between CAPD and a language disorder?**

While CAPD happens in the auditory area of the brain, language disorders come from the language area of the brain. The impacts in everyday life can be similar. However, a child with a language disorder does not necessarily have CAPD, and vice-versa. It is through the collaboration between an audiologist and a speech and language pathologist (SLP) that we are able to distinguish the two disorders. If a child is known for a language disorder, the audiologist will take it into account when choosing the tests and interpreting the results.

### **What is the difference between CAPD and dyslexia/dysorthographia?**

Dyslexia/dysorthographia is a written language (reading and writing) disorder. Some children can present with both CAPD and dyslexia/dysorthographia, while some only present with CAPD. The two disorders can be confused because in both cases, children can mix up sounds. The diagnosis of dyslexia/dysorthographia requires a thorough evaluation by a SLP or a neuropsychologist

### **What to expect for your appointment in audiology?**

The evaluation for CAPD requires multiple steps. First of all, we need to make sure the child hears well. We will also complete a questionnaire to better understand your child's hearing difficulties. Afterwards, the evaluation for CAPD will take place in one or two appointments of around 90 minutes each, including regular active breaks, during which we will evaluate the different auditory processing abilities.

### **The auditory processing abilities**

- ❑ **Binaural integration:** Ability to combine and process different words presented in the right and left ears simultaneously.
- ❑ **Listening in noise:** Ability to separate the verbal message from the background noise (to ignore the noise, in other words).
- ❑ **Temporal resolution:** Ability to detect the short silence between two sounds that are presented very close together.
- ❑ **Auditory memory:** Ability to remember information given, notions learned, and pertinent elements of a verbal message.
- ❑ **Temporal sequencing/ordering:** Ability to remember every element of a message, an instruction or a story in the right order.
- ❑ **Auditory discrimination:** Ability to differentiate high and low pitch sounds, or short and long sounds.

## Solutions

There are 3 areas where we can intervene to help:



### 1) Improvement of the sound environment

- Use of an FM system
- Preferential seating in class
- Modifications to the acoustic of the classroom
- Reduction of the background noise (e.g. turning off the television during meals)
- Etc.

### 2) The type of auditory message

- Using short and simple sentences
- Speaking slowly
- Rephrasing (repeating using different words)
- Etc.

### 3) Compensation strategies

- From the child: managing the noise, letting people know when they did not understand, asking to speak slower or to rephrase, etc.
- From other people (family, teacher): managing the noise, keeping good visual contact, getting closer to the child, making sure the child understood, etc.
- Auditory training in audiology

## Available follow-ups

Audiology follow-ups for children with CAPD are available in rehabilitation centers or in private clinics. Your audiologist will direct you towards the most appropriate resources, if needed.