Instructions for Administering the Meaningful Auditory Integration Scale (MAIS) and the Meaningful Use of Speech Scale (MUSS)

The MAIS & MUSS, developed at the Indiana University School of Medicine, are parent report scales which allow the examiner to evaluate a child's skills in meaningful, real-world situation. Each scale utilizes 10 probes. The MAIS gathers auditory behavioral information, whereas the MUSS investigates speech production behaviors. In the tradition of parent report schedules such as the Vineland, parents are not to fill out the forms themselves, neither are they to be asked direct yes/no questions. Rather, unstructured probes are presented to the parent so that a description is given by them about the child's spontaneous listening and speech in natural situations. Based on this information, the examiner can then ask further questions and request specific examples to support the response. This method helps prevent the type of bias that may occur with direct questionnaires. That is, if a parent thinks he knows what the examiner wants him to say, he may be influenced to respond in a certain way, rather than giving an unbiased description.

The clinician should remember that the MAIS & MUSS are to be scored on the basis of parent report and clinician observation. This means that a clinician who has evaluated a child or who is familiar with his skills can modify the scoring of the MAIS or MUSS from what the parent reports if s/he feels the parent report is inaccurate. This should not be viewed by clinicians as being "dishonest" or trying to go around the parent, but rather as a means of more accurately scoring the scale.

The MAIS & MUSS each list ten(10) areas to be probed, then gives the specific question that are to be asked by the clinician. In many instances, additional queries are also given which might help the parent answer more accurately and fully. It is important for the clinician to write the parents' response in its entirety, rather than simply marking an "X" on one of the five (5) possible responses. This is important for two reasons. First, we want to be able to antidotally compare the child's progress over time, and examples and reports given by parents help us do that. In addition, the ability to evaluate interexaminer reliability requires that enough information be written down so that an independent examiner could also answer the questions, based on the parent's written responses.

The examiner should always ask for specific examples the parent has seen of the behaviors discussed. If a parent responds, "Oh, she does that all the time," the examiner must ask, "Give me some examples of instances where she has done that." Another important query which aids in scoring is to ask, "What are some instances where she doesn't demonstrate that?" This suggests to the parents that it is acceptable if the child is not demonstrating all of the target behaviors all the time.

Note that on the revised MAIS (1995) Question #1 has 2 possible versions. Question 1a should be used with parents of very young children, whereas Question 1b is used with older children approximately 5 years and above, who take responsibility for their sensory aids.
MEANINGFUL USE OF SPEECH SCALE (MUSS)¹
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NAME__________________________DATE________________
INTERVAL_________________________
CONDITION(device)________________
EXAMINER_________________________
INFORMANT________________________

1. The child uses vocalizations to attract others' attention.

Ask: "Tell me about what Johnny does to gain your attention at home. If Johnny wanted to get your attention from across the room, what percentage of the time would he use:

   a. gestures(stomping, hand waving, etc.) ______
   b. gestures plus vocalization ______
   c. vocalization alone ______

Score question based strictly on percentage of time the child gains attention using vocalization alone.

   _____0= Never: spontaneously uses voice; uses other means to gain the attention of others.
   _____1= Rarely: vocalizes (less than 50% of the time).
   _____2= Occasionally: uses vocalization alone (at least 50% of the time).
   _____3= Frequently: uses vocalization alone (at least 75% of the time).
   _____4= Always: uses vocalization alone (100%).

COMMENTS:

¹Revised by Advanced Bionics Corporation, 1994
2. Vocalizes during communicative interactions.

Ask: "Tell me about the ways Johnny communicates at home. Of the total number of communication interactions with Johnny at home, how often would he vocalize during them--either using speech plus sign or speech alone (i.e.; excluding sign alone utterances)?"

_____ 0= Never: uses voice spontaneously while communicating.
_____ 1= Rarely: uses voice spontaneously while communicating (less than half of the time).
_____ 2= Occasionally: uses voice while communicating (at least 50% of the time, or uses voice more than 50% of the time but with undifferentiated vocalizations.
_____ 3= Frequently: vocalizes (at least 75% of the time) and shows some differentiation's of speech sounds and syllable structure.
_____ 4= Always: vocalizes with at least approximation of syllable and/or phrase structure of intended message (100%).

COMMENTS:

3. Vocalizations vary with content and message.

Ask: "Describe how much control Johnny has in his spontaneous speech over loudness, length of syllables and the pitch of his voice. If he were relating an event to you (such as retelling a movie plot or story), tell me about the variations in his speech." In the case of the younger child, if he/she was excited about an event, would the pitch of his/her voice reflect that excitement? If he/she were relating an event that happened to them during their day, would there be variations in the loudness and/or duration of the utterance?

NOTE: Examiner's observations of the child's spontaneous speech is critical here. Appropriate and volitional control of suprasegmentals is the goal of this question, not involuntary changes in pitch, rate, etc.

_____ 0= Never: All vocalizations similar re: suprasegmental aspects of speech (i.e., no intentional use).
_____ 1= Rarely: Child has limited control over volume (loud/soft) AND/OR duration (long/short) only.
_____ 2= Occasionally: Child has control over volume and duration at least 50% of the time.
_____ 3= Frequently: Child has control of volume and duration of voice at least 75% of the time and my show some variation in pitch.
_____ 4= Always: Child's spontaneous speech represents appropriate control of loudness, length and pitch. (i.e., speech resembles that of a normal-hearing person).

COMMENTS:
4. Is the child spontaneously willing to use speech only to communicate with parents and/or siblings when the topic of conversation is a known or familiar one?

Ask: "If Johnny were talking about a shared event with his family (such as Christmas morning), how much of the time would his communication to his family consist of speech alone?" For the younger child, if he/she is "reading" a favorite book, or reviewing a specific event the family shared that day.

Ask for examples of child's use of gestures, pantomime, drawing, writing. Frequent use of these suggest a lower score.

- 0 = Never: spontaneously uses speech alone. Only does so with prompting.
- 1 = Rarely: less than half of the time.
- 2 = Occasionally: at least 50% of the time.
- 3 = Frequently: at least 75% of the time.
- 4 = Always: spontaneously uses speech alone in this situation.

COMMENTS:

5. Is the child willing to use speech only to communicate with parents and/or siblings when the topic of conversation is not a familiar one?

Ask: "If Johnny were telling his family about an event with which they were unfamiliar (such as something that happened at school that day), how much of the time would his communication consist of speech alone?" Ask about the child's use of gestures, pantomime, writing, and drawing in this situation. Frequent use of these would suggest a lower score.

- 0 = Never: spontaneously uses speech alone.
- 1 = Rarely: less than half of the time.
- 2 = Occasionally: at least 50% of the time.
- 3 = Frequently: at least 75% of the time.
- 4 = Always: uses speech alone spontaneously.

COMMENTS:
6. Is the child willing to use speech spontaneously during social exchanges with hearing persons?

Ask: "What does Johnny do in social situations when hearing people speak to him?" Would Johnny say "Hello" back to a hearing person who spoke to him, or say "thank you" to a hearing person without being prompted to do so? In the case of the younger child, would he/she say "bye-bye" when waving good-bye without being prompted? Ask about situations where the child is somewhat familiar with the person speaking to him, and where his parents are present. This avoids evaluating the child's "friendliness with strangers" which is not the goal of this question. Situations to ask about include the child's responses to hearing persons at church, to hearing persons visiting in his home, or to speaking with Santa Claus.

_____ 0= Never: Child never does so, or only with parental prompting.
_____ 1= Rarely: less than 50% of the time.
_____ 2= Occasionally: At least 50% of the time.
_____ 3= Frequently: At least 75% of the time.
_____ 4= Always: uses speech alone spontaneously.

COMMENTS:

7. Is the child willing to use speech only to communicate with unfamiliar people to get something s/he desires?

Ask: "Think about situations outside home and school when Johnny is expected to communicate his needs. How often does Johnny spontaneously use speech alone to order in a restaurant, interact with store clerks, or speak with cashier (without parent intervention)?" For the younger child, ask "Do you see ______ using vocalizations with a new daycare provider when desiring a snack? or when playing on the playground, if s/he wanted another child's ball or toy? The critical issue here is the child's willingness to do so independently and without prompting.

_____ 0= Never: child never does so, or only with parental prompting.
_____ 1= Rarely: Less than 50% of the time.
_____ 2= Occasionally: At least 50% of the time.
_____ 3= Frequently: At least 75% of the time.
_____ 4= Always: uses speech alone spontaneously.

COMMENTS:
8. Is the child's speech understood by others who are unfamiliar with him?

Ask: "Suppose Johnny became lost in a store. How well would a security officer or store clerk be able to understand his speech if he tried to explain to them who he was and what he needed?" In the case of the younger child, ask "If ______ were playing on the playground, how well would an unfamiliar person understand one or two word utterances such as "my ball" or "want swing".

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
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<tbody>
<tr>
<td>0</td>
<td>0= Never: None of the child's speech would be understood.</td>
</tr>
<tr>
<td>1</td>
<td>1= Rarely: Adult would understand only single words and gestural or written support would be critical.</td>
</tr>
<tr>
<td>2</td>
<td>2= Occasionally: Adult would understand about half of what the child said. Gestures or writing would aid in the person's comprehension.</td>
</tr>
<tr>
<td>3</td>
<td>3= Frequently: Adult would understand most of what the child said, missing only a few details.</td>
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<tr>
<td>4</td>
<td>4= Always: All of the child's speech would be understood with ease by an adult.</td>
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COMMENTS:

9. Child spontaneously uses appropriate oral repair and clarification strategies when speech is not understood by people familiar with him/her.

Ask: "If Johnny is talking to you and you do not understand him, what strategies does he use to repair broken lines of communication? What percentage of the time does he use:

   a. sign or gesture only _______  
   b. sign/gesture + oral _______  
   c. oral repair only __________ |

Query the parent regarding the various oral strategies the child may have at his disposal. If one is unsuccessful, does he try another oral strategy or immediately resort to non-oral one? For example, if the child repeats a word a still is not understood, would he pick a synonym, rephrase, explain the word, spell the word out loud? Evaluate the child's persistence is using spoken repair strategies.

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<th>Score</th>
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<tbody>
<tr>
<td>0</td>
<td>0= Never: Child uses no strategies involving oral communication, or uses them only with prompting.</td>
</tr>
<tr>
<td>1</td>
<td>1= Rarely: Less than 50% of the time, child will use an oral strategy such as saying a key word slowly, or emphasizing it in his speech.</td>
</tr>
<tr>
<td>2</td>
<td>2= Occasionally: Child uses oral strategies at least 50% of the time, and persists when unsuccessful.</td>
</tr>
<tr>
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<td>3= Frequently: Child uses oral strategies at least 75% of the time, and persists when unsuccessful.</td>
</tr>
<tr>
<td>4</td>
<td>4= Always: Child uses oral strategies 100% of the time.</td>
</tr>
</tbody>
</table>

COMMENTS:
10. Child spontaneously uses appropriate oral repair and clarification strategies when speech is not understood by people unfamiliar with him/her.

Ask: "If Johnny is talking to someone he does not know and they do not understand him, what strategies does he use to repair broken lines of communication?" What percentage of the time would he use:

   a. sign or gesture only ________
   b. sign/gesture + oral __________
   c. oral repair only ____________

Query the parent regarding the various oral strategies the child may have at his disposal. If one is unsuccessful, does he try another oral strategy or immediately resort to a non-oral one? For example, if the child repeats a word and still is not understood, would he pick a synonym, rephrase, explain the word, spell the word out loud? We're evaluating the child's persistence in spoken repair strategies.

   _____ 0= Never: Child uses no strategies involving oral communication, or uses them only with prompting.
   _____ 1= Rarely: Less than 50% of the time, child will use an oral strategy such as saying a key word slowly, or emphasizing it in his speech.
   _____ 2= Occasionally: Child uses oral strategies at least 50% of the time, and persists when unsuccessful.
   _____ 3= Frequently: Child uses oral strategies at least 75% of the time and persists when unsuccessful.
   _____ 4= Always: Child uses oral strategies 100% of the time.

COMMENTS: __________________________

Total points correct _________/40