

## **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.

## LEVEL 1 & LEVEL 2

### MEANINGFUL AUDITORY INTEGRATION SCALE (MAIS)

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NAME \_\_\_\_\_ DATE \_\_\_\_\_

INTERVAL \_\_\_\_\_

CONDITION(device) \_\_\_\_\_

EXAMINER \_\_\_\_\_

INFORMANT \_\_\_\_\_

1. Score item 1a if the child is younger than age 5 and item 1b if the child is older than age 5.

1a. Does the child wear the device all waking hours **WITHOUT** resistance?

Ask the parent, "What is your routine for putting on \_\_\_\_\_'s device each day?" Have the parent explain how long the child wears the device and determine if the child wears it all waking hours **WITHOUT** resistance or for only restricted periods of time. Ask, "If one day you didn't put the device on \_\_\_\_\_ would \_\_\_\_\_ show any indication that s/he missed wearing it (such as pulling or pointing to his/her ear, going over to where the device is kept when not in use, looking upset or quizzical, etc.)" An additional query would be, "Does your child give any nonverbal indication that s/he is upset when the device is removed (such as crying or fussing)?"

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| _____0=Never:        | If parent seldom puts the device on the child because the child resists wearing it.  |
| _____1=Rarely:       | If the child wears the device for only short periods of time but resists wearing it.   |
| _____2=Occasionally: | If child wears device for only short periods of time but without resistance.   |
| _____3=Frequently:   | If the child wears the device all waking hours without resistance.   |
| _____4=Always:       | If the child wears the device all waking hours and provides some indication if the parent forgets to put it on one day and/or some indication that s/he is upset or misses the device when it is not on. |

PARENT REPORT:

1b. Does the child ask to have his or her device put on, or put it on him/herself **WITHOUT** being told?

Ask "What is \_\_\_\_\_'s routine for putting on his/her device each day?" Have parent explain if it is the parent or the child who takes responsibility for it. Ask, "If one day, you didn't put the device on \_\_\_\_\_ and didn't mention it, would \_\_\_\_\_ ask to wear it and be upset by not having it?" An additional query would be, "Does your child basically wear it according to routine (such as all day at school and one hour at night) or does s/he want it on all waking hours?" (for example, s/he puts it on at night even after his/her bath)? The latter would indicate a child who is more boded and dependent on his her device than the former.

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| _____0=Never:        | If the child resists wearing it.   |
| _____1=Rarely:       | If the parent says child wears it without resistance, but would never ask for it.          |
| _____2=Occasionally: | If child might inquire about it and is content to wear it with a set time routine.         |
| _____3=Frequently:   | If the child wears the device all waking hours without resistance.                         |
| _____4=Always:       | Only if child wears it all waking hours and it's part of his body (like glasses would be). |

PARENT REPORT:

2. Does the child report and/or appear upset if his/her device is non-functioning for any reason?

Ask parent to give examples of what the child has done (verbally or nonverbally) when the device was not working. Ask also, "Have you ever checked \_\_\_\_\_'s device and found it was not working (or headpiece had fallen off), but s/he had not noticed or had not told you?" In the case of the younger child, ask "Have you ever checked \_\_\_\_\_'s device and found it wasn't working but s/he had not provided any nonverbal indication (such as crying, reaching for the headpiece, etc.) that it was not working?"

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| _____0=Never:        | If child has no awareness of the device working or not.  |
| _____1=Rarely:       | If parent says child might only notice a malfunctioning device (using verbal or nonverbal indication) once in a while.   |
| _____2=Occasionally: | If parents can give some examples of when the child would recognize a malfunctioning device (or if headpiece has fallen off) more than 50% of the time and may be beginning to distinguish some device problems from others. |
| _____3=Frequently:   | If parent gives examples and/or child can often distinguish different types on malfunction (e.g. bad cord vs. weak batteries).   |
| _____4=Always:       | If child would never go without immediately detecting and reporting a problem with his/her unit and can easily identify what the problem is.   |

PARENT REPORT:

3. Does the child spontaneously respond to his name in quiet when called auditorially-only with no visual cues?

Ask, "If you called \_\_\_\_\_'s name from behind his back in a quiet room with no visual cues, what percentage of the time would he respond the first time you called?"

- \_\_\_\_\_0=Never:            If the child never does.
- \_\_\_\_\_1=Rarely:            If he has done it only once or twice or only with multiple repetitions.
- \_\_\_\_\_2=Occasionally:    If he does it about 50% of the time on the first trial or does it consistently but only when parent repeats his name more than once.
- \_\_\_\_\_3=Frequently:        If he does it at least 75% of the time on the first try.
- \_\_\_\_\_4=Always:            If he does this reliably and consistently, responding every time just as a hearing child would. Ask for examples.

PARENT REPORT:

4. Does the child spontaneously respond to his name in the presence of background noise when called auditorially only with no visual cues?

Ask, "If you called \_\_\_\_\_'s name from behind his back with no visual cues in a noisy room, with people talking and the TV on, what percentage of time would he turn around and respond to you the first time you called"?

- \_\_\_\_\_0=Never:            If the child never does.
- \_\_\_\_\_1=Rarely:            If the child has done it only once or twice or only with multiple repetitions.
- \_\_\_\_\_2=Occasionally:    If he does it about 50% of the time on the first trial or does it consistently but, only when the parent repeats his name more than once.
- \_\_\_\_\_3=Frequently:        If he does it at least 75% of the time on the first try.
- \_\_\_\_\_4=Always:            If he does this reliably and consistently, responding every time just as a normal hearing child would. Ask for examples.

PARENT REPORT:

5. Does the child spontaneously alert to environmental sounds (doorbell, telephone) in the home without being told or prompted to do so?

Ask, "Tell me about the kinds of environmental sounds \_\_\_\_\_ responds to at home and give me examples".  
Question parents to be sure the child is responding auditorially only with no visual cues. Examples could be asking about the telephone, doorbell, dog barking, water running, smoke alarm, toilet flushing, engines revving, horns honking, microwave bell, washer changing cycles, thunder, etc. Examples must be child alerting spontaneously and not prompted by parent.

- \_\_\_\_\_0=Never: If parent can give no examples or if child responds only after a prompt.
- \_\_\_\_\_1=Rarely: If parent can give only one or two examples, or give several examples where the child's responses are inconsistent.
- \_\_\_\_\_2=Occasionally: If child responds about 50% of the time to more than two environmental sounds.
- \_\_\_\_\_3=Frequently: If child consistently responds to many environmental sounds at least 75% of the time.
- \_\_\_\_\_4=Always: If child basically responds to environmental sounds the way a hearing child would. If there are a number of sounds which regularly occur to which the child does not alert (even if he consistently responds to two sounds such as the phone and the doorbell) he would score no higher than Occasionally.

PARENT REPORT:

6. Does the child alert to auditory signals spontaneously when in new environments?

Ask, "Does your child show curiosity (verbally or nonverbally) about new sounds when in unfamiliar settings, such as in someone else's home or a restaurant by asking, "What was that sound?" or "I hear something?" A younger child may provide nonverbal indications that s/he has heard a new sound with eye widening, looking quizzical, searching for the source of the new sound, imitation of the new sound (such as when playing with a new toy). Examples parents have reported are children asking about clanging dishes in a restaurant, bells dingling in a department store, PA systems in public buildings, unseen baby crying in another room.

- \_\_\_\_\_0=Never: If parents can give no examples.
- \_\_\_\_\_1=Rarely: If parents can give only one or two examples.
- \_\_\_\_\_2=Occasionally: If child has done this numerous times and parents can give examples.
- \_\_\_\_\_3=Frequently: If parents can give numerous examples and this is a common occurrence.
- \_\_\_\_\_4=Always: If very few sounds occur without the child asking about them (or, in the case of the younger child, showing curiosity nonverbally).

PARENT REPORT:

7. Does the child spontaneously RECOGNIZE auditory signals that are part of his/her school or home routine?

Ask, "Does \_\_\_\_\_ regularly recognize or respond appropriately to auditory signals in his/her classroom (e.g., school bell, PA system, fire alarm) or in the home (e.g., running to the window to see which family member is home when s/he hears the garage door opening; going to the table when the bell of the microwave goes off, signaling that the food is cooked and it is time to eat) with no visual cues or other prompts?"

- \_\_\_\_\_0=Never:            If s/he never does it.
- \_\_\_\_\_1=Rarely:            If there are one or two instances.
- \_\_\_\_\_2=Occasionally:    If s/he responds to these signals about 50% of the time.
- \_\_\_\_\_3=Frequently:      If many examples are given and the child does it 75% of the time.
- \_\_\_\_\_4=Always:          If s/he has clearly mastered this skill and does it all of the time.

PARENT REPORT:

8. Does the child show the ability to discriminate spontaneously between two speakers, using audition alone (such as knowing mother's vs. father's voice, or parents' vs. sibling's voice)?

Ask, "Can \_\_\_\_\_ tell the difference between two voices, like Mom or Dad's (or Susie's or John's) just by listening to them?"

- \_\_\_\_\_0=Never:            If parent can give no examples of the child discriminating between two speakers.
- \_\_\_\_\_1=Rarely:            If one or two examples are given.
- \_\_\_\_\_2=Occasionally:    If several examples are given and the child does this at least 50% of the time.
- \_\_\_\_\_3=Frequently:      If many examples are given and the child does this 75% of the time.
- \_\_\_\_\_4=Always:          If always done and the child shows no errors in doing this.

PARENT REPORT:

9. Does the child spontaneously know the difference between speech and nonspeech stimuli with listening alone?

Ask, "Does \_\_\_\_\_ recognize speech as a category of sounds that are different from nonspeech sounds? For example, if you were standing behind your child and a noise occurred, would s/he ever say, "What was that noise?" In the case of the younger children, ask, "Would \_\_\_\_\_ ever run into the next room to search for a family member's voice versus looking out the window for a dog or fire truck.?"

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| _____0=Never:        | If parent can give no examples of the child discriminating speech from nonspeech. |
| _____1=Rarely:       | If one or two examples are given.   |
| _____2=Occasionally: | If several examples are given and the child does this at least 50% of the time.   |
| _____3=Frequently:   | If many examples are given and the child does this 75% of the time.               |
| _____4=Always:       | If always done and the child shows no errors in doing this.                       |

PARENT REPORT:

10. Does the child spontaneously associate vocal tone (anger, excitement, anxiety) with its meaning based on hearing alone?

Ask, "By listening only, can \_\_\_\_\_ tell the emotion conveyed in someone's voice such as angry voice, and excited voice, etc.?" (e.g., Father yells at child to "hurry up" through the bathroom door and the child responds, "Why are you mad?" and yells back at him. In the case of the younger child, the child starts to cry because of the angry sound in his/her voice). Another example is if the parent is reading a new book to a young child while s/he is sitting on the parent's lap and cannot see their parent's face, (e.g., Mom says "the boy yelled "Let's go!" and the child says "The boy is happy to go to the park").

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| _____0=Never:        | If the parent can give no examples or if the child has never had the opportunity to do this. |
| _____1=Rarely:       | If the child does it 25% of the time.  |
| _____2=Occasionally: | If the child does it about 50% of the time.  |
| _____3=Frequently:   | If s/he does it 75% of the time.   |
| _____4=Always:       | If s/he consistently can identify more than one emotion in the listening alone condition.    |

PARENT REPORT:

Total points correct: \_\_\_\_\_/40