



Minnesota State University Moorhead

Speech/Language/Hearing Sciences Department

Screening Protocols for Cleft Palate Team Speech-language Pathologists

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Speech & Resonance Screening Tool

For Children with Cleft Palate

Ages: birth to 12 months

From direct observation, determine child's phonetic repertoire and "Babbling Level": Check level, then record all *observed* productions.

Prebabbling:

Birth to 1 month : Stage 1 Phonation (Oller, 1980; 1986)

☐ Phonation with reflexive vocalizations or quasi-resonant nuclei (vowel precursors)

2 to 3 months: Stage 2 Coo & Goo (Oller, 1980; 1986)

☐ Cooing/ gurgling of back vowels & primitive back consonant-like productions:

[], [], [], [], [], []

4 to 6 months: Stage 3 Exploration-Expansion (Oller, 1980; 1986)

Vocal Play:

☐ Vocal play with non speech noises e.g. 'raspberries', squeals, friction noises, isolated fully resonant nuclei (vowel-like sounds)

Babble: Use of both vowels and consonants

☐ No true consonants, i.e., Stoel-Gammon's Level 1 (1989)

[], [], [], [], [], []

☐ Precanonical babble of prolonged resonants, prolonged fricatives, nasals, glides, glottal stops

[], [], [], [], [], []

7 to 9 months: Stage 4 Canonical Babbling (Oller, 1980; 1986)

(/b/, /p/, /t/, /d/, /k/, /g/, /m/, /n/, / ŋ /, and eventually glides /w/ and /j/)

☐ Canonical babble with stops; and/or one true C

[], [], [], [], [], [], [], []

☐ Canonical babble with one true C (may be repeated) (stops, nasals, fricatives, resonants; but not glides /w/, /j/, nor glottals /h/, /?/); i.e., Stoel-Gammon's Level 2

[], [], [], [], [], [], [], []

☐ Canonical babble with at least 2 different true Cs; i.e., Stoel-Gammon's Level 3

[], [], [], [], [], [], [], []

10 to 12 months: Stage 5 Variegated babbling (Oller, 1980; 1986)

- ☐ Variegated babble: babbling produced with rhythm and variety of vowels and consonants patterns that have adult-like intonations and CV sequences
[b u d i z], [t e k r o s], [m a p l e] [n e i j o]
- ☐ Jargon: utterances with strings of syllables which have sentence-like intonation and prosodic characteristics, but without attributed meaning
[b u d i z], [t e k r o s], [m a p l e] [n e i j o]
- ☐ Vocables: word-like productions that are non-meaningful, but sound like a true word; may be used with a consistent gesture
[b u d i z], [t e k r o s], [m a p l e] [n e i j o]
- ☐ Protowords: first meaningful production (to infant but not adult); not based on adult phonological patterns, and without adult like phonological-semantic linkage.
[b u d i z], [t e k r o s], [m a p l e] [n e i j o]
- ☐ First “true” words: Similar to adult word form; used repeatedly in same context, correctly; semantically related to object, action, person, location, etc.
[b u d i z], [t e k r o s], [m a p l e] [n e i j o]

Adapted from Oller, 1980; 1986; Stoel-Gammon, 1989; Velleman, 2003; Owens, 2004; Menn, 1975; Kelman, M. in Hodson (2007); Broen & Moller, (2001).

List for possible words elicitation -- by parents from child near 12 months age:

bye-bye	mama
hi	no
Dada	mo(re)
pu(ppy)	
u(p)	
a(ll) (g)o(ne)	
uh-oh!	

(sounds in parenthesis and/or final consonants are not expected...)

Note: An excellent substitution for this protocol would be Velleman's (2003) *Vocal Development Checklist Form*, an adaptation of Proctor's (1989) *Developmental Vocal Assessment Protocol*. In light of the brevity of time during Cleft Palate team assessments, this shorter form may be helpful.

Speech & Resonance Screening Tool

For Children with Cleft Palate

For Ages: 1 to 2 years

Articulation Screening

High Pressure Consonants			
Stops /p,b/	Initial	Medial	Final
	bye pop pup	bye- bye papa uh-oh	up
Fricatives /h/	Initial	Medial	Final
	high he hop	Does not Apply	Does not apply
Sonorants			
Glides /w/	Initial	Medial	Final
	wow we	Does not apply	Does not apply

(Adapted from: Broen & Moller, 2001; Peterson-Falzone, et al., 2006; p. 73)

Presence of compensatory articulations and atypical articulations

- ☐ Glottal Stops
 ☐ Pharyngeal Fricatives
 ☐ Pharyngeal stop
 ☐ Pharyngeal affricate
 ☐ Velar fricative
 ☐ Posterior nasal fricative
 ☐ Mid-dorsum palatal
 ☐ Atypical backed articulations
 ☐ Vowel Deviations
 ☐ Other (specify) _____

Intelligibility / Understandability Rating (Peterson-Falzone, et al., 2006; p. 75)

- ☐ 0=Understandable all the time
 ☐ 1=Understandable almost all the time
☐ 2=Hard to understand some of the time
 ☐ 3=Hard to understand most of/ all the time

Comments concerning articulation:

Comments concerning resonance:

Speech & Resonance Screening Tool

For Children with Cleft Palate

For Ages: 2 to 3 years

Articulation Screening

High Pressure Consonants			
Stops /p,b,t,d,k,g/	Initial	Medial	Final
	bed bye cat do go good pie two	daddy hippo maybe puppy yucky	big bite boat book eat hug peep up
Fricatives /h, f/	food foot he hey hop who		if huff
Sonorants			
Glides /w,j/	Initial	Medial	Final
	what why wet wow yeah you yuck	owie yo-yo	Does not apply

(Adapted from: Broen & Moller, 2001; Peterson-Falzone, et al., 2006; p. 73)

Presence of compensatory articulations and atypical articulations

- ☐ Glottal Stops
 ☐ Pharyngeal Fricatives
 ☐ Pharyngeal stop
 ☐ Pharyngeal affricate
 ☐ Velar fricative
☐ Posterior nasal fricative
 ☐ Mid-dorsum palatal
 ☐ Atypical backed articulations
 ☐ Vowel Deviations
☐ Other (specify) _____

Intelligibility / Understandability Rating (Peterson-Falzone, et al., 2006; p. 75)

- ☐ 0=Understandable all the time ☐ 1=Understandable almost all the time
☐ 2=Hard to understand some of the time ☐ 3=Hard to understand most of/ all the time

Comments concerning articulation:

Comments concerning resonance:

Speech & Resonance Screening Tool

For Children with Cleft Palate

For Ages: 3 to 4 years

Articulation Screening

High Pressure Consonants			
Stops /p,b,t,d,k,g/	Initial	Medial	Final
	bike black cup day get kite two	bubble doggie icky sticky	bed book boat dip pot sick stop
Fricatives /h, s, f, v, ʃ/ & Affricates /dʒ, tʃ/	chip fit he see she spy	choo-choo hissy puffy	dish fish kiss hoops house off
Sonorants			
Glides /w, j/	Initial	Medial	Final
	wet wipe wish why yo-yo yuck yes	kiwi yo-yo	Does not apply
Liquids /l,(r)/	like look red rock	yellow silly dolly fairy	ball hole wiggle car ear

(Adapted from: Broen & Moller, 2001; Peterson-Falzone, et al., 2006; p. 73)

Presence of compensatory articulations and atypical articulations

- ☐ Glottal Stops
 ☐ Pharyngeal Fricatives
 ☐ Pharyngeal stop
 ☐ Pharyngeal affricate
 ☐ Velar fricative
 ☐ Posterior nasal fricative
 ☐ Mid-dorsum palatal
 ☐ Atypical backed articulations
 ☐ Vowel Deviations
 ☐ Other (specify) _____

Intelligibility / Understandability Rating (Peterson-Falzone, et al., 2006; p. 75)

- ☐ 0=Understandable all the time
 ☐ 1=Understandable almost all the time
☐ 2=Hard to understand some of the time
 ☐ 3=Hard to understand most of/ all the time

Comments concerning articulation:

Oral/Nasal Resonance Screening

Screen for inappropriate nasality

High vowel /u, i/ single words with pressure consonants								
Initial Pressure consonant	Nasalized	Nasal Emission	Medial, e.g. "eagle"	Nasalized	Nasal Emission	Final Pressure consonant	Nasalized	Nasal Emission
beat	<input type="checkbox"/>	<input type="checkbox"/>	doodle	<input type="checkbox"/>	<input type="checkbox"/>	eat	<input type="checkbox"/>	<input type="checkbox"/>
blue	<input type="checkbox"/>	<input type="checkbox"/>	leader	<input type="checkbox"/>	<input type="checkbox"/>	keep	<input type="checkbox"/>	<input type="checkbox"/>
feet	<input type="checkbox"/>	<input type="checkbox"/>	people	<input type="checkbox"/>	<input type="checkbox"/>	loop	<input type="checkbox"/>	<input type="checkbox"/>
do	<input type="checkbox"/>	<input type="checkbox"/>				oops	<input type="checkbox"/>	<input type="checkbox"/>

(Adapted from: Bzoch, 1991; Brodsky, Holt, & Ritter-Schmidt, 1992; Peterson-Falzone, et al. 2006; p. 73)

☐ NE due to VPI ☐ NE due to fistula ☐ NE specific to phoneme

Rate words with non-nasal contexts for inappropriate nasality

(Peterson-Falzone, Hardin-Jones, & Karnell, 2001; p. 226)

Normal		Hypernasality					
←-----		-----→					
+1		2	3	4	5	6	7
		Mild		Moderate		Severe	

- ☐ Intermittent hypernasality across several utterances
☐ Hypernasal resonance worsens across several utterances

Screen for inappropriate denasality

Initial nasal	+ or -	Medial	+ or -	Final Nasal	+ or -
knock	<input type="checkbox"/>	finger	<input type="checkbox"/>	him	<input type="checkbox"/>
no	<input type="checkbox"/>	funny	<input type="checkbox"/>	sing	<input type="checkbox"/>
noodle	<input type="checkbox"/>	monkey	<input type="checkbox"/>	sting	<input type="checkbox"/>
mad	<input type="checkbox"/>	tummy	<input type="checkbox"/>	mine	<input type="checkbox"/>

(Adapted from: Brodsky, Holt, & Ritter-Schmidt, 1992; Peterson-Falzone, et al. 2006; p. 73)

Rate nasal context words for lack of nasality and/or cul de sac resonance

(Peterson-Falzone, Hardin-Jones, & Karnell, 2001; p. 226)

Hyponasality	Normal	Hypernasality					
←-----		-----→					
-1	+1	2	3	4	5	6	7
		Mild		Moderate		Severe	

- ☐ Cul de sac resonance across several utterances

Comments concerning resonance:

Speech & Resonance Screening Tool

For Children with Cleft Palate

For Ages: 4 to 6 years

Articulation Screening

High Pressure Consonants			
Stops /p, b, t, d, k, g/	Initial	Medial	Final
	back bees cut dog go pig tug	copy jiggle obey pebble tickle zipper	bug cap cat sad stick tub
Fricatives /h, s, z, f, v, θ, ð, ʒ, ʃ/ & Affricates /dʒ, tʃ/	chair five fits how juice ship this who zip soap	bathtub before bridges busy catches fishes kisses mother lazy	bath beach buzz cough page stove zips
Sonorants			
Glides /w, j/	Initial	Medial	Final
	waffle white which yes yellow	kiwi away yo-yo	Does not apply
Liquids /l, r/	lip lock red rat	below color follow carrot	call carol purple ear paper pepper stair

(Adapted from: Broen & Moller, 2001; Peterson-Falzone, et al., 2006; p. 73)

Presence of compensatory articulations and atypical articulations

- ☐ Glottal Stops
 ☐ Pharyngeal Fricatives
 ☐ Pharyngeal stop
 ☐ Pharyngeal affricate
 ☐ Velar fricative
☐ Posterior nasal fricative
 ☐ Mid-dorsum palatal
 ☐ Atypical backed articulations
 ☐ Vowel Deviations
☐ Other (specify) _____

Intelligibility / Understandability Rating (Peterson-Falzone, et al., 2006; p. 75)

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 ☐ 1=Understandable almost all the time
☐ 2=Hard to understand some of the time
 ☐ 3=Hard to understand most of/ all the time

Comments concerning articulation:

Oral/Nasal Resonance Screening

Screen for inappropriate nasality

High vowel /u, i/ single words with pressure consonants								
Initial Pressure consonant	Nasalized	Nasal Emission	Medial, e.g. "eagle"	Nasalized	Nasal Emission	Final Pressure consonant	Nasalized	Nasal Emission
boot	<input type="checkbox"/>	<input type="checkbox"/>	doodle	<input type="checkbox"/>	<input type="checkbox"/>	beep	<input type="checkbox"/>	<input type="checkbox"/>
zoo	<input type="checkbox"/>	<input type="checkbox"/>	boogie	<input type="checkbox"/>	<input type="checkbox"/>	food	<input type="checkbox"/>	<input type="checkbox"/>
keys	<input type="checkbox"/>	<input type="checkbox"/>	easy	<input type="checkbox"/>	<input type="checkbox"/>	leap	<input type="checkbox"/>	<input type="checkbox"/>
jeep™	<input type="checkbox"/>	<input type="checkbox"/>	people	<input type="checkbox"/>	<input type="checkbox"/>	loop	<input type="checkbox"/>	<input type="checkbox"/>

(Adapted from: Bzoch, 1991; Brodsky, Holt, & Ritter-Schmidt, 1992; Peterson-Falzone, et al. 2006; p. 73)

☐ NE due to VPI ☐ NE due to fistula ☐ NE specific to phoneme

Rate words with non-nasal contexts for inappropriate nasality

(Peterson-Falzone, Hardin-Jones, & Karnell, 2001; p. 226)

Normal		Hypernasality					
←-----		-----→					
+1		2	3	4	5	6	7
		Mild		Moderate		Severe	

☐ Intermittent hypernasality across several utterances
☐ Hypernasal resonance worsens across several utterances

Screen for inappropriate denasality

Initial nasal	+ or -	Medial	+ or -	Final Nasal	+ or -
maps	<input type="checkbox"/>	hamper	<input type="checkbox"/>	fishing	<input type="checkbox"/>
nice	<input type="checkbox"/>	singer	<input type="checkbox"/>	playing	<input type="checkbox"/>
new	<input type="checkbox"/>	winner	<input type="checkbox"/>	rung	<input type="checkbox"/>
				tongue	<input type="checkbox"/>
				vacuum	<input type="checkbox"/>
				zoom	<input type="checkbox"/>

(Adapted from: Brodsky, Holt, & Ritter-Schmidt, 1992; Peterson-Falzone, et al. 2006; p. 73)

Rate nasal context words for lack of nasality and/or cul de sac resonance

(Peterson-Falzone, Hardin-Jones, & Karnell, 2001; p. 226)

Hyponasality	Normal	Hypernasality					
←-----		-----→					
-1	+1	2	3	4	5	6	7
		Mild		Moderate		Severe	

☐ Cul de sac resonance across several utterances

Comments concerning resonance:

Speech & Resonance Screening Tool

For Children with Cleft Palate

For Ages: 6 to 8 years

Articulation Screening

High Pressure Consonants						
Stops /p,b,t,d,k,g/	Initial		Medial		Final	
	pizza party birthday toys dark cake grape cows		first-grade hopscotch kickball lucky puddle people riddle sitter sparkle soccer		breakfast chalk clap eight frog grab outside surfboard	
Fricatives /h, s, z, f, v, θ, ð, ʒ, ʃ/ & Affricates /dʒ, tʃ/	cherry football house joke shoelace spider that vase zipper first says		bathroom birthday bridges eraser feather flashlight sister safety scratches teacher yahoo		brave	
					catch crash garbage giraffe itches recess puzzles tooth six	
Sonorants						
Glides /w, j/	Initial		Medial		Final	
	wallet whale where yellow yes yipee		awake always actually		Does not apply	
Liquids /l, r/	laugh	race	asleep	arrow	fall	car
	light	rabbit	dollar	carry	football	bear
	lips	robot	elephant	serious	school	four
			pillow		tall	

(Adapted from: Broen & Moller, 2001; Peterson-Falzone, et al., 2006; p. 73)

Presence of compensatory articulations and atypical articulations

- ☐ Glottal Stops
 ☐ Pharyngeal Fricatives
 ☐ Pharyngeal stop
 ☐ Pharyngeal affricate
 ☐ Velar fricative
☐ Posterior nasal fricative
 ☐ Mid-dorsum palatal
 ☐ Atypical backed articulations
 ☐ Vowel Deviations
☐ Other (specify) _____

Intelligibility / Understandability Rating (Peterson-Falzone, et al., 2006; p. 75)

- ☐ 0=Understandable all the time
 ☐ 1=Understandable almost all the time
☐ 2=Hard to understand some of the time
 ☐ 3=Hard to understand most of/ all the time

Comments concerning articulation:

Oral/Nasal Resonance Screening

Screen for inappropriate nasality

High vowel /u, i/ single words with pressure consonants

Initial Pressure consonant	Nasalized	Nasal Emission	Medial, e.g. "eagle"	Nasalized	Nasal Emission	Final Pressure consonant	Nasalized	Nasal Emission
deep	<input type="checkbox"/>	<input type="checkbox"/>	easy	<input type="checkbox"/>	<input type="checkbox"/>	leaf	<input type="checkbox"/>	<input type="checkbox"/>
peak	<input type="checkbox"/>	<input type="checkbox"/>	leader	<input type="checkbox"/>	<input type="checkbox"/>	steep	<input type="checkbox"/>	<input type="checkbox"/>
pool	<input type="checkbox"/>	<input type="checkbox"/>	super	<input type="checkbox"/>	<input type="checkbox"/>	fruit	<input type="checkbox"/>	<input type="checkbox"/>
tube	<input type="checkbox"/>	<input type="checkbox"/>	loser	<input type="checkbox"/>	<input type="checkbox"/>	loot	<input type="checkbox"/>	<input type="checkbox"/>

(Adapted from: Bzoch, 1991; Brodsky, Holt, & Ritter-Schmidt, 1992; Peterson-Falzone, et al. 2006; p. 73)

☐ NE due to VPI ☐ NE due to fistula ☐ NE specific to phoneme

Rate words with non-nasal contexts for inappropriate nasality

(Peterson-Falzone, Hardin-Jones, & Karnell, 2001; p. 226)

Normal		Hypernasality			
←-----		-----→			
+1		2	3	4	5
		Mild		Moderate	
					6 7
					Severe

☐ Intermittent hypernasality across several utterances
☐ Hypernasal resonance worsens across several utterances

Screen for inappropriate denasality

Initial nasal	+ or -	Medial	+ or -	Final Nasal	+ or -
magic	<input type="checkbox"/>	money	<input type="checkbox"/>	nine	<input type="checkbox"/>
moon	<input type="checkbox"/>	winner	<input type="checkbox"/>	tongue	<input type="checkbox"/>
name	<input type="checkbox"/>	singer	<input type="checkbox"/>	twin	<input type="checkbox"/>
knee	<input type="checkbox"/>	summer	<input type="checkbox"/>	worm	<input type="checkbox"/>

(Adapted from: Brodsky, Holt, & Ritter-Schmidt, 1992; Peterson-Falzone, et al. 2006; p. 73)

Rate nasal context words for lack of nasality and/or cul de sac resonance

(Peterson-Falzone, Hardin-Jones, & Karnell, 2001; p. 226)

Hyponasality	Normal	Hypernasality			
←-----		-----→			
-1	+1	2	3	4	5
		Mild		Moderate	
					6 7
					Severe

☐ Cul de sac resonance across several utterances

Comments concerning resonance:

Speech & Resonance Screening Tool

For Children with Cleft Palate

For Ages: 8 years and older

Articulation Screening

High Pressure Consonants			
	Initial	Medial	Final
Stops /p, b, t, d, k, g/	grasp target	jiggle zippers	grade splat speak Jeep™
Fricatives /h, s, z, f, v, θ, ð, ʒ, ʃ/ & Affricates /dʒ, tʃ/	church judge there three thread very zebra	crouches treasure other sofa fizzy tissue plastic cushy	search pledge bathe with tough drive beige splash half
Sonorants			
	Initial	Medial	Final
Glides /w, j/	wizard wow youth usual	away actually kayak	Does not apply
Liquids /l, r/	lizards leopard wreath rodeo	swallow police volleyball library	basketball loyal yell river pepper

(Adapted from: Broen & Moller, 2001; Peterson-Falzone, et al., 2006; p. 73)

Presence of compensatory articulations and atypical articulations

- ☐ Glottal Stops
 ☐ Pharyngeal Fricatives
 ☐ Pharyngeal stop
 ☐ Pharyngeal affricate
 ☐ Velar fricative
☐ Posterior nasal fricative
 ☐ Mid-dorsum palatal
 ☐ Atypical backed articulations
 ☐ Vowel Deviations
☐ Other (specify) _____

Intelligibility / Understandability Rating (Peterson-Falzone, et al., 2006; p. 75)

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 ☐ 1=Understandable almost all the time
☐ 2=Hard to understand some of the time
 ☐ 3=Hard to understand most of/ all the time

Comments concerning articulation:

Oral/Nasal Resonance Screening

Screen for inappropriate nasality

High vowel /u, i/ single words with pressure consonants

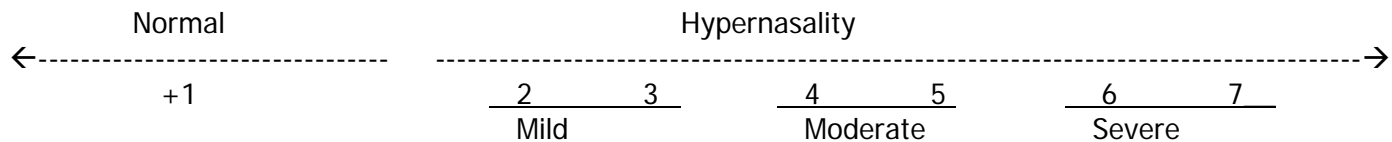
Initial Pressure consonant	Nasalized	Nasal Emission	Medial, e.g. "eagle"	Nasalized	Nasal Emission	Final Pressure consonant	Nasalized	Nasal Emission
choose	<input type="checkbox"/>	<input type="checkbox"/>	legal	<input type="checkbox"/>	<input type="checkbox"/>	soup	<input type="checkbox"/>	<input type="checkbox"/>
loose	<input type="checkbox"/>	<input type="checkbox"/>	google™	<input type="checkbox"/>	<input type="checkbox"/>	sloop	<input type="checkbox"/>	<input type="checkbox"/>
peach	<input type="checkbox"/>	<input type="checkbox"/>	people	<input type="checkbox"/>	<input type="checkbox"/>	speak	<input type="checkbox"/>	<input type="checkbox"/>
please	<input type="checkbox"/>	<input type="checkbox"/>	poodle	<input type="checkbox"/>	<input type="checkbox"/>	steep	<input type="checkbox"/>	<input type="checkbox"/>

(Adapted from: Bzoch, 1991; Brodsky, Holt, & Ritter-Schmidt, 1992; Peterson-Falzone, et al. 2006; p. 73)

☐ NE due to VPI ☐ NE due to fistula ☐ NE specific to phoneme

Rate words with non-nasal contexts for inappropriate nasality

(Peterson-Falzone, Hardin-Jones, & Karnell, 2001; p. 226)



- ☐ Intermittent hypernasality across several utterances
- ☐ Hypernasal resonance worsens across several utterances

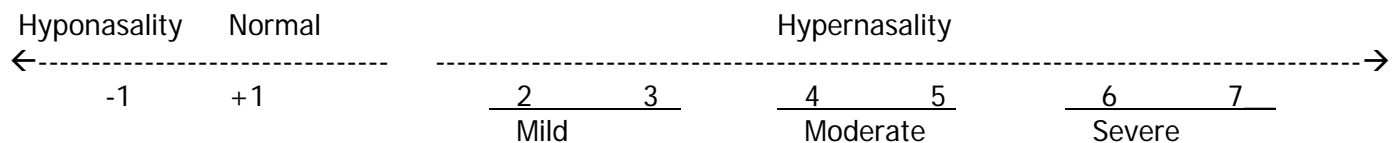
Screen for inappropriate denasality

Initial nasal	+ or -	Medial	+ or -	Final Nasal	+ or -
knife	<input type="checkbox"/>	hammer	<input type="checkbox"/>	dream	<input type="checkbox"/>
knock	<input type="checkbox"/>	Monday	<input type="checkbox"/>	pudding	<input type="checkbox"/>
modem	<input type="checkbox"/>	monkey	<input type="checkbox"/>	rhyme	<input type="checkbox"/>
mission	<input type="checkbox"/>	thinner	<input type="checkbox"/>	upon	<input type="checkbox"/>

(Adapted from: Brodsky, Holt, & Ritter-Schmidt, 1992; Peterson-Falzone, et al. 2006; p. 73)

Rate nasal context words for lack of nasality and/or cul de sac resonance

(Peterson-Falzone, Hardin-Jones, & Karnell, 2001; p. 226)



- ☐ Cul de sac resonance across several utterances

Comments concerning resonance:

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