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DIFFERENTIAL DIAGNOSIS OF DISFLUENCIES

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BEFORE LEAVING TODAY, YOU WILL BE ABLE TO...

- Describe common characteristics of:
 - Developmental disfluencies
 - Language formulation disfluencies
 - Childhood onset stuttering
 - Atypical stuttering
 - Cluttering
- Describe the qualitative and quantitative differences between the various types of disfluencies that assist in making a differential diagnosis.
- Identify factors that put a child at elevated risk for persistent stuttering
- Explain what a formal fluency assessment entails.

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WE WILL NOT BE COVERING...

- Neurogenic stuttering
- Psychogenic stuttering
- Treatment

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WHAT ARE DISFLUENCIES?

- An interruption in the flow of speaking which may affect the continuity, smoothness, rate and effort put forth for speech
- All children demonstrate disfluencies but not every child needs to be referred to a speech pathologist....

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DEVELOPMENTAL DISFLUENCIES

- Also referred to as “typical disfluencies”- this is a diagnosis of **typical** behavior
- Occurs as a child passes through the necessary stages of language development
- Typically occurs between the ages of 2 ½ and 5

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DEVELOPMENTAL DISFLUENCIES

- What do developmental disfluencies generally sound like?

- Mostly nonstuttered disfluencies
- Minimal “stuttering-like” disfluencies
- Minimal repetition units

Stuttering-like Disfluencies	Nonstuttered Disfluencies
Monosyllabic whole word repetitions	Multisyllabic whole word repetitions
Sound/syllable repetitions	Interjections
Prolongations	Phrase repetitions
Blocks	Phrase revisions/abandoned utterances

- How frequent do developmental disfluencies occur?

- Tumanova et al. (2014) found that:
 - Typically total disfluencies (typical + stuttering-like) occur in less than 8 – 10 percent of syllables spoken
 - Typically stuttering-like disfluencies occur in less than 3% of syllables spoken

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DEVELOPMENTAL DISFLUENCIES

- What do developmental disfluencies generally look like?
 - No signs of tension or struggle
 - No awareness/negative reactions
- Parental concerns are varied, however this has the potential to offer insight into if their child's disfluencies are in fact "normal" disfluencies.
 - Tumanova et al. (2014) found that ~90% of parents that **were not** concerned about their child's disfluencies were also **not** classified as stuttering based on frequency of stuttered disfluencies. ~82% of parents that **were** concerned had correctly classified their child as stuttering.

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DEVELOPMENTAL DISFLUENCIES

Summary of features:

- Occurs during stages of typical language development
- Mostly nonstuttered disfluencies
- Disfluencies (stuttering-like and nonstuttered) occurs in less than 10% syllables spoken ; less than 3% stuttering-like disfluencies
- Limited duration/repetition units
- No signs of tension/struggle
- No awareness on part of child, no negative reactions
- Typically parents are not very concerned

What do I do??

Educate and Monitor

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LANGUAGE FORMULATION DISFLUENCIES

- What do language formulation disfluencies look/sound like?
 - Nonstuttered disfluencies (phrase revisions, phrase repetitions, interjections)
 - Some stuttering-like disfluencies may be present (although not enough to qualify for a stuttering diagnosis)
 - No physical tension/struggle
 - No awareness/negative reactions

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LANGUAGE FORMULATION DISFLUENCIES

- Children with language impairment have significantly more disfluencies than typically developing peers. (Boscolo, Ratner & Rescorla, 2002)
- Children with a history of language impairment who have improved their skills to fall within average limits also demonstrated significantly more nonstuttered disfluencies and stuttering-like disfluencies than their typically developing peers (but not enough to qualify for a diagnosis of stuttering).
- Children with language formulation disfluencies did not demonstrate struggle behaviors

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LANGUAGE FORMULATION DISFLUENCIES

- Language transcript of 6 year old with mixed receptive/expressive language delay & articulation disorder:

The cake have some ca-The cake have some candles/ Also like the card has some words/
Th-and the poster i- the poster is white/ And this is pink and blue/ This balloon is blue/
This balloon is red/ This balloon is yellow/ This present is green, blue and pink/This- he
is buying- he is buying food/At the grocery-at the grocery shop/ Carrots is yummy/ For-
for-for-for eating/ What's that for

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LANGUAGE FORMULATION DISFLUENCIES

- Summary of features:
 - Speech/language disorder or weakness
 - Mostly nonstuttered disfluencies, not enough stuttering-like disfluencies to qualify for stuttering diagnosis
 - No physical tension/struggle
 - No awareness/negative reactions

What do I do??

Provide language intervention that will indirectly improve fluency

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CHILDHOOD ONSET STUTTERING

- What is stuttering?
 - A disruption in the flow of speech characterized by repetitions, prolongations and blocks
 - Stuttering-like disfluencies occurs in 3% or more of syllables spoken; 10% or more when counting nonstuttered disfluencies (Take frequency count with a grain of salt due to variability)

Stuttering-like Disfluencies	Nonstuttered Disfluencies
Monosyllabic whole word repetitions	Multisyllabic whole word repetitions
Sound/syllable repetitions	Interjections
Prolongations	Phrase repetitions
Blocks	Phrase revisions/abandoned utterances

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CHILDHOOD ONSET STUTTERING

- May occur with:
 - Physical tension/struggle
 - Secondary behaviors (i.e. blinking, tongue clicking)
 - ***Avoidance of words/situations**
 - ***Negative reactions (affective, cognitive, behavioral)**

***Some components of stuttering are observable and some are not—we need to consider both!!**

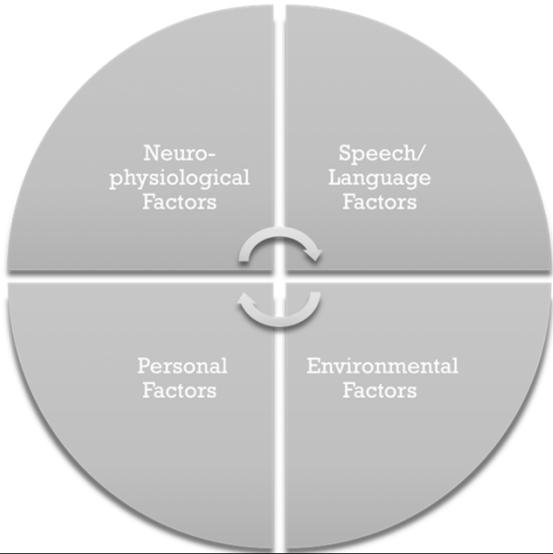
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CHILDHOOD ONSET STUTTERING

6 year old client diagnosed with childhood onset stuttering

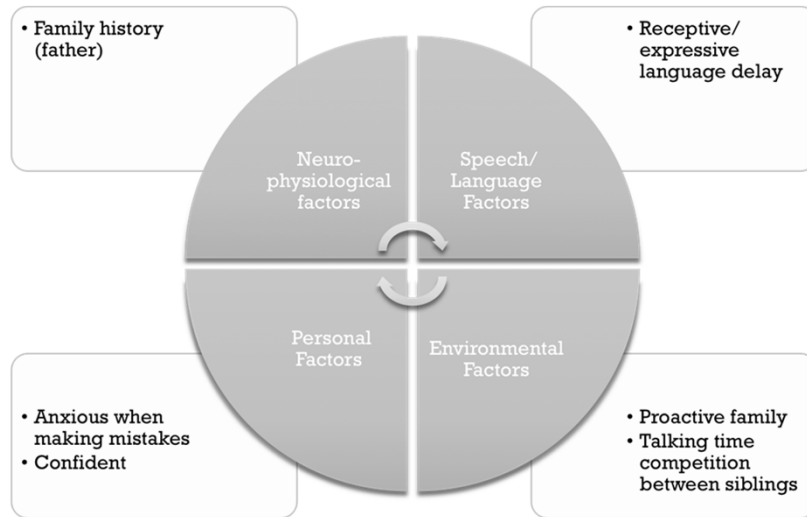
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CHILDHOOD ONSET STUTTERING



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CHILDHOOD ONSET STUTTERING



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CHILDHOOD ONSET STUTTERING

Risk Factor Chart		
<i>Place a check next to each that is true for the child</i>		
Risk Factor	Elevated Risk	True for Child
Family history of stuttering	A parent, sibling, or other family member who still stutters	
Age at onset	After age 3½	
Time since onset	Stuttering 6–12 months or longer	
Gender	Male	
Other speech production concerns	Speech sound errors or trouble being understood	
Language skills	Advanced, delayed, or disordered	

www.stutteringhelp.org

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CHILDHOOD ONSET STUTTERING

- There seems to be an increasing awareness of the statistic that 80% of children who stutter will outgrow it, however children who are demonstrating developmental disfluencies are NOT a part of this statistic. The likelihood that a child is going to outgrow disfluencies does NOT play a role in if a child is diagnosed with stuttering. (Yairi & Ambrose 1992, 1999; Yairi, Ambrose, Paden & Throneburg, 1996)

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CHILDHOOD ONSET STUTTERING

Summary of features:

- Stuttering-like disfluencies that are over 3% of syllables spoken or over 10% (when including nonstuttered disfluencies)- Consider variability!
- Potential for physical tension/struggle
- Potential for awareness/negative feelings related to speaking
- Parental concern

What do I do??

Consider treatment that addresses all the components of the stuttering disorder

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CHILDHOOD ONSET STUTTERING

Can my child be cured?

For the pre-school aged child (~ 6 years and younger)

- Our goal is to eliminate or greatly reduce the frequency and severity of stuttering
- There are studies demonstrating that both indirect and operant approaches assist in eliminating stuttering above and beyond the 80% spontaneous recovery rate. (de Sonnevile-Koedoot, C., Tolk, E., Rietveld, T., & Franken, M.C, 2015).

For older children/teens (~7+ years and older)

- We have not identified a cure, however your child can learn ways to manage stuttering so that we can minimize the negative impact it has on their life.
- We are NOT giving up on increasing fluency, however we're working on fluency AND the other components of the stuttering disorder (i.e. becoming an advocate for themselves, improving overall communication skills, developing positive attitudes towards talking, reducing avoidances, etc.)

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ATYPICAL STUTTERING

- What does it sound like?
 - Final part word repetition (i.e running-ing-ing)
 - Mid-word break/insertion (i.e. we-he)
 - Final sound prolongation
- What does it look like?
 - Do not often demonstrate tension/struggle
 - Awareness varies
 - No negative reactions

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ATYPICAL STUTTERING

- Who is demonstrating atypical stuttering?
 - Neurotypical children
 - Autism Spectrum Disorder
- What is the nature of these disfluencies?
 - Inability to initiate the following word?
 - Cognitive processing difficulties at the stage of speech production?
 - Working memory weaknesses?
 - Perseveratory behavior?

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ATYPICAL STUTTERING

Reading Transcript of 6 year old diagnosed with ASD and atypical stuttering:

People also need water-er-er-errr-errr-er to live

Drinking-ing drink-hing lots of water every day helps-elps you stay healthy

Are many-y sports-ts-s and games-s that people enjoying in the water

Some of these-ese are swimming diving and water silking

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Atypical Stuttering

- Summary of features

- Disfluencies occurring in the medial and final positions of syllables/words
- Often does not come along with physical tension/struggle behaviors
- Awareness and frustration varies

What do I do??

Consider treatment that includes building awareness of disfluencies, traditional stuttering modification techniques and negatives reactions (if present).

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CLUTTERING

- What does cluttering look like?
 - Rapid and/or irregular rate of speech (mandatory for diagnosis)
 - One or more of the following:
 - Excessive nonstuttered disfluencies
 - Inappropriate pauses/prosody
 - Coarticulation of sounds
- May occur with:
 - Language organizational issues
 - Poor handwriting
 - ADHD/Attention issues
 - Auditory Processing Disorder
 - Learning difficulties
 - Autism Spectrum Disorders
 - Stuttering (approximately 1/3 of people who stutter are thought to clutter as well)
 - Awareness and negative reactions to cluttering vary

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CLUTTERING

- Very little research published on the nature/causes of cluttering
 - May run in families
 - Features of cluttering are sometimes (not all the time) seen in children with neurological disorders (i.e. ADHD, ASD)
 - Systems that govern self-regulation may be impacted

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Cluttering

- Summary of features
 - irregular or fast rate
 - Often seen along side other weaknesses/disorders
 - No physical tension/struggle
 - Awareness and frustration varies

What do I do??

Consider treatment that involves building awareness, improving clarity of speech (ex. overarticulation), monitoring and modulating rate, etc. ³⁴

CASE STUDY 1:

- Madeline
 - 4 years old
 - Demonstrating interjections, whole word repetitions and blocks
 - Eye blinking and covering mouth during disfluencies
 - Recently said to parent “I can’t talk” after a particularly long block
 - Parents noticed disfluencies approximately 4 months ago and are growing more concerned by the day

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CASE STUDY 2:

- Ethan
 - 3 ½ years old
 - Demonstrating multisyllabic whole word repetitions, phrase repetitions and interjections
 - No awareness or frustration on the part of the child
 - Recent language spurt
 - Another parent of a child who stutters suggested they see a speech pathologist but the parents had not noticed these disfluencies themselves

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CASE STUDY 3:

- Charlie
 - 9 years old
 - Collapsing/omitting syllables & excessive use of fillers and phrase revisions
 - Speech sounds very fast; reduced intelligibility
 - Reports being told he's a fast talker but does not agree
 - Diagnosed with ADHD

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CASE STUDY 4:

- Patrick
 - 8 years old
 - Diagnosed with Mixed Receptive/Expressive Language Disorder
 - Demonstrating interjections, phrase revisions, abandoned utterances and whole word repetitions
 - Child is not demonstrating awareness/frustration
 - Parents are concerned with the fact that other children are having a hard time understanding him

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FLUENCY EVALUATION

- Case history
- Consultation with parent/guardians
- Child interview (if applicable)
- Questionnaires/interview with other important people in the child's life (ex. teachers)
- Disfluency analysis (frequency, type and duration of disfluencies; presence of secondaries/struggle behaviors; rate of speech)
- Assessment of impact
- Assessment of other language domains (receptive/expressive language, articulation, pragmatics, etc.)

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TAKE HOME MESSAGE

- All disfluencies are not created equal
- There are qualitative and quantitative differences between the categories of disfluencies that should be considered when deciding whether treatment is warranted
- Early detection of fluency disorders is critical- we don't have to "wait and see" when we can be looking at the different factors that can assist us in making the differential diagnosis

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RESOURCES

- **General Information**
 - www.asha.org/Practice-Portal/Clinical-Topics/Childhood-Fluency-Disorders/
- **Self Help/Support Groups**
 - <http://www.stutteringhelp.org/>
 - <http://www.westutter.org/>
 - <http://www.friendswhostutter.org/>
- **Podcasts**
 - www.stuttertalk.com
- **Handouts/Forms/Continuing education opportunities**
 - <http://www.fluencyfriday.org/index.html>
 - <http://www.stutteringcenter.org/stuttering-center-forms.html>
 - <http://www.virtualstutteringcenter.com/page4.html>
 - <http://www.mnsu.edu/comdis/kuster/>
 - <http://www.stutteringspecialists.org/>
- **My Website**
 - www.stutteringsource.com

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