Oral Hygiene Resistance

Julie Mehrl, MOT,OTR/L

Clinical Services Bureau
Developmental Disabilities Supports Division
New Mexico Department of Health

Oral Hygiene and Aspiration

- Saliva contains many bacteria. Bad oral hygiene and periodontal diseases lead to the proliferation of pathogenic bacteria that can cause aspiration pneumonia.

Scannapieco, FA (1999) Role of oral bacteria in respiratory infection. J Periodontal 70 (7):793-802.

Oral Hygiene and Aspiration

- Morbidity/mortality of respiratory infections has been directly linked to the overall bacterial load in the oral cavity.

- In a study of 417 nursing home residents, pneumonia, and death from pneumonia decreased significantly in those who received good oral care.

Yoneyama, T, et. al. (2002), Oral Care reduces pneumonia in older patients in nursing homes. J Am Geriatr Soc. 50 (3): 430-3

Oral Health and I/DD

Retrospective study of electronic dental records of over 4,700 people with I/DD in Massachusetts.

(61% mild to mod. and 39 % severe disability)

- Oral health and adults with I/DD.
  - 32% had untreated cavities
  - 80% had gum disease
  - Over 10% were missing teeth

Morgan, J.P., et. al (2012). The oral health status of 4,732 adults with intellectual and developmental disabilities. *The Journal of the American Dental Association, 143(8),* 838-846

Oral Health and I/DD

- A 6 month long study with 63 persons with I/DD completed oral sampling and oral examinations, baseline then monthly.
- Participants with high microorganisms at baseline were significantly more likely to develop respiratory infection.
- Those with poor oral hygiene were significantly more likely to develop pneumonia.

- Binkley, CJ (2009), Oral Microbial and Respiratory Status of persons with Mental Retardation/Intellectual & Developmental Disability – An Observational Cohort Study. *Oral Surg Oral Med Oral Pathol Oral Radio Endod,* 108(5); 722

Oral Health and Systematic Disease

- Research has linked poor oral hygiene to a variety of systematic diseases.
  - Cardiovascular disease
  - Diabetes
  - Low birth weight
  - Stroke
  - Bacterial Pneumonia

- Xiaojing, L. & Kolitveit, K. M., et. Al. (2000). Systematic diseases caused by oral infection. *Clinical Microbiology Review, 13 (4),* 547-558.

Related OT Research

- Individualized oral care plans more effective in improving oral hygiene than general staff training
  - Altabet, S., Rogers, K., et.al. (2003). Comprehensive approach toward improving oral hygiene at a state residential facility for people with mental retardation. *Mental Retardation, 41 (6),* 440-445

- OT intervention improved oral and denture hygiene in dependent and cognitively impaired LTC residents.
  - Bellomo, F., de Preux, F., et. al (2005). The advantages of occupational therapy in oral hygiene measures for institutionalized elderly adults. *Gerodontology, 22 (1), 24-31.*

Focus – Oral Hygiene Resistance

- For the I/DD population resistance to oral hygiene is a common barrier to good oral hygiene.

Oral Hygiene Resistance

Resisting tooth brushing is a frequent reason for OT referral

- The mouth is a very vulnerable area.
- The mouth has more tactile nerve endings than any other part of our body.
- Individuals may have had bad experiences in the past.
- Staff or family may be rushed. Tooth brushing may be one of the last activities in a long morning or mealtime routine.

Assessment and Intervention Considerations

Is the person resisting because of pain?

- Chart Review – Dental
- Interview staff/family
- Has person always resisted oral care?
- Did visual oral evaluation reveal possible sources of pain like: redness, swelling, bleeding gums, bad breath that may be related to infection, broken/cracked/or discolored teeth?
- Does tooth brush have soft, quality bristles?
- Has "Sensitive" toothpaste helped in the past?
- Would an electric toothbrush help?
- One trial with "Oral-gel" type product may help with assessment

Assessment and Intervention Considerations

Is the person resisting because of
↓ trust level/ ↑anxiety ?

- Interview staff/family: past experiences, new staff, oral hygiene routine.
- Observe the Oral Hygiene Routine. (Staff/family touch, timing, interaction, etc……)
- Some intervention areas to consider:
  - How much time is allowed for oral hygiene? Can schedule be adjusted?
  - When is oral hygiene done?
  - Is the bathroom the best location for oral care? (fight/flight)
  - Establish a trust and routine
  - Consider environmental factors and cognitive/communication factors. (picture/tactile cues, lighting, music, calming scents, etc…….)

Low Trust and High Anxiety

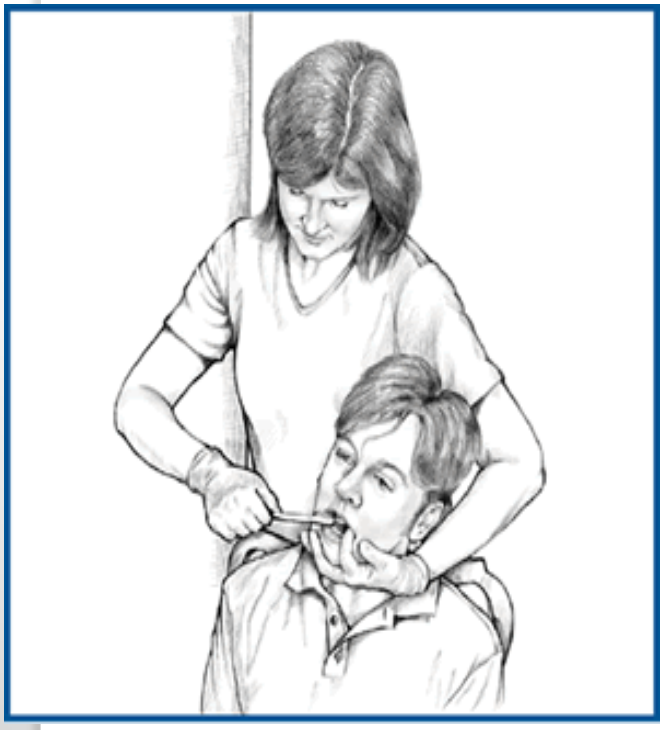
Models of Intervention to Explore

- "Practice without Pressure" involves: modeling, positive behavioral supports, incremental practice, visual sequence cards, breaks and rewards. Often geared toward those on the autism spectrum.
- Reducing care-resistant behaviors by reducing "Threat Perception". Involves: non-threatening approach, environmental modification, respectful communication, and one-step commands. Other techniques: priming, cueing, chaining, hand-over-hand, distraction, bridging, and rescuing.

  - www.autismfile.com. "Practice without Pressure" is a non-profit training organization in Delaware.
  - Jablonski, RA et.al. (2011). No More Fightlng and Biting During Mouth Care: Applying the Theoretical Constructs of Threat Perception to Clinical Practice. Res Theory Nurs Pract, 25(3): 163-175.

Assessment and Intervention Considerations

Is the person resisting because of inability to swallow secretions safely during oral care?



- For most, head should be properly aligned with slight chin tuck.
- Consider positioning for oral drainage.
- Suction, oral swabs to assist with clearing oral secretions, no toothpaste?
- Make sure to squeeze or shake out any excess moisture from tooth brushes and/or oral swabs.

Assessment and Intervention Considerations

Is the person resisting because of inability to breathe?

- Mouth Breathers need an open airway!
- Clear nasal congestion first
- Give lots of breaks
- Positioning
- Little or No toothpaste
- Smaller size brush head
- Use strategies to decrease anxiety

Is the person resisting because of Oral Sensory Processing Dysfunction?

Many individuals with I/DD have not had "normal" sensory- motor experiences throughout their development.

- Oral sensory input is the foundation for oral motor development.
- The ability to bring hand to mouth or bring objects to the mouth for oral exploration may have been limited.

Oral SPD and Aspiration

A variety of Theoretical Models can guide the therapist in Assessment and Treatment for the Adult I/DD population:

- Bonnie Hanschu "Ready Approach"
- Winnie Dunn "Model of Sensory Processing"
- Wilbarger Approach to Treating Sensory Defensiveness
- Shellenberger and Williams "Alert Program for Self-Regulation"
- Lucy Jane Miller Writings and Research

What does SPD have to do with Aspiration?

↓Sensory Threshold

Sensory Over-Responsivity (SOR)

- Decreased ability to tolerate oral care.
- Decreased ability to tolerate oral sensory input/challenges.
- "fight/flight" can trigger abnormal tone that influences positioning and airway protection.
- Contributes to poor oral- motor abilities and dysphagia.

↑Sensory Threshold

Sensory Under-Responsivity (SUR)

- Contributes to oral dysphagia.
- ↑ Drooling
- Mouth Stuffing
- Pocketing
- ↑ bolus size
- Can affect tolerance of oral care

Some Behavioral Indications of Oral SPD and Aspiration

Oral Sensory Over-Responsivity

- Responds negatively to new textures, flavors, temperatures.
- Gagging
- Dislikes hygiene activities
- Avoids touching utensils with mouth
- Has signs of general tactile defensiveness

Oral Sensory Under-Responsivity

- Likes intense flavors
- Messy eater
- Large bites
- Stuffing Mouth
- Pocketing
- Drooling
- Likes to mouth objects and seems to crave oral input

Oral SPD Intervention

Observe the individual to see what oral sensory input tends to support them or "organize" them. Some general ideas (must be individualized):

Sensory Over-Responsivity

- "Safe" input is predictable, slow, rhythmic
- Deep touch not light "tickly" touch
- Start in areas that are less sensitive and progress to more sensitive areas: trunk, arms, hands, face, mouth
- Activities that decrease tone
- Graded "just-right" Challenges

Sensory Under-Responsivity

- "Wake-up" input
- More input taste, texture, etc.
- Chewing
- Vibration
- Activities that increase tone and graded, organized movement

Oral SPD Intervention

A General Sensory Processing Support Plan should be considered to support normalization of response to Oral Input.

Sample Sensory Diet Activities

Whole body organization:

•Swimming, exercise

•Pushing on therapy ball

•Deep Pressure Massage

•Weighted or Compression Items

•Pillow "Fights"

•Swinging/Rocking

Sample Mealtime "Sensory Prep or Sensory Processing Strategies"

Oral-Motor organization

•Washing face (firm, elongating strokes toward midline or deep pressure placement)

•Joint Compression through shoulders

•Facial Massage or Vibration

•Lemon Ice

•Sucking, Blowing, Chewing activities

•Sensory Qualities of Food/Liquid Choices

Oral SPD Intervention

Oral Defensiveness

- Consider Environmental Factors
- Type of Tooth Brush
- Sensory Qualities in the Mouth
- Teach staff/family about: firm touch, maintaining contact, using rhythm to help establish expectation and control.
  - Count "1,2,3,4,5…out". Or … use a song to do this.
- Give the individual control
- Establish communication, "safe" touch, trust and routine.

Assessment and Intervention Considerations

Additional Considerations

- Does the individual have a Sensory Processing Support Plan that integrates a Sensory Diet to help address overall sensory needs?
- Have you considered the Wilbarger Deep Pressure and Proprioceptive Technique and or Oral Tactile Technique?
- Consider Oral-Motor Treatment to help normalize response to oral input. Consult/Collaborate with SLP as needed.

Focus -
Assistive Technology for Oral Care

Squeezes Toothpaste

- Toothpaste Dispensers
- Touch N Brush

Slide on the Cover.

Assistive Technology for Oral Care

Grasping Toothbrush

- built-up handles
- utensil holder
- wrist support
- weighted cuff

Scuba Brush

Assistive Technology for Oral Care

Brushing all surfaces →

- Plaque Identifying Rinses or Swabs
- Cueing Cards for Oral Care Routine
- Timers

Assistive Technology for Oral Care

Toothbrush Options → **What to consider → Collaborate (Nursing/Dental) as needed**

Collis-Curve

Surround

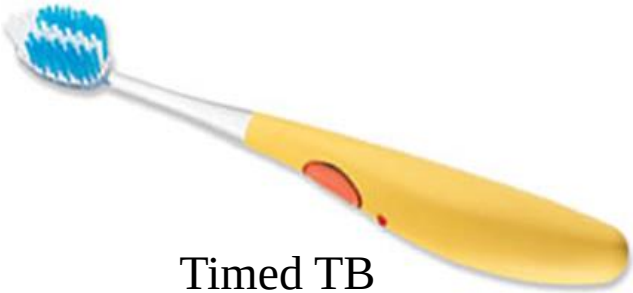
Benefit

Scuba

Suction TB

Sensitive TB

Electric TB



Timed TB

Assistive Technology for Oral Care

- Bite Reflex → Inhibition techniques, bite blocks, coated/soft TB handles, caution…
- When should you consider use of Bite Blocks?
  - Safety for individual or for staff/family
  - Can't provide oral care without one and other methods have been considered first
  - Collaborate as needed

Case Study – Oral Hygiene

- "Martha"
  - In mid-50's
  - Communicates non-verbally.
  - Is independently ambulatory, poor balance.
  - Diagnosis: I/DD, autism, periodontal disease, osteopenia, GERD, and Hx. of rumination.
  - Medications: Zantac, Fosamax, Calcium, Vit. D.
  - Tactile Defensiveness, dislikes face washing and oral care.
  - Enjoys music (oldies), things she can throw, riding in the car, going for walks, and looking nice.