

# Feeding and Oral Hygiene: How to Address the Challenges

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# Oral Motor Assessment

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- Parent report of oral motor concerns at meals
- Beckman Oral Motor Evaluation- Baseline status
- Sensory responsiveness- food texture, oral hygiene, therapy “handling”
- Neurodevelopmental status
  - Postural stability
  - Muscle tone
  - Communication status
  - Social/Transition responses





# Oral Motor Treatment

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- Multidiscipline approach, including Psychology, Nutrition, Skill, Medical/Nursing
- Skill: Combining therapy interventions with behavioral practice
- Beckman Oral Motor Interventions
  - Reduced muscle strength
  - Reduced range of movement
  - “Normalize” sensory responses
  - Caregiver training
  - Texture advancement in feeding





# What is Sensory Processing?

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- Registration of stimuli within the neurological system
  - Processing of the information
  - Interpretation/perception
- = Integration of environmental input within the neurological system
- ✓ Timely response to stimuli
  - ✓ Contextually appropriate response





# Wanted: Adaptive Response

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- Hyper-responsiveness
- Hypo-responsiveness
- Grading of oral-sensory/motor input; finding the “just right” intervention to reduce oral sensitivity
- Improved tolerance to touch, pressure and movement
- **Goal of “Normalizing” sensory responses**





# Adaptive Response

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- The “just right” sensori-motor response, learned through repetition/autonomic CNS responses
- Hyper-responsiveness: CNS interpretation of a “neutral”/non-threatening sensory experience as noxious or aversive/painful
- Hypo-responsiveness: Incoming sensory stimuli is “under-registered” by CNS; more than typical sensory input is needed for adequate awareness





# Body Position/ Postures

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- Head and neck position to optimize oral care
  - Head-trunk aligned
  - Slight chin tuck position
- Atypical positions/ postures
  - Swallow with head tilted back
  - Swallow with open lips
  - Swallow with head tilted to side



# Postural Stability

- Avoid poor body position in sitting
  - Hips/trunk aligned and supported
- Side-lying or Prone positions
  - Good alternatives for some feeding and oral care





# Alternative Feeding Positions

## Positioning: Implications of Different Positions

### Positioning: Implications of Different Positions



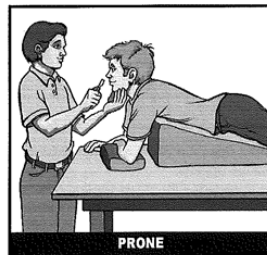
#### Inclined Sidelying

- This is a resting position.
- Breathing may be better in this position. Breathing may be impaired if there is too much pressure on the rib cage.
- Better alignment may occur with less hyperextension, extraneous movement, or other reflex patterns.
- Increased jaw, lip and tongue control may occur.
- Coughing may decrease.
- Provides good position after eating for digestion.
- Spillage out of the lower cheek may increase.
- ▲ Assistant should be positioned to avoid head hyperextension of the individual.
- ▲ A straw works better than a cup in this position.



#### Sitting

- Provides upright orientation.
- Breathing better in sitting than in supine.
- Head and neck hyperextension, jaw thrust, tongue thrust and tonic bite may be increased in this position.
- ▲ If head control is poor, dynamic head support maybe needed to ensure alignment.
- ▲ Caregiver should be positioned to avoid head hyperextension of the individual.
- ▲ The angle of chair may be reclined from 90 degrees which results in faster flow of foods and fluids into the throat.



#### Prone

- This is a working position.
- Enhances movement of lips and cheeks toward midline.
- May reduce jaw thrust or jaw retraction.
- Good for weight bearing.
- Straw drinking with head in slight flexion is possible in this position.
- Hyperextension of head and neck may occur with cup drinking and as the spoon is removed when eating.
- Breathing may be impaired if there's too much pressure on the rib cage.
- ▲ Caregiver should be positioned to avoid head hyperextension of the individual.
- ▲ If poor lip control is present, spillage may increase.





# Head and Neck Position: Swallowing

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## Head and neck stability

- Only available to the patient when hips and trunk are supported/ stable
- Optimal position for intake of fluids and solids
  - Slight chin tuck
  - Head at 90 degrees
  - Slight recline no more 75 degrees with body aligned





# Toothbrush Phobia:

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- Oral Sensory Hyper-responsiveness and/or Reduced range of movement can negatively impact daily oral hygiene
- Frequently used to enhance Oral Hygiene
  - *Gum massage*: Improve tolerance for touch, pressure and movement
  - *Cheek stretches*: Improve space between gums and cheeks
  - *Stretch at ramus bilaterally*: Improve resting jaw range
  - *Cued Brushing Protocol*: Count aloud x 3 brushes at each section, and give 10 second breaks.

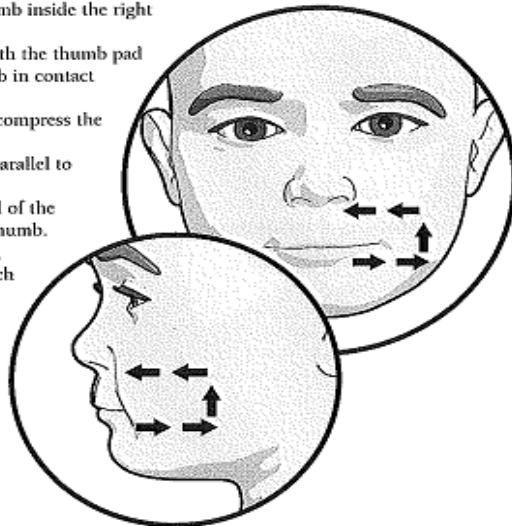


## Beckman Oral Motor Assessment & Intervention

Caution: This information is to be used only under the direction of a therapist trained in the application of this information. !

### 14. Upper Check Stretch

- 1) Use the right thumb inside the left cheek and the left thumb inside the right cheek.
- 2) Place the thumb inside the lower corner of the mouth, with the thumb pad in contact with the inner cheek and the back of the thumb in contact with the lower gum.
- 3) Place the pad of the index finger on the outer cheek and compress the tissue against the thumb pad.
- 4) Slide and stretch from front to back, keeping the thumb parallel to the lower gum.
- 5) At the ramus, stretch the finger and thumb up to the level of the upper gum. The index finger will move farther than the thumb.
- 6) Keeping the back of the thumb parallel to the upper gum, move the finger and thumb from back to front, with stretch and slide, moving past the smile line. Release slowly.
- 7) Maximum consecutive repetition is 3.



### 15. Upper Posterior Check Stretch

- 1) Complete #14. Upper Check Stretch, but do not release the tissue. Maintain steady support at this point with this hand.
- 2) With the other hand, find the top of the ear. With two fingers, compress the tissue in front of the ear. (Should be on the cheek bone).
- 3) Stretch the upper cheek up and toward the ear.
- 4) The stretch should occur behind the eye, but in front of the ear, on the posterior cheek.
- 5) Maximum consecutive repetition is 3.

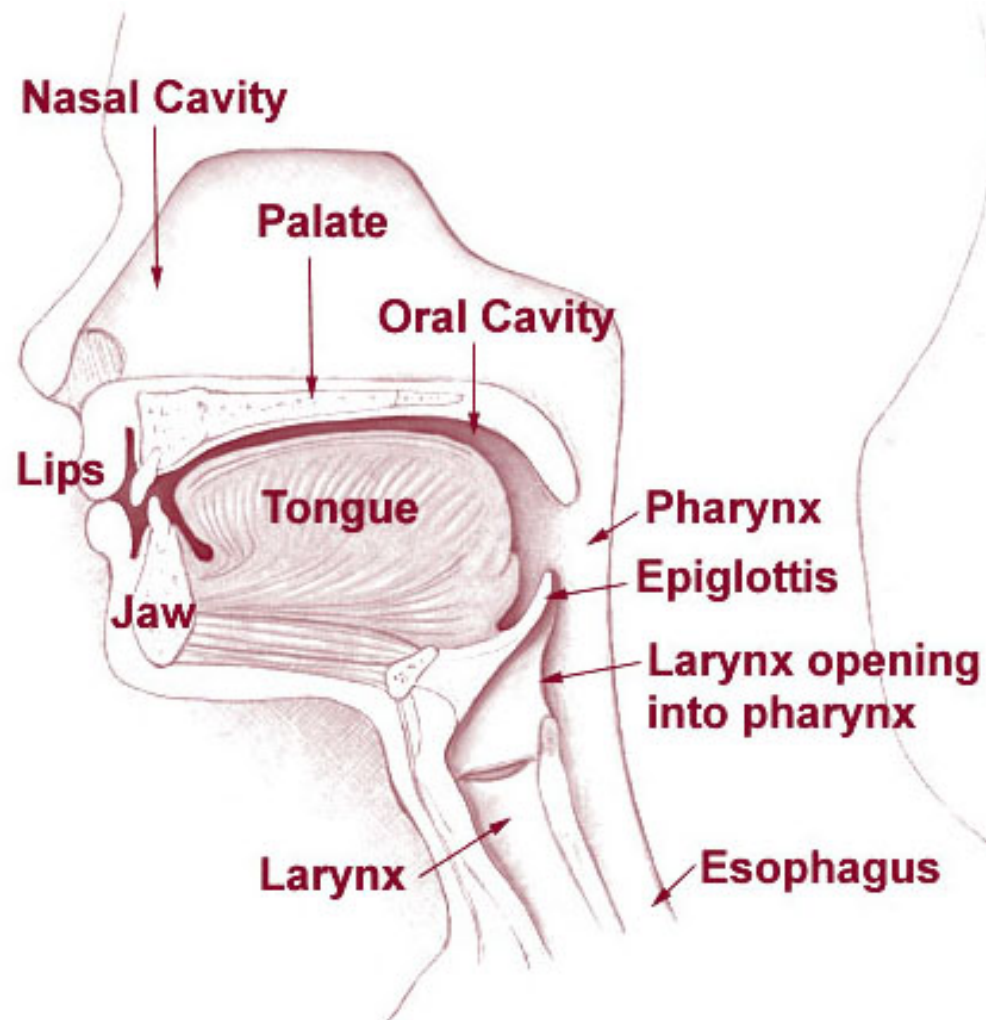


**13. Gum Message (like pressure massage or “brushing” on the body)**

- 1) Place the thumb and middle finger of the dominate hand at the lower edge of the mandible.
- 2) Place index finger of the dominate hand under the upper lip at midline, and compress the gum tissue with gentle firm pressure.
- 3) Keeping the finger parallel to the gum ridge, move the index finger front to the back on the side of the mouth opposite the dominate hand at a rate of one tooth per second or one cm per second, with steady movement, no wiggles or jiggles.
- 4) At the point where the gums join, move the finger pad to the lower gum, keeping the finger parallel to the gum. Move finger pad back to front.
- 5) At lower midline, remove the index finger and place the thumb pad at lower midline.
- 6) Move the thumb pad front to back along the lower gum keeping the thumb parallel to the gum line.
- 7) At the point where the gums join, move the thumb pad to the upper gum, keeping the thumb parallel to the gum.
- 8) Move the thumb pad back to front along the upper gum. At upper midline, remove the thumb pad.
- 9) One time around the gums is one repetition. Maximum consecutive repeat is 3.
- 10) If the jaw has limited range posterior, at step 4 and step 7, provide sustained pressure pressing in toward the middle of the mouth for 3 to 5 seconds.
- 11) If the individual can follow commands, the task can be made more complex by having the individual follow the pressure on the gum by moving the tongue to the pressure.
- 12) If a gag occurs, stop the movement, maintain the pressure and assist the individual to swallow, then determine if the massage should stop or can continue.



# Anatomy of the Oral Pharyngeal Mechanism





# Oral Phase

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- What is the oral phase of feeding/ swallowing?
  - Coordination of lip closure
  - Coordination of jaw and tongue
    - Pushing food particles laterally between the molars for grinding prior to bolus formation on the tongue prior to swallow
  - Coordination of cheeks, lips, tongue and jaw
    - Coordination of tongue to pool masticated bolus on the mid-blade of the tongue and continue to grind larger particles on the molars



# Pharyngeal phase

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- What is the pharyngeal phase of swallowing?
  - Coordination of mid-blade tongue / tongue base elevation,  
Elevation of the soft palate to the pharyngeal wall (back of the throat) to close off the nasal cavity (blocking nasal regurgitation), Epiglottis closes over the opening of the trachea,  
And bolus is forced into the esophagus by peristaltic action





# Etiology of Swallow Dysfunction

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## Neuromuscular deficits - Congenital or acquired

- Cerebral palsy, chromosomal defects, syndromes, hydrocephalus, congenital infections, vascular accidents, muscle tone differences (low tone)
- Central Nervous System deficits
  - Seizure disorder, brain formation abnormality, premature birth

## Congenital Anatomical Defects

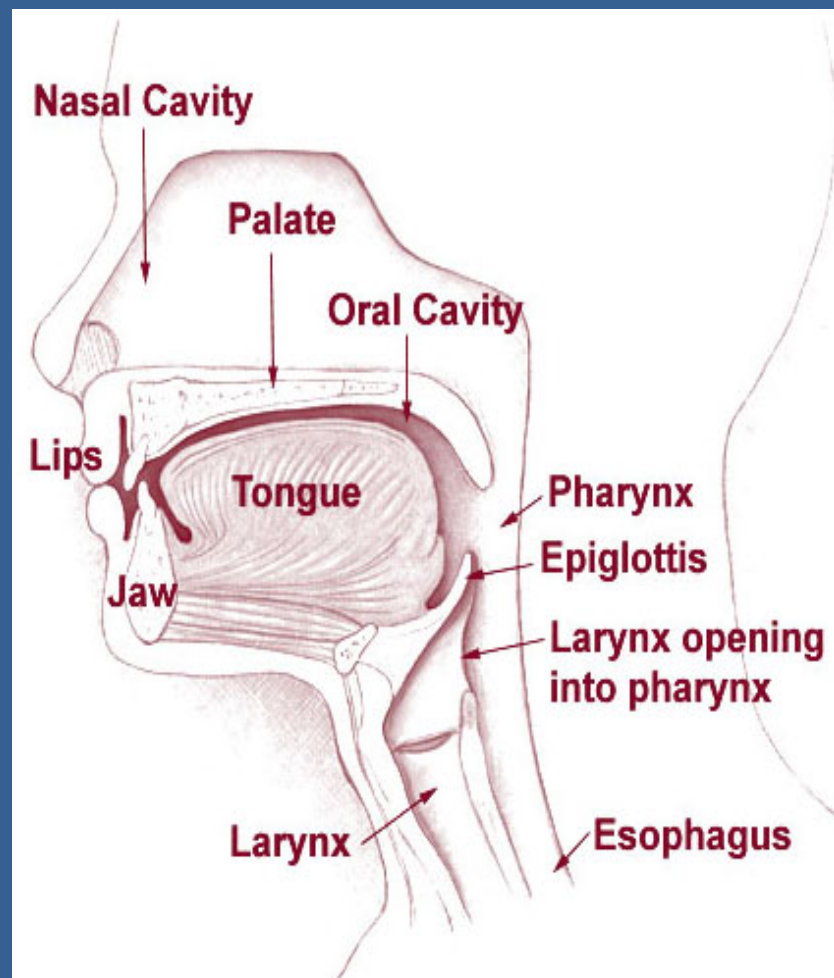
- Mouth, palate, larynx, pharynx, esophagus
  - Cleft lip and palate, small jaw/ retracted jaw (Pierre-Robin syndrome), tracheoesophageal fistulas, dysmotility, etc.

# ASPIRATION

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## 3 Phases

- Before the swallow
  - Oral Phase
- During the swallow
  - Oral/Pharyngeal Phase
- After the Swallow
  - Esophageal Phase



# ASPIRATION

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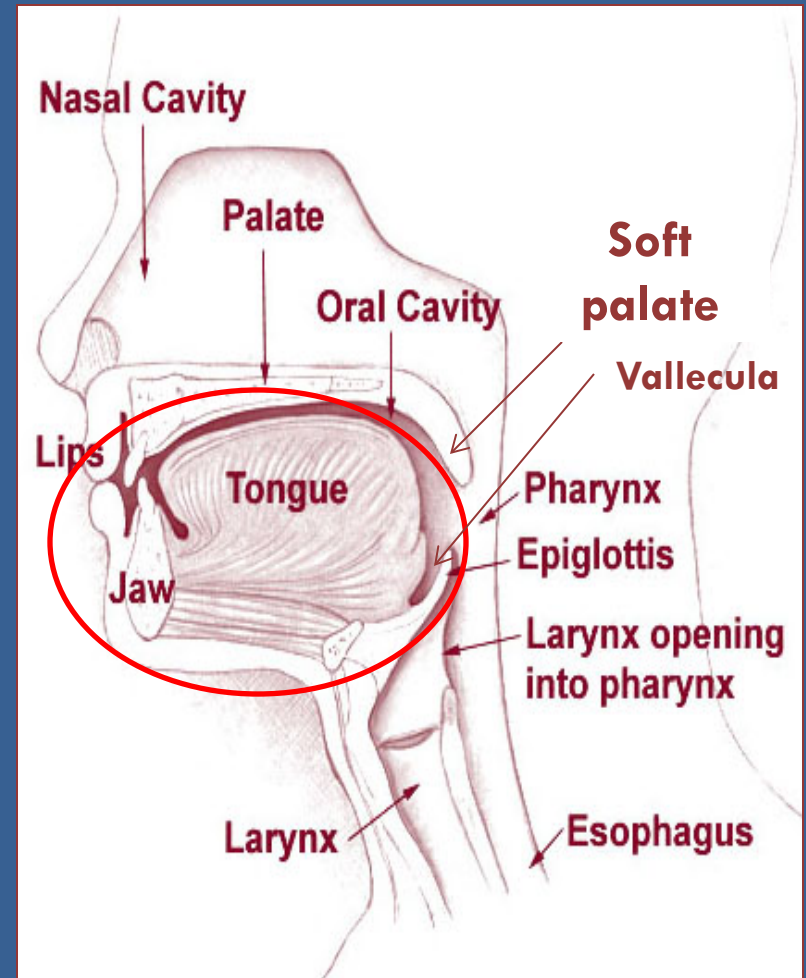
- **Oral Phase**

- Tongue is not able to form a bolus and maintain a cohesive mass until the swallowing reflex is triggered [and] portions of the bolus may fall over the posterior portion of the tongue in a piecemeal fashion (Donner, M.W. 1985)
- Delayed trigger of the swallow reflex in the presence of an intact oral phase can result in pooling of bolus at vallecular and pyriform sinuses (Logemann, J.A. 1986)

# ASPIRATION:

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- Before the swallow
  - Pooling in Valleculae
  - Delayed Swallow Trigger
- During the swallow
- After the swallow



# What is **Silent** Aspiration?

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- Food entering the airway without expected signs or symptoms of the event
  - No cough or throat clearing in response to food or fluid going into the airway
  - Wet voice, congestion *building* during meal or following meal
  - Aspiration Pneumonia
  - Only discerned by OPMS

# Signs and Symptoms of Aspiration

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- WET VOICE following swallow or during the meal  
(not associated with cold/congestion)
- Cough with wet voice following the swallow
- Persisting cough associated with swallow  
(not associated with cold/congestion)
- Teary eyes
- Hesitation in taking next breath after a bite
- Increasing congestion as the meal continues  
(not associated with crying, cold congestion)
- **Silent aspiration**