Oral Health and Dementia

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Objectives

- Describe the importance of maintaining good oral/dental health in older adults.
- Communicate a basic understanding of characteristics of oral-systemic interactions as associated with aging and common among older adults.
- Describe oral-pharmacological interactions often experienced by older adults, with a focus on those with Alzheimer’s Disease.
- Translate the bi-directional relationship between periodontal/gum disease and Alzheimer’s Disease.
- Discuss proper brushing, flossing, and denture care techniques and how to perform them on individuals with Alzheimer’s Disease.

Misconceptions About Aging and the Oral Cavity

- The myth that most older adults will lose their teeth is a common misconception about age progression.
- More older adults are retaining their natural teeth, thereby reducing the need for partials or dentures

(Beltran-Aguilar et al.; 2005 Brown, 2005; Cunha-Cruz, Hujoe, Nadanovsky, 2007; Dye, 2007; Donaldson, 2011)
Misconceptions about Aging and the Oral Cavity

- Dry mouth is not a normal consequence of aging
- No meaningful decrease in production of saliva due to aging itself
- Decrease is usually caused by medication or trauma, abnormality or disease of salivary glands

The main cause of dry mouth in older adults is medication taken

[Brief List of Medications that Cause Dry Mouth]

<table>
<thead>
<tr>
<th>Accupril</th>
<th>Trazadone</th>
<th>Librium</th>
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<tr>
<td>Aldactone</td>
<td>Dyazide</td>
<td>Lopressor</td>
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<tr>
<td>Altace</td>
<td>Eldepryl</td>
<td>Naprosyn</td>
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<tr>
<td>Bumex</td>
<td>Flomax</td>
<td>Paxil</td>
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<tr>
<td>Capoten</td>
<td>Imodium AD</td>
<td>Prilosec</td>
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<td>Cardura</td>
<td>Claritin</td>
<td>Prozac</td>
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<tr>
<td>Coreg</td>
<td>Lasix</td>
<td>Sinemet</td>
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Health Conditions That Cause Dry Mouth

- Autoimmune conditions
  - HIV/AIDS
  - Sjögren's syndrome
    - immune cells attack and destroy salivary glands that produce saliva.
- Parkinson’s Disease and Diabetes
  - Affect salivary glands
- Stroke and Alzheimer’s Disease
  - Cause a perception of dry mouth

http://www.mayoclinic.org/diseases-conditions/dry-mouth/basics/causes/con-20035499
http://www.nidcr.nih.gov/oralhealth/topics/drymouth/
Other Side-Effects of Some Meds

- Antipsychotics are used as supplemental medications for Alzheimer's Disease
- Carry a risk of tardive dyskinesia
  - a condition involving repetitive, involuntary movements often of the mouth, tongue, facial muscles and upper limbs.
  - Facial grimacing
  - Finger movement
  - Jaw swinging/grinding
  - Repetitive chewing
  - Tongue thrusting
- Impacting ability to chew and wear dentures or partials
- Leading to possible dietary issues - malnourishment

Some Other Oral Conditions That Can Impact Ability to Eat

- Chipped or broken teeth
- Mouth sore/lesion
- Temporal Mandibular Joint (TMJ) Disorder
- Gum Disease
- Improper fitting Denture(s) or Partial(s)
  - Cause irritation and mouth sores

Impact of Malnourishment

- 3 times longer length of hospitalization
- 3 times higher risk of infection
- More dependence in activities of daily living (ADLs)

Low levels of vitamin E, B12 and D have been associated with a decline in functional mobility
Oral Changes Associated with Aging

- Teeth
  - Clinical Effects of Aging = Wear
    - attrition, abrasion, erosion
  - Histopathological Effects of Aging
    - Enamel
      - decrease in width
      - Change in color, loss of translucency
    - Dentin
      - Increase in width, shrinking/hardening of dentinal tubules leads to decreased tooth sensitivity
    - Pulp
      - Decrease in vascularity leads to decreased tooth sensitivity

- Oral Mucosa
  - Frequently associated with changes similar to those in the skin
    - Some Epithelium thinning
    - However, studies have found that the appearance of the oral mucosa does not change with age.
  - Tongue
    - Increased lingual varicosities
    - Becomes smoother with loss of filiform papillae
      - Most numerous
      - Don’t contain taste buds (circumvallate papilla)

Gingival Recession Increases with Age

- “Long in the Tooth”
  - Gums recede (lower on tooth) exposing root surfaces
  - More susceptible to decay (cavity)

- More Prominent in Older Adults
  - Can lead to other problems
    - Rampant root decay
    - Prevention is crucial
      - Practice proper oral hygiene techniques and use fluoride supplement to prevent root decay and sensitivity
Periodontal Diseases (Gum Diseases)

**Gingivitis:**
Inflammation of gingival/gum tissues without bone loss

**Periodontitis:**
Extension of inflammation into gingival connective tissues with bone loss

** Gum diseases are infections that are initiated by more than one specific type of bacteria**
Inflammatory Process Associated with Periodontal Disease Impacts Gingival Health and Overall Health

Oral-Systemic Relationship

- Scientific findings strongly support an association between oral health and overall health.
  - Osteoperosis
  - Respiratory Diseases
  - Pre- term & low birth weights
  - CVD
  - Rheumatoid Arthritis
  - Diabetes
  - Alzheimer’s Disease

Periodontal Disease and Alzheimer’s Disease

- Exposure to inflammation early in life from ailments such as chronic periodontal disease quadruples an individual’s risk of developing Alzheimer’s disease
- Researchers reported this at the first Alzheimer’s Association International Conference on Prevention of Dementia in 2011
Research Supports a Bidirectional Relationship Between Perio Disease and Alzheimer’s

- Inflammatory process associated with periodontal disease
  - Means inflammatory mediators from the oral cavity enter circulation
  - Stimulate proinflammatory cytokines: IL-1, IL-6 and TNF-Alpha gain access to the brain ---> Lead to brain tissue destruction, precipitate neuropathological changes.
  - Interleukin-1 is critical to the processing of APP (amyloid precursor protein) and favors continued deposition of beta amyloid in the brain
  - IL-6 and TNF-alpha can be directly toxic in high concentration.
  - TNF-alpha and interferon gamma, in combination, has also been found to trigger beta amyloid production

Bidirectional Relationship Between Perio Disease and Alzheimer’s

- Persons with Alzheimer’s Disease
  - Experience a higher risk for oral disease
  - May forget to practice routine daily personal oral hygiene
  - May become unable to perform oral hygiene
  - May have a decreased ability to report pain or discomfort
  - May attempt to resist assistance from caregivers
  - Express trouble with or refuse to eat
  - Often may indicate the presence of a dental issue

Prevention is The Key
Focus on Need to Practice Good Oral Hygiene

Educating the Public/Patient
- Proper Techniques
  - Brushing and Flossing
  - Self or Care Provider Performed Oral Exams
- Proper Nutrition
  - Vitamin B-12
- Routine Dental Exams and Prophys (Cleanings)
- Prevention and treatment
  - cavities, gum issues, denture/partial issues
- Oral Cancer Screening
  - More prevalent in older adults
- Oral Health Care Providers (Dentists/Hygienists)
  - Comfortable and confident working with Alzheimer’s patients
  - Build report, are patient, open to family/care provider discussion
Prevention & Medical Costs

- Cost savings from prevention or early tx of dental diseases is higher than from HIV screenings or influenza immunization
  
  Allareddy V, J Am Dent Assoc 2010;41:1107-1116

- Oral cancer tx costs ~60% lower if found earlier
  

- Improving oral health saved >$4 billion in tx costs
  

Management of Oral Conditions

- Daily oral hygiene must be tailored to meet the needs of the independent older adult, the independent older adult with special needs, and the institutionalized older adult with varying degrees of dependency

- If mouth care has not been provided in a while it may be uncomfortable for the individual at first
  - But routine daily oral care, in most instances, relieves the discomfort as the gums are becoming healthier.

Brushing basics
Oral Hygiene Aids for Brushing

Flossing Basics

- Floss at least once a day
- Curve floss around the side of each tooth sliding up and down, just under the gums
- Ask a dentist or hygienist for help
- Flossing for someone else requires some skill and patience
  - Different tools to make flossing easier
    - Floss holder

Inter-dental Devices

- Floss Aid
- Proxy Brush
- Interdental Brushes
- Power Flosser
Oral Care – No Teeth

- Wipe out mouth especially before going to bed
  - Toothettes
  - Wash cloth

Denture/Partial Care

- Always remove dentures at night
- Soak dentures in denture cleaner or water
  - Use a soak with an antifungal agent
  - Helps prevent yeast infections/candidiasis
  - Brush Dentures with a denture brush
  - Don’t use toothpaste
- Clean denture cup weekly to stop fungus and bacteria growth
- Mark ALL dentures for identification

Maintaining the Oral Health of Individuals with Alzheimer's

- Key Points
  - Relationship and Communication are Important
  - No matter the stage of Alzheimer’s
  - No matter the type of care provider
    - Family member, friend or health care professional
  - Approaches that work can often change
    - Individualize the oral care approach
    - From person to person and day to day
    - What works one day may not work another
  - Need to establish a routine for oral care
    - Works best when performed/assisted by same person
Maintaining the Oral Health of Individuals with Alzheimer's

- Always be supportive
  - Kind, considerate and calm
  - Reluctance or behavior displayed has a reason
    - It is a form of communication for the individual
    - Use what you know about the individual to address communication challenges
- Encourage Independence, let them provide own oral care
  - Can provide tips and encouragement and check behind
  - If Assistance is needed try the Hand over Hand approach
- Approach from the front
- Move and Speak slowly and Make eye contact
- Tell them what you are doing or going to help them do
  - Ask permission

Oral Health Care Techniques

- Hand Over Hand

Addressing Communication Challenges

- Refusing care
  - Reason for Refusal:
    - May be bad timing
      - Try again at another time, may be more receptive
    - May be experiencing hearing problems
      - May not understand you
      - Get at eye level
      - Speak slowly, clearly and loudly
Communicating Effectively

Addressing Communication Challenges

**Reason for Refusal:**
- **May be Fear** (fear loss of control or possibility of pain)
  - Provide the individual with a reason for oral care
    - "It will make your mouth feel better"
  - Reassure them
  - Give them something to comfort them/hold
  - Sing or play music
  - Let them try on their own then assist as needed
    - Build on this if they need more assistance
      - Hand over hand, then you may be able to provide care
    - Be patient
    - Try later

- **Won't Sit Down**
  - Put a chair behind them and you sit down
  - Get their attention and just start a conversation
  - Provide oral care with them standing
    - In front of a sink is best

- **Won't Open Mouth**
  - Maybe they don't understand what you are trying to do or what you want them to do
    - Model the behavior
  - Touch/massage their mouth or jaw
  - Sing or Play Music, Provide them something to hold
  - Approach mouth with a toothbrush
    - Slide the brush in
  - Maybe they just don't want the care at that time, try at another time
Addressing Communication Challenges

- Reason for Refusal:
  - Individual says they just don't want the care
  - Be patient
  - Make small talk
    - Tell them how important it is to brushing their teeth
  - Give them something to hold
  - Sing or Play music
  - Let them do it themselves, you offer help as needed and wanted
    - Hand over hand approach
    - Check behind them
  - Use a second tooth brush or a bite block to prop the mouth open and brush with the other toothbrush
  - Be sure to keep fingers outside of the teeth
  - Try at another time

Effective Care Approach

- Hitting
  - Stop at earliest signs of discontent
    - Try to see what may be going on
    - Talk to them, give them something to hold for comfort
    - Sing or play music
    - Use a gentle touch
    - If hitting continues, try later
    - Don’t get frustrated

- Biting the brush or fingers of care provider
  - This is a natural reflex – may be trying to eat
    - More often seen in middle to later stages of Alzheimer’s
    - Wiggle the brush, try tooth brushes with smaller sized heads
    - Massage cheeks or jaw
    - Keep fingers on outside of teeth
    - Keep trying, but if action continues too long, try later
Addressing Communication Challenges

- Sucking on the toothbrush
  - A natural reflex seen more often in later stage
  - Pleasant sensation
  - Wiggle the brush, try two brushes
  - Keep fingers on outside of teeth
  - Keep trying, but if continues action too long, try later
  - May be doing this because they are experiencing oral pain
    - Try to evaluate their oral cavity
      - Look for anything unusual

Denture Care

- Dentures have to be taken out so they and the gums under them can be cleaned and to give gingival tissues a chance to "breath". Best to be soaked at night.
  - Reassure the individual
  - Tell them the importance of what needs to be done
  - Let them take them out
    - If they decline or are unable
      - Touch or massage cheeks while working to remove them
      - Never be aggressive or forceful
Good Oral Hygiene
Impacts Quality of Life

- Relationships are key
- Don’t think of it as a task
- Encourage – give positive feedback
- Be respectful
- Use a gentle touch
- Establish an oral health care routine
  - With same care provider works the best