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Identifying Typical and Atypical Speech Patterns Using the Goldman Fristoe Test of Articulation - Third Edition (GFTA-3)

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Senior Research Director, Pearson Clinical Assessment
September 8, 2016

Disclosures

- Chien (Shannon) Wang is employed by Pearson Clinical Assessment.

- Pearson Clinical Assessment is the publisher of the GFTA-3.

- This presentation will focus on administration, scoring, and interpretation of the GFTA-3. No other articulation assessments will be discussed during this session.
Learner Outcomes

After this course, participants will be able to:

• Describe the administration and scoring for GFTA-3.

• Describe application of GFTA-3’s definitions for emergence of speech sounds and mastery of speech sounds.

• Explain how to interpret the data from case studies to propose an intervention plan.

Agenda

• GFTA-3 New Features
• GFTA-3 Administration and Scoring Changes
• Why are GFTA-3 Scores Different from GFTA-2?
• Emergence vs Mastery of Speech Sounds
• Interpretation of Results from Children’s Typical and Atypical Speech Patterns
• Intervention Planning Based upon Children’s Typical and Atypical Speech Patterns
• Q&A
New Features

- New digital administration and scoring options
- Current normative data
- Consonants assessed in multiple contexts

Updated analyses

- New R error analysis that enables you to look at productions separately of –er, vowel + r, and /r/ blends
- New vowel error analysis (useful as an indicator of apraxia)

- Updated Sounds-in-Sentences test, now in a sentence imitation format and optional intelligibility rating

- Two sets of age appropriate art—
  one for ages 2:0-6:11; one for ages 7 and up

GFTA-3
Administration and Scoring
GFTA-3 Administration and Scoring

What is the same?

Sounds-in-Words
• Examinee presented with picture stimuli
• Examinee is prompted to name the picture
• A standard cue can be provided, including asking the examinee to repeat the word if it cannot be elicited spontaneously

Sounds-in-Sentences
• Examinee presented with picture stimuli as he or she is told a story

The Sounds-in-Words and Sounds-in-Sentences test may be administered independently.

Scoring
• Consonant and consonant cluster errors are scored to calculate a raw score.
• Vowel errors are not scored to calculate a raw score.
• Hand scoring using a Record Form

Sounds-in-Words Administration

Administration Differences
Age-based test stimuli
• One for ages 2-6:11; for ages 7+
• New words added (38); many the same as GFTA-2 (22), many deleted from GFTA-2 (31)

Sounds-in-Words
SS for ages 2:0-21:11

Sounds-in-Sentences
SS for ages 4:0 to 21:11

You may use either set of picture stimuli from the Sounds-in-Words test, but must administer the age-appropriate story from the Sounds-in-Sentences.
Distribution of Consonants in GFTA-3

- Consonant distribution is not based on frequency of occurrence in English
  - Examination of each speech sound in target word to ensure that each sound had good psychometric properties
- Tried out and selected words that were familiar for a wide age range and a diverse population
- Deleted words with an excessive number of dialectal variations (e.g., production of the word “sandwich” in different regions)
- Range in complexity in syllable shapes (add more multi-syllabic words)
- Targeted multiple occurrences (2-3) of each consonant in each position
  - Exceptions
    - Some consonants have only one exemplar in an IMF position (e.g., final voiceless “th”)
    - Some consonants have more than three exemplars in IMF position (e.g., initial /t/, final /n, l, r/
    - /r/ includes consonantal and vocalic /r/

The GFTA-3 word set was chosen to

» minimize the administration time,
» meet as many of the criteria as possible,
» while maintaining excellent psychometric properties of the item set
  - consistent developmental progression across age
  - high internal consistency
  - clinical utility (words that best differentiated performance between children who are typically-developing and children who are developing atypically)
Sounds-in-Words: Record Form

Response Capture pages

First printing

Revised design

GFTA-3 Scoring

Scoring Differences

• Score every occurrence of every consonant
• Dialect sensitive scoring: Score responses as correct if you have evidence to confirm that the individual speaks a dialect other than Standard American English.

Recording a Substitution

Recording an Omission

Identifying Typical And Atypical Speech Patterns Using GFTA-3 and KLPA-3
GFTA-3 Scoring

Recording a Diacritical Mark for a Distortion/Variation*

<table>
<thead>
<tr>
<th>Item</th>
<th>Target Word</th>
<th>IPA Transcription</th>
<th>Response</th>
<th>Initial</th>
<th>Medial</th>
<th>Final</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>house</td>
<td>/haus/ (lateral release)</td>
<td>h</td>
<td>s</td>
<td>/s/</td>
<td>j</td>
</tr>
<tr>
<td>2</td>
<td>door</td>
<td>/dɔr/</td>
<td>j</td>
<td>j</td>
<td>j</td>
<td>j</td>
</tr>
<tr>
<td>3</td>
<td>pig</td>
<td>/pt/</td>
<td>j</td>
<td>j</td>
<td>j</td>
<td>j</td>
</tr>
</tbody>
</table>

* Recording a Diacritical Mark for a Response Not Considered an Error

<table>
<thead>
<tr>
<th>Item</th>
<th>Target Word</th>
<th>IPA Transcription</th>
<th>Response</th>
<th>Initial</th>
<th>Medial</th>
<th>Final</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>fish</td>
<td>/fis/</td>
<td>f</td>
<td>f</td>
<td>f</td>
<td>f</td>
</tr>
<tr>
<td>14</td>
<td>watch</td>
<td>/waʃt/</td>
<td>j</td>
<td>j</td>
<td>j</td>
<td>j</td>
</tr>
<tr>
<td>15</td>
<td>spider</td>
<td>/ˈspɪdər/</td>
<td>j</td>
<td>j</td>
<td>j</td>
<td>j</td>
</tr>
<tr>
<td>16</td>
<td>web</td>
<td>/wɛb/</td>
<td>j</td>
<td>j</td>
<td>j</td>
<td>j</td>
</tr>
</tbody>
</table>

*A response in which articulators are slightly misplaced (e.g., dentalization), but the sound produced is acoustically accurate is not counted as a speech sound error. In addition, a dialectal variation is not considered an error response.

GFTA-3 Scoring

Recording No Response

<table>
<thead>
<tr>
<th>Item</th>
<th>Target Word</th>
<th>IPA Transcription</th>
<th>Response</th>
<th>Initial</th>
<th>Medial</th>
<th>Final</th>
</tr>
</thead>
<tbody>
<tr>
<td>39</td>
<td>vegetable</td>
<td>/ˈvɛrətəbəl/</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
</tr>
<tr>
<td>40</td>
<td>brushing</td>
<td>/ˈbruʃɪŋ/</td>
<td>tr</td>
<td>tr</td>
<td>tr</td>
<td>tr</td>
</tr>
<tr>
<td>41</td>
<td>blue</td>
<td>/blu/</td>
<td>bl</td>
<td>bl</td>
<td>bl</td>
<td>bl</td>
</tr>
<tr>
<td>42</td>
<td>yellow</td>
<td>/ˈjɛlt/</td>
<td>j</td>
<td>j</td>
<td>j</td>
<td>j</td>
</tr>
<tr>
<td>43</td>
<td>brother</td>
<td>/ˈbrʌðər/</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
</tr>
</tbody>
</table>

Recording an Error in Final /l/ and /r/
GFTA-3 Scoring

Self-corrections

<table>
<thead>
<tr>
<th>Item</th>
<th>Target Word</th>
<th>IPA Transcription</th>
<th>Response</th>
<th>Initial</th>
<th>Medial</th>
<th>Final</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>house</td>
<td>/haʊ/</td>
<td>h</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>door</td>
<td>/dɔːr/</td>
<td>d</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>pig</td>
<td>/pɪɡ/</td>
<td>p</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>cup</td>
<td>/kʌp/</td>
<td>k</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>boy</td>
<td>/bɔɪ/</td>
<td>b</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>apple</td>
<td>/æpp/</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>go</td>
<td>/ɡoʊ/</td>
<td>g</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

GFTA-3 Scoring: Consonant Clusters

Scoring When Both Phonemes are Substituted

<table>
<thead>
<tr>
<th>Item</th>
<th>Target Word</th>
<th>IPA Transcription</th>
<th>Response</th>
<th>Initial</th>
<th>Medial</th>
<th>Final</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>shoe</td>
<td>/ʃu/</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>slide</td>
<td>/ˈslɛd/</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>swing</td>
<td>/ˈswɪŋ/</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Scoring When Both Phonemes Are Omitted

<table>
<thead>
<tr>
<th>Story Text</th>
<th>Item</th>
<th>Target Word</th>
<th>IPA Transcription</th>
<th>Response</th>
<th>Initial</th>
<th>Medial</th>
<th>Final</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three friends are walking home from school.</td>
<td>1</td>
<td>walking</td>
<td>/ˈwɔːkɪŋ/</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>They see something little, furry, and black.</td>
<td>3</td>
<td>something</td>
<td>/ˈsʌmθɪŋ/</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>They see it zoom by and hide under a bush.</td>
<td>7</td>
<td>zoom</td>
<td>/ˈzʊm/</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
GFTA-3 Scoring: Consonant Clusters (continued)

Scoring When One Phoneme is Substituted

GFTA-2 counts errors for consonant and consonant clusters in selected target words. GFTA-3 counts errors for consonant and consonant clusters in every occurrence.

Scoring Adjacent Medial Consonant Sounds

Identifying Typical And Atypical Speech Patterns Using GFTA-3 and KLPA-3
GFTA-3 Scoring

Recording Final /r/

Dialect-appropriate responses (examples)

- English influenced by Spanish: “sh” for “ch” in the word “cheese”
- African-American English and Southern English: “n’” for “ng” in the word “brushing”
- English influenced by Asian Languages: “l” for “r” in the word “red”
Sounds-in-Sentences: Administration

Administration differences
- New stories
- Structured task: sentence repetition vs. story re-tell
- Ages 4+
- Unlike the Sounds-in-Words subtest, you must use the age-appropriate story if you choose to report the normative scores

Story for Ages 4:0 through 6:11
What Animal Do You Think It Is?

Story for Ages 7:0 to 21:11
A Terrible Day

Sounds-in-Sentences: Record Form

Response Capture pages

First printing

Revised design
Sounds-in-Sentences

Obtaining subtotals, total raw score, and intelligibility

First printing

Revised design

Sounds-in-Sentences: Scoring

Scoring Differences
- Standard scores
- Intelligibility rating
Sounds-in-Sentences: Calculating Intelligibility Rating

Identifying Typical and Atypical Speech Patterns Using GFTA-3 and KLPA-3

Scoring Differences
- Standard scores
- Intelligibility rating

Go to Appendix C, Table C.1 Intelligibility Ratings of the Normative Sample By Age
Digital Assessment and Scoring Options

2 iPads connected via Bluetooth®

Use one iPad to access test administration directions, control visual stimuli, and to record responses.

The examinee uses the other iPad to view and respond to stimuli.

Real-time scoring
Digital Assessment and Scoring Options

Web-based test administration, scoring and reporting system

• Access digital stimulus books and manuals online
• Show the visual stimuli on your iPad or any web-enabled tablet
• Use a paper record form for response capture.
• Score by hand or enter responses (or GFTA-3 raw scores) in the Q-global scoring platform to obtain a score report.
• Can be used for telepractice (on a computer) in screen share mode

Error Analyses

Identifying Typical And Atypical Speech Patterns Using GFTA-3 and KLPA-3
Record Form:
Sounds-in-Words Phonetic Error Analyses

Record Form:
Sounds-in-Words Error Analyses

R Error Analyses

Vowel Error Analyses
Record Form: Sounds-in-Sentences error analyses

Map Test Results on the Emergence and Mastery Tables, RF pg. 8

- Helps you interpret and explain test scores referencing the examinee’s results to developmental data
- Helps you identify
  - the age when you expect consonants to be in an examinee’s repertoire
  - the age when you expect consonants to be correctly produced 85% or more of the time.
GFTA-3 and GFTA-2: Why Are the Scores Different?

Why are GFTA-3 scores different from GFTA-2?

- The U.S. population is different.
  - GFTA-2 norms collected in 1999.
  - Motor skill development may not change much over time, but populations do.
  - Dialect variations are NOT counted as errors in GFTA-3 norms.
- Test item set is different.
- Scoring is different.
  - Each consonant error is counted. On GFTA-2, only one instance of production was counted.
- The resulting raw scores and norms are different (although the means for each sound match the GFTA-2).
- GFTA-2 scores reflect emergence of phoneme production (at least one correct production); GFTA-3 scores account for correct production given multiple opportunities.
Why are GFTA-3 scores different from GFTA-2? (continued)

- **GFTA-2 Premise:** If a phoneme is counted as correct, the child has mastered production of that phoneme.

- **GFTA-3 Premise:** Phonemes should be tested in multiple contexts because productions can be affected by surrounding vowels and consonants and the complexity of the word structure. In addition, research shows that children begin to correctly produce phonemes at different ages, with a time period between emergence and mastery of sounds.

- Low standard scores indicate that a child’s speech is not comparable to age/gender peers.

Why are GFTA-3 scores different from GFTA-2? (continued)

Then why are GFTA-2 and GFTA-3 scores so different if /r/ is the child’s only error?

It is not due to the number of occurrences of /r/ in the test.

- The number of /r/ occurrences contribute to the raw score. The normative score accounts for the number of errors very young children make (younger children make more errors than older children.)

- Table D1 shows ages and % of children who can produce consonantal and vocalic /r/ starting at age 2.

- Table D2 shows ages at which 90% of children produce /r/ correctly 85% or greater given each opportunity to produce the sound in Sounds-in-Words.
Why do I sometimes get a GFTA-3 Sounds-in-Sentences score higher than the Sounds-in-Words score?

- In the Sounds-in-Words test, productions of all phonemes are scored. In the Sounds-in-Sentences test, all phonemes in only the target words are scored. Errors in non-target words are not counted as errors.

- It is possible that a child misarticulates sounds that are included on the Sounds-in-Words test that are not included in the Sounds-in-Sentences test.

Example: A child, age 5, who misarticulates /b/ in final position, /d/ in medial position, and /g/ in medial position would have 3 errors counted toward his/her total raw score in Sounds-in-Words, but not in Sounds-in-Sentences. Those three sounds in those word positions are not included in the Sounds-in-Sentences subtest.

Why do I sometimes get a GFTA-3 S-in-S score higher than the S-in-W score? (cont.)

Although the Sounds-in-Sentences is an imitation task, sound production in sentences is expected to be more difficult than spontaneous single word productions.

- Children perform more similarly to age-level peers on the sentence task (the more difficult task) than they do to age-level peers on the words task (the easier task), especially when their errors include late-developing consonants.

- Typically-developing children make fewer errors on the Sounds-in-Words test than they do on the Sounds-in-Sentences test. A child’s standard scores may be lower on the Sounds-in-Words test because performance is less like same age, same sex peers.

- Typically-developing children make more errors on the Sounds-in-Sentences test than they do on the Sounds-in-Words test. A child’s standard scores may be higher on the Sounds-in-Sentences test because performance is more like same age, same sex peers.

- 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 (easier) 2 x 2 = 4 (more difficult)
GFTA-3: Emergence vs. Mastery of Speech Sounds

Emergence vs. Mastery of Phonemes

GFTA-3 Criteria

Emergence
Age at which a phoneme is present (one or more correct productions) in the child’s repertoire. This information is reported as the ages at which 50%, 75% and 90% of children were able to spontaneously produce a phoneme correctly one or more times on GFTA-3, based on age and sex.

Mastery
Ages at which 90% of the GFTA-3 normative sample (by sex) produced the phoneme with at least 85% accuracy.
GFTA-3 data indicate that it is NOT common for children to go from not producing a phoneme to spontaneously producing a phoneme accurately 85% or more of the time.

Most children produce phonemes correctly in certain contexts (e.g., in simple syllable shapes and when paired with specific vowels or consonants) before exhibiting mastery (85%+ correct productions).
GFTA-2 Supplemental Norms Booklet &
GFTA-3 Table D.2 Ages At Which Phonemes are Mastered
in the Normative sample (Males, /r/)

<table>
<thead>
<tr>
<th>2:0</th>
<th>2:6</th>
<th>3:0</th>
<th>3:6</th>
<th>4:0</th>
<th>4:6</th>
<th>5:0</th>
<th>5:6</th>
<th>6:0</th>
<th>7:0</th>
<th>8:0</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>.32</td>
<td>.38</td>
<td>.44</td>
<td>.58</td>
<td>.69</td>
<td>.80</td>
<td>.81</td>
<td>.91</td>
<td>.98</td>
<td>.93</td>
</tr>
<tr>
<td>M</td>
<td>.44</td>
<td>.64</td>
<td>.64</td>
<td>.60</td>
<td>.80</td>
<td>.74</td>
<td>.84</td>
<td>.83</td>
<td>.92</td>
<td>.95</td>
</tr>
<tr>
<td>F</td>
<td>.60</td>
<td>.72</td>
<td>.76</td>
<td>.76</td>
<td>.76</td>
<td>.74</td>
<td>.81</td>
<td>.90</td>
<td>.94</td>
<td>.97</td>
</tr>
</tbody>
</table>

GFTA-2: % of boys producing the phoneme correctly (one opportunity)

GFTA-3: Mastery data: % of boys producing the phoneme 85% or more correctly (multiple opportunities)

Males master /r/ at age 7:0-7:11

In the GFTA-3 standardization sample:
- 90% of males ages 7:0 through 7:11 were able to produce initial /r/ and final /r/ correctly with 85% accuracy.
- 90% of males ages 6:0 through 6:11 were able to produce medial /r/ correctly with 85% accuracy.
- Developmental trajectory and age of mastery of sounds are similar for GFTA-2 and GFTA-3
- GFTA-2 and GFTA-3 emergence and mastery data are similar to range of ages shown on developmental norms charts.
Females master /r/ by age 6:0 to 6:11

In the GFTA-3 standardization sample:

- Developmental trajectory and age of mastery of sounds are similar for GFTA-2 and GFTA-3 and the trajectory of acquisition is similar to the males.

- However, 90% of females ages 6:0 through 6:11 were able to produce initial, medial, and final /r/ correctly with 85% accuracy.

- GFTA-2 and GFTA-3 emergence data are similar to range of ages shown on developmental norms charts. Mastery data, however, shows mastery of /r/ a full year earlier for females than males.

Interpretation of GFTA-3 Results:
Score Comparisons at Different Ages
### Omar, Age 2:4

<table>
<thead>
<tr>
<th>Type of /r/</th>
<th>Raw Score</th>
<th>Standard Score</th>
<th>Percentile</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>All /r/ productions, including clusters</td>
<td>22</td>
<td>120</td>
<td>91</td>
<td></td>
</tr>
<tr>
<td>Only blend errors</td>
<td>9</td>
<td>129</td>
<td>97</td>
<td></td>
</tr>
<tr>
<td>4 errors</td>
<td>4</td>
<td>134</td>
<td>99</td>
<td></td>
</tr>
<tr>
<td>2 errors</td>
<td>2</td>
<td>136</td>
<td>99</td>
<td></td>
</tr>
</tbody>
</table>

### Omar, Age 4:4

<table>
<thead>
<tr>
<th>Type of /r/</th>
<th>Raw Score</th>
<th>Standard Score</th>
<th>Percentile</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>All /r/ productions, including clusters</td>
<td>22</td>
<td>94</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>Only blend errors</td>
<td>9</td>
<td>107</td>
<td>68</td>
<td></td>
</tr>
<tr>
<td>4 errors</td>
<td>4</td>
<td>115</td>
<td>84</td>
<td></td>
</tr>
<tr>
<td>2 errors</td>
<td>2</td>
<td>118</td>
<td>88</td>
<td></td>
</tr>
</tbody>
</table>

### Omar, Age 6:4

<table>
<thead>
<tr>
<th>Type of /r/</th>
<th>Raw Score</th>
<th>Standard Score</th>
<th>Percentile</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>All /r/ productions, including clusters</td>
<td>22</td>
<td>75</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Only blend errors</td>
<td>9</td>
<td>90</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>4 errors</td>
<td>4</td>
<td>98</td>
<td>45</td>
<td></td>
</tr>
<tr>
<td>2 errors</td>
<td>2</td>
<td>105</td>
<td>63</td>
<td></td>
</tr>
</tbody>
</table>

### Jenny, Age 2:4

<table>
<thead>
<tr>
<th>/r/ Errors</th>
<th>Raw Score</th>
<th>Standard Score</th>
<th>Percentile</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>All /r/ productions, including clusters</td>
<td>22</td>
<td>120</td>
<td>91</td>
<td></td>
</tr>
<tr>
<td>Only blend errors</td>
<td>9</td>
<td>133</td>
<td>99</td>
<td></td>
</tr>
<tr>
<td>4 /r/ errors</td>
<td>4</td>
<td>137</td>
<td>99</td>
<td></td>
</tr>
<tr>
<td>2 /r/ errors</td>
<td>2</td>
<td>138</td>
<td>99</td>
<td></td>
</tr>
</tbody>
</table>

### Jenny, Age 4:4

<table>
<thead>
<tr>
<th>/r/ Errors</th>
<th>Raw Score</th>
<th>Standard Score</th>
<th>Percentile</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>All /r/ productions, including clusters</td>
<td>22</td>
<td>90</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Only blend errors</td>
<td>9</td>
<td>105</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>4 /r/ errors</td>
<td>4</td>
<td>112</td>
<td>79</td>
<td></td>
</tr>
<tr>
<td>2 /r/ errors</td>
<td>2</td>
<td>115</td>
<td>84</td>
<td></td>
</tr>
</tbody>
</table>

### Jenny, Age 6:4

<table>
<thead>
<tr>
<th>/r/ errors</th>
<th>Raw Score</th>
<th>Standard Score</th>
<th>Percentile</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>All /r/ productions, including clusters</td>
<td>22</td>
<td>64</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Only blend errors</td>
<td>9</td>
<td>82</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>4 /r/ errors</td>
<td>4</td>
<td>93</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>2 /r/ errors</td>
<td>2</td>
<td>102</td>
<td>55</td>
<td></td>
</tr>
</tbody>
</table>
Intervention Planning
Based on Children’s
Typical and Atypical
Speech Patterns

Factors to consider when evaluating
articulation assessment results

GFTA-3 scores provide the norm-referenced data that is part of the
information you use to diagnose a disorder.

• Developmental patterns and progression
• Correct vs. incorrect productions of an error sound in specific
  contexts
• Stimulability
• Intelligibility
• Academic impact
• Oral motor or apraxia issues
• Other
Omar’s GFTA-3 standard scores

Omar, age 4:4
Standard score: 94
Confidence interval: 61-70 (90%)

Omar, age 4:4
A look at Omar’s developmental patterns: age of emergence of error phonemes
Omar, age 4:4

A look at Omar’s developmental patterns: age of mastery of error phonemes

Table D.2 Ages at Which 90% of the GFTA-3 Normative Sample Masted Consonants and Consonant Clusters by Initial, Medial, and Final Position (Male)

<table>
<thead>
<tr>
<th>MLE</th>
<th>Initial position</th>
<th>Medial position</th>
<th>Final position</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-25</td>
<td>/br/</td>
<td>/br/</td>
<td>/br/</td>
</tr>
<tr>
<td>26-31</td>
<td>/kn/</td>
<td>/kn/</td>
<td>/kn/</td>
</tr>
<tr>
<td>36-31</td>
<td>/gn/</td>
<td>/gn/</td>
<td>/gn/</td>
</tr>
<tr>
<td>40-44</td>
<td>/g/-</td>
<td>/g/-</td>
<td>/g/-</td>
</tr>
<tr>
<td>46-431</td>
<td>/g/</td>
<td>/g/</td>
<td>/g/</td>
</tr>
<tr>
<td>50-531</td>
<td>/g/</td>
<td>/g/</td>
<td>/g/</td>
</tr>
<tr>
<td>60-61</td>
<td>/g/</td>
<td>/g/</td>
<td>/g/</td>
</tr>
<tr>
<td>70-71</td>
<td>/g/</td>
<td>/g/</td>
<td>/g/</td>
</tr>
<tr>
<td>80-81</td>
<td>/g/</td>
<td>/g/</td>
<td>/g/</td>
</tr>
</tbody>
</table>

In addition to standard scores and emergence/mastery data,

Also consider in Omar’s case:

Parent/teacher concerns and priorities: His speech is “babyish” compared to his sister Rosie’s speech when she was 4 years old. Parents want him to say his name and his sister’s name correctly.

Stimulability: He is stimulable for final /r/.

Intelligibility: Omar’s preschool teacher says she can understand his speech all the time. Omar earned “good” intelligibility ratings on 85% of the sentences he imitated in the S-in-S test. GFTA-3 data report that 60% of 4:0-4:5 year old children in the normative sample received an overall rating of 90% “good” ratings.

Impact on participation in preschool or in the home: Omar is unaware of his /r/ errors at preschool. However, at home he is starting to avoid talking because he does not want to be corrected for saying /r/ incorrectly.

Are there any:

- Developmental considerations (vowels mastered before consonants) No concerns
- Speech patterns/phonological processes No concerns
- Speech production inconsistencies (vowels, consonants) No concerns
Jenny’s GFTA-3 standard scores

Jenny, age 6:4
Standard score: 64
Confidence interval: 61-70 (90%)

A look at Jenny’s developmental patterns: age of emergence of error phonemes
Jenny, age 6:4

A look at Jenny’s developmental patterns: age of mastery of error phonemes

Table D.2 Ages at Which 90% of the GFTA-3 Normative Sample Mastered Consonants and Consonant Clusters by Initial, Medial, and Final Position (Female)

<table>
<thead>
<tr>
<th>Age</th>
<th>Initial position</th>
<th>Medial position</th>
<th>Final position</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:0-2:5</td>
<td>/l/</td>
<td>/l/</td>
<td>/l/</td>
</tr>
<tr>
<td>2:6-3:5</td>
<td>/l/</td>
<td>/l/</td>
<td>/l/</td>
</tr>
<tr>
<td>3:6-4:11</td>
<td>/l/</td>
<td>/l/</td>
<td>/l/</td>
</tr>
</tbody>
</table>

Also consider in Jenny’s case:

Parent and teacher concerns and priorities: Jenny’s speech is “immature” compared to her classmates. Children tease her about the way she speaks.

Stimulability: She was stimulable for initial and final /r/ in syllables.

Intelligibility: Jenny’s teacher says she can understand her speech about 70% of the time. Jenny earned “good” intelligibility ratings on 85% of the sentences she imitated in the S-in-S test. GFTA-3 data report that 88% of 6:0-6:11 year old children in the normative sample received an overall rating of 90% “good” ratings.

Impact on participation in academics: When Jenny speaks, she does not seem aware when she is making speech errors. She is surprised and embarrassed when her classmates tease her. After she is teased or her speech is corrected by a classmate, she withdraws and will not participate in group discussions.

Are there any:

Developmental considerations (vowels mastered before consonants) No concerns.

Speech patterns/phonological processes KLPA-3 analysis to examine gliding, vocalization, and cluster simplification

Speech production inconsistencies (vowels, consonants) No concerns.
22 Errors (all /r/ productions)

Question & Answer
Additional questions?

Frequently Asked Questions on www.gfta3.com

GFTA-3 Spanish (Available Spring 2017)