Minnesota State University Moorhead

Speech/Language/Hearing Sciences Department

Screening Protocols for Cleft Palate Team Speech-language Pathologists

Elaine Pyle, Kristin Ostlund, Melissa Ollie, Rochelle Loomis, Shari Moller, Nicole Zitzow, Lindsay Gilleshammer, Angie Villarreal, Lindsay Timm, Sara Paterson, Crystal Lindquist, & Jane McCabe, Ph.D.



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 I Phonation (Oller, 1980; 1986) |
| Phonation with reflexive vocalizations or quasi-resonant nuclei (vowel precursors) |
| <u> </u> |
| 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/, / n/, 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: | • | egated babbling (Oller, 19 ng produced with rhythm | | als and |
|---------|----------------------------------|---------------------------------|--|-------------------------------|------------------|
| | _ | | adult-like intonations a | - | is and |
| | [|], [|], [|][|] |
| | | | ings of syllables which h ut without attributed me | | itonation |
| | [|], [|], [| 1 [|] |
| | | word-like produused with a cons | ictions that are non-measistent gesture | aningful, but sound | like a true |
| | [|], [|], [|][|] |
| | | _ | ful production (to infant nd without adult like pho | | |
| | [|], [|], [|][|] |
| | | | to adult word form; used to object, action, person | - | context, |
| | [|], [|], [| 1 [|] |
| | l from Oller, 1980; 196; (2001). | 86; Stoel-Gammon, 1989; | ; Velleman, 2003; Owens, 2004; Mei | nn, 1975; Kelman, M. in Hodso | on (2007); Broen |
| List fo | or possible woı | rds elicitation | by parents from child ne | ear 12 months age: | |
| oye-k | oye | | mama | | |
| ni | | | no | | |
| Dada | | | mo(re) | | |
| ou(pp | oy) | | | | |
| u(p) | | | | | |
| | g)o(ne) | | | | |
| uh-ol | | sis and/or final a | onconante ava not over | stad) | |
| soun | us in parentne | sis and/or final C | onsonants are not expe | cied) | |

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.

For Ages: 1 to 2 years

| Stops /p,b/ | Initial bye pop | gh Pressure Consonants Medial bye- bye | Final up |
|----------------|---|---|---|
| | bye | | |
| | pup | papa uh-oh | |
| /h/ | high he hop | Does not Apply | Does not apply |
| | | Sonorants | |
| Glides | Initial | Medial | Final |
| /w/ | wow we | Does not apply | Does not apply |
| Glottal Stop | s Pharyngeal Fricatives [sal fricative Mid-dorsum | s and atypical articulation Pharyngeal stop Phary | Moller, 2001; Peterson-Falzone, et al., 2006; p. 73) NS NS Yngeal affricate Velar fricative articulations Vowel Deviations |
| 0=Understa | / Understandability Ratin ndable all the time anderstand some of the time terning articulation: | | 06; p. 75) e almost all the time stand most of/ all the time |
| | | | |

| Screen for inappropri | |
|---|---|
| Н | igh vowel /u, i/single words with pressure consonants |
| Initial Pressure consonant do bee | Medial, e.g. "eagle" "by Final Pressure consonant Ray |
| □NE due to VPI □ | (Adapted from: Bzoch, 1991; Brodsky, Holt, & Ritter-Schmidt, 1992; Peterson-Falzone, et al. 2006; p. 73) NE due to fistula NE specific to phoneme |
| (Peterson-Falzone, Hardin-Jones, | <u>-nasal contexts for inappropriate nasality</u> , & Karnell, 2001; p. 226) |
| Normal | Hypernasality |
| +1 | <u>2 3 4 5 6 7</u> Mild Moderate Severe |
| | asality across several utterances ce worsens across several utterances iate denasality |
| Initial nasal | + or - Medial + or - Final Nasal + or - |
| my mine no | tummy mom D in D winnie |
| Rate nasal context w | (Adapted from: Brodsky, Holt, & Ritter-Schmidt, 1992; Peterson-Falzone, et al. 2006; p.73) Fords for lack of nasality and/or cul de sac resonance |
| (Peterson-Falzone, Hardin-Jones, Hyponasality Normal | |
| -1 +1 | 2 3 4 5 6 7 Mild Moderate Severe |
| Cul de sac resonance | e across several utterances |
| Comments concerning r | esonance: |
| | |
| | |
| | |
| | |
| | |
| | |

For Ages: 2 to 3 years

Articulation Screening

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

| Presence of compensatory articulations and atypical articulations Glottal Stops Pharyngeal Fricatives Pharyngeal stop Pharyngeal affricate Velar fricative Atypical backed articulations Other (specify) Other |
|---|
| Intelligibility / Understandability Rating (Peterson-Falzone, et al., 2006; p. 75) 0=Understandable all the time |
| |
| |

| Screen for inappropr | | | |
|---|--|------------------------------------|---|
| Н | ligh vowel /u, i/single words w | rith pressure consonar | nts |
| Initial Pressure consonant beat boot | Medial, e.g. Weagle" beep-beep boo-boo | se se E ☐ ☐ heap ☐ ☐ food | Final re consonant Nasal Emission |
| | (Adapted from: Bzoch, 1991; Bro | dsky, Holt, & Ritter-Schmidt, 1992 | ; Peterson-Falzone, et al. 2006; p. 73) |
| ■NE due to VPI | NE due to fistula NE speci | fic to phoneme | |
| Rate words with non (Peterson-Falzone, Hardin-Jones | -nasal contexts for inappropria , & Karnell, 2001; p. 226) | ite nasality | |
| Normal ← | | nasality | → |
| +1 | | | 6 7 Severe |
| | asality across several utterances ce worsens across several utterance | es | |
| Screen for inappropr | | _ | |
| Initial nasal my mom night-night | + or - Medial candy ding dong mommy (Adapted from: Bro | gone hang yum | inal Nasal + or - |
| Rate nasal context w (Peterson-Falzone, Hardin-Jones | vords for lack of nasality and/or | • | · |
| Hyponasality Norma | I | Hypernasality | ` |
| -1 +1 | | | 6 7 Severe |
| ☐ Cul de sac resonance | e across several utterances | | |
| Comments concerning r | esonance: | | |
| | | | |
| | | | |
| | | | |
| | | | |

For Ages: 3 to 4 years

| | | High Pressure Consonants | |
|--------------------------|----------------------------|---|---|
| Stops | Initial | Medial | Final |
| /p,b,t,d,k,g/ | bike | bubble | bed |
| | black | doggie | book |
| | cup | icky | boat |
| | day | sticky | dip |
| | get | | pot |
| | kite | | sick |
| | two | | stop |
| Fricatives | chip | choo-choo | dish |
| /h, s, f, v, ∫/ | fit | hissy | fish |
| & | he | puffy | kiss |
| Affricates | see | | hoops |
| /ʤ, ʧ/ | she | | house |
| | spy | | off |
| | , | Sonorants | |
| Glides | Initial | Medial | Final |
| /w, j/ | wet | kiwi | Does not apply |
| | wipe | yo-yo | |
| | wish | | |
| | why | | |
| | yo-yo | | |
| | yuck | | |
| | yes | | |
| | like | yellow | ball |
| Liquids | look | silly | hole |
| /I,(r)/ | red | dolly | wiggle |
| | rock | fairy | car |
| | | | ear |
| _ | | | Moller, 2001; Peterson-Falzone, et al., 2006; p. 73 |
| Glottal Sto Posterior na | | ons and atypical articulations is Pharyngeal stop Pharyi um palatal Atypical backed a | |
| | / / Understandability Ra | Iting (Peterson-Falzone, et al., 2006; p. 75 |) almost all the time |
| = | understand some of the tir | | and most of/ all the time |
| I J=Hard to | icerning articulation: | 5-riald to dilucist | and most on an the time |
| | | | |

| Screen for inappr | | | | | | |
|---|--------------------------------|---|--|---|---|--|
| High vowel /u, i/single words with pressure consonants | | | | | | |
| Initial Pressure consona beat blue feet do NE due to VPI | | · · | Nasalize Nas | Final Pressure consonant eat keep loop oops chmidt, 1992; Peterson-Falzone | Pasalized Nasalized Nasal et al. 2006; p. 73 | |
| Rate words with (Peterson-Falzone, Hardin- | | exts for inappropri p. 226) | ate nasality | | | |
| Normal | | Нурег | rnasality | | _ | |
| +1 | | 3 Mild | <u>4 5</u> Moderate | <u>6 7</u> Severe | - | |
| | nance worsens acopriate denasa | several utterances cross several utterance lity or - Media finger funny monkey tummy | | Final Nasal him sing sting mine | + or - | |
| (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: | | | | | | |
| Sommonts concern | g resonance. | | | | | |

For Ages: 4 to 6 years

Articulation Screening

| | | High Pressure Consonants | | |
|----------------|---------|---------------------------------|---------------------------------|--------|
| Stops | Initial | Medial | | Final |
| /p,b,t,d,k,g/ | back | сору | bug | |
| | bees | jiggle | сар | |
| | cut | obey | cat | |
| | dog | pebble | sad | |
| | go | tickle | stick | |
| | pig | zipper | tub | |
| | tug | | | |
| Fricatives | chair | bathtub | bath | |
| h, s, z, f, v, | five | before | beach | |
| θ, δ, | fits | bridges | buzz | |
| 3,5/ | how | busy | cough | |
| & | juice | catches | page | |
| Affricates | ship | fishes | stove | |
| /कु, तु/ | this | kisses | zips | |
| | who | mother | | |
| | zip | lazy | | |
| | soap | | | |
| | | Sonorants | | |
| Glides | Initial | Medial | | Final |
| /w, j/ | waffle | kiwi | Does not app | oly |
| | white | away | | |
| | which | yo-yo | | |
| | yes | | | |
| | yellow | | | |
| | lip | below | call | paper |
| Liquids | lock | color | carol | pepper |
| /I, r/ | red | follow | purple | stair |
| | rat | carrot | ear Moller, 2001: Peterson-Falz | |

(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: |
| |
| |
| |
| |
| |
| |

| Screen for inappropriate nasality | | | | | | |
|--|---|----------------------------------|---------------------------------|---|--|--|
| High vowel /u, i/single words with pressure consonants | | | | | | |
| Initial Pressure cons boot zoo keys jeep™ NE due to VP | Nas | dood boog easy peop (Adapted fro | ie le om: Bzoch, 1991; Bi | Pasalize Nasalize Nasalize Periodsky, Holt, & Ritter-Secific to phoneme | Final Pressure consonant beep food leap loop chmidt, 1992; Peterson-Falzone | Nasalized Nasalized Parision Nasalized Parision Nasalized Parision Nasalized |
| Rate words w (Peterson-Falzone, Ha | | | or inappropri | ate nasality | | |
| Norma | al | | • . | rnasality | | |
| +1 | | | 3_ | 4 5 Moderate | 6 7 Severe | - |
| Hypernasal i | hypernasality a resonance wors appropriate de al nasal | ens across s | | | Final Nasal fishing playing rung tongue vacuum | + or - |
| (Peterson-Falzone, Ha Hyponasality ← | ardin-Jones, & Karnell Normal | , 2001; p. 226) | asality and/o | or cul de sac re | ZOOM chmidt, 1992; Peterson-Falzon SONANCE | |
| -1 | +1 | | 3_ | 4 5 | 6 7 Severe | |
| Cul de sac re | esonance across | s several utt | erances | | | |
| Comments cond | cerning resonan | ce: | | | | |
| | | | | | | |

For Ages: 6 to 8 years

Articulation Screening

| | | | gh Pressure C | | | |
|--|-------------------|------------------|-----------------------------|----------------------|----------------------------------|-------------------------|
| Stops |] | Initial | | Medial | | Final |
| /p,b,t,d,k,g/ | pizza | | first-grade | | breakfast | |
| | party | | hopscotch | | chalk | |
| | birthday | | kickball | | clap | |
| | toys | | lucky | | eight | |
| | dark | | puddle | | frog | |
| | cake | | people | | grab | |
| | grape | | riddle | | outside | |
| | | | sitter | | surfboard | |
| | cows | | | | Suriboaru | |
| | | | sparkle | | | |
| | | | soccer | | | |
| ricatives | cherry | | bathroom | | brave | |
| h, s, z, f, v, | football | | birthday | | catch | |
| θ, δ, | house | | bridges | | crash | |
| 3,∫/ | joke | | eraser | | garbage | |
| & | shoelace | | feather | | giraffe | |
| Affricates | spider | | flashlight | | itches | |
| | that | | sister | | recess | |
| /कु, तु/ | vase | | safety | | puzzles | |
| | zipper | | scratches | | tooth | |
| | first | | teacher | | six | |
| | says | | yahoo | | 0 | |
| | <u> </u> | | Sonoran | ıts | | |
| Glides | | Initial | | Medial | | Final |
| /w, j/ | wallet | - | awake | | Does not app | olv |
| | whale | | always | | '' | , |
| | where | | actually | | | |
| | yellow | | a o ca a y | | | |
| | yes | | | | | |
| | yipee | | | | | |
| | | rooo | acloon | orrow | fall | oor |
| | laugh | race | asleep | arrow | | car |
| Liquids | light | rabbit | dollar | carry | football | bear |
| /l, r/ | lips | robot | elephant | serious | school | four |
| | | | pillow | tad fram. Dua 0 M | tall | t -l 200/ |
| scopeo of | componento | ry articulations | | | oller, 2001; Peterson-Fa | izone, et al., 2006; p. |
| | | | | | and offsignts \(\Bar{\sigma} \) | lalar frigativa |
| | | ngeal Fricatives | | | | |
| | | ☐ Mid-dorsum p | balatal 🔲 Aty | pical backed art | iculations 🔲 Vow | el Deviations |
| ()thor (cno | city) | | | | | |
| Other (spe | | | | | | |
| . , | / / Understa | ndability Rating | g_ (Peterson-Falzone | et al., 2006; p. 75) | | |
| . , | 7 0 1 1 4 0 1 0 4 | | | | almost all the time | 9 |
| telligibility | andable all th | e time | 1−0 | | | |
| telligibility 0=Underst | andable all th | | = | | nd most of/ all th | e time |
| telligibility 0=Underst 2=Hard to | andable all th | ome of the time | = | | nd most of/ all th | e time |

| Screen for inappropria | | | | | |
|--|--|--------------------|--|--|--|
| Hig | jh vowel /u, i/single words | s with pressure c | onsonants | | |
| Initial Pressure consonant deep beak bool tube | Medial, e.g. "eagle" easy leader super loser (Adapted from: Bzoch, 1991; | Nasali Nasali | Final Pressure consonant leaf steep fruit loot chmidt, 1992; Peterson-Falzone | Nasalized Nasalized Emission et al. 2006; p. 7 | |
| _ | nasal contexts for inapprop | pecific to phoneme | | | |
| Normal ← | | pernasality | _ | | |
| +1 | 3 Mild | 4 5 Moderate | <u>6 7</u> Severe | | |
| Screen for inappropriation Initial nasal magic moon name | te denasality + or - Med money winner singer | lial + or - | Final Nasal nine tongue twin | + or - | |
| Peterson-Falzone, Hardin-Jones, & | rds for lack of nasality and | or cul de sac re | worm chmidt, 1992; Peterson-Falzon sonance | e, et al. 2006; p. | |
| Hyponasality Normal ← | | | | • | |
| -1 +1 | <u>2</u> 3 Mild | 4 5 Moderate | <u>6 7_</u> Severe | _ | |
| Cul de sac resonance a | across several utterances sonance: | | | | |

For Ages: 8 years and older

| | High | n Pressure Consonants | |
|-----------------|------------------------------|--|---|
| | Initial | Medial | Final |
| Stops | grasp | jiggle | grade |
| /p,b,t,d,k,g/ | target | zippers | splat |
| | | | speak |
| | | | Jeep™ |
| Fricatives | church | crouches | search |
| /h, s, z, f, v, | judge | treasure | pledge |
| θ, δ, | there | other | bathe |
| 3, \$/ | three | sofa | with |
| & | thread | fizzy | tough |
| Affricates | very | tissue | drive |
| /ਖ੍ਰ, ੯੍ਰ/ | zebra | plastic | beige |
| | | cushy | splash |
| | | | half |
| | | Sonorants | |
| Glides | Initial | Medial | Final |
| /w, j/ | wizard | away | Does not apply |
| | wow | actually | |
| | youth | kayak | |
| | usual | | |
| | lizards | swallow | basketball |
| Liquids | leopard | police | loyal |
| /l, r/ | wreath | volleyball | yell |
| | rodeo | library | river |
| | | , and the second | pepper |
| | | | 2001; Peterson-Falzone, et al., 2006; p. 73 |
| | compensatory articulations a | | offricate Waler friestive |
| | ps Pharyngeal Fricatives | Pharyngeal stop Pharyngeal | |
| = | • | alatal | ations vower Deviations |
|] Other (spec | cify) | | |
| ntelliaihility | / Understandability Rating | (Peterson-Falzone et al. 2006; n. 75) | |
| | andable all the time | 1=Understandable almo | st all the time |
| = | understand some of the time | 3=Hard to understand n | |
| _ | cerning articulation: | | nost on an the time |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

| Screen for inappro | | | | ! : | | | | |
|---|----------------------|----------------------------------|----------------------------|---------------|--------------------|---|------------|--------------------|
| | High vowe | | ie words w | _ | | onsonants | _ | |
| Initial Pressure consonar | nt] Nasalized | | edial, e.g. "eagle" | Nasalized | Nasal ∫Emission | Final Pressure consonant | Nasalized | Nasal Emission |
| choose loose peach | | 」 legal] google™] people | | | | soup sloop speak | | |
| olease | | poodle | 270ch 1001: Pro | deky Holt & D | | steep nmidt, 1992; Peterson-Falzone, | ot al. 20 | 206: p |
| NE due to VPI | | fistula | | fic to phon | | imiut, 1992, Peterson-Paizone, | et al. 20 | лоо, р. |
| Rate words with r | on-nasal cor | ntexts for i | nappropria | te nasalit | : y | | | |
| Peterson-Falzone, Hardin-J | | | | | - | | | |
| Normal ← | | | Hypern | • | | | - → | |
| +1 | | 2 | 3_ | 4 | 5_ | 67 | | , |
| | | Mild | | Moderat | te | Severe | | |
| Screen for inappro Initial nas knife knock modem mission | al | + or - | Medial mmer nday nkey nner | | Fitter-So | Final Nasal dream pudding rhyme upon hmidt, 1992; Peterson-Falzone | | or - |
| Rate nasal contex Peterson-Falzone, Hardin-J | ones, & Karnell, 200 | ack of nasa | | cul de sa | nc res | | , | , , |
| Hyponasality Nor ← | mal | | | Hypernasa | ality | | | - → |
| -1 +1 | | 2 Mild | 3_ | 4 Moderat | <u>5</u> te | 6 7 Severe | - | · |
| Cul de sac resona | ance across se | veral utterar | nces | | | | | |
| Comments concernir | ng resonance: | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

- Bleile, K. (1995). *Manual of articulation and phonological disorders: Infancy through adulthood.* Clifton Park, NY: Singular.
- Brodsky, L., Holt, L., & Ritter-Schmidt, D. (1992). *Craniofacial anomalies: An interdisciplinary approach.* St. Louis, MO: Mosby-Year Book, Inc.
- Broen, P. & Moller, K. (2001). Early phonological development and the child with cleft palate. In Moller, K. and Starr, C. (Eds.) *Cleft palate: interdisciplinary issues and treatment*. Austin, TX: Pro Ed.
- Bzoch, K.R., (1997). Shands Hospital Communicative Disorders Clinical Tests-1991A Protocol. In Bzoch, K. (Ed.) *Communicative disorders related to cleft lip and palate (4thed.).* Austin, TX: PRO-ED.
- Chin, S. & Dinnsen, D. (1992). Consonant clusters in disordered speech: Constraints and correspondence patterns. *Journal of Child Language*, *19*, 259-285.
- Grunwell, P. (1985). *Phonological assessment of child speech (PACS)*. Scarborough, Ontario, Canada: Nelson-Thomson Learning.
- Hodson, B. (1997). Disordered phonologies: What have we learned about assessment and treatment? In B. Hodson & M. Edwards (Eds.), *Perspectives in applied phonology.* 197-224. Gaithersburg, MD: Aspen Publishers.
- Hodson, B. (2007). *Evaluating and enhancing children's phonological systems: Research and theory to practice.* Greenville, SC: Thinking Publications University-Super Duper, Inc.
- Kelman, M. (2007). Acquisition of speech sounds & phonological patterns. In Hodson, B. (Ed.) *Evaluating and enhancing children's phonological systems: Research and theory to practice.* Greenville, SC: Thinking Publications University-Super Duper, Inc.
- Peterson-Falzone, S., Hardin-Jones, M., & Karnell, M. (2001). *Cleft palate speech (3rd Ed.).* St. Louis, MO: Mosby, Inc.
- Peterson-Falzone, S., Trost-Cardamone, J., Karnell, M., & Hardin-Jones, M.I (2006). *The clinician's guide to treating cleft palate speech.* St. Louis, MO: Mosby Elsevier.
- Smit, A., Hand, L., Freilinger, J., Bernthal, J., & Bird, A. (1990). The Iowa articulation norms project and its Nebraska replication. *Journal of Speech and Hearing Disorders*, *55 (4)*, 779-798.
- Stoel-Gammon, C. (1987). Phonological skills of 2-year-olds. *Language, Speech, and Hearing Services in the Schools, 18,* 323-329.
- Velleman, S. (1998). Making phonology functional: What do I do first? Boston, MA: Butterworth-Heinemann.
- Velleman, S. (2003). *Childhood apraxia of speech resource guide*. Clifton Park, NY: Thomson-Delmar Learning.