Assessment of Fluency

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DEFINITION PI 11.36(5)(a), Wisconsin Administrative Code Speech or Language Impairment means: An impairment of speech or sound production, voice, fluency, or language that adversely affects educational performance or social, emotional, or vocational development.

Administrative Rule: Fluency Disorder

The child exhibits characteristics of a fluency disorder, following consideration of the child's age, language background, culture, and dialect. The evaluation shall include a variety of measures, including case history, observation in natural environment, norm-referenced assessment or disfluency analysis, and result in evidence of atypical fluency.

The presence of one or more of the following characteristics shall indicate a fluency disorder:

a. Speech disfluencies associated with stuttering or atypical disfluency, which include repetitions of phrases, words, syllables, and sounds or dysrhythmic phonations such as prolongations of sounds or blockages of airflow typically in excess of 2% of total syllables, one second of duration, and two or more iterations in a repetition. Non-verbal physical movements, such as eye blinking or head jerking, may accompany the stuttering. Negative feelings about oral communication may be significant enough to result in avoidance behaviors in an attempt to hide or diminish stuttering.

b. A speech rate that is documented to be rapid, irregular, or both and may be accompanied by sound or syllable omissions, sequencing errors, or a high number of non-stuttering speech disfluencies such as interjections, phrase and whole word repetitions, and revisions. The resulting speech fluency pattern is considered to be significantly disruptive to efficient communication. Negative feelings and attitudes about oral communication may or may not be present under this disfluency profile.
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Key Ideas for Fluency Disorders

Stuttering is a complex, multi-dimensional disorder that may persist through the school years and beyond. Suspected fluency disorders such as stuttering require a comprehensive assessment that uncovers the full range of the speech behaviors across environments and linguistic tasks. Additionally, contributing factors to the disfluency may change as a child develops and must be accounted for, including the following:

- language and articulation skills,
- temperament,
- attitudes or emotions, and
- coexisting diagnosis.

Stuttering is variable within and across individuals. It is rare that a student who stutters produces all of the typical characteristics of the disorder across environments and speaking tasks, and some students who stutter may not demonstrate the usual characteristics. A comprehensive assessment for a fluency disorder must also uncover those speaking situations wherein the problems adversely impact the student (Campbell and Chmela 2014).

The assessment practices for preschool children (3-5+ years), who are closer to the onset of stuttering, are different than for school-age students, who have been stuttering for many years. Most stuttering appears between the ages of 2-4, and preschool children have about an 80% chance of spontaneous recovery of natural fluency (Manning and DiLollo 2018). Additionally, the severity of the stuttering behaviors at or close to onset, are not correlated with persistence of stuttering (Yairi and Seery 2015). For these reasons, the assessment of a preschool child must look at risk factors for persistent developmental stuttering instead of, or in addition to, the severity of the speech behaviors that may be present at any particular time during the evaluation process.

Risk factors include:

- family history of stuttering, particularly if that family member continues to stutter
- stuttering that has persisted longer than 6-12 months and either is increasing in severity or demonstrates a cyclical occurrence of fluency severity
- onset after 3 years; 5 months of age
- presence of and higher proportion of stutter-like disfluencies (i.e., repetitions more than two iterations, prolongations of sounds, or blocks of airflow) compared to other disfluencies (e.g., whole word repetitions without tension, phrase revisions and repetitions, interjections)
- assigned male at birth
● concerns or diagnosis in other speech-language areas (e.g., phonology or articulation) as well as overall developmental concerns or diagnoses (e.g., autism, Attention Deficit Hyperactivity Disorder (ADHD), Obsessive-Compulsive Disorder (OCD), Tourette Syndrome) or suspected learning disabilities.

● level of parent concern

● student’s frustration and awareness of the stuttering

**Cluttering may exist on its own or in combination with stuttering.** A student suspected of cluttering must have a fast or irregular rate of speech and usually presents along a spectrum of severity and with a range of characteristics including one (or more) of the following: (a) excessive "normal" disfluencies; (b) excessive collapsing or deletion of syllables; or (c) abnormal pauses, syllable stress, or speech rhythm (St. Louis and Schulte 2011). Cluttering often co-occurs with other concerns or diagnoses such as ADHD or poor handwriting abilities. As in the case of stuttering, an assessment for cluttering must be comprehensive.

**Obtain information about fluency in all languages spoken by the child.** Parents and caregivers can give important information regarding whether or not the child’s fluency in their native language differs from what is expected.

**Ensure the IEP team is conducting a comprehensive special education evaluation which includes obtaining information from all of the following:** academic activities (including observation), contextualized measurement, SLP probes, as well as norm-referenced assessments, if appropriate.

**Any documented delay must impact the student’s education (i.e., academic, social, emotional, vocational) in order to identify a student with a Speech or Language Impairment in public schools.** See Understanding Academic Language and Adverse Effect.
Procedures and Tools for Assessing Fluency

Academic Activities

Engage in Discussion with Classroom Teacher(s)

- Classroom teachers provide important information on progress towards grade level academic standards, and comparison of typical academic and functional classroom expectations to grade level peers.

- Educate classroom teachers on how stuttering may be expressed in unexpected ways (especially in older school-age children) including avoidance of talking, word substitutions, circumlocutions (i.e., “the use of many words when fewer would do”), pretending not to know the answer, overuse of common interjections, and inefficiency of verbal expression. It may also be helpful to inform the teacher how normal disfluencies can differ from stuttering. Enlist the classroom teacher to make observations on overall communication skills.

- Data provided from classroom teachers can include a description of the student's communication skills in natural settings and how those skills affect classroom functioning (academic performance or social, emotional, or vocational development). Consider a teacher questionnaire and/or rating scale specific to stuttering.

Observation Tips and Tools

- Observations should take place in the context of daily activities or routines in multiple settings and situations with different peers and adults, such as during a time of social interaction (e.g., morning meeting, recess or lunch) and during academic time.

- Observations should focus on the functional impact of skills rather than isolated discrete skills. An observation of a student's speech and language skills during oral language activities in the classroom or school environment should provide information on frequency and type of disfluencies as well as any nonvocal behaviors (e.g., loss of eye contact, body movements) or avoidance behaviors (Virginia Department of Public Instruction 2018).

- Data collection during observations should include quantitative data in addition to qualitative information (e.g., description of what the practitioner is observing). For more information regarding Systematic Recording Methods, go to the DPI Speech-Language Impairment website: Assessment Tools for Speech or Language Impairment.

Contextualized Measurement

Review student data to look for factors that may indicate a fluency disorder.

- Consider whether district-wide and statewide assessment performance is below the expected range for the student’s age or grade level.
● Are there other possible reasons why the student may not score within the expected range for their age or grade that are due to issues with instruction, curriculum, or environment? For additional information about the ICEL and RIOT frameworks, go to the DPI Comprehensive Special Education Evaluation Evaluation website.

SLP Probes

Case History and Interviews

● Families or caregivers should be active participants in the evaluation process, sharing information about how the student communicates wants and needs, engages with other children, and transitions between home and community. The Wisconsin Statewide Parent-Educator Initiative (WSPEI) offers some Resources, including “Snapshot” forms and “Positive Student Profile” to assist family members in active IEP team meeting participation.

● Obtain case history from the family to determine the following:
  ○ the extent of the family’s understanding of fluency disorders, including suspected causal factors, and how fluency disorders such as stuttering may be viewed in their culture
  ○ information about the child’s onset of stuttering and how the stuttering may have changed over time
  ○ what they may be already doing to help their child with fluent verbal expression
  ○ other speech, language, or learning concerns
  ○ medical information about the child which could be contributing factors to the fluency disorder
  ○ current stressors in the home environment which may be impacting the child’s fluency such as a new sibling, recent move, or even a fast-paced living and talking environment
  ○ family history of stuttering
  ○ family observations regarding the current variability of stuttering across time and settings

● Evaluators should also interview school staff (including the general education teacher) regarding the student’s disfluencies across school settings.

● Interview the student whenever possible. The student can provide firsthand information about peer relationships, attitudes toward school, hobbies and interests, strengths and challenges, sensory concerns, and activities outside of school. A student may be able to express what they may be thinking and feeling about their stuttering and how it is impacting them in school. View the assessment process as the initial steps to forming a relationship with the student.
 Criterion-Referenced Assessment  

Criterion-referenced assessments “are...tests [and procedures] that measure an individual's performance against a set of predetermined criteria or performance standards (e.g., descriptions of what an individual is expected to know or be able to do at a specific stage of development or level of education)” (ASHA n.d.). They may be standardized or more informal or clinician developed. These assessments have a more narrow focus of content when compared to norm-referenced assessments and often have a percentage, mastery/non mastery or pass/fail result. A student would be scored as “pass” if a particular skill was mastered and as “fail” if they did not demonstrate mastery of the content.

Criterion-referenced assessments grew out of a need for better assessment methods. Norm-referenced tests were found to be inadequate for determining present levels of performance and identifying targets for intervention. They also have limited utility when a student is not represented in the normative sample due to their cultural and linguistic background (McCauley 1996).

Speech Samples: Analysis of Disfluency

Speech samples are integral to determine whether or not a student has a fluency disorder (i.e., stuttering, cluttering, or atypical disfluency), to estimate any impact on communication efficiency, and for treatment planning. There is no universally adopted system of speech sample analysis for purposes of assessment of stuttering and fluency (Yairi and Seery 2015). However, there are some accepted guidelines for their collection and analysis:

- Aim to collect speech samples across various environments including the home environment and/or at various times. Additionally consider sampling using differing language tasks such as single word answers, repeating sentences of varying lengths and complexities, answering questions, during conversation, reading, narration or expository tasks.
- Sampling a child’s fluency in a single situation is unlikely to result in a representative sample of behavior, as a child who stutters (or clutters) may be able to display near normal levels of fluency in some situations or with extra effort (Yaruss 1997).
- Many researchers in stuttering (Yairi and Seery 2015; Manning and DiLollo 2018) advocate for at least 300-500 words or syllables for the conversational and/or narrative/expository speech sample. Typically, a narrative or expository speech sample may generate more examples of disfluency than conversation (Byrd, Logan, and Gillam 2012).
- For students with less frequent stuttering, longer speech samples (i.e, 600 to 1200 syllables) may be necessary to accurately diagnose a fluency disorder (Yairi and Seery 2015).
- The minimum criteria for stuttering frequency in order to be diagnosed with a fluency disorder is often considered to be over 2-3% syllables stuttered (Yairi and Ambrose 2005).
• General guidelines for severity of stuttering utilize the frequency of stuttering events, the duration of events and the intensity of secondary characteristics such as body movements. It is important to consider that any severity rating, determined by the frequency and duration of stuttering moments, does not necessarily correlate with the impact of stuttering for any particular child.

• The disfluencies of children who stutter are predominantly stutter-like disfluencies (about ⅔ of total disfluencies and may include part-word repetitions, single syllable word repetitions and dysrhythmic phonations). This contrasts with the disfluencies of children who do not stutter, who have ⅔ of their disfluencies composed of normal or typical disfluencies such as word or phrase repetitions (usually only one iteration), revisions and interjections (Manning and DiLollo 2018).

Speech Samples: Cluttering and Atypical Disfluency

Speech samples are also essential in determining fluency disorders such as Cluttering or Atypical Disfluency. "Cluttering is a fluency disorder wherein segments of conversation in the speaker's native language typically are perceived as too fast overall, too irregular, or both. The segments of rapid and/or irregular speech rate must further be accompanied by one or more of the following: (a) excessive "normal" disfluencies; (b) excessive collapsing or deletion of syllables; or (c) abnormal pauses, syllable stress, or speech rhythm” (St. Louis and Schulte 2011.) Speech samples for cluttering should include language tasks that have more structure, such as generating a sentence about a picture using a target word, as well as more unstructured language samples, such as conversation. Typically, speech improves for children who clutter when there is more structure and an increase in self-monitoring of their speech.

Atypical disfluency is defined as disfluencies such as mid-syllable breaks, (i.e. “we-hee” for “we”), final sound repetitions (i.e. “cat-t-t”) and repetition of the final syllable or word part (i.e. “lunch-unch-unch” or “window-doe-doe”). This type of fluency disorder is usually accompanied by some neurological sensitivity in a typically developing child, or a child with autism (Sisskin and Wasilus 2014). Guidelines for collecting speech samples for stuttering, also apply here; collect speech samples from different environments and language tasks.

Speech samples collected for fluency analysis (conversation, narratives and expository) may also provide information about a child's overall language strengths and weaknesses as a communicator and how language may be a contributing factor to the fluency disorder. Language sample analysis is a useful criterion-referenced measure since it can give quantitative measures of how a target student compares to age-matched peers on measures impacted by disfluencies such as speech rate measured in words per minute, length of utterances, mazes, and pausing. A language sample helps the examiner to understand the impact of the fluency on overall communication efficiency and the student’s language skills on a functional task.
Other Criterion-Referenced Assessments

In addition to Language Sample Analysis, some commonly utilized criterion-referenced assessments for fluency disorders include:

- The Overall Assessment of a Speaker’s Experience of Stuttering (OASES; Yaruss and Quesal 2016) is a criterion-referenced rating scale to help measure baseline attitudes towards stuttering and communication and to determine progress over time on those measures. There are a variety of other measurements and rating scales to determine the impact of stuttering.

- The Communication Attitude Test-Revised (Vanryckeghem and Brutten 1993).

- The KiddyCat: Communication Attitude Test for Preschool and Kindergarten Children WHO Stutter. (Vanryckeghem and Brutten 2007).

- The Predictive Cluttering Inventory (Daly 2006) is a criterion referenced assessment that can be used to help identify cluttering.

SLPs may utilize norm-referenced tests as criterion-referenced assessments. In those cases, standard scores would not be reported but proficiency of specific skills would be reported.

- A sentence repetition task on a norm-referenced language test could be used to assess percent syllables stuttered in a situation where the student cannot substitute words as an avoidance strategy.

- The subtest could also be used to informally assess the relationship between length and complexity of an utterance and the frequency of disfluencies.

- Single-word expressive vocabulary measures could be utilized to show an increase in stuttering for one-word answers compared to disfluencies observed during connected discourse.

Norm-Referenced Assessments

Norm-referenced assessments are standardized tests designed to compare students’ performance with the performance of same-age peers nationwide (ASHA n.d.; McCauley 1996). A student's performance is reported as a percentile or standard score that is a comparison to the normative sample. Tests are designed to include test items that those with disorders get wrong while those without disorders get right (McCauley 1996). Norm-referenced assessments are most often broad areas of assessment (e.g., oral language skills).

In selecting norm-referenced assessments, evaluators should review the psychometric properties of the test in order to determine whether each test is appropriate for particular students and their area(s) of need. Information about the Limitations of Norm-Referenced Assessments can be found on the DPI Speech-Language Impairment website: Assessment Tools for Speech or Language Impairment.
In Wisconsin, “Significant discrepancy” means performance on a norm-referenced assessment that meets the cutoff score for a speech or language disorder and is significantly below age- or grade-level expectations relative to a normative sample, often reported as a percentile or standard score. Additional information about Significant Discrepancy can be found on the DPI Speech-Language Impairment website: Assessment Tools for Speech or Language Impairment.

- Significant discrepancy is based on tests' sensitivity, specificity and cut scores.
- If a test's sensitivity and specificity is 80% or higher, consider the cut score for determining disorder on the instrument but also consider:
  - Is the score within the average range (i.e., within 1 standard deviation of the mean)? If so, consider other information in determining an impairment in the schools.
  - Is it at least -1.5 SD from the mean? This score would indicate moderate to severe impact. The evaluator should still look at social, emotional, academic impact and other factors in determining eligibility.

Norm-referenced assessments commonly used for assessment of stuttering in school age children include the Stuttering Severity Index 4 (SSI4), the Test of Childhood Stuttering (TOCS) and the Behavior Assessment Battery for School Age Children (BAB). The TOCS should not be used with children displaying “atypical disfluency” such as final sound and syllable repetitions.

Norm referenced language tests may be used to document the extent to which language (delayed, advanced or discrepant) could be contributing to the child’s disfluency. Additionally, speech sound normative assessments are important measures to use when there are concerns in these areas, since phonological delays frequently co-occur with fluency disorders and may be significant contributing factors to the persistence of stuttering.

**Understanding Academic Language and Adverse Effect**

When conducting assessments for speech-language eligibility, it is a requirement that there includes documentation of the impact of the identified speech-language delay.

The academic impact of stuttering typically does not correlate with reading and writing measures in the same manner that a language delay may impact reading comprehension or a speech sound delay may impact spelling. Instead, the academic impact usually results from a child not participating to his or her fullest extent in oral language opportunities beneficial to the learning process. Reading fluency should not be used as a measure of reading proficiency for a child with a suspected or known stuttering disorder. Examples of how stuttering and other fluency disorders impact a child’s academics may include:
● Decreased oral participation in classroom activities and discussions, including asking and answering questions

● Difficulty reading aloud and giving oral presentations

● Unusual language patterns (i.e., word substitutions, circumlocutions) and pragmatics (i.e., frequent interrupting) in an attempt to avoid stuttering

● Increased absences or increased somatic complaints when classroom oral demands increase

Social/emotional impact may be documented through observations, interviews (including with the student), and questionnaires. They may reveal some of the following impacts:

● Student withdrawing from social situations

● Student being teased by peers

● Student withdrawing from large and small group conversations

● Students choosing classes and extracurricular activities based on speaking demands rather than interests and aptitudes

**Summarizing Assessment Data**

● Evaluators should consider information from a variety of sources when determining whether a student has a Speech or Language Impairment.

● When determining a student’s academic or functional performance in any area, the team should not rely on a single data point (i.e., one assessment or test score). Triangulating data is a strategy that can be used to compile multiple (at least 3) types of data from different sources.

● Assessment results should include sufficient information so the IEP team can consider the student’s previous rate of academic growth, and whether the student is on track to achieve or exceed grade-level standards and expectations. It should also note and account for any behaviors interfering with progress, the effectiveness of instructional interventions, and any additional information and input provided by the student’s parents.

● Wisconsin has adapted the Virginia Department of Education’s Rubric for Considerations of Fluency Disorders which can be found in the [Appendices of Resources and Tools](#) section of this document.
References


Appendices of Resources and Tools

The following are additional resources and tools referenced in this document as well as helpful websites for further investigation.


The Stuttering Foundation [www.stutteringhelp.org](http://www.stutteringhelp.org)

The Stuttering Homepage [www.stutteringhomepage.com](http://www.stutteringhomepage.com)

National Stuttering Association [www.westutter.org](http://www.westutter.org)

The National Association of Young People Who Stutter [www.friendswhostutter.org](http://www.friendswhostutter.org)

Stuttering Scholarship Alliance [www.stutteringservice.org](http://www.stutteringservice.org)

American Board of Fluency and Fluency Disorders [www.stutteringspecialists.org](http://www.stutteringspecialists.org)