



Stuttering, Disfluency and Childhood Apraxia of Speech

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Disclosures

- I receive compensation for my role with CASANA.
- I receive ongoing compensation for participation in the production of the CASANA DVD "Treatment Strategies for CAS."
- I act as the ASHA CE Consultant for CASANA for no additional compensation.

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What causes disfluency in children with apraxia?

- Like other diagnoses (Down Syndrome, autism, dysarthria), stuttering and CAS can co-occur.
- System "overload" suspected.
- Quite frustrating for parents AND therapist!
- Just when things were going well...

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How are stuttering and childhood apraxia similar?

- First, let's look at ASHA AdHoc committee's 3 consensus features.
- Inconsistent errors on consonants and vowels in repeated productions of syllables or words
- Lengthened & disrupted coarticulatory transitions between sounds & syllables
- Inappropriate prosody, especially in relation to lexical or phrasal stress

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How are stuttering and childhood apraxia similar?

- Parents, researchers and practicing SLPs want to know "Why?" [quotes from Stuttering Foundation article "Stress and Stuttering" – 2014].
- Neither one should "define" the child ("child with CAS" or "child who stutters" vs "the apraxic child" or "the stutterer"). [5 finger strengths/weaknesses]
- [Recent COO quote in Stuttering Foundation issue]

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How are stuttering and childhood apraxia similar?

- Involve complex motor plan with biggest problem at level of initiation and "on demand" speech.
- Oral groping in apraxia can look like stuttering.
- [Video – Luke, age 3-2]

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Luke and Sharon

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How are stuttering and childhood apraxia similar?

- May share similar genetic and/or neurological underpinnings.
- Current research emphasis for both is on genetics and brain imaging, hopefully to discover a cause and eventually enhance prevention.
- Critical to find out if there is a family history of stuttering or CAS. If so, may be higher risk for longer term stuttering or motor planning struggles.

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What are the recent genetic findings?

- Fox P2 gene for a while most studied for apraxia.
- Is a regulatory gene.
- Studies show Fox P2 gene is essential for developing the full articulatory power of human language.
- High levels of Fox P2 located in basal ganglia.

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What are the related genetic findings?

- “The core dysfunction in stuttering is suggested to be impaired ability of the basal ganglia to produce timing cues for the initiation of the next motor segment in speech.” from Per A. Alm 2004
- CAS genetic and brain imaging studies are showing likelihood of different subtypes as is the case for stuttering (e.g. “Researchers estimate that roughly 9 percent of people who stutter possess mutations in one of three genes” – 2010)

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Will disfluencies in children with CAS or who stutter look alike?

- Repetitions, prolongations, and blocks
- Given poor rhythm in speech, word retrieval challenges, etc these can look very much alike.
- In both instances, children may be attempting to hold the conversational floor. [Competition for talking – “salt at the table” example]

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Will reactions in children with CAS or who stutter look alike?

- Not as likely to see emotional reaction to disfluency in children with CAS (my conjecture) but stress can aggravate both [article 2014]
- Children with CAS have a history of verbal communication challenges, ongoing frustration, and negative comments so... can certainly react to one more struggle with fluid speech.
- [Fill-in-the blank for 10-year-old who stutters]

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How are stuttering and childhood apraxia similar?

- Tend to result in children who become guarded and non-risk takers.
- Early intervention is CRITICAL!
- Highly affected by demand for talking, levels of excitement, etc.
- May result in word avoidances [recent 9-yr-old]
- Are challenging to treat.
- Require intensive parent involvement.

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How are stuttering therapy and CAS therapy similar?

- Begin at less complex levels of speech and language and work toward more complex.
- Assure “success” before moving to next level of complexity.
- Acknowledge the feelings throughout!!
- Must involve the parents for optimal progress and carryover/generalization.

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How are stuttering therapy and CAS therapy different?

- Generally not working at the syllable level with children who stutter.
- For older children, may talk about no cure”.
- Disfluencies for children with CAS can occur on even the most “well-rehearsed” words but tend to be less so for children who stutter (unless there is a “fear” of certain words such as their name, words that begin with /b/, etc). [Video – Jack, age 9-7]

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Jack Short Clip

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What do we do when a child with CAS becomes disfluent?

- First, don't panic!! DON'T say "Slow down!"
- Consider adjusting therapy to alleviate increased speech-motor demand.
- Target other areas of need.
- Re-visit need for parental rate of speech or demand adjustments. [wireless microphone]
- Make sure teachers are informed/educated.

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What do we do when a child with CAS becomes disfluent?

- For "older" child, teach and practice "phrased speech" with visual markings in print.
- Use "Build-A-Sentence" activity for breaking sentences into phrases.
- You CAN work on both at the same time since more fluid sequencing may lead to more fluent speech...but at times disfluency is too intense.
- [Video – Joe]

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Joe Disfluency

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What are other therapy considerations?

- Look at possibility that word retrieval struggles can play a role in this.
- Model, as in stuttering therapy, that it's okay to take time to respond.
- Have parents carry out activities like reading with fill-in-the-blank strategy.

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Summary

- Overall, you don't have to be a stuttering "expert" to know how to handle disfluencies that arise in children with CAS.
- Don't panic, but don't take it too lightly either.
- Use similar strategies as for children who stutter.
- Apraxia-kids.org summary in the Library under "Diagnosis and Treatment" called "Children with Apraxia and Periods of Disfluency"

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