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Sounds Like Auditory Processing Disorder

Trouble remembering information presented orally? Poor listening skills? Difficulty with reading comprehension? Here's everything you need to know about central auditory processing disorders — including a symptom checklist.

by Gina Pera

"Garbled." That is how Diane described communicating with her fiancé George. Once she met him at her front door with a warm smile, noticed mud on his shoes, and asked him to leave his boots on the stairs. Puzzled, he said, "Your suits stare? What?"

Despite Diane's clarification, George insisted that she had said exactly that — *and* in a disapproving tone of voice.

Given the couple's tangled talk, and George's penchant for watching TV at full volume, Diane thought he had a hearing problem, but testing nixed that theory. The couple's therapist suggested that George had a deep-seated resistance to listening to Diane, so he blocked her out. Diane didn't buy it: "It's not that he wasn't listening or didn't want to listen. He was looking right at me, paying attention. But the message had been sliced and diced on the way from my mouth to his understanding of what I'd said." Diane was right.

Just as their miscommunication reached fever pitch, George was diagnosed with attention deficit hyperactivity disorder (ADHD). The couple was relieved when the cognitive therapist explained to them that ADHD has a common comorbid condition called Central Auditory Processing Disorder (CAPD). Simply put, CAPD causes a person to misinterpret what someone is saying and the tone of voice in which it is said.

Central Auditory Processing Disorder (CAPD) and ADHD

Their therapist gave George and Diane strategies for enhancing communication. The couple also discovered that stimulant medication may rectify misinterpretation by "strengthening the signal," the neurochemical pathway from the ear (where sound waves enter) to the brain's auditory processing cortex (where sounds are interpreted and given meaning). "We've had hardly any garbled messages since George started taking medication for his ADHD," says Diane.

"There's no tiny speaker inside your brain that relays messages from the outside," explains neurologist Martin Kutscher, M.D., author of *Kids in the Syndrome Mix of ADHD, LD, Asperger's, Tourette's, Bipolar, and More!* "What you think you 'hear' is a virtual-reality recreation of sounds that stopped at your eardrum and, from there on, exist as soundless electrical impulses."

Music To Soothe the Savage...Child?

Here's what happens in an exchange between speaker and listener:

- **The speaker's vocal cords produce a sequence of vibrations** that travel invisibly through the air and land on the recipient's eardrums.
- **The listener's eardrums vibrate**, causing movement of three tiny bones that, in turn, stimulate the cochlear nerve. This is essentially where "sound" ends.

- From this point, **what the listener thinks he "hears" is actually a series of silent electrical stimuli** carried by neuronal wires.

"The brain processes these electrical impulses into sounds, then into words, and then into meaningful sentences and ideas," says Kutscher. "Most of us do it effortlessly. Some adults have problems in converting these electrical neuronal impulses into meaning. We call these problems Central Auditory Processing Disorders."

ADHD or Auditory Processing Disorder?

We hear a lot about children having CAPD or Auditory Processing Disorder (APD). But psychologists and psychiatrists seldom use these terms, which originate in the speech and language profession. Limited evidence suggests that Central Auditory Processing Disorder (CAPD) is sometimes a condition separate from ADHD. Yet, as one review paper summarized: "Whether the child (or adult) receives the diagnosis of CAPD or ADHD may depend on whether an audiologist or a psychologist assesses the person first."

A rigorous reading of the literature points to a "discipline bias" -- the condition is diagnosed differently, depending on the professional's area of specialty. The difference lies in the type of treatment available — an important distinction, because research in this area suggests methylphenidate (the generic name for the medication in Ritalin and Concerta, for example) can improve CAPD symptoms, often dramatically.

By contrast, nonmedical interventions for CAPD are limited to strategies such as using electronic devices and altering the learning environment (less ambient noise).

The following characteristics of CAPD, from the National Institute on Deafness and Other Communication Disorders, sound similar to those of ADHD:

- Has trouble paying attention to and remembering information presented orally
- Has problems carrying out multi-step directions
- Has poor listening skills
- Needs more time to process information
- Has behavior problems
- Has difficulty with reading, comprehension, spelling, and vocabulary.

Children with ADHD may be misdiagnosed with CAPD, but if an adult has subpar listening ability, he may be perceived as passive-aggressive, oppositional, withholding emotionally, or argumentative, rather than as an individual with attention deficit.

Identifying Central Auditory Processing Disorder (CAPD) Symptoms

What about the tone of voice that George complained he heard from Diane? The trouble can start in the right temporal lobe, according to clinical neuroscientist Dr. Charles Parker, founder of CorePsych Blog. The non-dominant temporal lobe (usually the right) processes facial expressions, verbal tones, and intonations from others, as well as hearing rhythms and music.

Parker cites the example of an Olympic skier who took a bad fall during practice. Having sustained a head injury and a concussion, his right temporal lobe showed significantly diminished function. Yet he presented with denial (also called low insight) regarding deteriorating communication he had with his wife and peers, firmly asserting that he had

no problems. In this way, he had much in common with those adults with ADD/ADHD who have no perspective about their challenges. For these people, it's important to know that therapy emphasizing better communication strategies might not solve the problems.

After reading the skier's SPECT scan, Parker said to him, "You are the kind of guy who doesn't get it, and doesn't admit he doesn't get it." The patient took a deep breath and, with a dazed look, responded quickly, "No, I get it." Parker pointed out that he'd done it again -- given a pat answer that didn't reflect comprehension -- and asked the patient to repeat what Parker had just said. He mumbled an intelligent but jargon-filled answer. His wife chimed in: "This is what happens all the time."

As Parker recalls: "Ultimately, he did get it, because the SPECT scans and the problems with others proved undeniable. Medication and targeted supplements improved his communication skills."

One needn't have an injured brain to suffer from CAPD, Parker points out. "Many contributing factors may create diminished temporal lobe function," he says, "from commonplace, subtle challenges with gluten sensitivity to sleep medications. Any of these brain challenges, amplified by coexisting ADD/ADHD, will bring communication challenges to a relationship."

CAPD and ADD/ADHD Listening Strategies

Core ADD/ADHD traits -- distractibility, inattention, and poor working memory -- apart from CAPD, can contribute to a Tower of Babel twosome. These practical strategies can ease communication tangles.

For Partners of Adults with ADD/ADHD:

- **Eliminate distracting noises** (turn off the TV or computer) before speaking with your partner.
- **Touch your partner** on the arm or shoulder before speaking, allowing him time to shift his focus from what he was doing to the conversation you are having.
- **Ask your partner to repeat what you've said**, to make sure it was understood.
- **Speak concisely**, eliminating superfluous detail.

For Adults with ADD/ADHD:

- **Recognize** that listening closely to your partner means that you value him.
- **Listen first, respond second.** Set aside what you were doing, what you're thinking of doing when your partner finishes talking, or unrelated topics. If you need time to shape a response, ask for it.
- **Use relaxation techniques** to clear your mind before important conversations.

For Couples:

- **For some topics, e-mail works best.** An adult with ADD/ADHD needs time to formulate a response, without feeling the pressure of having to respond immediately.
- **Don't insist on eye contact** when talking about something important. Eye contact distracts some ADHDers.
- **Walk and talk.** Exercise reduces stress and increases blood flow to the brain.

When these strategies fall short, consider taking a stimulant, if you're not doing so already. "Stimulants often help transmit messages more reliably," Kutscher says, "as well as enabling the person to pay attention to the information being talked about." Both are essential to sustaining a relationship.