

# Eating and Swallowing Issues in Persons with Alzheimer's Disease: Impairment to Treatment

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U.S. Department  
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# Disclosures



## **Nicole Rogus-Pulia, PhD, CCC-SLP**



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Swallowing/eating is a *biopsychosocial* activity that is a key element of healthy life



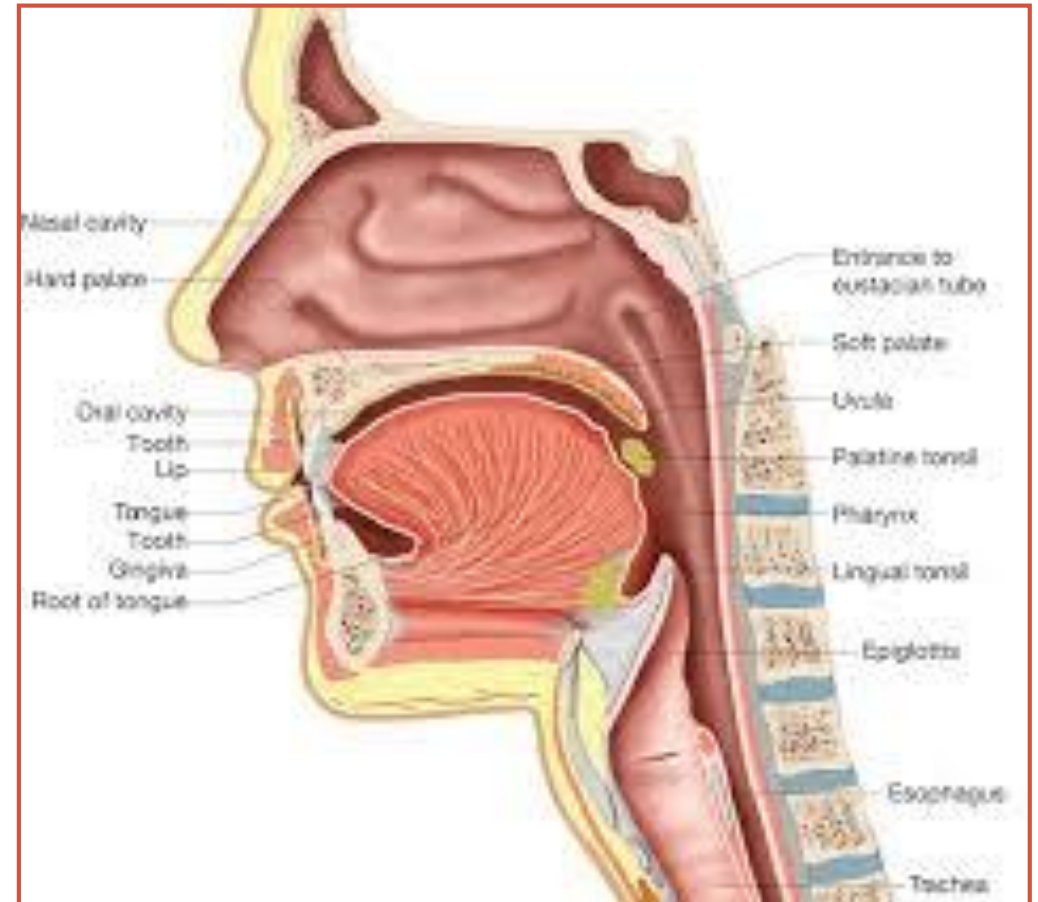
**Swallow** – to move material from the mouth through the esophagus into the stomach by a series of muscular actions

**Dysphagia** – a swallowing disorder characterized by difficulty moving...

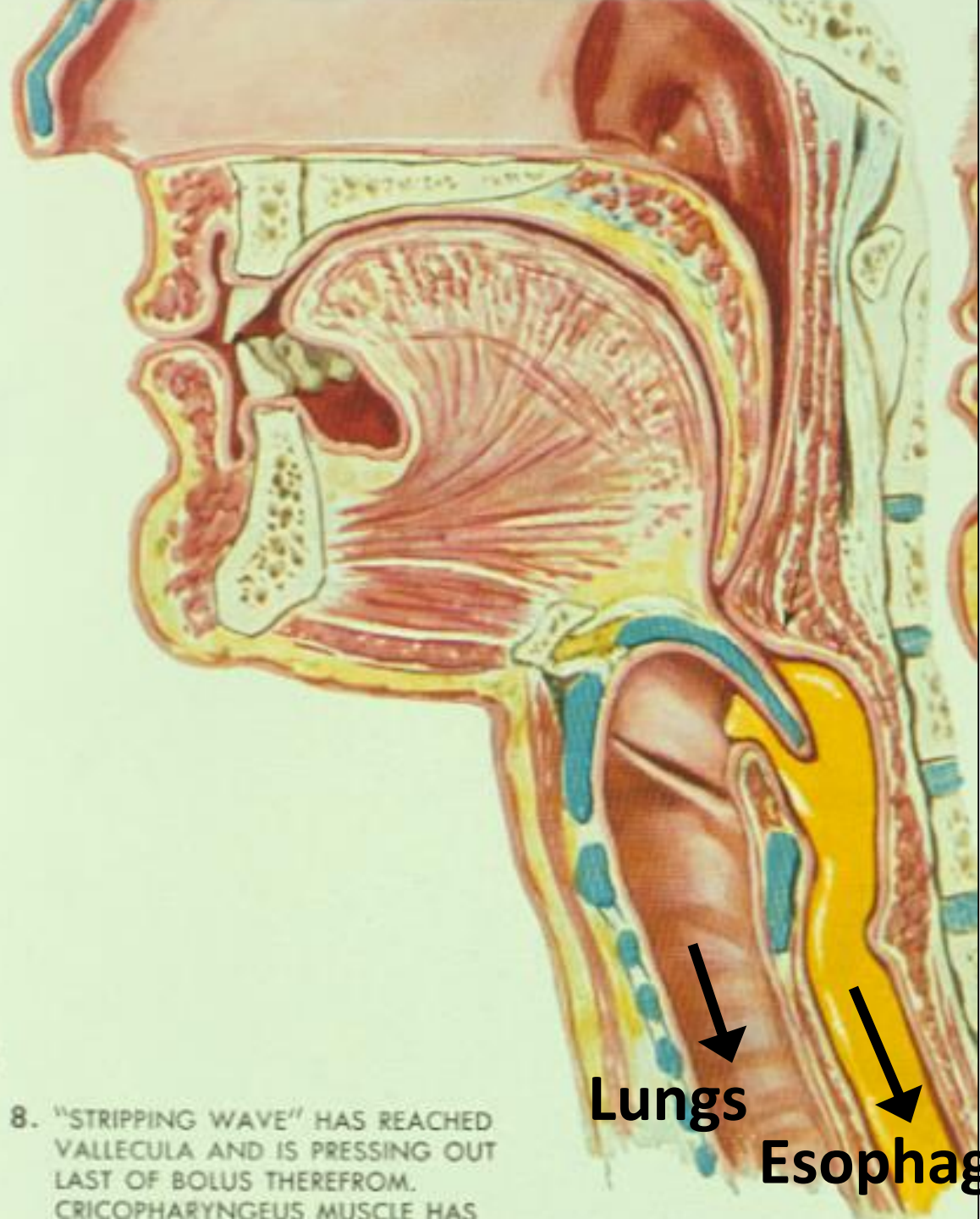
- food
- liquid
- secretions
- medications

# Normal Swallowing Process

- Complex mechanism
  - Involves coordination of many different nerves and muscles
- Stages during a swallow:
  - Oral preparatory phase
  - Oral phase
  - Pharyngeal Phase
  - Esophageal phase



# Swallowing Physiology



8. "STRIPPING WAVE" HAS REACHED VALLECULA AND IS PRESSING OUT LAST OF BOLUS THEREFROM. CRICOPHARYNGEUS MUSCLE HAS

Lungs

Esophagus

Normal



Normal  
Swallow of  
Older Adult

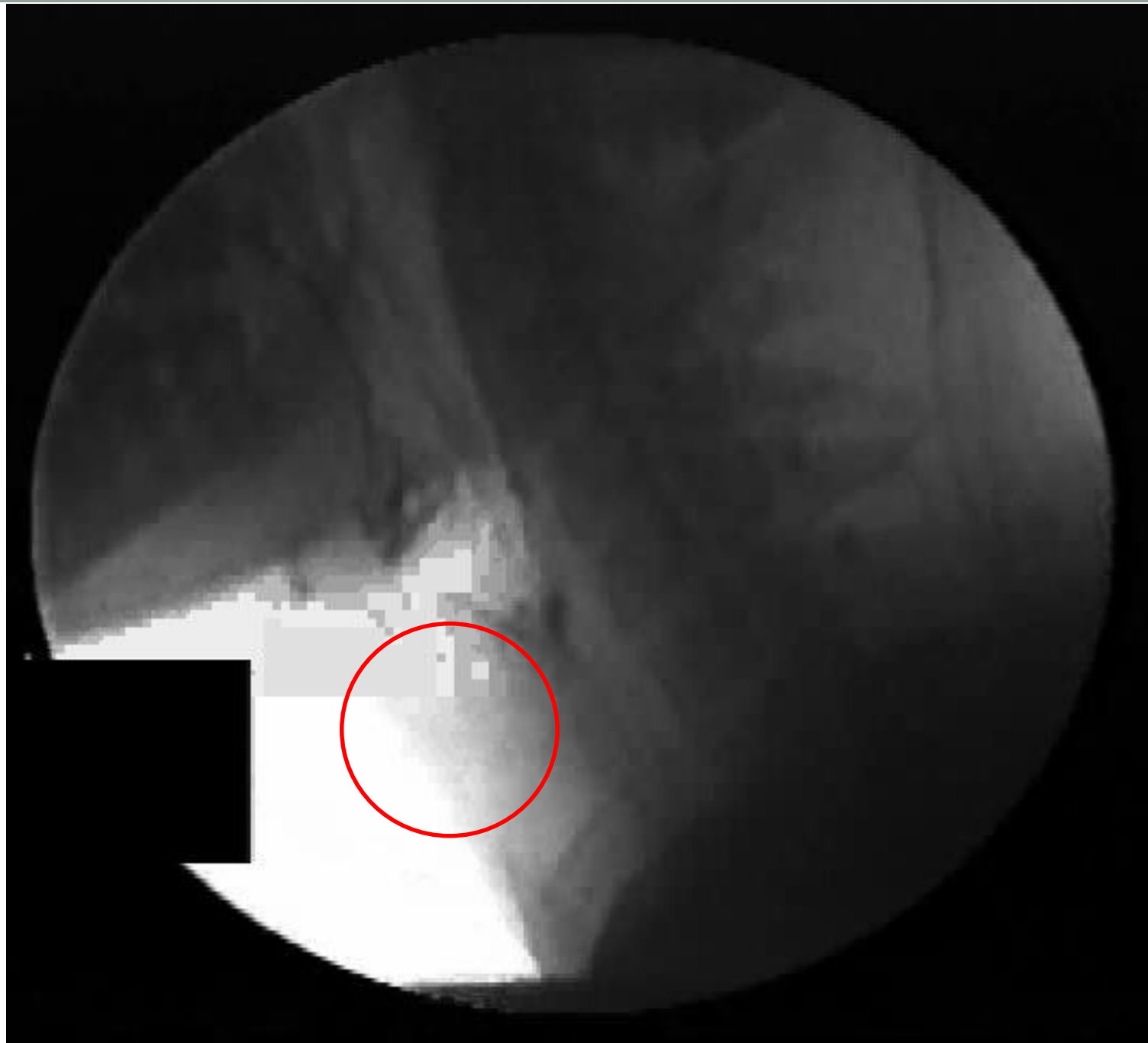




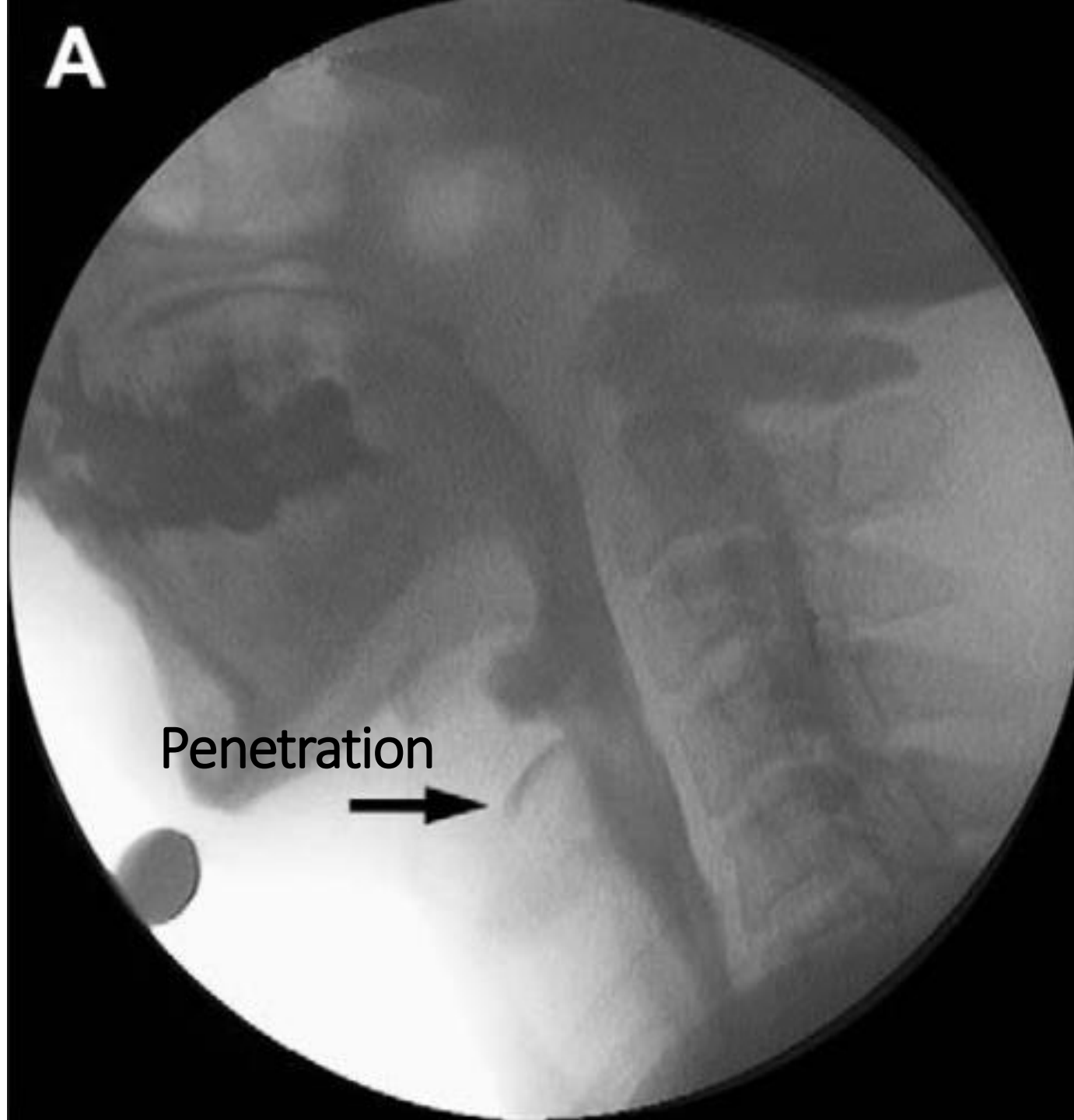
What happens  
when  
something  
goes wrong?



Abnormal  
Swallow



A



Penetration

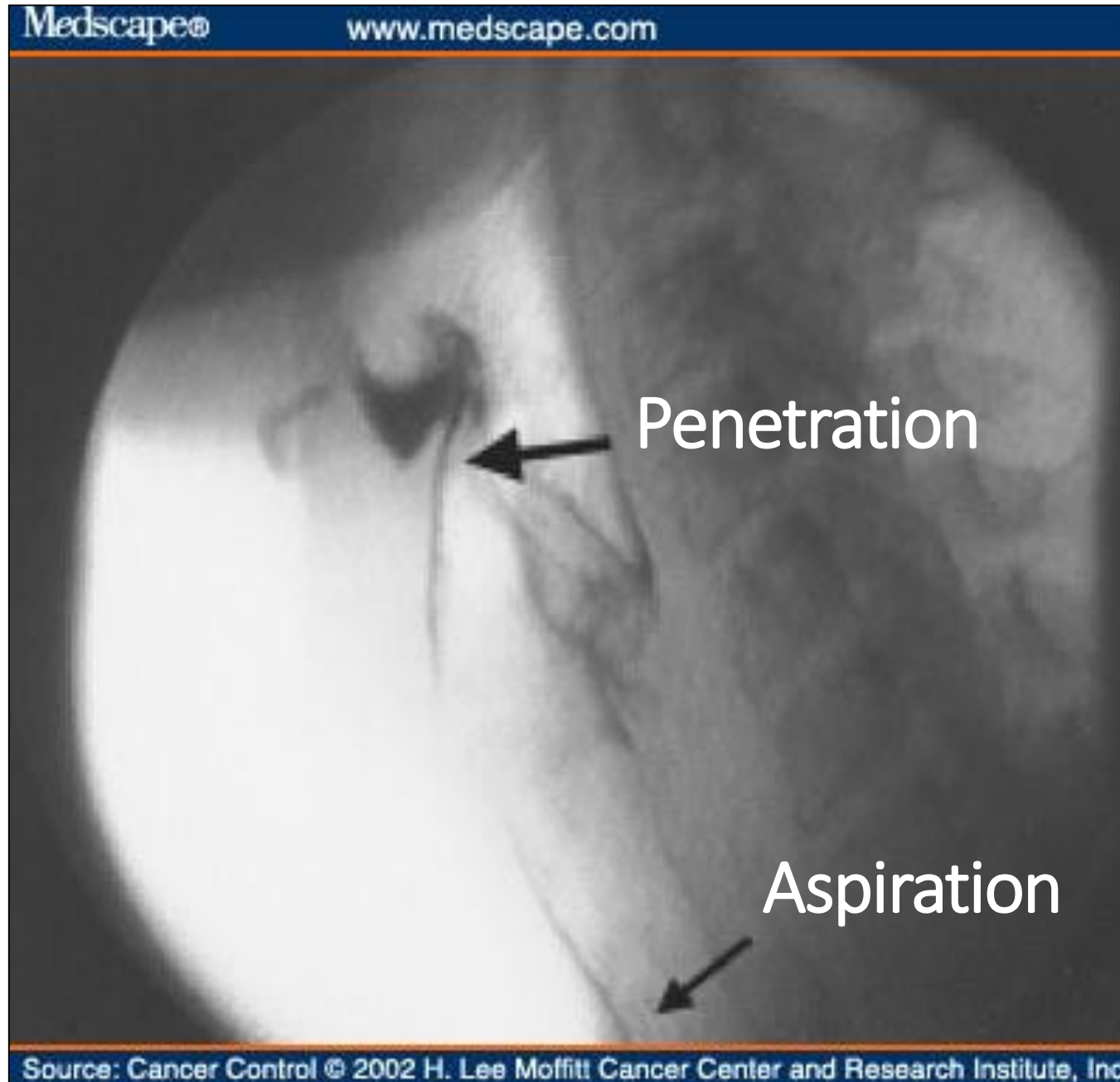


## Penetration

*material enters the larynx (voice box), but does NOT descend below the vocal folds into the trachea (airway)*

# Aspiration

*entry of material below the level of the vocal folds into the trachea (airway)*



# Residue

*when solids or liquids “stick” in the throat instead of passing down into the esophagus (food tube)*



Without effective treatment, dysphagia can lead to....

mortality

pneumonia (pulmonary complications)

malnutrition

dehydration

Decreased rehabilitation potential

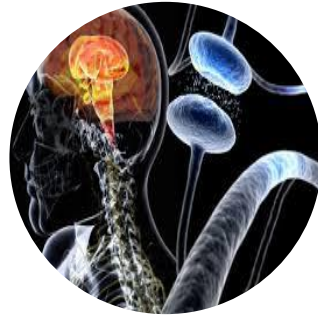
decreased quality of life

Increased length of hospital stay

# Dysphagia is Not a Disease



Stroke



Progressive  
Neurologic  
Disease



Dementia



Traumatic  
Brain Injury



Head and  
Neck  
Cancer



Dysphagia

# Why Does Dysphagia Matter?

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- Bronchopneumonia is the most common cause of death in persons with Alzheimer's disease
- Malnutrition in >50% of long-term care residents
- Dysphagia at discharge increases risk for:
  - Pneumonia
  - Malnutrition
  - Feeding tube placement
  - Longer length of stay
  - Discharge to a facility

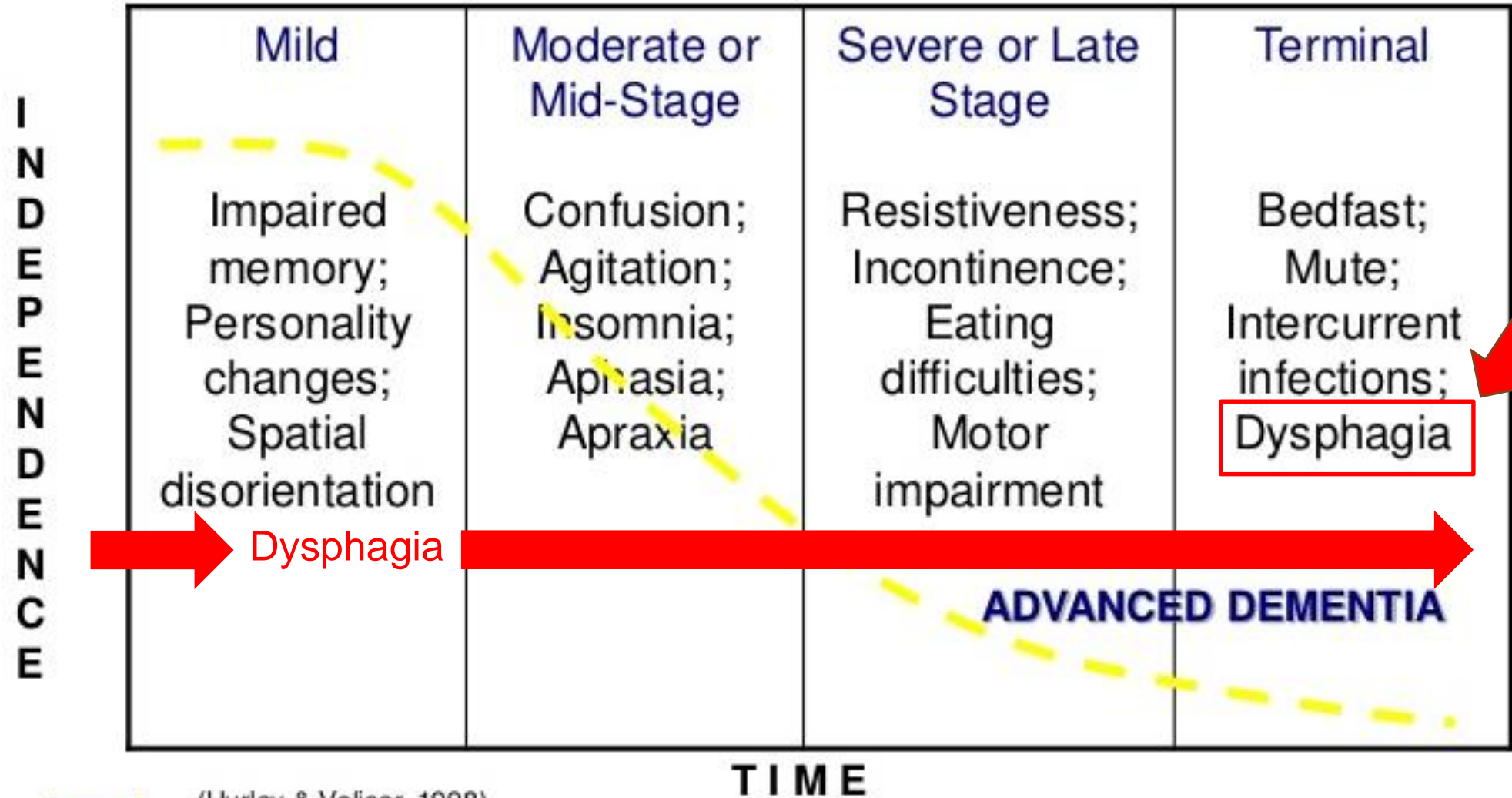


# Dementia and Dysphagia

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- 1 in 10 individuals over 65 years of age has Alzheimer's disease (AD)
- Prevalence of comorbid dysphagia: 32% to 75%
  - 53% in long-term care
  - 81% self-report dysphagia vs. 27% of healthy
  - 50% lose ability to feed self within 8 years post-diagnosis

# Progression of Dementia



(Hurley & Volicer, 1998)

# What is affected?

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Swallowing



Successful transport of food, liquid, or secretions through the mouth and throat and into esophagus

Self-Feeding



Recognition of appropriate items to eat, planning of transport to the mouth, how it will be transported, and in what amount

# Swallowing Impairments by Alzheimer's Disease Stage

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## MILD AD

- Penetration but no aspiration episodes
- Ineffective food/liquid transport
- Delayed swallow response

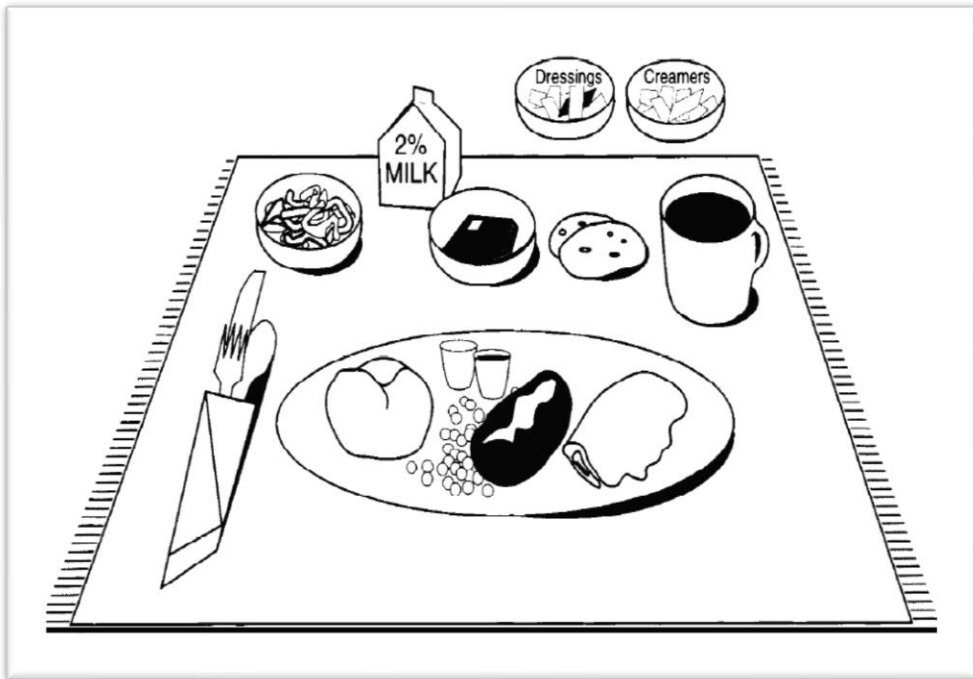
## MODERATE TO SEVERE AD

- 1 in 4 patients with aspiration
- Ineffective food/liquid transport
  - Increased transit time
  - Residue
- Delayed swallow response

# Self-Feeding Impairments in AD

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- More likely to receive cues from eating partner
- Needing to be fed or cued increases pneumonia and mortality risk

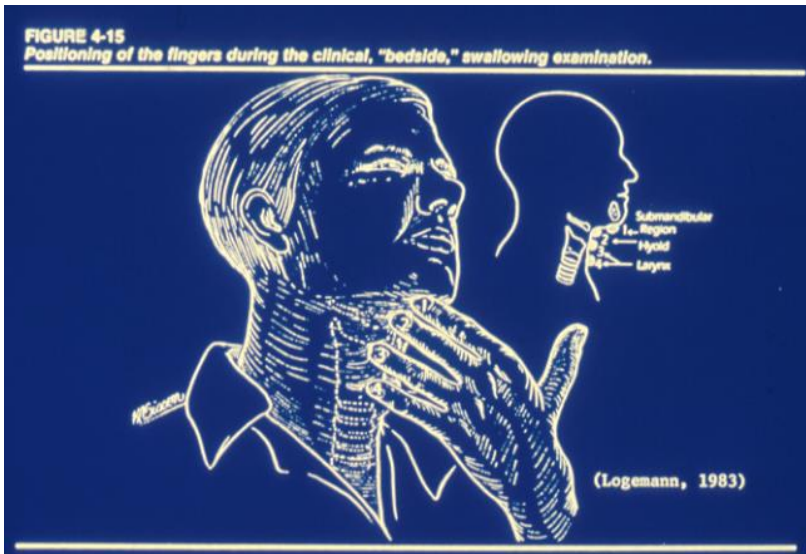


## POTENTIAL IMPAIRMENTS:

- Opening a package with silverware and folded napkin
- Opening carton of milk
- Opening salad dressing pack and pouring dressing on salad
- Opening salt, pepper, and cream packets
- Buttering bread
- Using a knife and fork to cut meat

# Evaluation of Swallowing

## Clinical bedside swallow evaluation





# Signs and Symptoms of Dysphagia

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- Coughing during or after meals
- Throat clearing
- Increased secretions
- Wet or gurgly voice
- Chest sounds
- Reduced oral intake
- Pocketing of food in the mouth
- Food or pills sticking in the throat
- Recurrent pneumonia



# Evaluation of Swallowing

## Videofluoroscopic swallow assessment





# Treatment for Dysphagia

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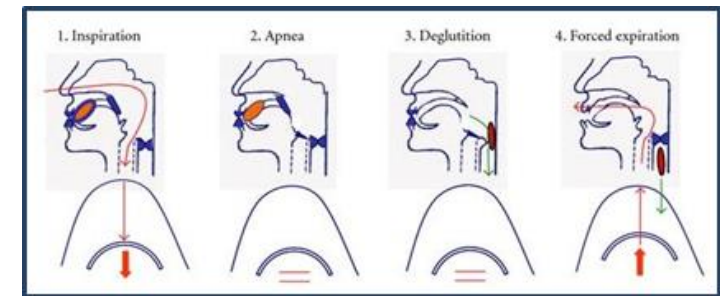
- Compensatory methods
  - Postural adjustments
  - Maneuvers
  - Diet modifications
- Eating strategies
  - Optimize environment for eating
  - Alternating liquids and solids
- Rehabilitative
  - Change swallowing physiology to restore function
  - Exercise regimens

# Compensatory Approaches

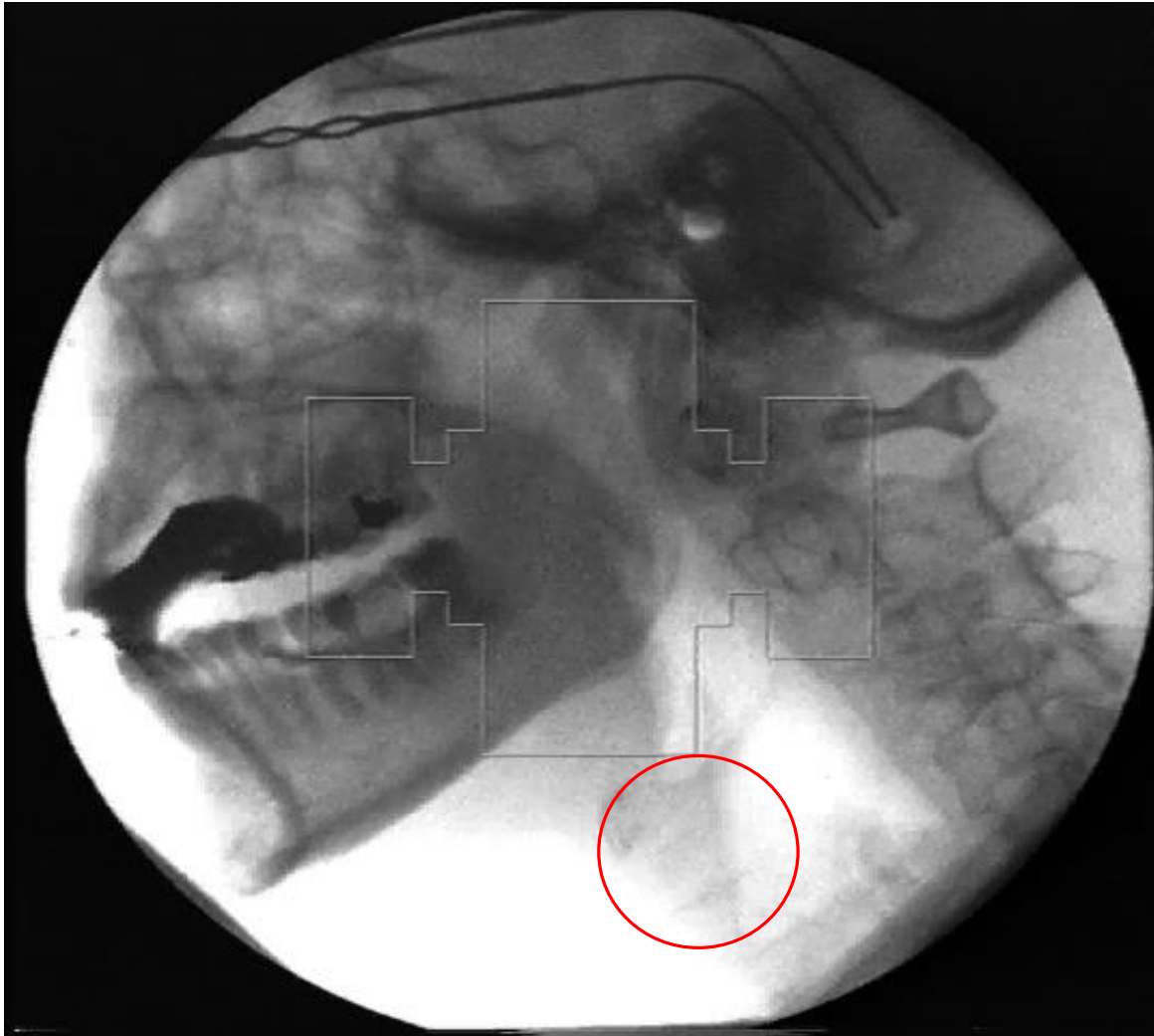
- Postures
  - Chin tuck
  - Head tilt
  - Head turn



- Maneuvers (effortful swallow, Mendelsohn maneuver, supraglottic swallow)

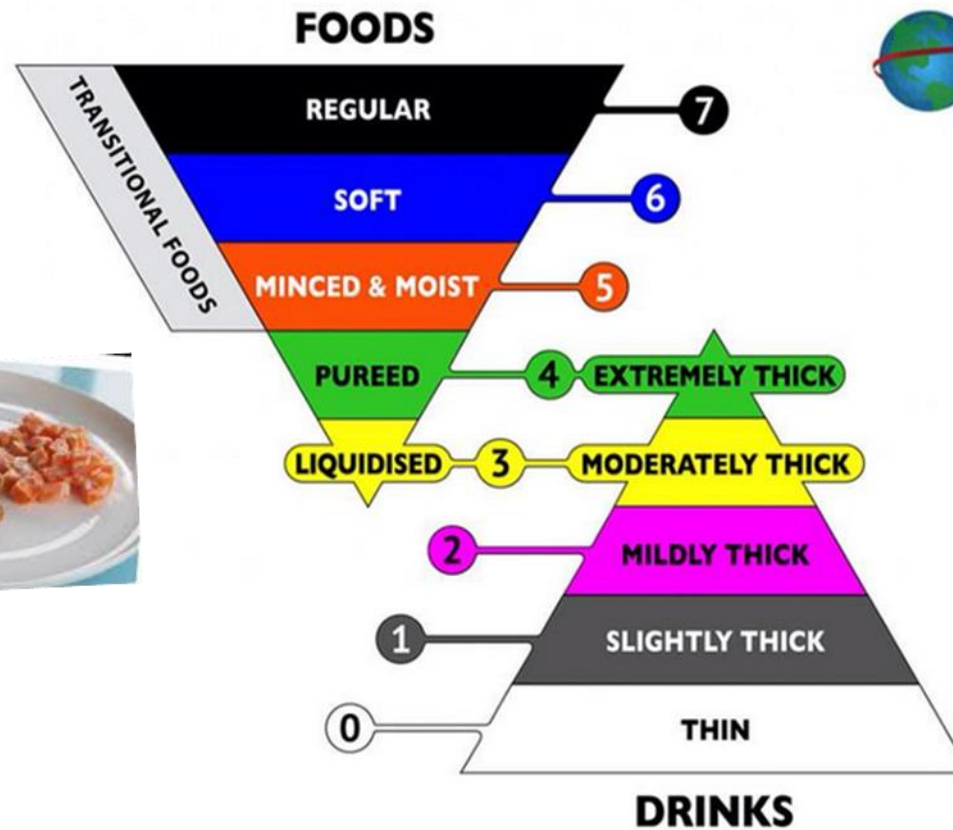


# Chin Tuck Posture

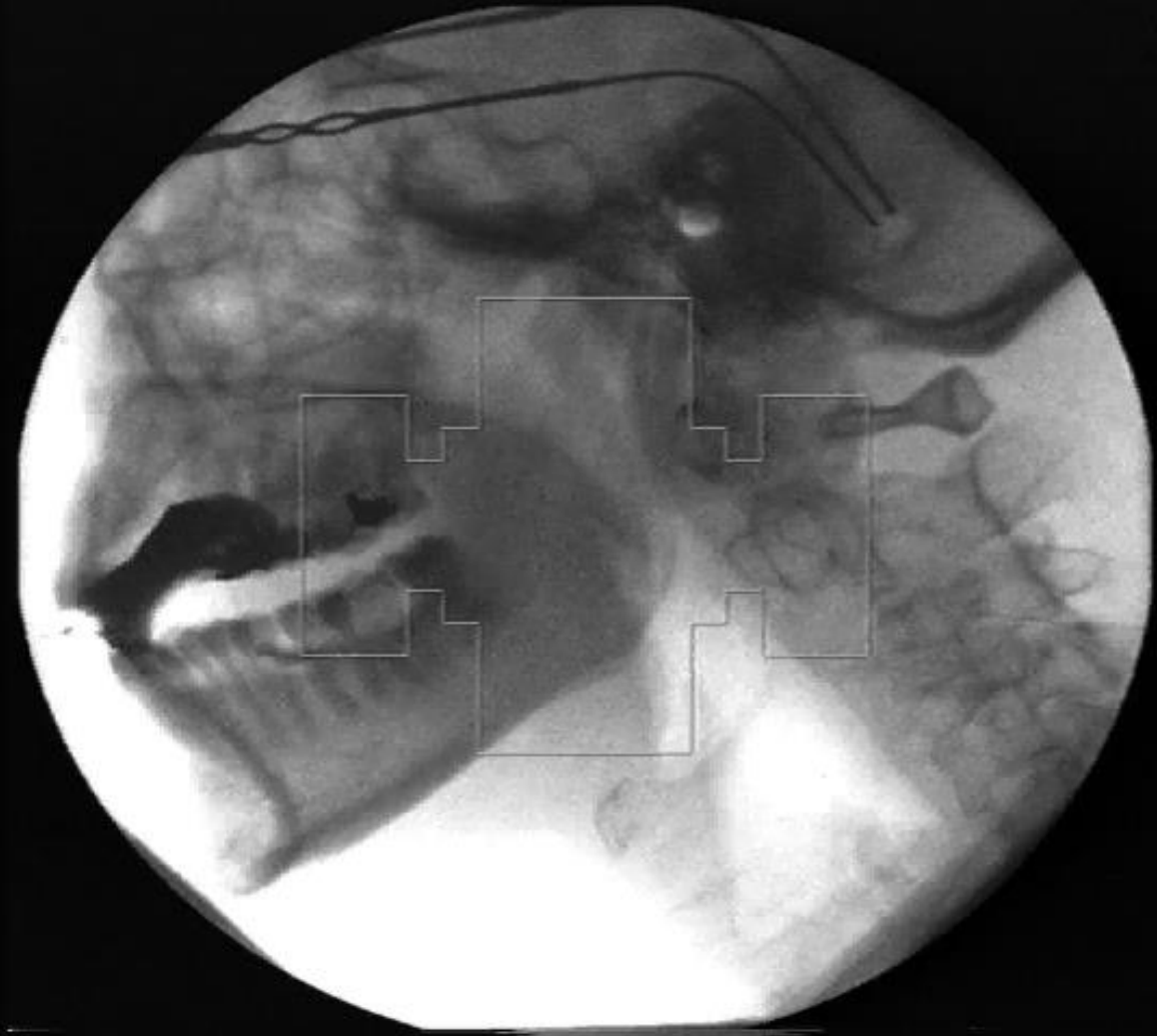


# Compensatory Approaches

- Dietary Modifications
  - Thickened liquids
  - Changes to solid food



# Do thickened liquids work?



No Intervention



Nectar-thick liquid

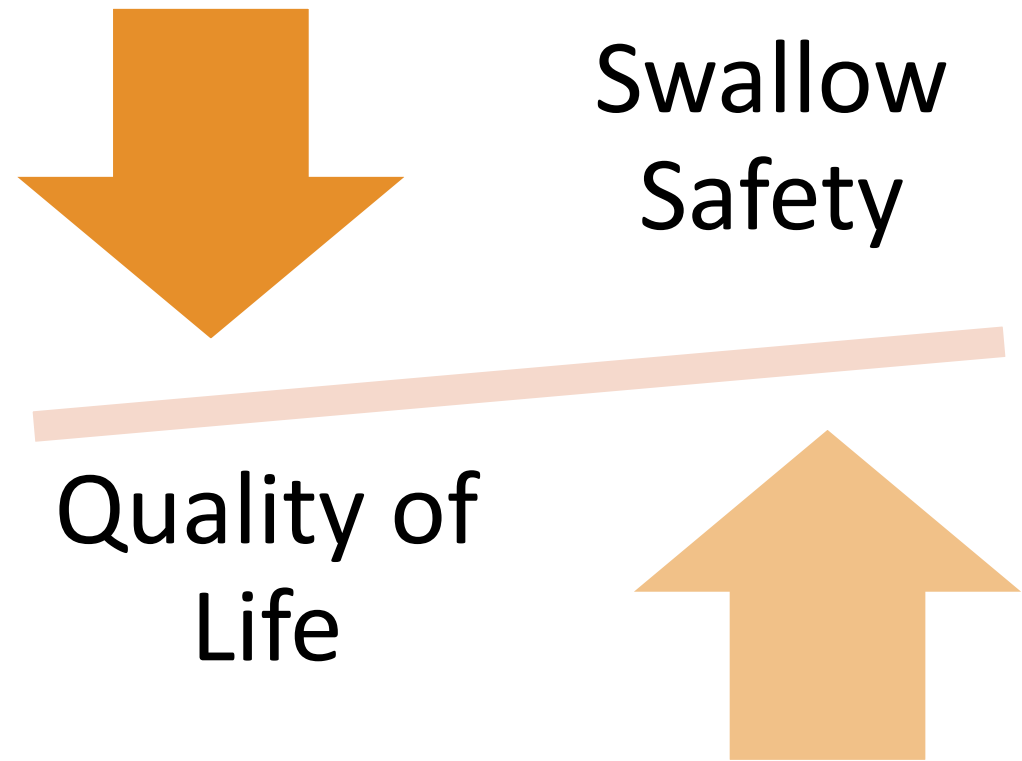
# Compensatory Approaches

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- Dietary Modifications
  - Thickened liquids
  - Changes to solid food

# Weighing Risks and Benefits

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# Caregiver Involvement

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- Task-centered vs. patient-centered feeding (Gilmore-Bykovskyi & Rogus-Pulia, 2017)
- Greater caregiver burden
- Education, training, and engagement
  - Home context
  - Patient preferences and goals
  - Supports



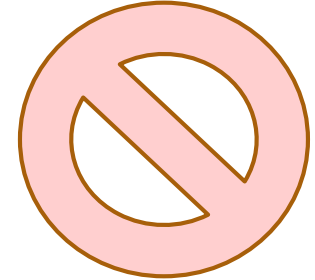
# Device-Facilitated Exercise



# Three Dysphagia Myths in Late Stage Dementia

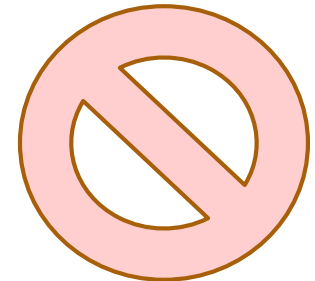
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1. SLP can only provide recommendations if instrumental exam is available and these modifications will always negatively affect quality of life



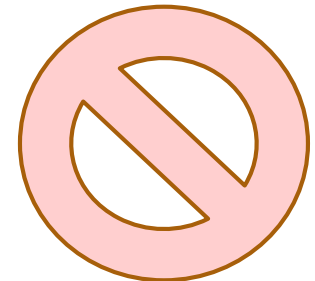
2. Feeding tubes

- Prevent aspiration and thus pneumonia
- Prolong life



3. Unrestricted diets restore quality of life

- Asphyxiation risk
- Experiencing dysphagia is unpleasant





## Our Cognitive Care Clinic Model

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- Geriatric Research Education and Clinical Center (GRECC)
- Multidisciplinary diagnostic and care-planning clinic for patients with dementia
  - Physician
  - Neuropsychologist
  - Speech-language pathologist
  - Social worker

# Speech-Language Pathology Evaluation

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- Obtain baseline information
  - Speech/language/communication
  - Voice
  - Feeding/swallowing
- Address current deficits
- Determine whether further evaluation or treatment is warranted
- Provide counseling and resources
  - Educate caregiver on signs and symptoms the patient may exhibit in the future

# Eating and Swallowing Tasks

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- Clinical interview
- 3 ounce water swallow test
- Saltine cracker trial
- EAT-10 symptom screening
- Maximum isometric lingual pressures





Let's identify the signs and symptoms of aspiration!



# 3 oz. Water Swallow Screening Test

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1. Assess baseline voice quality
2. Instruct the person to drink 3 oz. of water in a cup without stopping
3. Listen for signs and symptoms of aspiration:
  - Cough
  - Throat clear
  - Wet or gurgly voice

*If a cough, throat clear, or wet voice was appreciated up to one minute after drinking the water, the person has failed the 3 ounce water swallow screening test*

# SLP Recommendations

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- Referral for further evaluation and/or treatment if warranted
- Tailored to address specific patient and caregiver needs
- Education and counseling
  - Safe swallowing strategies
  - Tips for taking pills
  - Encouraging nutritional intake
  - Caregiver feeding
  - Signs of dysphagia
  - Eating strategies and mealtime environment





# Let's practice!

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Video 1 (throat clear)

Video 2 (normal)

Video 3 (cough)

*Listen for:*

- Cough
- Throat clear
- Wet or gurgly voice

- Grab a partner!
- Ask your partner to say a prolonged “ahhhh”
- Say, *“Drink all of the water in this cup without stopping”*

# Take Home Points

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- Swallowing changes begin early in dementia
  - Early intervention may change trajectory
- Interdisciplinary team approach
  - Integrate SLP throughout progression
- Goals of care
  - Maximize intake and optimize safety
- Caregiver education, training, and support



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Steve Wang, BS



## UW Swallow Service



## VA Speech Pathology





# Vocal Hygiene

*Taking care of your voice is the best way to ensure that you maintain your quality voice over time*



- Drink plenty of liquids (64oz)
- Avoid starchy foods and dairy products before extended periods of voice use



- Avoid caffeine and alcohol
- Exercise regularly
- Give your voice a rest after 5:00pm



- Do not smoke or use tobacco
- Avoid throat drops with menthol/ eucalyptus



- Avoid shouting/yelling
- Don't whisper. Write or limit talking if you are close to losing your voice



- Use hard candies to keep your throat moist if needed

*From The Ohio State University Comprehensive Cancer Center at [patienteducation.osumc.edu](http://patienteducation.osumc.edu) and from *Practical SLP Info.com* by Katrina M. Jensen, M.A., CCC-SLP.*

# Communication and Memory Strategies

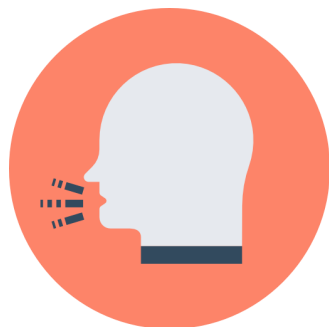


## Geriatric Research Education and Clinical Centers

*Established to improve the health and health care of older Veterans*

# Changes in Communication

Changes in the ability to communicate can vary from person to person throughout the disease progression

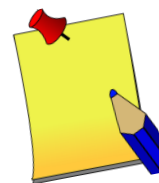


## Changes may include:

- Difficulty finding the right words
- Using familiar words repeatedly
- Describing familiar objects rather than calling them by name
- Easily losing a train of thought
- Difficulty organizing words logically
- Reverting to speaking a native language
- Speaking less often
- Relying on gestures more than speaking

*For more on communication, visit [www.alz.org/help-support/caregiving/daily-care/communications](http://www.alz.org/help-support/caregiving/daily-care/communications)*

# Memory Strategies

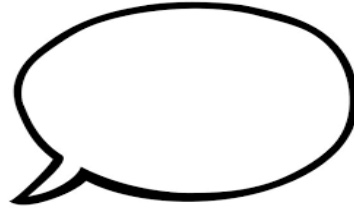


- **Write it down.** Use a planner, sticky notes, or notes on your phone.
- **Association.** Relate new information to something you already know.
- **Repetition.** Reading, writing, or saying the information over and over again.
- **Visualization.** Picture the new information in a fun and memorable way.
- **Categorization.** Group related items.
- **Talk it out.** Saying it out loud to someone can help you remember.
- **Routine.** Maintain a daily routine so you are less reliant on your memory.
- **Set locations.** Establish a “home base” for commonly used items (i.e., wallet, keys).
- **Cues.** Visual cues such as stickers, signs, or sticky notes.

*For more information on responding to behaviors, please visit [www.alz.org/care](http://www.alz.org/care)*

# Word-Finding Strategies

*When the word is on the tip of your tongue....*



- **Delay.** The word may pop out on its own.
- **Describe.** Provide the listener with information about what the thing looks like or does.
- **Association.** Talk about something related.
- **Substitute.** Think of a word that means the same as the word you cannot say.
- **First Letter.** Try to write or think of the first letter of the word.
- **Gesture.** Use your hands or body to act out the word.
- **Draw.** Sketch out a quick picture of what you're trying to say.
- **Look it up.** Find somewhere the word is written down or pictured.
- **Narrow it down.** Name the category so the listener can predict what you are trying to say.
- **Come back later.** If you can't think of the word and your partner cannot guess.

As found on [www.tactustherapy.com/word-finding](http://www.tactustherapy.com/word-finding)

# Tips for Successful Communication



- **Be sensitive.** Speak directly to the person and maintain eye contact.
- **Be patient.** Give the person time to respond. Don't interrupt or finish sentences unless he or she asks for help.
- **Minimize noise.** Engage in one-on-one conversation in a quiet space with minimal distractions.
- **Use non-verbal cues.** Use visual cues, gesture, touch, and facial expression.
- **Consider emotions.** Look for the feelings behind the words or sounds.
- **Avoid arguing.** Do not criticize or correct. Let it be.
- **Keep it simple.** Ask "yes" or "no" questions. Ask one question at a time. Offer clear, step-by-step instructions for tasks.



# Conversational Partner Strategies

## General strategies



- Speak in short, simple sentences
- Remove distractions
- Notice non-verbal cues to assess understanding

## Supplement the conversation



- Use gestures
- Write key words
- Use pictures

## Help the speaker convey the message

A

B

C

- Write out multiple choice questions/answers
- Ask for clues in the form of gestures or pointing to objects

**REFLECT**

**EXPAND**

**SUMMARIZE**

# Identifying Causes of Behavior

## BEHAVIOR MAY BE RELATED TO:

*Physical pain or discomfort*

*Overstimulation*

*Unfamiliar surroundings*

*Complicated tasks*

*Frustrating interactions*

## 1. Examine the behavior

- *Was it harmful?*
- *Did something trigger it?*
- *What happened immediately after?*
- *Could the person be in pain?*
- *Could this be related to medications or illness?*

## 2. Explore potential solutions

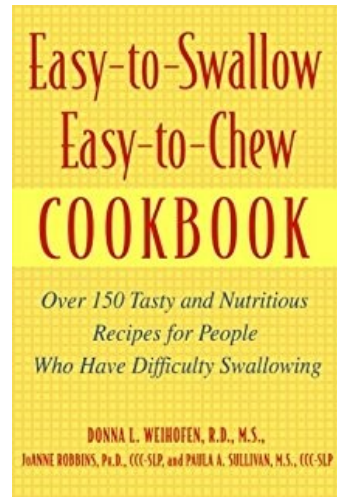
- *Are the person's needs being met?*
- *Can adapting the surroundings comfort the person?*
- *How can you change your reaction or approach?*

## 3. Try different responses

- *Did your new response help?*
- *If not, what can you do differently?*

## Easy-to-Swallow Easy-to-Chew Cookbook

*The Easy-to-Swallow, Easy-to-Chew Cookbook* presents a collection of more than 150 nutritious recipes that make eating enjoyable and satisfying for anyone who has difficulty chewing or swallowing. It also shares helpful tips and techniques to make eating easier for the elderly and those with such diseases as Parkinson's, AIDS, or head and neck cancers.



## Swallowing & Salivary Bioscience Laboratory

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# Feeding and Swallowing Problems



## Swallowing & Salivary Bioscience Laboratory

*Focused on innovative research, education,  
and optimal clinical management of dysphagia  
in older adults*

# What is Dysphagia?

Dysphagia, or difficulty swallowing, can occur at any age, but is more common in older adults.



## CAUSES

A wide range of conditions can cause swallowing problems.

These include:

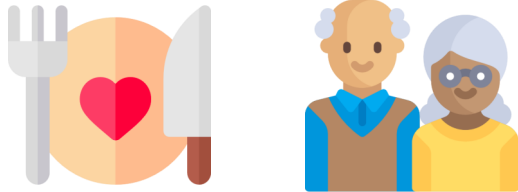
- Stroke or head trauma
- Neurodegenerative disease such as Parkinson's disease, dementia, or multiple sclerosis
- Head and neck tumors or radiation/surgical resection of the area
- Developmental disabilities such as cerebral palsy

# Encouraging Nutritional Intake



- Eat small, frequent meals
- Increase energy by adding double cream, butter, or jam/honey to recipes
- Increase protein by adding extra skimmed milk powder, eggs or cheese
- Consider oral nutritional supplements or vitamin-fortified foods/beverages
- Ensure caloric and fluid intake
- Form recipe books specific to dysphagia with a registered dietitian
- Provide two food choices per meal
- Make food visually appealing
- Consult with a registered dietician to determine appropriate high calorie snacks
- Include foods that are spicy, sweet, or sour to maximize sensory input

## Caregiver Feeding



- Encourage self-feeding including hand feeding with finger foods
- Caregivers can place their hand under the patient's hand, guiding it to their mouth
- Keep a consistent mealtime environment and routine to decrease risk of confusion
- Consider serving several (6) small meals throughout the day
- Minimize distractions
- Limit non-food items in the meal area
- Keep dessert out of sight until the end of the meal
- Model eating and drinking; eat and drink together
- Add sauces or gravies to moisten solids
- Consider providing visual aids

## Signs of Difficulty Swallowing



- Coughing or choking during or right after eating, drinking, or taking medications



- Increased drooling
- Wet, gurgled voice
- Increased congestion or secretions



- Malnutrition or dehydration
- Unplanned weight loss



- Pocketing of food in the mouth
- Food or pills sticking in the throat



- Recurrent pneumonia

## Safe Swallowing



- Sit at a 90° angle during meals
- Maintain upright position for 60-90 minutes after a meal



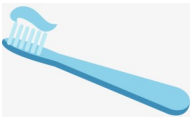
- Minimize distractions during mealtime (TV, conversation)



- Keep bites small and encourage multiple swallows/bite
- Decrease rate of feeding/eating



- Alternate liquids and solids
- Single sips of liquid and no gulping



- Practice excellent oral hygiene

*It is best to check with your primary care physician make sure there are no dietary restrictions or other medical conditions.*

## Tips for Taking Pills



- Cut pill in half
- Take 1 pill at a time
- Use liquid medicine if possible
- Drink fluid to swallow pill
- Put pill further back on tongue
- Crush and mix pill with food
- Wet mouth before taking pill
- Sit upright