**Initial Speech-Language Evaluation Summary**

**Name**: Liam Martinez **Evaluation Date**: March 7, 2023

**Date of Birth:** May 18, 2015 March 9, 2023

**Age:** 7 years, 9 months

**Relevant Background Information**

Liam, a 7-year, 9-month-old male was seen on March 7, 2023 and March 9, 2023 at Innovative Pediatric Learning Center of Miami for an initial speech-language evaluation. His father, who served as reliable, was present. Mr. Michael Martinez reported concerns regarding Liam’s academic performance in school, as well as his expressive language abilities.

As per information obtained from the case history, Liam was born following a full-term pregnancy via natural birth. Mother reported there were no complications during and/or after birth. Birth history was significant for frequent ear infections. At the age of 2, Liam had surgery “to drain the fluid in his ears.” His father reported Liam is in good health at this time.

Early developmental milestones were reported to be developing within normal limits with the exception of responding to his name at 2 years of age. Liam received speech-language intervention and occupational therapy from 3 to 4 years of age at Midtown Rehabilitation Center. Concerns regarding Liam’s development resurfaced this school year. Additionally, Liam’s father reported that he was diagnosed with Noonan Syndrome by Dr. Jayakar, a Geneticist. Liam was also diagnosed with Attention Deficit/Hyperactivity Disorder by a neurologist. At 4 years of age, Liam was seen by Dr. Alejandro Diaz, an Endocrinologist, and began growth hormones. Liam continues to take growth hormones once a day. He also continues to visit Dr. Jayakar and Dr. Diaz two times a year.

At this time, Liam currently attends Coral Way K-8 and is in the second grade. He receives small group instruction in class. He is also exposed to both English and Spanish.

**Instrumentation**

Formal and informal measures performed during the evaluation included the following:

* Social Behavioral Observation
* Clinical Evaluation of Language Fundamentals- Fifth Edition (CELF-5)
* Comprehensive Test of Phonological Processing- Second Edition (CTOPP-2)
* Dynamic Indicators of Basic Early Literacy Skills- Eighth Edition (DIBELS-8)
* Oral-Peripheral Examination
* Speech-Language Sample

All measures were performed in English. Results of all formal and informal assessments appear to be reliable.

**Outcome of Evaluation**

**Social Behavioral Observation:**

Observation was used to assess behavioral components in various structured and unstructured activities throughout the evaluation. The following social behavioral observations were noted:

* Speech-Language evaluation was completed over the course of two sessions. Both sessions, Liam was able to separate from parent and enter treatment room independently.
* **Upon arrival, Liam instantly made “friends” and engaged with other children in the waiting room. Age-appropriate conversation and play was observed.**
* Liam demonstrated adequate communicative intent and awareness of others. In addition, appropriate eye contact was present.
* Throughout the course of formal assessment measures, Liam demonstrated difficulty with overall attention to task. He demonstrated impulsivity as evident by getting up to get a desired item in the middle of a conversation with the clinician about another topic.
* Clinician used a visual timer throughout the formal evaluation measures in order to aid with attending to task.
* Liam was observed to be easily distracted by various stimuli. Additionally, he would move around in his seat and was observed to engage the clinician in off topic conversation whenever there was a pause between items. However, he was verbally redirected and would return to task.
* Overall, Liam was compliant throughout the entire assessment. Formal assessment measures were broken down and Liam was provided with breaks throughout.
* It should be noted that Liam did require redirection to task, extra time, and repetitions to complete some assessment items.
* It was also noted that when Liam appeared to not be listening, overall comprehension was affected. During administration of the CELF-5, it was observed that Liam’s inconsistent attention affected overall comprehension.
* Throughout the portions of the CELF-5 where repetitions were allowed, Liam required them in order to increase performance.
* It should be noted that visuals in the assessment were useful in aiding with overall comprehension.
* Generally, Liam performed all tasks willingly and interacted well with the clinician. He attempted all tasks. Throughout the course of the evaluation, verbal praise, visuals, and breaks were proven to be effective in keeping Liam motivated and on task.

**The Clinical Evaluation of Language Fundamentals- 5th Edition (CELF-5)** a standardized assessment of receptive and expressive language skills was administered in order to assess overall language skills. The CELF-5 is designed for students ages 5-21 years to assess language and communication skills in a variety of contexts.

**Core Language Score and Index Scores-** The Core Language Score and Index Scores are composite scores. These scores are based on the sum of various test scaled scores.

Standard Scores are based on a scale with a mean of 100 and a standard deviation of +/- 15. The following interpretation of standard scores is applicable:

|  |  |
| --- | --- |
| **Standard Score Range** | **Interpretation** |
| Above 115 | Above Average |
| 86-114 | Average/ Within Normal Limits |
| 78-85 | Marginal/Below Average/Mild |
| 71-77 | Low Range/Moderate |
| 70-50 | Very low range/Severe |
| 50 and below | Profound |

The following results were obtained:

|  |  |  |  |
| --- | --- | --- | --- |
| Core Language Score and Index Scores | Standard Score | Percentile Rank | Interpretation |
| Core Language Score | 66 | 1% | Severe Delay |
| Receptive Language Index | 61 | 0.5% | Severe Delay |
| Expressive Language Index | 66 | 1% | Severe Delay |
| Language Content Index | 61 | 0.5% | Severe Delay |
| Language Structure Index | 66 | 1% | Severe Delay |

Core Language Score - The Core Language Score is a measure of general language ability and provides an easy and reliable way to quantify overall language performance. The Core Language Score is derived by summing the scaled scores from Sentence Comprehension, Word Structure, Formulated Sentences, and Recalling Sentences. Liam received a Core Language Score of 66 and a percentile rank of 1%. This standard score and percentile rank yields a severe delay.

Receptive Language Index - The Receptive Language Index is a measure of listening and auditory comprehension skills. The Receptive Language Index is derived by summing the scaled scores for Sentence Comprehension, Following Directions, and Word Classes. Liam received a Receptive Language Index score of 61 and a percentile rank of 0.5%. This standard score and percentile rank yields a severe delay.

Expressive Language Index - The Expressive Language Index is a measure of expressive aspects of language including oral language expression. The Expressive Language Index is derived by summing the scaled scores from Word Structure, Formulated Sentences, and Recalling Sentences. Liam received an Expressive Language Index score of 66 and percentile rank of 1%. This standard score and percentile rank yields a severe delay.

(vocabulary) Language Content Index - The Language Content Index is a measure of vocabulary and word knowledge. The Language Content Index is derived by summing the scaled scores from Linguistic Concepts, Following Directions, and Word Classes. Liam received a Language Content Index score of 61 and a percentile rank of 0.5%. This standard score and percentile rank yields a severe delay.

Language Structure Index – The Language Structure Index is a measure of understanding and production of syntactical structures and morphology. The Language Structure Index is derived by summing the scaled scores from Sentence Comprehension, Word Structure, Formulated Sentences, and Recalling Sentences. Liam received a Language Content Index score of 66 and a percentile rank of 1%. This standard score and percentile rank yields a severe delay.

**Test Scaled Scores-** Test scaled scores provide performance information about the language content that each test targets. Test scaled scores are based on a scale with a mean of 10 and a standard deviation of +/- 3. Subtest scaled scores that are between 7 and 13 are considered to be average. The following interpretation of scaled scores is applicable:

|  |  |
| --- | --- |
| **Scaled Score Range** | **Classification** |
| 13 and above | Above Average |
| 8 to 12 | Average |
| 7 | Marginal/Borderline/At risk |
| 6 and below | Low to very low |

The following results were obtained:

|  |  |  |  |
| --- | --- | --- | --- |
| Test | Scaled Score | Age Equivalence | Interpretation |
| Sentence Comprehension | 4 | 4-10 | Very Low |
| Linguistic Concepts | 4 | 3-9 | Very Low |
| Word Structure | 7 | 4-1 | At Risk |
| Word Classes | 4 | 4-5 | Very Low |
| Following Directions | 2 | 3-6 | Very Low |
| Formulated Sentences | 2 | 4-8 | Very Low |
| Recalling Sentences | 3 | 3-10 | Very Low |
| Understanding Spoken Paragraphs | 3 | N/A | Very Low |

Sentence Comprehension- The Sentence Comprehension subtest is used to evaluate the ability to interpret spoken sentences of increasing length and complexity and select the picture that illustrates referential meaning of the sentences. Liam obtained a scaled score of 4 and age equivalence of 4 years, 10 months. This scaled score and age equivalence are in the very low range. He demonstrated relative strength with understanding negation, verb phrases, interrogatives, direct requests, and indirect requests. However, Liam demonstrated difficulty with understanding sentences containing modifications, prepositional phrases, direct/indirect objects, infinitives, relative and subordinate clauses, passive voice, and compound sentences. It is important to note that sentence comprehension was observed to be affected by overall attention.

Linguistic Concepts- The Linguistic Concepts subtest assessed Liam’s ability to interpret spoken directions that contain basic concepts and identify mentioned objects from among several pictured choices. Liam obtained a scaled score of 4 and an age equivalence of 3 years, 9 months. This scaled score and age equivalence are in the very low range. He demonstrated relative strength with verbal commands including location (middle, closest, between, next to), quantity (all, many), and conditional (if…if not). However, Liam demonstrated difficulty with verbal commands including inclusion/exclusion (with, not, without, underlined, neither…nor), sequence (after, beginning, before), conditional (unless), and temporal (until, at the same time).

Word Structure - The Word Structure subtest is used to evaluate a child’s knowledge of grammatical rules in a sentence-completion task. Liam was asked to complete a sentence that pertains to an illustration using the targeted word structures. Information from this subtest can help determine how Liam is acquiring the morphological rules of the English language. Liam obtained a scaled score of 7 and an age equivalence of 4 years, 1 month. This scaled score and age equivalence are in the at risk range. He demonstrated relative strength with using third person singular, possessive nouns, derivation of nouns, uncontractible copula/auxiliary (he is, she is), and reflexive pronouns (myself, herself). Liam demonstrated difficulty with regular plurals, irregular plurals, contractible copula (it’s cracked), auxiliary + -*ing*, possessive pronouns, regular past tense verbs, objective pronouns (them, us, her), future tense, comparative and superlatives (-*er*, -*est*), subjective pronouns, and irregular past tense.

Word Classes- The Word Classes subtest evaluates the ability to understand and express relationships between words that are related by semantic class relationships. Liam was asked to choose the items that best represent the desired relationship. This subtest provides information on Liam’s development of categorization skills and ability to associate word meanings. Liam obtained a scaled score of 4 and an age equivalence of 4 years, 5 months. This scaled score and age equivalence are in the very low range. He demonstrated relative strength identifying word classes when provided with visuals in a field of three. However, once four visual choices were provided, Liam was unable to complete word class items.

Following Directions - The Following Directions subtest is used to evaluate a child’s ability to interpret, recall, and execute oral commands of increasing length and complexity. Liam was asked to remember the names, characteristics, and order of pictured animals, and point to them in response to an oral direction. Liam obtained a scaled score of 2 and an age equivalence of 3 years, 6 months. This scaled score and age equivalence are in the very low range. He demonstrated relative strength with following 1-level commands with no orientation. However, Liam demonstrated difficulty with following 1-level commands with orientation and following all 2-level commands. It is important to note that overall attention affected Liam’s performance in the Following Directions subtest.

Formulated Sentences- The Formulated Sentences subtest assesses ability to formulate simple, compound, and complex sentences when given grammatical (semantic and syntactic) constraints. Liam obtained a scaled score of 2 and an age equivalence of 4 years, 8 months. This scaled score and age equivalence are in the very low range. He demonstrated relative strength with formulating very short, basic sentences. However, Liam demonstrated difficulty with formulating longer, organized sentences.

Recalling Sentences- The Recalling Sentences subtest is used to evaluate the child’s ability to repeat sentences of varying length and complexity without changing any word meanings or structure. The child’s response indicates if critical meaning or structural features are internalized for recall. The ability to remember spoken sentences is required in following directions and other situations in school and home settings. Liam obtained a scaled score of 3 and an age equivalence of 3 years, 10 months. This scaled score and age equivalence are in the very low range. Liam was able to recall keywords in a sentence. However, he missed at least one component of each sentence. In addition, as length and complexity of sentences increased, Liam was unable to recall the sentence.

Understanding Spoken Paragraphs- The Understanding Spoken Paragraphs subtest assesses the ability to sustain attention, create meaning from oral narratives, and supply critical thinking strategies. Questions are probed to assess memory for facts and details, ability to identify main idea, and make inferences. Liam received a scaled score of 3 which is in the very low range. He demonstrated difficulty recalling key details, recalling the main idea, sequencing, inferencing, predicting, and understanding social context.

**Comprehensive Test of Phonological Processing- Second Edition (CTOPP-2)** a comprehensive assessment of phonological processing abilities was administered in order to assess difficulties with phonological awareness, phonological memory, and phonemic awareness, which affects reading fluency. The CTOPP-2 is designed for students ages 4-24 years to assess phonological skills. Portions of the CTOPP-2 were administered in order to gather more information regarding Liam’s phonological awareness skills. For individuals 7-24 years of age, subtests Elision, Blending Words, and Phoneme Isolation were administered to assess phonological awareness. The following relevant information was collected:

Liam was able to blend sounds together to create words. Additionally, he was able to blend words together to create compound words. However, Liam demonstrated difficulty with elision. Elision is the ability to omit a sound, syllable, or part of a word. For example, he was asked to say “cup” without the /k/ sound. This gives insight on his ability to manipulate phonemes, which in turn aids with single-word reading. Additionally, he demonstrated difficulty with phoneme isolation. Phoneme isolation is the ability to identify where a sound is located in a word. For example, “What is the first sound in the word *sun*?”. This aids in Liam’s ability to sound out words to improve reading fluency. Overall, phonological awareness skills were observed to be delayed for his chronological age.

**Dynamic Indicators of Basic Early Literacy Skills- Eighth Edition (DIBELS-8)** an assessment of early literacy and reading skills was administered to provide insight as to whether or not difficulties with oral language comprehension extend to decoding and making sense of written language input. DIBELS-8 is designed for students in Kindergarten through Eighth Grade. Portions of the DIBELS-8 were administered informally in order to gain more information regarding Liam’s early literacy and reading skills. Liam was asked to read sight words, nonsense words, as well as a paragraph that is written at expected grade level for his age. Reading fluency and reading comprehension were then evaluated. The following was observed:

Alphabet Knowledge is the actual child’s awareness of letters and their sounds. Alphabet knowledge lays the foundation for children to read simple words fluently and automatically. Liam demonstrated understanding of letter sound association and letter naming fluency. He was able to label letters by their name and most letters by their sound.

Core Early Literacy Skills include sight word recognition and fluency skills. These skills allow for a child to develop automaticity while reading in order to lay the groundwork for reading comprehension. Liam demonstrated the ability to read sight words. However, he demonstrated difficulty with nonsense word reading fluency, word reading fluency, and oral reading fluency. He was observed to get frustrated while reading and asked to only read a small portion of the paragraph. The words he was able to read in the passage included sight words (and, in, the, them). Liam had difficulty with overall reading fluency.

Reading Comprehension is the child’s ability to understand a text. Readers must translate print to language and then interpret the meaning of that language. The passage administered in the DIBELS-8 was then used to assess comprehension. Liam was able to answer auditory comprehension questions, after the clinician read the passage. However, he had difficulty with oral reading comprehension. After Liam read a paragraph, the clinician asked him comprehension questions. It is important to note that his ability to answer comprehension questions was affected by his reading fluency skills.

**Oral Peripheral Observation:** Informal assessment of the oral speech mechanism was performed through observation to assess the adequacy of the structures and functions of the oral-motor mechanism. Cursory observation revealed:

Structure – The face was observed to be symmetrical in shape. The mandible and maxilla were in proper alignment, height, shape, and size. Dental occlusion, the palatal arch and oral/dental structures were observed to be unremarkable based on chronological age. At this time, Liam’s oral structure was observed to be adequate for speech production.

Function – The body, trunk, and facial tone were observed to be normal. All reflexes were inhibited (no observable reflexes when eating or performing verbal tasks). Phonation and breath support were adequate (1-3 seconds of sustained phonation), for single voiced, nasal and un-voiced phonemes could be produced. Labial-facial control and jaw movements were observed to be adequate. Lingual Control (tongue) was also observed to be adequate.

**Speech-Language Sample:** A speech-language sample was observed in order to evaluate spontaneous speech and obtain more information about Liam’s language skills in a less structured environment. A language sample can help identify the types of language behaviors in a child’s repertoire and provides an enhanced overview of language development. The speech-language sample was collected informally and observed for semantic, syntactic, morphological, and pragmatic language abilities. The following was observed:

Spontaneous language consisted predominantly of four- to five- word utterances. Liam had difficulty using expanded utterances and when he did use them they were observed to be off topic, at times. Language content consisted of naming objects, using action words, using words to describe objects, and using words denoting place, possession, quantity, time, and reason. However, word finding difficulties were noted in conversation. At times, it was difficult for Liam to produce age-appropriate sentences with proper syntax.

Liam’s social language use consisted of using phrases and sentences to request, get the clinician’s attention, talk about what he was doing, naming an object, greeting the clinician, answering the clinician’s questions, and asking the clinician questions. Additionally, he was able to talk about a recent event, and maintain a conversation with the clinician. Liam demonstrated difficulty turn taking in social interactions and preferred to control the conversation. He often times interrupted the clinician in conversation. Additionally, he demonstrated difficulty maintaining conversational topics and repeating messages that weren’t understood.

Liam’s connected speech was considered to be disorganized, off topic, at times, and out of sequence. Additionally, intelligibility in unstructured and structured conversation was judged to be good.

Overall, observations collected from the speech-language sample were consistent with results obtained from the formal assessment, as well as, information collected via case history and parent interview.

**Impressions**

Based on the results of formal and informal assessments, as well as parent interview and clinical observation, Liam, a 7-year, 9-month-old male presents with a severe receptive and expressive language delay secondary to Noonan Syndrome and Attention Deficit/Hyperactivity Disorder.

Social behavioral observation revealed Liam engaged in appropriate conversation with clinician, demonstrated adequate communicative intent and awareness of others. In addition, appropriate eye contact was present. Throughout the course of formal assessment measures, Liam demonstrated poor attention to task. He appeared impulsive and easily distracted by various stimuli. Liam was observed to move around in his seat, as well as engage the clinician in off topic conversation whenever there was a pause between items. However, he was easily redirected and would return. Generally, Liam performed all tasks willingly. Formal assessment measures were broken down and Liam was provided with breaks throughout. He required redirection, extra time, and repetitions to complete some assessment items. Additionally, it was noted that Liam’s inconsistent attention affected overall comprehension. Overall, it was observed that when length and complexity of utterances increased, comprehension was affected, as evident by the scores obtained in the CELF-5.

Results from administration of formal assessment measure, the CELF-5, revealed receptive language, language content, overall core language, expressive language, and language structure yielded a severe delay. Information collected from the subtests of the CELF-5 revealed Liam’s word structure was in the at risk range. Additionally, his ability to comprehend sentences, linguistic concepts, word classes, follow directions, formulate sentences, recall sentences, and ability to understand spoken paragraphs were in the very low range.

Results from administration of portions of CTOPP-2 revealed that Liam was able to blend sounds together to create words. Additionally, he was able to blend words together to create compound words. However, Liam demonstrated difficulty with elision and phoneme isolation. Overall, phonological awareness skills were observed to be delayed for his chronological age.

Results from administration of portions of DIBELS-8, revealed alphabet knowledge to be age-appropriate. Liam demonstrated understanding of letter sound association and letter naming fluency. Additionally, Liam was able to read sight words. However, the DIBELS-8 revealed Liam’s core early literacy and comprehension skills were delayed for his chronological age. He demonstrated difficulty with nonsense word reading fluency, word reading fluency, oral reading fluency, and oral reading comprehension. It was observed that his ability to answer comprehension questions was affected by his reading fluency.

Cursory observation of the oral speech mechanism revealed that the face was observed to be symmetrical in shape. No gross structural asymmetries or abnormalities were noted at this time. Liam’s oral structure was observed to be adequate for speech production.

Overall, observations collected from the speech-language sample were consistent with results obtained from the formal assessment, as well as information collected via case history and parent interview. Additionally, Liam’s connected speech was considered to be disorganized, off topic, at times, and out of sequence. Intelligibility in unstructured and structured conversation was judged to be good.

During early speech and language development, children learn skills that are important to the development of literacy. Phonological awareness is strongly connected to early reading and writing. Speech-language Pathologists have a key role in promoting the emergent literacy skills of all children. However, at this time, Liam would not benefit from intervention that solely focuses on reading secondary to decreased attention skills required to properly participate in an effective reading intervention, as well as, decreased receptive and expressive language skills. At this time, reading intervention should be addressed informally in correlation with other language goals and should begin working on reading skills more formally once functional language skills have been established and Liam’s ability to focus on relevant auditory input and linguistic stimuli in order to process it has improved.

It is important to note that all components of attention have a role in language acquisition. A language learner must focus on relevant linguistic input, discounting irrelevant input. He must sustain this focus in order to take in complete input for processing. When the source of language input shifts, the language learner must also shift his attention to avoid missing relevant input. Finally, he must attend to processing the information in order to make it available for future use.

Furthermore, it is important to note that individuals with difficulties with attention exhibit some form of impairment in executive functioning. Executive functioning includes areas of working memory, cognitive flexibility, and self-regulation. Executive functioning involves higher order language and cognitive skills. These skills are highly connected with academic and life success. Goals targeted toward the areas of executive functioning should also be included in Liam’s intervention plan.

Finally, longer-term impressions about Liam’s development potential based on these test results cannot be made at this time. The results of this assessment should be interpreted in terms of relative strengths and weakness so that they may be addressed through intervention. Future assessments may yield different results. These results may be higher or lower due to a variety of intervening factors. Based on the results from this evaluation, family support, and adherence to recommendations that follow, prognosis for improved communication skills is favorable.

**Recommendations**

Based on the information obtained through the assessment tools and parent, the

following recommendations are made:

1. Individual speech-language therapy 3-4 times a week for 30 minutes to improve overall speech-language skills.
2. Goals should be reviewed and updated monthly and a re-evaluation is recommended in 6 months to evaluate progress.
3. Implement at home activities focusing on goals targeted in therapy.
4. Closely monitor reading skills and implement reading intervention as receptive and expressive language improves.

It has been a pleasure meeting and working with Liam and his family. If you have any questions and/or concerns feel free to contact me directly via telephone at (786) 622-2353 or via email at [info@iplcmiami.com](mailto:info@iplcmiami.com).

Sincerely,

Sophia Fernandez, M.S., CF-SLP

Speech-Language Pathologist