POSTette: Reducing Risk of Dehydration /Free Water Protocol

Reference: Medicare Benefit Manual Chapters 8 & 15, Local LCD's, ASHA

Dehydration

Dehydration is a serious and common problem encountered in health care particularly in the elderly dysphagic patient. *Dehydration is the most common fluid and electrolyte disturbance in the geriatric population*. (Sansevero, 1997; Chernoff, 1994)

"*Dehydration can lead to a variety of negative health consequences including:*

- *Changes in drug effects*
- *Infections*
- *Poor wound healing*
- *UTI's*
- *Confusion*
- *Constipation*
- *Altered cardiac function*
- *Declining nutritional intake"*

(Gross et al., Coperman, 2000; Kleiner, 1999)

Quality of Life

A patient's quality of life must be considered when recommending an altered diet. Long term orders for thickened liquids or tube feedings without an option for water or ice chips denies a very primitive and basic drive to refresh the senses.

Traditional thought holds that aspiration of any material into the lungs can lead to aspiration pneumonia so many patients who have difficulty swallowing are placed on diet restrictions that avoid thin liquids. Following the guidance of thickening liquids and giving the patient additional time to swallow, rather than letting the liquid go into the airway.

However, a confounding evidence in the literature suggests that pulmonary aspiration of differing materials may not present an equal risk for the development of aspiration pneumonia. **Aspiration will result in pneumonia only if the aspirated material is pathogenic to the lungs and the host resistance to the aspirated material is compromised.** Research also discovered: *"The risk of developing aspiration pneumonia was significantly greater if thick liquid or more solid consistencies were aspirated."* (Holas, DePippo, & Redding, 1994)

If a patient must be on a thickened liquid for any duration of time, **research using a free water protocol found that fewer residents had UTI's and dehydration and that when paired with proper positioning and oral care, there were no incidents of aspiration.** Additionally, providing patients with thin water:

- Improves quality of life
- Improves Resident satisfaction with meals and less reports of thirst (Over 35% of patients are noncompliant with thickened liquids)
- Decreases risk of dehydration, UTI's and pneumonia

Think Thin! Clinical scenarios to consider decisions made on ordering thickened liquids:

- Patient admitted on thick liquids due to clinical s/s of aspiration in the hospital. No MBS or FEES performed. Complete a bedside assessment to determine if patient can advance to thin liquids. Use evidenced based practice to determine risk for not just aspiration, but for aspiration pneumonia. Coughing on its own is not a reason to place a patient on thickened liquids. What other medical precipitating factors? Use the three pillars of aspiration* to help determine risk of advancing. Do they need MBS?
- Long term care patient with dementia has been on thick liquids for 1 year or more. Reassess the patients swallow abilities. Review patient history for pneumonia, dehydration, and diet compliance. What is the clinical reason to continue on the thickened liquids? Implement Free Water Protocol.

  ***Three Pillars of Aspiration:** All three factors–impaired health status, dysphagia, and poor oral health–must be considered together each with their presence and severity integrated into determining if your patient is at risk for pneumonia from aspiration or not.*

  - ***Health Status,** or severity of illness, can be determined from the medical record including age, current medical diagnoses, how debilitated is the patient and why, and the status of the immune system.*

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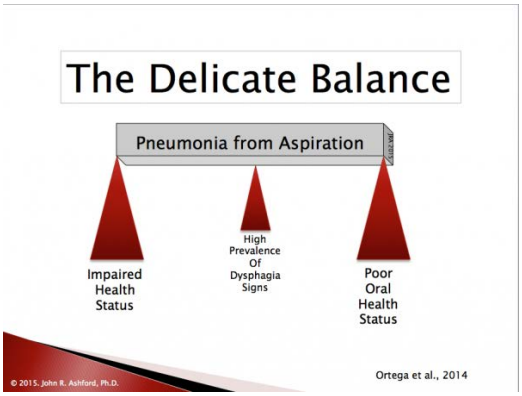
- ***Oral Health Status*** *can be determined by overtly examining the teeth, tongue, and mouth. The Oral Health Assessment Tool (OHAT) is a recognized, proven screening tool for just such purposes.*
- ***Swallowing Safety*** *should only be determined using both a clinical swallowing evaluation as well as an instrumental study as needed*



Bacteria

The elderly have an increased incidence of oral pharyngeal colonization of respiratory pathogens. This can occur because of decreased salivary production and abnormalities of swallowing. Because they cannot clear the organisms, pathogenic colonization takes place.
Preventive measures to promote oral and dental health may reduce the likelihood of pathogenic bacteria being present in the oral cavity and being aspirated either alone or in combination with foods or liquids.

Frequent Oral Infection Control leads to:

- A reduction in bacteria
- Increased desire to eat /Increased oral awareness of food
- Decreased aspiration
- Increased alertness
- Prepares patients for meals by increasing taste, sensation and produces salivation.

Vital Signs

Vital signs provide valuable information on a patient's status. Oxygen saturation and temperature are often used to determine if a patient is aspirating. While there is mixed evidence that these changes help identify aspiration, it's best to consider a variety changes in vital signs to help make clinical decisions related to dysphagia intervention such as: Heart rate; Respiratory rate; Blood pressure; Oxygen Saturation; and Temperature.

Changes in vocal quality and cough strength can also be signs of aspiration. It is important to assess the patient with all of the information available including recent lab values, chest x-ray (or other pertinent imaging), as well as the precipitating and perpetuating factors. One data point by itself is not enough information. By incorporating vital signs into SLP treatment sessions, better informed decisions for patients can be made.

Safety of Water

Aspiration during water drinking trials is a benign event. "*Water is rapidly absorbed by the lungs and even massive entry may cause only transient respiratory changes in cases of near drowning."* (Feinberg, 1990)

"Clear liquids do not pose an aspiration pneumonia risk unless the pH is very high or very low or if the quantity is great enough to cause asphyxiation."(Crossley & Thum, 1989)

Most municipal tap water is nearly neutral pH and very close to the pH of bodily fluids (pH=7.2) Therefore, the presence of water in the pulmonary system should not cause a chemical injury to the mucosa of the lungs.

The Free Water Protocol may not be appropriate for all patients. The following table can be used to help assess risk.

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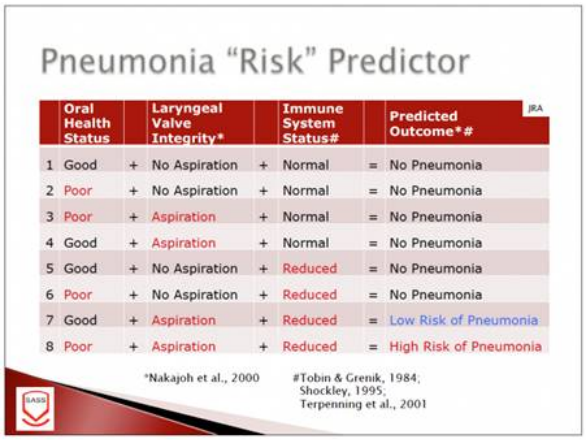

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Free Water Protocol Implementation

- **SLP/Nursing/Dietary partnership** to implement / validate facility wide education and training. Include implementation of oral infection control protocols.
  - This is not an SLP program but rather a facility program.
  - It works best if oral infection control is provided every am, prior to meals, after meals, as needed. If NPO, provide as needed or at minimum every shift.
  - The intervention needs to be care planned
- SLP assesses each patient who is on a thickened liquid to determine if they 1. They actually still require a thickened liquid and 2. If so, are appropriate for free water (thin water) between meals.
- Obtain an order will for patient participation in the Free Water Protocol.
- Establish Identifiers so the patient can be monitored (by entire staff) ensuring that free water is not provided during meals or given with medications
- Educate the resident and families

The Protocol

- **Position upright** ALWAYS.
- **Assess oral cavity** for need for oral infection control.
- Thin water is offered freely throughout the day **except during meals or when providing medications.**
  - Water and ice chips cannot be provided during a meal if the patient is prescribed thickened liquids. The prescribed thickened liquid is provided at meals.
  - Medication cannot be administered with water if patient has a prescribed thickened liquids.
- **After a meal:** No thin water is offered until either 1. Oral infection control is completed or 2. It's been 30 minutes after the meal.
- **NPO patients** can have thin water anytime as deemed appropriate by SLP.
- Use all other swallowing guidelines

Assessment Areas for Signs/Symptoms of Dehydration	
Assess Oral Mucosa	Dry mucosa can be a sign of dehydration
Assess skin turgor during evaluation, review nursing notes	An early sign of dehydration
Check Pertinent Lab Values for general condition of patient at time of evaluation	Typically electrolytes, BUN, creatinine, ratio of BUN: Creatinine can be indicators along with other evidence of dehydration
Check Foley catheter for urine color	This is crucial information, especially if urine darkens over time
Assess Swallow function of Thin vs. Thick Liquids and determine if Free Water is an option	Use swallow function information and risk for dehydration vs. pneumonia to determine best liquids for patient.
Take a thorough history to see if there are known disease processes which disrupt fluid management(i.e., kidney disease	Precipitating factors for dehydration can affect decisions to modify liquids.
Assess if patient is known to be at risk for dehydration and/or if there is an order to encourage fluids	Some patients need fluids encouraged. Work with nursing to provide during all therapies and rest breaks. Document and relay to nursing
Take Vitals to look for any s/s of dehydration	i.e. Low blood pressure, high heart rate, high respiratory rate
Assess for Delirium **NOTE:** it is important to have documentation that time was given for a delirium to resolve before intervention and that the services are now needed because the unresolved issues are affecting the patient's rehab potential.	If cognition is markedly different from baseline or if patient had recent ICU stay / surgery: assess for Delirium using Confusion Assessment Method(also on MDS)

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ORAL HEALTH ASSESSMENT TOOL (OHAT) for NON-DENTAL PROFESSIONALS
Primary Care

Patient/Client:

Date:

Initial assessment ○ Repeat assessment ○ 1 ○ 2 ○

*NOTE: A Star * and underline indicates referral to an oral health professional (i.e. dentist, dental hygienist, denturist) is required.*

Category	0 = healthy	1 = changes	2 = unhealthy	Score	Action Required	Action Completed
Lips	Smooth, pink, moist	Dry, chapped, or red at corners	Swelling or lump, white/red/ulcerated patch; bleeding/ ulcerated at corners*		1=intervention 2 =refer	☐YES ☐ NO
Tongue	Normal, moist, pink	Patchy, fissured, red, coated	Patch that is red and/or white, ulcerated, swollen*		1=intervention 2 =refer	☐YES ☐ NO
Gums and Tissues	Pink, moist, Smooth, no bleeding	Dry, shiny, rough, red, swollen around 1 to 6 teeth, one ulcer or sore spot under denture*	Swollen, bleeding around 7 teeth or more, loose teeth, ulcers and/or white patches, generalized redness and/or tenderness*		1 or 2 = refer	☐YES ☐ NO
Saliva	Moist tissues, watery and free flowing saliva	Dry, sticky tissues, little saliva present, resident thinks they have dry mouth	Tissues parched and red, very little or no saliva present; saliva is thick, ropey, resident complains of dry mouth*		1=intervention 2 =refer	☐YES ☐ NO
Natural Teeth ☐ Y ☐ N	No decayed or broken teeth/ roots	1 to 3 decayed or broken teeth/roots*	4 or more decayed or broken teeth/ roots, or very worn down teeth, or less than 4 teeth with no denture*		1 or 2 = refer	☐YES ☐ NO
Denture(s) ☐ Y ☐ N	No broken areas/ teeth, dentures worn regularly, name is on	1 broken area/tooth, or dentures only worn for 1-2h daily, or no name on denture(s)	More than 1 broken area/tooth, denture missing or not worn due to poor fit, or worn only with denture adhesive*		1 = ID denture 2 = refer	☐YES ☐ NO
Oral Cleanliness	Clean and no food particles or tartar on teeth or dentures	Food particles/ tartar/ debris in 1 or 2 areas of the mouth or on small area of dentures; occasional bad breath	Food particles, tartar, debris in most areas of the mouth or on most areas of denture(s), or severe halitosis (bad breath)*		1=intervention 2 =refer	☐YES ☐ NO
Dental Pain	No behavioural, verbal or physical signs of pain	Verbal and/or behavioural signs of pain such as pulling of face, chewing lips, not eating, aggression*	Physical signs such as swelling of cheek or gum, broken teeth, ulcers, 'gum boil', as well as verbal and or behavioural signs*		1 or 2 = refer	☐YES ☐ NO
					Completed by:	

REFERRAL ☐ Referral to oral health professional Date _____ Name _____
INTERVENTIONS ☐ Chronic disease management ☐ Acute illness management ☐ Medication review ☐ Patient/Client/Family education
☐ Referral to health professional ☐ MD ☐ Nurse/NP ☐ Dietician ☐ OT ☐ SW ☐ Community worker ☐ Other _____
NOTES:

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ML van der Horst, D Scott, D Bowes

Additional Education Resources

- https://www.ahajournals.org/doi/full/10.1161/01.str.28.9.1773#:~:text=As%20shown%20in%20Table%201%2C%20the%20mean%20arterial,1.6%25%2C%20which%20occurred%20at%20the%20point%20of%20aspiration.
- Water Protocol: Safety, Hydration, and Quality of Life available from www.asha.org
- www.jhsmh.org - The Frazier Rehab Institute Water Protocol, Kathy Panther
- http://www.jhsmh.org/carecenters/re_sp_waterpro.asp JAGS January 2006 Volume 54. No. 1 - Oral Care Provided by Certified Nursing Assistants in Nursing Homes, P.Coleman and N. Watson
- http://dhs.wisconsin.gov/rl_dsl/TRAINING/OrlCrhndout.pdf The Washington Post 8/19/08 page HE01- Watch Your Mouth:Gums and Teeth Give Clues About What's Going On Inside Your Body, R. Mishori
- http://www.washingtonpost.com/wp-dyn/content/article/2008/08/15/AR2008081503122.html PulminaryReviews.com Sept. 2002 Volume 7 No. 9-Oral Health Affects Pneumonia Risk in the Elderly, G. Jurasek http://www.pulmonaryreviews.com/sep02/pr_sep02_oralhealth.html
- https://www.sasspllc.com/wp-content/uploads/2018/02/Ashford-2005-Pneumonia.-Factors.pdf
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- https://www.sasspllc.com/wp-content/uploads/2018/02/Mills__Ashford.pdf

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