Swallowing is the movement of food from the lips through the mouth, throat and esophagus.
- Five cranial nerves work in concert to coordinate 35 muscles.
- Done without much thought.

Dysphagia is a disorder in moving food from the mouth to the stomach.
- Acute onset.
- Progressive.
- Related to surgery or chemo and radiation.
- Changes the act of swallowing to a conscious effort.
Continued...

- Aspiration: occurs when material enters the airway and goes into the lungs. It can be “silent”
- Penetration: occurs when material enters the laryngeal vestibule above the airway

Aspiration Pneumonia can result when oral pathogens enter the lungs during an aspiration event and is associated with the dependent portions of the lungs (lower lobes) or posterior lobes in the bed-bound patient.

The Aging Swallow

Few changes related to normal aging occur until the age of 80
- Decreased sensitivity in mouth and throat
- Increased number of chewing strokes for adequate mastication
- Reduced strength of pharyngeal contraction

Aging swallow...

- Reduced esophageal peristalsis & incomplete emptying into stomach
- Increased incidence of penetration
- Overall decrease in muscle mass
- Decreased functional reserve
- Fewer vegetative swallows
Strong correlations have been found between age-related disease and dysphagia:
- Parkinson’s disease
- Stroke
- Multiple Sclerosis
- Cardiovascular disease
- Alzheimer’s and the other dementias

Physiological changes
- Decreased lateral tongue movement
- Delayed pharyngeal swallow initiation
- Reduced tongue retraction
- Bilateral pharyngeal hypomotility
- Xerostomia

Dysphagia of Dementia
- Food agnosia/gustatory agnosia
- Feeding apraxia or object agnosia
- Decreased sense of smell
- Decreased appetite
- Impaired cognitive process of eating: attention, initiation, motor planning and visual-spatial impairment
- Overstimulation
**Outcomes Related to Dysphagia**

- Death: approximately 60,000 people die yearly as a result of dysphagia
- Aspiration pneumonia: 37% of stroke patients will develop pneumonia, medical costs per incidence range from $11,000- $15,000
- Malnutrition: up to 48% of acute care stroke patients and 50% of Alzheimer's patients experience malnutrition
- Dehydration: increases risk for infection, renal failure, confusion, falls, constipation

**Outcomes .....**

- Failure to thrive: unintentional weight loss
- Decubitus ulcers
- Fear of choking or fear of eating (sitophobia)
- Depression: overall decreased quality of life

Malnutrition + Dehydration = Weakened immune system

**Geriatrics in general...**

- Have a longer apneic period during swallowing
- Post swallow inhalation becomes more common as people age
- Have reduced mucociliary clearance and cough
- Are not as physically active
- Are quick to stop eating & drinking when sick
- Don’t want to ask for help or inconvenience anyone
- May not understand the implications of swallowing problems
What the evidence tells us

Who will get sick because of aspiration?
- Poor oral hygiene**
- Dependence for feeding**
- Tube fed patient
- Greater number of medications
- Smokers
- Altered level of consciousness


Risk Factor: poor oral hygiene

Report of a systematic review of the preventative effect of oral hygiene on pneumonia and respiratory tract infection focusing on elderly people in hospitals and nursing homes. Review included RCT and non-RCT for the time frame 1996-2006 and reported a correlation between poor oral and denture hygiene and pneumonia or respiratory tract infection in dependent and frail elderly patients

And went on to conclude....

Results from the RCT’s provide strong evidence that mechanical oral hygiene decreases the mortality risk from pneumonia and seems to have a clinically relevant preventative effect on non-fatal pneumonia in dependent elderly individuals

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Risk factors influencing oral hygiene in the geriatric population. Your physical assessment should include an oral mechanism exam:

- Saliva – is it thick, ropey, sticky?
- Teeth – are they clean, carious, sparse?
- Dentures or partials – do they fit well?
- Is there oral infection or thrush?
- Is the mouth dry?
- Is there unilateral weakness

Other factors:

- Positioning problems?
- Decreased level of alertness?
- Cognitive deficits – refusal, agitation, poor insight?
- Are there xerogenic medications on board?
- Medications impacting LOA?
- Reduced manual dexterity?

Then what?

Notify physician if:

- Gums are bleeding
- Red, swollen or tender gums
- Pus at the gum line
- Very bad breath
- Loose or chipped teeth or poor fitting appliances
- Patient c/o loss of appetite or documented weight loss
Provide AM/PM oral care
- Oral care after meals and snacks
- Duration of brushing: 1-2 minutes
- Include teeth and tongue

Other resources indicate that a soft bristle brush is best, consider a pediatric toothbrush if mucosal injury is apparent
- Scraping the tongue is better than brushing it.
- Use of “plaque vac” in ICU

Recommended cleaning agents
- Toothpaste
- Use tap water or saline when toothpaste is not available or appropriate – cleaning is more about “friction”
- Avoid lemon glycerol and hydrogen peroxide: linked to decreased saliva
- Glycerin promotes bacteria growth
- Use alcohol free products
Resources for oral care of this population

- [www.dentalgentlecare.com](http://www.dentalgentlecare.com)
  Provides daily dental care tips for caregivers of older adults, Dr. Dan Peterson

- ConsultgeriRN.org
  From the Hartford Institute of Geriatric Nursing

Books

*Basic Geriatric Nursing*, Gloria Wald, 2004

A book of evidenced based practice guidelines published by the University of Iowa College of Nursing (48 pages):

*Oral Hygiene Care for Functionally Dependent and Cognitively Impaired Older Adults*

Dental Hygiene Education for Nursing Staff

From a study conducted at a nursing home in Sweden.

“Most nurses had a negative attitude about providing oral care”

A three step training process was found to be effective in improving nursing knowledge, self confidence and interest in providing oral hygiene to their patients

Three Steps

1. Attended a lecture focusing on the association between dental hygiene, oral hygiene and general health of the elderly
2. Nurses received instruction on oral care technique with hands on training in tooth brushing & use of electric toothbrushes
3. Participated in small discussion groups with a dental hygienist and psychologist

Risk Factor: dependence for feeding

- Confirm that the meal received is the diet ordered and liquid is appropriately thickened
- Ensure the patient is alert and calm
- Ensure dentures or partials are in mouth and secure – if not, they may do better w/o them
- Ensure that the patient is seated upright (out of bed is preferable) during and 30 minutes after intake
- Follow specific swallowing guidelines posted by speech therapy if indicated
- Give small bites and sips
- Ensure the mouth is emptied after each bite
- Tell them what you are feeding them
- Be pleasant and socialize w/o asking them to talk too much
### If the patient has modified independence
- Do a full tray set up, opening cartons and packets, discarding trash from tray, opening silverware
- Cut foods smaller for easier management
- Encourage safe eating: small bites, sips
- Intermittently check on the patient, encourage good intake and offer further assistance

### What about medications???
- Ensure the patient is alert and upright, explain what you are doing and which meds you are giving
- Moistens the mouth with a sip prior to pills
- Safest to give one pill at a time until you are confident that swallowing is intact
- Administer medications with thickened liquid if order calls for “thick liquid”

- Ensure medications can be crushed prior to crushing in puree
- Embed in puree if not able to crush
- Or provide elixir form if liquids can be swallowed safely
- If you have concerns about a patient swallowing, discuss with the physician and seek a referral for a swallowing evaluation


www.dentalgentlecare.com, Peterson, D., Daily dental care tips for those caring for the older adult