

Topics in Central Auditory Processing



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This About That: *When a person enters a different field (such as ours) they bring with them new skills and concepts that can enrich the new field. Having colleagues from different professions, different countries, and different experiences enriches IGAPS as we have much to learn from one another. Of course, because we are a receptive group we must also be sure what is new is better than what we have been doing or perhaps there is a third way.*

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Jack Katz, Ph.D., Auditory Processing Service, Prairie Village, KS

*** Reminder:**

- April 27-29, 2017 the 3rd annual IGAPS conference will reconvene in Kansas City
- If you have attended before you know it is filled with a variety of professional content involving CAPD and related topics (and did we mention fun).
- If you have not been to one we know you will be pleased.
- This year the first afternoon will have demonstrations of new techniques by your colleagues and some commercial presenters.
- Coordinators: Kavita Kaul and Christa Reeves; Host: Sarah Zlomke, St. Luke's Medical Center; CEUs: Kim Tillery ASHA, Christa Reeves AAA
- **Contact:** Christa Reeves <christa@littlelistenersclinic.com>; Kavita Kaul <kkaul@hotmail.com>

Editors: Jack Katz, Kavita Kaul, Jay Lucker, Kim Tillery, Michael Webb, Thomas Zalewski & Publication Columnist: Wayne Wilson

Can You Inherit CAPD?

Wayne J. Wilson, Ph.D.

Have you ever heard the parent of a child with central auditory processing disorder (CAPD) say: “He’s just like his father, he doesn’t listen”? Such comments have often led audiologists to suspect a possible genetic link for some types of CAPD. In other words, audiologists have often wondered: “Can you inherit CAPD?”

Brewer et al. (2016) investigated this heritability question with non-speech central auditory processing (CAP) skills. They studied frequency and temporal resolution for auditory signals and speech recognition in noise. These researchers analysed the DNA of 96 identical or fraternal twin pairs (aged 6–11 years) who had no hearing problems other than occasional tympanostomy tubes. Each participant was assessed on the CAP tests of backward masking (a measure of temporal resolution), noise masking (measures spectral resolution), pure-tone frequency discrimination (measures temporal fine structure sensitivity), and nonsense syllable recognition in noise (measures speech recognition in noise). Structural equation modelling was then used to estimate the relative contributions of genetic and environmental factors to CAP test performance. The resulting heritability measure represents the proportion of a skill (the expression of genes, or the phenotype) that could be attributed to heritance (the genes themselves, or the

genotype). A heritability measure of 1 suggests the skill is 100% inherited.

On completing their analyses, Brewer et al. reported that CAP skills had heritability measures from 0.32 to 0.74. The highest measures were for backward masking (0.72) and pure-tone frequency discrimination (0.74). The lowest heritability measure was for noise masking (0.32). These results were similar to the results for dichotic listening (~0.73; Morell et al., 2007), tune deafness (~0.71 to 0.80; Drayna et al., 2001), and related cognitive disabilities such as dyslexia (0.44 to 0.75; DeFries et al., 1987), phonological processing (~0.72; Bishop et al., 1999), and late language emergence (0.42 to 0.44; Rice et al., 2014).-

While Brewer et al. (2016) suggested that some CAP skills can be inherited, they also noted that this inheritance was not complete (i.e., was not 100%). They argued that this supports a shared contribution from genetics and environment when it comes to determining a person’s CAP skills or their susceptibility to CAPD or comparable disorders.

So, you can inherit some types of CAPD? But the details of an individual’s CAPD will be a mix of genetics and environment. Perhaps this should come as no surprise as it suggests something we’ve heard many times before: it’s both nature and nurture.

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APD SERVICES IN SCHOOLS

Kavita Kaul, Au.D.

Current Status of APD Assessment in Public Schools

School systems are expected to consider assessments of hearing, vision, language, psychological, educational components to determine their potential effect on academic, social, emotional, and/or communication within the school environment. Based on these recommendations pure tone hearing screening and assessment are included, but surprisingly assessment of meaningfully processing of speech does not have equal importance. There seems to be a void in screening, assessing, and identifying central auditory processing skills.

Speech signals travel via the auditory pathways to the auditory centers in the brain. This provides meaningful 'information-processing' required for academic, social, emotional, and/or communication purposes. Undoubtedly auditory processing is an essential and mandatory aspect of the entire cycle of communication. However this process is often assessed only when all other interventions have failed to address the school-based difficulties of the child. Sometimes it takes years of other futile interventions including speech therapy and occupational therapy, before an audiologist is possibly asked to assess the auditory skills. The phrase often used to recommend the evaluation is, "audiological assessment to rule out Auditory Processing Disorder". It may be more appropriate to suggest "audiological evaluation to assess strengths and weaknesses of auditory processing skills".

Often Audiologists are very cautious to label the problem as an AP deficit (possibly because of limited understanding of APD) and thus may prevent the child from getting appropriate services to minimize the effects of auditory weaknesses. Audiologists may not be experienced in providing therapy and thus provide the team with pages of accommodations, modifications, and environmental alterations which may be impossible to implement in school.

Sadly, the school team is at ease to recommend assessments such as peripheral hearing, etc. but may think multiple times before requesting a full CAP evaluation.

It is all the SAME BRAIN

The SAME BRAIN processes all sensory inputs and motor outputs, thus any deficit in one of the mechanisms can possibly affect other areas of functions (especially the auditory system because it is processed in so many parts of the brain).

Sometimes auditory weakness may be a result of broader problems such as Intellectual Disability, Autism, etc. These etiologies may also include speech-language weakness for which speech-language therapy is recommended without a second thought. That same logic does not seem to apply to auditory processing deficits. They are often dismissed as being "a weakness" which is a symptom of the disorder such as Autism and nothing can be done to remediate, even though communication weakness is also a symptom of the same disorder and therapy is recommended immediately.

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Looking at Auditory Processing from a Multisystem Perspective

by *Jarin Hawkins & Jay R. Lucker*

In the last issue of TiCAP, LaVae Hoffman discussed an information processing approach to speech-language assessments and therapy that involved more than just the language system. Hoffman explained the importance of the cognitive system when speech-language pathologists look at language functioning in children. The concept of a multisystem approach also applies to the area of auditory processing. The following is a discussion of a multisystem model or approach to auditory processing.

A uni-system approach to auditory processing is identified by ASHA (2005) and the AAA (2010). Our professional associations identify that deficits in auditory processing occur due to a breakdown in getting information from the ears to the brain via the central auditory pathways. Accordingly, Auditory Processing Disorders would be considered as a breakdown in the auditory pathways applying this audiocentric perspective.

When Katz first discussed his approach to auditory processing via the Staggered Spondaic Word (SSW) Test, he looked at what he called the Auditory Reception (AR) areas of the brain and the Non-Auditory Reception (NAR) areas of the brain. Thus, in the early 1970s, a view of auditory processing was identified that incorporated more than just the central auditory pathways.

While most audiologists still focus on the auditory system from an audiocentric

perspective, there are others who feel that auditory processing and its disorders involve more than just this audiocentric approach. The authors suggest an audiological approach that applies a multisystem auditory processing model including six primary systems that are involved in the processing of auditory stimuli

A Multisystem Integrative Approach to Evaluation and Treatment of APD

What Katz and others identify is that there is more than just the auditory system involved in the processing of auditory information. As stated earlier, the authors have approached auditory processing from a multisystem perspective that involves six primary systems. The approach is called the Lucker Multisystem Integrative Approach (LMSIA) to the evaluation and treatment of APD.

The LMSIA views auditory processing starting with the ear picking up the auditory signal (thus, the **auditory system**). The auditory system, including the cochlea itself, breaks down the frequency and intensity patterns in the auditory signal and sends that information to the brain via the central auditory pathways. However, as soon as a person starts listening, two other systems become involved. One is the **cognitive system** which approaches its processing based on the situation, topic of conversation, prior knowledge, expectations, and other factors that we bring to the listening task. At the same time, the **executive functioning system** sets up to what we will attend, how we will attend, what we may do at the same time as we are attending to the listening task (such as taking notes or getting our

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A Sad Blindness for CAP

Jack Katz

When anyone loses their vision, it is very sad. When professionals close their eyes, to what's extremely important and effective, for no valid reason that, too, is really sad if it harms the people we are supposed to help. This column will give you a peek at this decades-long, self-imposed and self-defeating blindness. What is the outcome of their labor?

History Lesson Step 1

Back in the 70's I had a department colleague who was negative about CAP. But when I referred a patient to her we began to interact and share information. Gradually her attitude for CAP began changing positively as the patient improved in the skills we were targeting. Finally, she began telling me what her initial dislike for CAP was based on.

She is a respected language professor. She said the initial challenge to CAP was inspired by Noam Chomsky (Duchan & Katz, 1983). Before CAP, Chomsky wrote that speech is really a mumble (Chomsky, 1959). It is actually unintelligible! The only way that we know what was said is that we have this innate language ability to translate the mumble into what the person means to communicate to us!

I could not believe my ears. Speech is not really intelligible, but we have this magical in-born ability to understand the auditory message.

So the first clear takeaway that we have is that Dr. Chomsky is creative possibly has a case of CAPD. Nevertheless, let's see if there is much logic to his assumptions.

1. No one in the world would have an articulation problem or a foreign accent, so that's good, but not true.
2. Why buy expensive hearing aids, just let them hear a mumble and they'll know what the person said?
3. Why test word recognition scores?
4. SRT should be the Speech Mumble Test (SMT).
5. If language is innate we should not have so many language problems or CAPD.
6. And why do CAP tests and therapies work so well?

Well let's go on to Step 2

Chomsky's revelation went viral and Norma Rees (1981) made fun of those who still believed in all that CAP stuff. Other creative people took Chomsky's mumble to heart. Fodor et al. (1974) tried to explain how it might be possible to actually comprehend language with just a minimal knowledge of the signal.

The mumble-speech concept seeped into different fields. Even audiologists got on board!!! But, they didn't stop testing word recognition. Surely all their patients who could hear the mumble would get 100%, if they intuitively knew the speaker's/recording's intent.

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Can You Inherit CAPD? – Wilson

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APD in Schools - Kaul

Often communication skills are not remediated to age appropriate levels with speech therapy and this is universally accepted. However, remediation to improve auditory skills, to the best of the child's abilities, is not considered to be equally important or relevant.

Hesitancy to Diagnose

In general there appears to be an inherent fear in addressing and/or diagnosing auditory processing skills. This may be due to an inconsistency in the definition of Auditory Processing among Audiologists and across the multi-disciplinary professionals. This muddies the eligibility process required for IEP qualifications. Most children with deficits in auditory processing have significant academic, communication, emotional and/or social adjustments issues. Often these children are identified as having 'Specific Learning Disability' or 'Other Health Impairment'. This does not qualify them for specific auditory processing therapy, intervention or remediation.

Definition of Auditory Processing Skills

One of the definitions of auditory processing skills is 'What we do with what we hear' (Katz, 1992). It is not something we measure with a simple hearing test. It is the efficiency with which individuals are able to manage the more complex auditory information that is heard. Some of the functions within the central auditory system are auditory localization, attention, memory, selection, separation, and integration of

multi-modal information. It facilitates the ability to understand speech in noise to be able to identify the sounds and words of our language quickly and accurately. In addition it assists us in combining auditory and visual information, remembering what we have heard, retrieve what we have stored, and to maintain the information in its proper order.

Weaknesses such as slow processing of speech; understanding speech in noise difficulty; difficulty integrating multi-modal processes (e.g., auditory and visual information); and maintaining the sequence of the signal inputs for adequate comprehension could all be the result of auditory weaknesses.

Typical school and communication-related difficulties are: weaknesses in oral reading; spelling; phonics; articulation; comprehension; reading comprehension; distractibility in noise; difficulty with self-monitoring and self-correction skills. These characteristics often overlap with attention deficits and/or reading disorders (e.g., Dyslexia).

Auditory Training and Therapy

Auditory related approaches including training: a) to identify, recognize, and discriminate speech sounds in noise and quiet; b) training for speech sound synthesis and analysis and within meaningful words and non-word speech sequences; c) training to integrate auditory-visual modalities to make sound-symbol associations; and d) Sequencing drills using numbers, words, and sentences to improve working memory.

A well balanced system helps the individual self-regulate their behavior,

listening, attention, and body posture required for information processing even in adverse conditions.

Accommodations and Modifications

Accommodations and modifications specific to auditory weaknesses can include but not limited to:

- Environmental modifications: preferential seating; quiet classroom; teacher with loud-clear speech
- Communication accommodations: extra time for processing and response; verbal rehearsal of oral directions prior to execution of directions
- Learning style accommodations: Importantly, using gestures; chunking of information, repeating rather than rephrase; repetition of new material for long term retention. Limit multi-level processing, multi-tasking, and/or multi-step directions, limit information input with new material for better comprehension and retention, provide appropriate pauses in conversations, pre-teach new vocabulary to increase familiarity, provide visual lists on the board, teaching organizational skills by an educational specialist.
- Assistive technology accommodations: employ an assistive listening device- FM system.
- Fatigue reduction accommodations: frequent breaks; buddy or peer helper; testing in a quiet room or in small group

Why Auditory Processing Assessment and Therapy

Considering how critical auditory processing weakness can be in the educational setting and how widespread

the problem is, it is surprising that this problem has been either ignored or given minimal importance. Even when these children have IEPs for their academic difficulties they are seldom provided with auditory specific interventions. They often receive language interventions when auditory skills are diagnosed, however the goals of intervention do not address the auditory specific weaknesses. They may get accommodations and modifications for their perceived weaknesses however may not receive remediation.

My Experience

As a school based Speech Language Pathologist for more than 10 years, one of the biggest hurdles for addressing auditory processing deficits in children is the lack of personnel, as well as, the resources needed to assess and treat these children. Audiologists are often spread thin across numerous schools. There are not enough hours in a week to do more than a quick peripheral hearing pure-tone assessment. Hearing screenings are often given by the nurses. Audiologists are consulted for peripheral hearing assessment if the child fails the screening. Auditory processing assessment is recommended only when all other assessments are completed and auditory weakness is suspected based on Speech Language and/or Psychological testing.

There are federal regulations governing the process of eligibility for the special education category. Specific criteria checklists for special education do not include auditory processing weakness. Children with auditory weakness are often labeled under other categories such as Specific Learning Disability; Other Health Impairment; Autism;

Speech Language Impairment; Intellectual Disability; etc. Their auditory weakness may be a comorbid condition or a symptom of a larger etiology. Regardless their auditory weakness is seldom addressed directly.

Free and Appropriate Public Education (FAPE)

FAPE is like a large publically funded insurance. The tax payer funds the program. As such there are only a limited amount of financial resources available to be appropriately distributed for the various needs. It is possible that even if Auditory Processing Disorder is ultimately recognized as a special education category, it may be not be financially feasible to provide direct 1:1 appropriate intervention for every child. According to federal guidelines any deficit identified within the educational confines and impacting educational access has to be remediated and financed by public funds. Thus, if auditory processing weakness cannot be addressed adequately in schools it has to be appropriately financed outside the school by qualified personnel. If the recommendation is made by the team, the remediation has to be paid for by the school. Thus, the team often is hesitant to suggest APD for fear of having to pay for it.

Although these fears appear to be well-founded, in reality there seems to be a subtle disconnect. When a child has difficulty seeing the board from a distance, the teacher does not hesitate to inform the parent about it. The parent is expected to get medical help and possibly eye glasses and to pay for it. When the child is extremely distracted in class the teacher does not hesitate to inform the parent that the student may

need medical advice for attention deficit. So if there is weakness within auditory system and the school is not able to provide appropriate intervention, the teacher should be able to advice the parent to seek services outside the school without fear of having to pay for it.

Possible Solutions:

- School is allowed to provide honest feedback to the parent about the child's auditory weakness
- Recommendation is made to seek services either in or outside school based on availability of qualified Audiologists who assess and treat APD
- Parents have options to avail services through their medical insurance because Auditory Processing Disorders is a medical condition (H93.25).
- Health insurance companies recognize APD as a medical condition and provide comparable compensation (not always right away) for the services
- Parents can also seek other qualified fee for service providers if they wish to pursue that route
- A clear understanding of the differences and relationships between Auditory, Language and Cognitive processing skills is important.

Summary

Educational impact of auditory processing weakness is real and affects the academic, social, emotional, and communication developmental skills. One person or even two people can't effect such a change but a whole group of people from various fields working

together can make a difference with the help of parents. Solutions may be in the following areas:

1. Consistent understanding and acceptance of APD.
2. In-service training to understand the difference and relationship between Language Processing, Auditory Processing, and Cognitive-Linguistic Skills
3. Auditory Processing evaluation should be routinely included in the initial battery of tests
4. Audiologists have to be trained in evaluation and therapy of Auditory Processing Skills
5. Speech-Language Pathologists have to be trained to understand that Auditory Processing Therapy is distinctly different from Language Processing therapy
6. Health Insurance to accept APD as a medical diagnosis and reimburse evidenced based services comparably and efficiently.

A little money spent in the early years will better prepare students to be self-sufficient and more likely successful tax-paying citizens of the nation. Good APD skills will promote and facilitate well-balanced children with functional communication; speech-language-hearing skills for academic, emotional, and social success.

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Multisystems – Hawkins & Lucker

to be raised if we hear the “beep” during a hearing test) and identifying what other systems are needed to deal successfully with the soon to be heard auditory messages.

Once the auditory message is attended to appropriately and decisions are made as to what is and what is not important, the frequency, intensity, spatial, and timing/temporal information coded by the central auditory pathways deliver the signal to the auditory centers of the brain. If the information is coded having linguistic qualities, the verbal message goes to the language centers of the brain where linguistic meaning is placed on the information. For non-verbal auditory messages, the cognitive system integrates with the language centers of the brain to give a “label” to the messages we hear. For example, if we hear three “bangs” on our front door, we do not interpret them as three “bangs” but as someone knocking on the door to be let into the house. Thus, the next system identified is the **language system**.

While we are processing what we hear and putting meaning to messages through our language and cognitive systems, we form “mental images of the information”. These images may be related to knowledge of memories from past experiences. Thus, to make sense of incoming information we need to use both the **cognitive system** while building mental imagery, as well as the **executive functioning system** as we are organizing information. At the same time, we use our executive system to

focus appropriately on important information, and to apply appropriate mental energies to process information successfully. While these auditory-cognitive-linguistic processes are occurring based on information transmitted via the classical (central) auditory pathways, non-classical pathways (Musiek et al., 2011) get involved and transmit the auditory messages into our **emotional processing system**. These non-classical pathways connect our upper brainstem auditory centers with our limbic system which houses emotional memories and emotional interpretations that can activate our autonomic nervous systems (ANS) to respond to what we hear. Additionally, we attach an emotional context to the auditory information which is further verified by the integration of our cognitive systems. While this is occurring, our cognitive memory (part of the cognitive system) and our emotional memory (part of the emotional system) identify what the information “means” to the listener based on past memories. At the same time, our **sensory regulatory system** makes decisions regarding how to deal with this incoming sensory information. It informs the cognitive, executive functioning, and emotional systems regarding what is relevant, what should be ignored, and how we are going to respond to the information we are processing.

The LMSIA identifies that these processes occur essentially simultaneously. Thus, there is no top-down or bottom-up processing if viewed as two separate, non-synchronous functions. The LMSIA states that all these

processes work together in an integrated fashion with all systems functioning and corresponding with each other as needed. According to this approach or model of auditory processing, disorders are viewed as a breakdown in proper functioning of one or more of these systems or the integration of these systems. As such, when we evaluate auditory processing, we need to be consciously aware of the contributions of each of these systems to the success or lack of success in processing what we hear. Therefore, therapy treatments should focus on the systems that are malfunctioning and aim to get the systems to work together in an integrated fashion.

Conclusion

The authors believe that the audiocentric approach does not explain all factors that are involved in the successful processing of what we hear. They state that auditory processing and its disorders relate to the processing of auditory information rather than the central auditory pathways processing incoming auditory information. The approach includes multiple systems including the auditory system, cognitive system, executive functioning system, linguistic system, emotional system, and sensory system as the six primary systems involved in the processing of auditory information.

LMSIA model suggests that we need to be aware of all systems involved when a person is identified as having an auditory processing disorder. Therapy should focus on the systems that are leading to the problems in processing auditory information and not merely to problems with the auditory system.

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*Jarin Hawkins, M.S., CCC-SLP
Ph.D. Student in Program
Dept. of Communication Sciences and Disorders
Howard University, Washington, DC*

*Jay R. Lucker, Ed.D., CCC-A/SLP
Professor
Dept. of Communication Sciences and Disorders
Howard University
Washington, DC*

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Sad Blindness - Katz

I think Chomsky's statement was unbelievable for those who do not subscribe to voodoo. But each time the explanation was revised it came to the same conclusion about CAP.

That little gem also caused big problems for teaching reading skills. If speech is unintelligible then why worry about phonics? Some of you might remember that the schools stopped teaching phonics for 10 years! The scores fell so dramatically that they had to reinstitute it quickly. No such reprieve for CAP.

Unfortunately, after all the negative things that were spewed about CAP; how could the speech-language and hearing people admit they were just plain wrong (like the reading folks did)? So they said, "Yes, we were right about CAP all along. Speech isn't a mumble; but all we need is some general phonological awareness' (not phonemic accuracy or precision)." You don't need to hear clearly so why don't we just call it **Phonological Awareness**.

Initially, we were told there is no such thing as an auditory"perception" (currently called 'processing') problem. But they couldn't explain how it just broad-jumps to the language centers. At that point the anti-CAP folks softened their argument. Then there was such a thing as auditory processing, but they

concluded it just wasn't important, perhaps because of the inborn intuitive language stuff that we have.

That didn't work either, "Okay, maybe CAP would be important, but there are no therapies." You will notice that the trajectory of their complaints shifted yet a bit more. Later, what they really meant was that there are no "evidenced-based" therapies. But, of course when you look at **all** of the literature you find lots of evidence that CAP therapy is very effective. How could that be?

The takeaway is when people keep changing their rationale but their conclusion is always the same, the conclusion's credibility goes down with each iteration.

Now Step 3

During step 2, and into step 3, I was strongly disappointed with colleagues in language and audiology who continued their negative harping about CAP. After more than 50 years they should let it go (unless they **really** need another published article to get tenure).

I am absolutely delighted to see the gradual and powerful growth in CAP acceptance because of our success in helping children and adults with this very significant disorder. What distresses me is the continued oppositional policy from those who say that CAP is *Baaad*.

I had a wonderful colleague who was an assistant professor in a department that was, unfortunately, led by anti-CAP people. She invited me to speak to her audiology class about CAPD for 2 or 3 years. That last year, as I was leaving the building, I bumped into the department Chair. We chatted and he asked me why I was there and I told him. He responded, "We don't believe in that here." I said that's great! Let's do a study. We'll get a group of kids and we'll divide them randomly. You do your stuff and I'll do my stuff and we'll see whose is better. He was silent, then he smiled and without a word he went directly to his elevator.

The wonderful professor did not invite me again but did let me use her lab. I was shocked and saddened when she did not get tenure. I'm still troubled that openness to CAP caused that. My suspicion was confirmed recently when I was in contact with another assistant professor who was so excited about working together on a fascinating CAP study based on one of his students. The professor needed to get approval. That was the end of our contacts as he didn't have tenure either. Another professor told a student never to mention CAP again because it is "illegal".

It is one thing to object to CAP based on facts; etc. but denying Academic Freedom is violating a basic premise of the American educational system. This shows how otherwise bright and fair people are so ideologically rigid that

they are willing (as I see it) to do something that they can't be proud of.

When people fight this hard and long for a worthless purpose I think it is very sad. They wasted critical time and didn't use some of our excellent procedures which could have helped their patients too. And it's worse.

We Are Now at the Landing

I think the self-imposed blindness/deafness in those who have been selling it for years is not likely to be cured by us. What I found to be most effective was telling them about the struggles people have with CAPD.

Parents have told us how disabling CAPD was for their children and how things improved when they got therapy. No humane human being could turn their head away from those reports by parents. This should make deniers rethink and stop denigrating this for fear that yet another person will suffer needlessly because of them.

One grandparent wrote to an audiologist that her granddaughter with CAPD would come home from kindergarten and sit in the corner and cry. On bad days she would hide under the table and bang her head on the floor. This very smart child understood her great limitations, but not her high potential. The audiologist dreaded thinking of what this child would be like when she was a teenager! Teens have enough to deal with without years of frustration and limited skills (3 teens we've seen wanted to die or commit suicide).

We need to find ways to educate those around us, especially colleagues (in and out of our profession). Parents can help greatly because they have first-hand knowledge of improvement with therapy and are most likely to spread the word.

In my therapy room, on the table next to where the parents sit while observing, is a copy of our colleague Susan Van Wie's book, "Josef's Journey", to educate them about CAPD. When parents report how much their child improved; ask them to please let the teacher know about CAP or if they would write it down for us to encourage others.

My colleague Sarah Zlomke spoke to medical and other groups and now has a wide array of new referral sources.

Research is so important, both basic and clinical. Jay Lucker has been very helpful in getting clinicians involved in researching their own cases and he has contributed his own important work. We all benefit from doing research and sharing it with colleagues, parent groups and in publications.

What have the nay-sayers achieved?

- Thousands and thousands of children and adults have been steered away from getting the help they need.
- Some have not achieved what they could in school, some have quit school, and some have suffered so much that they do drastic things.
- Some can't hold jobs or can't assist their children who struggle with the

same issues the parents experienced.

- You too have seen the consequences of not knowing about CAPD or actually being steered away from it.

Finally

Just when you would think that they tried every possible reason to discard CAP they posit an equally illogical reason: now **CAP is just language**. Period. Recently I was told that language breakdown actually creates CAPD. But, first we babble and then we talk! How is speech-in-quiet vs. speech-in-noise or localization of sound errors due to language problems?

The last takeaway message is that we are finally winning, so keep up the good work!

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