**SUGAR Procedures**

**COLLECTION: SUGAR ROBUST SAMPLING**

**Collect only 10 minutes of conversation**. This amount of time should be more than enough.

The most important aspect of talking with the child is to **avoid as many yes/no or product (one-word answer) questions as possible and to ask process question (How did/do…) or use “Tell me…” or “I wonder…” statements. Practice before collecting.**

* Turnabouts = Comment + Cue for child to talk
* Process Questions
	+ *How did…*
	+ *What happened…*
	+ *Tell me…*
	+ *I wonder what you…*
	+ *Why did…*
		- More than one-word “why” questions
		- Not appropriate for kids below 4.5 yrs
* Use narrative elicitations instead of yes/no questions
	+ Build on what the child says or on what you know
	+ Begin with…
		- *Your mom says you…. That sounds like fun. Tell me what happened.*
		- *I know that you…. Tell me what happened.*
		- *Did you ever…. Tell me what you did.*

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**SUGAR RAPID TRANSCRIPTION**

**Transcribe the sample directly onto your computer. Only type the child’s utterances, NOT yours. Do NOT include identifying data. Set “Numbering”, found on the tool bar in the “Paragraph” section**, to ensure that you only type 50 utterances.Remember that an utterance is a sentence or less, separated by a pause, drop in voice, inhalation or combination of these. Do not belabor the process of utterance determination. Stop when you have 50 utterances.

**PROCEDURES FOR TRANSCRIBING** (Think *speed*!)

* Type in plain English as spoken.
* Omit immediate child imitations of the other speaker.
* Highlight all utterances that are imperative or elliptical so when you analyze each you will know that some information has been omitted by the child.
* Omit punctuation to save time.
* Do NOT embellish the child’s utterance. In other words, don’t add morphemes that are missing.
* Type words in full even when pronunciation omits portions as follows:
	+ *Talkin’* should be transcribed as “Talking”
	+ *Gonna, wanna, gotta, hafta* should be transcribed as “going to, want to, got to, have to”
* Type contractions as is. In other words, *don’t* should be typed as “don’t” and *I’m* as “I’m”
* Do NOT include fillers (uhhhh, ummm, like, you know)
* Do NOT include disfluences. **Only include the fullest form of what the child actually said**. Example: “He said…he says…he tell me secrets” becomes “He tell me secrets.”
* Do NOT include repeated words unless it is for emphasis, as in “He went down down down in the cave.”
* Don’t spend an inordinate amount of time deciphering unintelligible utterances. If the entire utterance is unintelligible, omit it. If a word is unintelligible, type nonsense, such as “XX” in place of the word. If an utterance contains two or more unintelligible words, omit the entire utterance.
* If an utterance contains more than two clauses joined with *and*, consider it a run-on sentence and divide as follows:

*We went to the circus and I saw clowns and there were elephants and I got this sweet sticky stuff.but I didn’t like it so I gave it to my sister.*

 Becomes…

*We went to the circus and I saw clowns.*

*There were elephants and I got this sweet sticky stuff but I didn’t like it so I gave it to my sister.*

An utterance has only one “and” joining clauses. Do NOT do this with other conjunctions. Note in the previous example that the initial “and” was omitted in the second utterance.

**Stop at 50 utterances. Save the document. Come out of your document. Hit Control-S for PC or Command-S for Apple/Mac to save.**

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**SUGAR ANALYSIS**

**WORD COUNT**

**Before doing any actual analysis, make sure the “Numbering” function is off. Nothing else should be on the page accept the child’s 50 utterances. Turn “off” the “Numbering function by highlighting the entire document (Control-A for PC, Command-A for Apple/Mac), going to the “Paragraph” section of the Toolbar and clicking on “Numbering.”**

**Word count is on the tool bar at the bottom of your screen. Record the number of words before moving on.**

**MLU**

**Words are already separated by a space. Now set off bound morphemes in the same way.** For example, “unhappily” would be “un happi ly,” “bunnies” would be “bunnie s,” and “can’t” will be “ca n’t.” **Don’t worry about the spelling of the pieces or about leftover apostrophes…time is of the essence here**. For example, **“**I’ m un happi ly marrie d” counts as 7 words, although we know it’s 7 morphemes were counting. **Follow the rules below for counting morphemes.**

RULES FOR MORPHEME COUNTING (in order to speed the process).

* Count as one morpheme (Do not separate with a space)

Ritualized reduplications (*choo-choo*)

Irregular past tense verbs (*went*)

Diminutives (*doggie*)

Auxiliary verbs

Irregular plurals (*men*)

* Count as two morphemes (Separate with a space)

Possessive nouns (noun + *‘s* or *s’*)

Plural nouns (noun + *s*)

Third person singular present tense verbs (verb + *s*)

Regular past tense verbs (verb + *ed*)

Present progressive verbs (verb + *ing*)

* Count as one morpheme each word in Proper names
* Additional bound morphemes to offset with a space

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Morpheme | Example |  | Morpheme | Example |
| -ingAdjectiveGerund | Smiling girlI love hiking |  | -edAdjective | Powdered sugar |
|  -ly | Mostly |  | -ment | Entertainment |
| dis- | Dislike |  | re- | Refill |
| -erComparative | Bigger |  | -yAdjective | Bumpy |
| -estSuperlative | Biggest |  | -sion-tion | DiscussionInvitation |
| -ful | Thoughtful |  | un- | Unhappy |
| -ish | Foolish |  |  |  |

* Count contractions (*do n’t, I’ d, he’ s, we’ ll, they’ ve*) as two morphemes

**Separate contracted words even when the stem violates traditional spelling**. We’re not grading for spelling, so just leave the pieces as is in order to save time. For example, *won’t* will end up as the two morphemes “wo” and “n’t.” Although this seems odd, go with it.

**The number of morphemes will appear in the word count on the tool bar at the bottom of the screen. Record the number of morphemes. Divide the number of morphemes by 50. Or…Multiply by 2 and use 2 decimal places. For example, 208 morphemes X 2 = 416. Two decimal places = 4.16.**

**Pull out of the document by clicking the X in the upper right corner. A pop-up will ask if you want to save. DO NOT SAVE THE DOCUMENT. The sample now reverts to its original form.**

**WORDS/SENTENCE**

**Reopen the sample. Before doing any actual analysis, make sure the “Numbering” function (In the paragraph section on the toolbar at the top) is off. Nothing else should be on the page accept the child’s 50 utterances.**

**Delete all utterances that are NOT sentences. Follow the rules for determining a sentence.**

Both a sentence and a clause contain a subject and a verb, as in *Mommy walked*. A sentence can have more than one clause, as in *Mommy walked* but *I ran*. (2 clauses, 1 sentence). The critical element in a sentence is a verb.

**PROCEDURES FOR DETERMINING A SENTENCE**

* Count imperatives as sentences. In an imperative, the subject is understood to be *you*.

Come here. ([*You*] *come* here.)(1 clause, 1 sentence)

* Count as a clause and a sentence when either *the subject or a portion of the verb is omitted* because of ellipsis.

Examples:

Who can go with me?

I can = 1 clause (S + aux. verb, so 1 clause, I sentence)

What did you do?

*Ran home.* (Main verb, so 1 clause, 1 sentence)

* NEVER count as a clause or a sentence if the entire verb is missing, as in “Me” in response to “Who ate the cookies?” Other examples include “What?”, “Why?”, “Okay”, “Yes”, “Sure”, and the like.

**Once you have only sentences represented, note the total words from the word count section on the toolbar at the bottom of the screen. Record this number.**

**Switch on the “Numbering” function again, found in the paragraph section of the tool bar at the top of the screen. With this on, you can tell how many sentences you have.**

**Divide the number of words by the number of sentences to get the mean words/sentence.** Record this value somewhere.

**Leave the “Numbering” function on.**

**CLAUSES/SENTENCE**

You know the number of sentences, so now all you need is the number of clauses. **Locate the clauses. At the beginning of each clause within a sentence, hit the “Enter” key. Remember that the definition for a clause and a sentence are similar so again use the RULES FOR DETERMINING A SENTENCE.**

**PROCEDURES FOR DETERMINING A CLAUSE**

* Clauses may be either conjoined (Compound sentence) or embedded (Complex sentence)

Conjoined: I like ice cream but I don’t like the kind with nuts.

 Because I was sick, I stayed home.

 Embedded:

Noun phrase complement (Finishes the verb): I know you ate my cookie = I know + you ate my cookie [Often found with cognitive verbs such as *know, remember, forget, think*, and verbs such as *say* and the slang *like* (Mom was like you better come here.)]

Relative clause (Modifies a noun): I want the one you have = I want the one + you have

* Count *compound subjects or verbs* as a single clause/sentence.

Mommy walked and ran all the way home = 1 clause, 1 sentence (1 subject but 2 verbs)

Bobby and Jim ran fast = 1 clauses, 1 sentence (2 subjects but 1 verb)

I ate cookies and milk. Combined objects don’t count as separate clauses either.

No one is looking over your shoulder to see if each clause is exactly correct or that the remainder may be a partial clause. Time is of the essence. For example, “The boy who’s in my class is yukky” consists of two clauses, “The boy is yukky” and “Who is in my class.” Separate these as follow:

*The boy who’s in my class is yukky*

Are these correct grammatically? Of course not. Does it count correctly as two clauses? Yes, and that’s our purpose here. We can go back later and decide on the grammar just as we would go back and interpret test results.

When you have separated the clauses, **note the number and divide it by the same number of sentences as in the previous step.**

**SUGAR GUIDELINES FOR DETERMINING LANGUAGE IMPAIRMENT**

Before you make a decision about a child having a language impairment, ask yourself the following questions:

* Is the sample truly robust?
* Did the examiner ask fewer than 10 questions that could be answered with yes/no or a one-word response?
* Was the sampling activity one that offered the child an opportunity to provide extended utterances.

If you can answer “Yes” to all of these and standardized test results and other methods also suggest a language impairment, do a sub-analysis to determine areas for possible intervention.

**INTERPRETING THE SUGAR METRICS**

After calculating the four SUGAR metrics, use the Pavelko and Owens (in press) article to guide decisions in determining evidence-based ditscores. The highest diagnostic accuracy was a combination of -1SD for MLUS and a -1.25SD for CPS.

**SUGAR SUB-ANALYSIS**

To do a sub-analysis, select the appropriate sub-analysis form based on the chronological age of the child. Each form is different, depending on the structures seem in 70% of the samples of children that age or younger.

Open the language sample file for the child.

If the utterances are numbered, highlight the entire document (Control-A or Command-A), **),** go to the “Paragraph” section of the Toolbar and clicking on “Numbering” to delete all numbers.

With the sample still highlighted, select Control-C or Command-C.

Go to the Sub-analysis form, highlight all utterance spaces, then select Control-V or Command-V. The sample should appear in the utterance spaces.

You are now free to begin locating structures in the sample. A guide is below.

Here’s a freebie:

**CALCULATING TYPE/TOKEN RATIO**: Go to <http://www.usingenglish.com/resources/text-statistics.php>. Copy and paste the entire sample without numbering. Typically functioning 3-8 year old children should have a TTR of .45-.55. Scores below .45 indicate that the child is using the same words over and over. Be cautious because TTR is situationally variable. If you are playing a game, the word “Turn” may occur many times.

Pavelko, S.L., Owens, R.E., Ireland, M., & Hahs-Vaughn, D.L. (2016). Use of language sample analysis by school based SLPs: Results of a nationwide survey. *Language, Speech and Hearing Services in Schools, 47*, 246-258.

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Owens, R.E., & Pavelko, S.L. (2017). Relationships among conversational language samples and norm referenced test scores. *Clinical Archives of Communication Disorders*, *2*(1), 43-50.

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Owens, R.E., Pavelko, S.L., & Bambinelli, D. Moving Beyond MLU: Analyzing Language Samples to Identify Intervention Targets. (2018). *Perspectives ASHA SIGs, 3* (SIG.1) 5-22. Doi: 10.1044/persp3.SIG1.5

Pavelko, S.L., & Owens, R.E. (in press). Diagnostic Accuracy of the SUGAR Measures for Identifying Children with Language Impairment. *Language, Speech, and Hearing Services in Schools..*