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# Deciphering Oral Stasis: Managing the Challenging Combination of Dementia and Dysphagia – Part I

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# Deciphering Oral Stasis: Managing the Challenging Combination of Dementia and Dysphagia

Part I: Evaluation

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## Overview / Agenda

- Introduction and Overview of Cognitive Based Dysphagia
- The Cognitive Hierarchy and Assessment
- Prevalence of Dysphagia in Alzheimer's Disease
- Dysphagia Symptoms by Stage of Dementia
- Clinical Exam Reporting: Dementia Patients
  - Evaluation of Oral Apraxia, Oral Acceptance, Oral Preparatory and Oral Phases
- Challenging Environmental Factors During Mealtime
- Research, Conclusions and Next Steps

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## The Scope of Cognition

- A far reaching impact
- Cognition: A clinical area with an opportunity to affect the majority of patients
- What is impacted by cognition?
  - Pain
  - Falls
  - Positioning
  - Wound care
  - Dysphagia
  - Incontinence

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## Differential Diagnosis

- **Delirium – Disturbance of Attention**
- **Dementia – Disturbance of Memory**
- **Depression – Disturbance of Mood**
  
- **GOAL:**
  - To enhance our ability to interpret the signs and symptoms of our cognitively impaired patients and manage them effectively

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## Underlying Principle

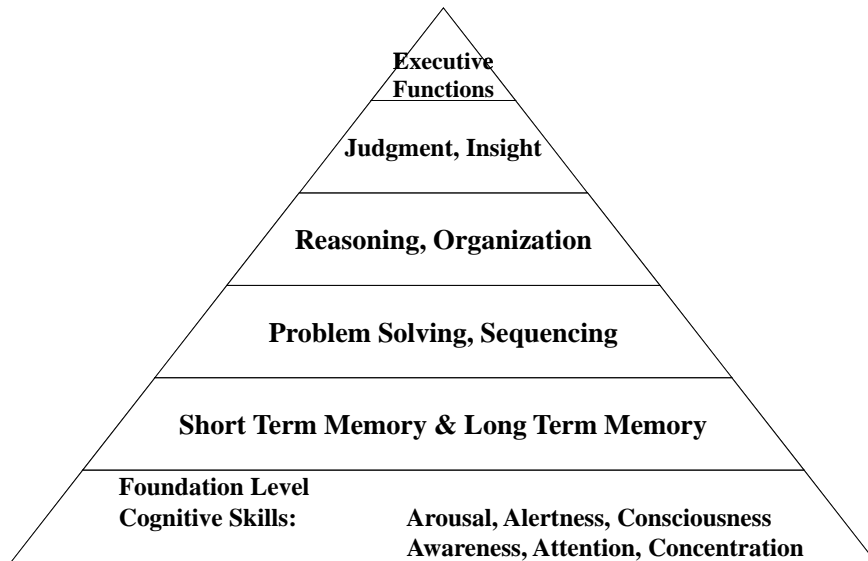
- Attention and concentration
  - Foundation level skills
- All cognitive skills build on this foundation
- When attention and concentration are impaired...
  - Remaining abilities are difficult to assess
  - All cognitive abilities appear deficient

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## The Cognitive - Communication Hierarchy



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## Delirium: Disturbance of Attention

- Syndrome of cognitive impairment caused most immediately and directly by metabolic brain dysfunction
- Impaired Cognitive Functions:
  - Prerequisites For Higher Level Skills
    - Arousal
    - Alertness
    - Consciousness
    - Awareness of External Stimuli
    - Attention
    - Concentration
- THEREFORE....Cognitive Impairment is Global, Diffuse

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# Delirium

Continued

## Time Considerations

- Recovery depends on ---- >
  - Presence of Pre-morbid Structural Brain Disease
  - Early Recognition
  - Severity
  - Cause / Etiology
  - Age
- Deliria caused by acute conditions -
  - Respond rapidly to RX - {4 - 7 Days}
- Deliria of more complex nature -
  - Several weeks or more
- Unrecognized, severe, protracted delirium =
  - Brain lesion, Permanent cognitive deficits

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## Clinical Laboratory Investigations

- Blood Tests
  - Electrolytes
  - Blood Count
  - ABG
  - Thyroid Function Tests
- Toxicology Screen
- Urinalysis
- CXR, CT Scan

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## Management of Delirium

- Match level of arousal to level of external stimuli
- Ameliorate sensory deficits
- Obtain stimulation balance
- Familiarize the environment
- Conveniently placed visual orientation aides

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## Dementia: Disturbance of Memory

- Acquired intellectual deterioration
- Broad array of cognitive impairments
- Complete disorganization of the individual
- Progressive, neurodegenerative disease
- Characterized by loss of function and death of nerve cells in several brain areas
- No cure but treatments attempt to delay onset and slow the progression

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## Symptoms of Dementia

- Clinicians must learn to differentiate dementia from the normal aging related forgetfulness.
  - Persons with normal aging related forgetfulness learn new information and recall previously learned information more slowly.
  - Persons with normal age related forgetfulness continue to perform daily functions.

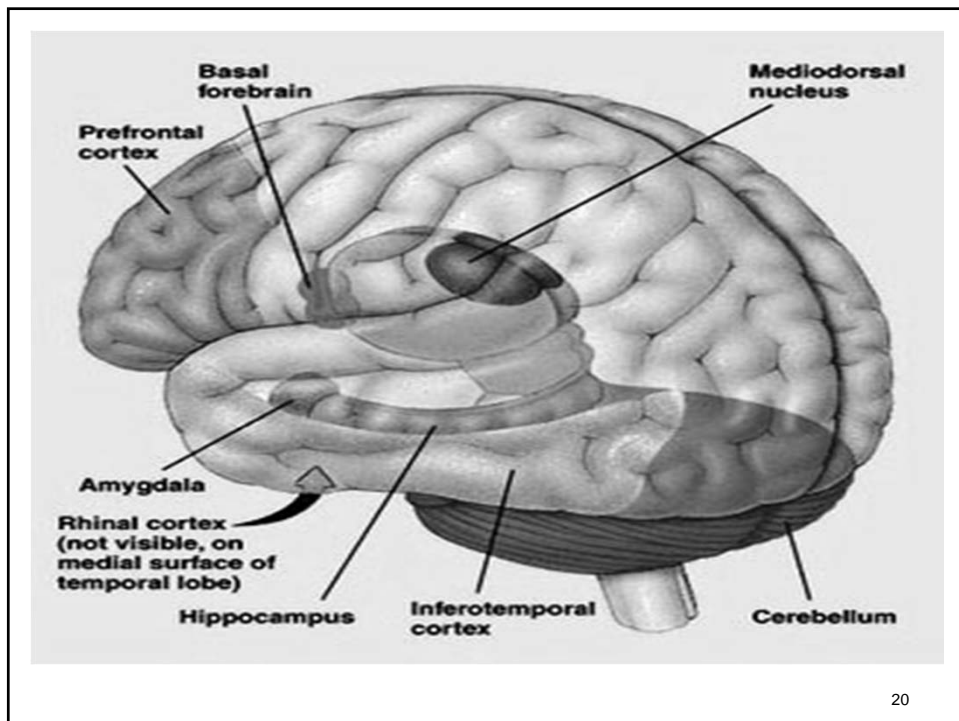
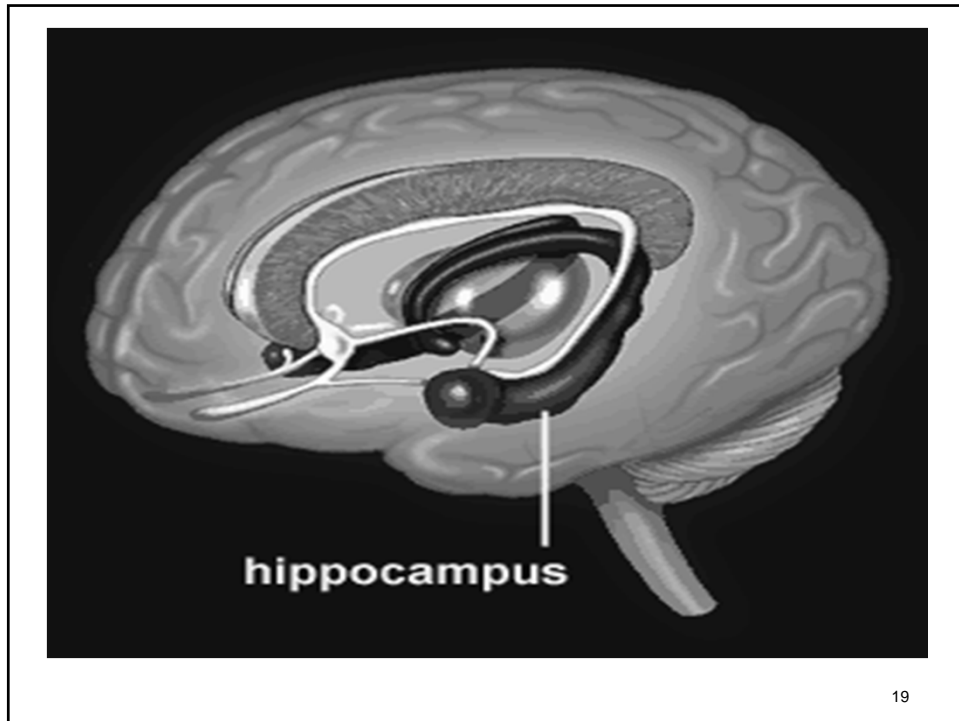
Normal Forgetfulness	Alzheimer's Memory Loss
<ul style="list-style-type: none"> <li>■ Forget details of recent experience but not the experience</li> <li>■ Frequently remembers a forgotten item later</li> <li>■ Can use notes or reminders to refresh memory</li> <li>■ Can follow both written and spoken directions</li> </ul>	<ul style="list-style-type: none"> <li>■ Forgets the experience</li> <li>■ Does not remember that anything has been forgotten</li> <li>■ Cannot use notes or cues to aid recall</li> <li>■ Eventually cannot follow written or spoken directions</li> </ul>

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## Memory

Memory	Location in the Brain
Episodic Memory (Rapid forgetting of events)	Hippocampus
Working Memory	Frontal Lobes
Procedural Memory	Motor Strip
Habits and Emotions (Feeding self, ADLs, crying)	Midbrain
Conditioned Responses (swallowing)	Brainstem

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## Depression: Disturbance of Mood

- Relationship to physical illness
- Depression - a 1st sign of physical illness
  - Hypothyroidism
  - Parkinson's Disease
  - Pancreatic CA
  - Early DM
  - Dementia
- Depression secondary to physical illness
- Treatable :
  - Depressed Mood
  - Attentional disturbance
- Poor concentration and memory are two signs most amenable to antidepressants

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## Prevalence of Dysphagia in Alzheimer's Disease

- Neurological disorders affecting oral, pharyngeal swallowing, Stephanie K. Daniels
- 32% (Volicer et al.)–84% (Horner et al.)
- In the CASCADE Study 86% of persons with advanced dementia developed a feeding problem, and onset was associated with 39% mortality at 6 months
- Pneumonia and eating difficulties in advanced dementia are associated with a 6 month mortality rate

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## Clinical Exam Reporting in the Dementia Patient with Dysphagia

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## The Normal Aging Swallow

- What has been described as swallowing dysfunction in young persons may not be abnormal in very elderly persons. It is difficult to distinguish the effect of normal aging from the effects of specific diseases or gradual degenerative changes.
- Preliminary observations on the effects of age on oropharyngeal deglutition (Julie F. Tracy, Jeri A. Logemann, Peter J. Kahrilas, Pothan Jacob, Mindy Kobara and Christine Krugler, *Dysphagia*, Volume 4, Number 2 / June, 1989)
  - Five measures were significantly changed with increasing age:
    1. Duration of pharyngeal swallow delay (increased)
    2. Duration of pharyngeal swallow response (decreased)
    3. Duration of cricopharyngeal opening (decreased)
    4. Peristaltic amplitude (decreased)
    5. Peristaltic velocity (decreased)

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## **Dysphagia and Dementia Combination**

- The ripple effect in Alzheimer's disease
  - Dysphagia – physiologic oral and pharyngeal changes
  - Dementia – cognitive and associated behavioral changes
  - Nutrition and hydration
  - Quality of Life
- Resuming calm waters
  - Achieving a Balance of Safety and Quality of Life

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## **The Dysphagia & Dementia Combination**

- The complexity of the relationship
- Dementia and significant change
- Anticipated improvement as an acute process resolves
- Treatment appropriateness conflict
- Individualized approaches identified via the skilled dysphagia clinician
- Nursing, Activities, Family training

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## Early Stage Dementia

- Effects of Dementia on swallowing, nutrition and hydration
  - Mild Cognitive Impairment (MCI)
  - Depression
  - Taste and smell dysfunction
  - Awareness of cognitive deficits
  - Attention - Mildly impaired
    - Distracted intermittently throughout the meal
  - Medications and polypharmacy
  - Decreased nutrition and hydration due to MCI and depression

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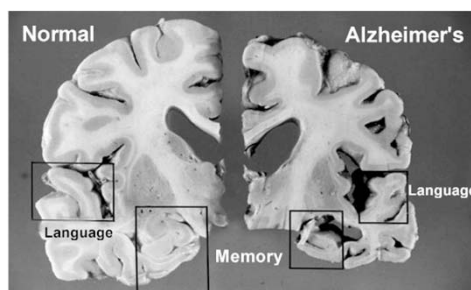
## Middle Stage Dementia

- Effects of dementia on swallowing, nutrition and hydration
  - Wandering
  - Motor restlessness
  - Assistance needed for adequate oral care
  - Cognitive based dysphagia
  - Attention - Moderately impaired
    - Distracted periodically throughout the meal
  - Texture aversion
  - Medications and polypharmacy
  - Decreased nutrition and hydration
  - Is it possible to forget to eat??

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## Advanced / Late / End Stage Dementia

- Effects of dementia on swallowing, nutrition and hydration
- Over chewing
- Severe myoclonus
- Twitching in oral musculature
- Self-feeding ability is lost
  - Individuals become dependent on others for meal consumption



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## Advanced / Late / End Stage Dementia

- Cognitive Based Dysphagia
  - Dependence on oral care
  - Oral apraxia
  - Oral acceptance deficits
  - Oral preparatory deficits
  - Attention - Mod-severely impaired
    - Often distracted throughout the meal
  - Texture aversion
  - Medications and polypharmacy
  - Pharyngeal phase deficits and aspiration
  - Positioning
    - Three common head/neck positions occur in the later stages of dementia: Chronic head/neck flexion, variable head/neck flexion/extension caused by a lack of positioning management, and chronic head/neck hyperextension
    - Crescent Pillow Mate - cervical alignment w/o forward flexion

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## Sensory Function

- Are sensory pathways intact, intermittently intact, or absent?  
Assessment of the six anatomic sites in order:
  1. Tongue (anterior two-thirds)
  2. Tongue (posterior one-third)
  3. Hard palate
  4. Soft palate
  5. Posterior pharyngeal wall
  6. Laryngeal region
- Manifested in: decreased PO intake secondary to:  
Altered/absent perception of taste; diminished safety mechanism for sensing hot food, with potential/actual intraoral injuries; and/or profound sensory deficits in the later stages of the disease that eliminate any functional mastication pattern
- Managing Dysphagia in Residents with Dementia, Sue Curfman, MA, CCC

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## Oral Motor Changes in Dementia

- The oral motor function will determine the pattern of mastication, which deteriorates in a predictable fashion with the progression of dementia. The progressive deterioration in the mastication patterns below reflects a transition from higher level reflex integration to lower level reflex integration during the course of dementia:
- (1) Rotary chew pattern; (2) Lateral chew/chomping pattern and jaw-jerk reflex; (3) Suck-swallow pattern and (4) Absent oral motor function for chewing.
  - Managing Dysphagia in Residents with Dementia – Skilled Intervention for a Common and Troubling Disorder by Sue Curfman, MA, CCC

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## Oral Apraxia

- Patient is unable to volitionally open their mouth to a spoon and/or cup
- Once bolus is in the mouth, the Patient may be unable to manipulate it or initiate a swallow
  - This may be seen with solids and/or liquids

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## Oral Acceptance

- Ability to achieve partial to complete jaw opening in response to cup, utensil, meal context
- Ability to complete jaw and lip closure
- Differentiate between patient refusal (behavioral) and oral apraxia

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## **Oral Acceptance Differential Diagnosis: Cognition and Behavior**

- Cognitive based dysphagia
  - Etiology lies in neurological disease process
- Behavioral refusal of PO intake
  - Consider medical diagnoses causing behavior disturbance
  - In the presence of intact oral motor and oral phase function
  - Determine favorite solids and liquids
  - Ask patient to take favorite items

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## **Oral Preparatory**

- Partial to complete oral stasis
- Bolus may come to a complete stop in the mouth
- Reduced A-P transit of masticated bolus

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## Overcoming Cognitive Challenges Impacting Swallowing

### ■ Alertness

- Consider the etiology of reduced alertness
- Give extra helpings when alert
- Nutritional supplements
- Flexibility within the feeding routine
- Determining satisfactory alertness criteria for safe meal consumption:
  - Are eyes open – not 100% necessarily if other criteria are met
  - Are questions being answered contingently?
  - Does patient follow one-step commands?

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## Tardive Dyskinesia

- Middle to late stage dementia and other diagnoses
- Older antipsychotic medications taken for a minimum of 6 weeks to extended periods
  - Chlorpromazine
  - Fluphenazine
  - Haloperidol
  - Trifluoperazine
- Newer antipsychotic medications are less harmful
- Tongue thrust
- Repetitive chewing
- Disorganized tongue movements
- Pharyngeal pooling, aspiration
- Facial grimacing

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## **Environment & Communication Assessment Toolkit for Dementia Care**

- Evaluation of personal spaces
  - Activity Performance
  - Environmental Measures – Circulation, Toilet, Bathtub / Shower, Signage, Sink-Grooming, Clothes Storage, Time/Location Cues, Controls for Ambient Conditions, TVs, Radios and Telephones, Conversation Areas, Display of Personal Items, Social Environment
- Evaluation of public spaces
  - Activity Performance
  - Environmental Measures – Circulation, Signage, Time/Location Cues, Restroom, Dining Room, Leisure and Social Areas

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## **Challenging Mealtime Environmental Factors**

- Media
  - Music that evokes a positive or negative reaction
  - TV
- Lighting – the more natural the better
- Environmental organization – level of clutter
- Color contrast
- Other Patients, Staff
- Meal tray set up
- Pre-meal wait time

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## **Dysphagia, Weight Loss, and Cognition**

- Consider primary reason for inability to sustain nutrition & hydration
- Weight loss as a result of dysphagia and impaired cognition
- SLPs treat the dysphagia and / or the cognitive deficits that may lead to reduced nutrition and hydration and then weight loss
- SLP (not RD, OT, or RN) focused goals for swallowing and cognition

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## **Predictors of Aspiration Pneumonia: How important is dysphagia?**

- Predictors of aspiration pneumonia: how important is dysphagia? - Langmore SE - Dysphagia - 01-APR-1998; 13(2): 69-81
- Research Risk Factors for Aspiration Pneumonia
  - Dependence for feeding
  - Dependence for oral care
  - Number of decayed teeth
  - Tube feeding
  - More than one medical diagnosis
  - Number of medications
  - Smoking

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## References and Conclusions

- Feeding and Swallowing Disorders in Dementia, Kindell, J., 2002, Speechmark Publishing Ltd.
- Dysphagia and aspiration pneumonia in patients with Alzheimer's disease, Madhu Kalia, *Metabolism - Clinical and Experimental* Vol. 52Supplement 2, Pages 36-38.
- Volicer L, *et al.* Eating difficulties in patients with probable dementia of the Alzheimer type. *J Geriatr Psychiatry Neurol* 1989;2:188–195.
- Horner J, Alberts MJ, Dawson DV, Cook GM. Swallowing in Alzheimer's disease. *Alzheimer Dis Assoc Disord* 1994;8:177–189.
- Laura C. Hanson, MD, MPH, Mary Ersek, PhD, RN, Robin Gilliam, MSW, and Timothy S. Carey, MD, MPH, *Oral Feeding Options for Patients with Dementia: A Systematic Review, J Am Geriatr Soc. 2011 March; 59(3): 463–472.*
- Mitchell SL, Teno JM, Kiely DK, et al. The clinical course of advanced dementia. *N Engl J Med.* 2009;361:1529–1538.
- More research is needed in all aspects of this diagnosis combination so that we can continue to alleviate the challenges it brings

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## Next Steps

- December 9, 2013 - Deciphering Oral Stasis: Managing the Challenging Combination of Dementia and Dysphagia – Part II
- Identify Cognitive Based Dysphagia Patients

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<b>Cognitive Based Dysphagia Diagnostic - Treatment Checklist</b>	
<b>Date</b>	<b>Strategies / Techniques Implemented</b>
_____	<b>Analysis of Alertness Level</b>
_____	Give extra helpings when alert
_____	Nutritional supplements
_____	Flexibility within the feeding routine
_____	Defining satisfactory alertness criteria for safe meal consumption:
_____	• Are eyes open – not 100% necessarily if other criteria are met _____
_____	• Are questions being answered contingently? _____
_____	• Does patient follows one-step commands? _____
_____	<b>Analysis of Mealtime Environmental Factors</b>
_____	Media
_____	• Music that evokes a positive or negative reaction: _____
_____	• TV: _____
_____	Lighting
_____	Environmental organization – level of clutter
_____	Color contrast
_____	Amount of other patients, staff
_____	Meal tray set up
_____	Pre-meal wait time
_____	<b>Oral Apraxia / Oral Acceptance / Oral Preparatory Deficits</b>
_____	Thermal - Gustatory Stimulation Methods - Alternate extreme tastes versus bland tastes
_____	Coated spoon presentation in between full bolus
_____	Cold, metal spoon presentation
_____	Adaptive equipment
_____	Cup versus spoon presentation
_____	• Nourishing Full Liquid Diet _____
_____	• Blenderized Pureed Diet _____
_____	Timing, readiness, techniques – provide next bolus within specific time intervals
_____	Patient routine adaptations - timing of meals capitalize on patient routine at PLOF
_____	Self feeding to facilitate natural oral acceptance, oral prep and retropulsion of bolus
_____	Alternate hot - cold
_____	Diet texture modification
_____	Use of distractions to facilitate natural oral acceptance, oral prep and retropulsion of bolus
_____	Behavioral strategies
_____	Turning the head away = A protective mechanism to indicate more time is needed
_____	• Provide more or a specific time between bites, sips
_____	Beckman Oral Motor – Compensatory Handling Techniques for:
_____	1) Impaired oral acceptance 2) Tonic biting on an item 3) Delayed oral transit
_____	4) Anterior spillage of solids / liquids
_____	Provide multi-modality and multi – sensory cues - Tactile, visual, verbal cues & modeling
_____	Provide contextual cues to comprehend mealtime setting
_____	Ambulate and eat – Requires finger foods
_____	Finger foods
_____	• When it is difficult to use a utensil _____
_____	• When it is helpful to ambulate and eat
_____	Participation in mealtime set up
_____	Limiting the items of meal presentation – 1-2 items on tray
_____	Establish mealtime routine
_____	6 small meals per day / snacks between meals
_____	Frequent breaks

	Differentiating the place settings and square tables
	Identify likes and dislikes
	Double portions when alert and at times of increased appetite
	Alternate temperature
	Capitalize on sweet taste receptors – use natural sweeteners when appropriate
	Strategies to reduce anxiety
	Name place cards, receipts for ‘payment’ of meals
	<b>Adaptive Equipment</b>
	Feeding devices
	Positioning devices
	Oral phase swallowing function equipment
	Pharyngeal phase swallowing function equipment
	<b>Education and Training</b>
	On all aspects of dysphagia for patients and caregivers
	Determining decision making capacity
	Patient right to refuse
	<b>Combination of Strategies</b>
	<b>Other Strategies / Techniques:</b>