Central Auditory Processing Disorder
CONFUSION!

Central Auditory Processing Disorder (CAPD or APD) can easily be misdiagnosed as . . .

- Autism – no response to name or eye contact
- Dyslexia – difficulty with phonics, slow reading
- Deafness – dropping portions of words
- Retardation – severely delayed learning
- EBD – quiet, depressed, withdrawn behavior
- Asperger Syndrome – pragmatic problems
- AD/HD – distractible, poor following directions
But CAPD is its own monster
What is CAPD?

- “Central auditory processing disorders (CAPDs) are deficits in the information processing of audible signals not attributed to impaired peripheral hearing sensitivity or intellectual impairment” (Kirk, et al., 2000, p. 312).

- “… primarily an ‘input’ disorder that affects specifically the way auditory information is processed at a variety of levels inside the central auditory nervous system” (Bellis, 2002, p. 30).
CAPD is NOT related to the ear or to higher cognitive processes

But may be related to
the auditory nerves
the primary auditory cortex
the auditory association cortex
or auditory hemispheric connections
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TYPES OF CAPD
#1 Auditory Decoding Deficit

- a language-dominant hemisphere dysfunction
- words are misheard
- poor auditory closure
- difficulty hearing with background noise
- poor syntax, semantics, phonemic decoding, phonological awareness, and auditory discrimination (da / ga)
#2 Prosodic Deficit

- a right-hemispheric dysfunction
- inability to perceive tone-of-voice qualities
- misunderstanding of intent, humor, etc.
- monotone speaking, flat facial expressions, unusual speaking rhythms
- social isolation and depression
- poor sight-word reading, reading, spelling
- often comorbid with AD/HD
#3 Integration Deficit

- a dysfunction in hemispheric integration
- difficulty linking content of message with intent of message
- person feels that message was not heard correctly or not understood
- difficulty hearing in noise
- difficulty with dual-hemispheric tasks, including note taking, sports, piano
- poor reading ability, sound-symbol association
- attention problems
#4 Associative Deficit

- an auditory receptive semantic deficit
- difficulty understanding message
- especially if message is complex
- especially if message is verbal
- word-finding difficulties
- begins to show itself around 3\textsuperscript{rd} grade
- may be a type of aphasia
- probably originates in auditory association cortex or its link with primary auditory cortex
#5 Output-Organization Deficit

- symptomatic of expressive language disorder
- difficulty formulating complex sentences
- difficulty responding to questions or following verbal instructions
- severe difficulty hearing in noise
- reflex of middle ear muscle is absent
- comorbid with ADHD or other executive function disabilities
#6 Central Deafness

- results from the dysfunction of the auditory cortex regions of both hemispheres
- the person is truly deaf, although ears are fully functional
#7 Auditory Neuropathy

- neurons of auditory nerve or lower brain stem do not fire synchronously
- difficulty with speech perception in noise
- possible hearing loss at variable levels
KEEP IN MIND!

“. . . approximately 10 to 20 percent [of students with TBI] will have difficulty with central auditory processing . . .”

(Turnbull, A., Turnbull, R., & Wehmeyer, M.L., 2006, p. 317)
DIAGNOSIS

• the first step in diagnosing CAPD is determining that the child is not deaf
• an audiologist will then run a number of tests to discern the child’s level of auditory discrimination, as well as hemispheric tests, or other CAPD tests
• only an audiologist can diagnose CAPD
TREATMENT

Direct Therapy

Environmental Modification

Compensatory Strategies
Remediation

• In-school therapy performed by SLP
• Out-of-school therapy performed by certified clinician (Fast ForWord®)
• Out-of-school therapy performed by family (Earobics®)
Two Highly-Rated Remediation Software Programs

Early intervention is crucial. Now there is a solution. **Earobics.**

The results speak for themselves. 97% of students who use Earobics achieve significant improvements in their literacy skills.
We the Teachers

• Speaking slowly is helpful for students with many types of CAPD
• Typical strategies include placing the student where he or she can see the teacher speaking and
• Using carpeted floors or other sound-muffling environmental modifications
• But many teaching techniques and modifications work for some types of CAPD but not for others, so that
• Understanding the student’s diagnosis is extremely important
EXAMPLE: Note Taking

• Good for students with Associative Deficit
• Bad for students with Integration Deficit
• Bad for students with Prosodic Deficit
• Bad for students with Output-Organization Deficit
• Bad for students with Auditory Decoding Deficit
more EXAMPLES

• An **amplification unit** may benefit a student with Auditory Decoding Deficit, but will not benefit a student with Prosodic Deficit

• **Repetition** may benefit a student with Auditory Decoding Deficit, but **rephrasing** may benefit a student with Associative Deficit
KEEP IN MIND!

“APD is not included in the IDEA definition of a child with a disability” (Bellis, 2002, p. 284).

The child with CAPD must be categorized under speech/language impairment, LD, or another disability to qualify for special education within state laws.

Accommodations can be made through Section 504 if the condition significantly interferes with the child’s education.
The CAPD Monster can be Tamed
Recommended

When the Brain Can't Hear

Unraveling the Mystery of Auditory Processing Disorder

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Bibliography


