Oral Health Considerations in Assessment and Management of Persons with Alzheimer’s Dementia and Related Disorders

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Objectives

By the end of this module, participants will be able to:

• Describe the impact that oral health can have on systemic health and on the quality of life of a person with ADRD;

• Describe medical complexities that may have an impact on the ADRD person’s oral health or their ability to receive dental care;

• Identify clinically significant oral health changes often observed in a persons with ADRD and make appropriate referrals; and

• Discuss, apply and/or teach oral health care maintenance strategies to persons with ADRD and their caregivers.
Case Report

An 85 year old patient in the advanced stages of Alzheimer's disease developed new behavioral difficulties

- Biting and hitting care-providers
- Biting cutlery
- Weight loss
- Biting his own hand
- Spitting

Repeated physical examinations and medication changes resulted in no improvement until he was seen by a dentist.

Three carious teeth were extracted under general anesthesia.

The patient ceased the acquired antisocial behaviors of hitting, biting and spitting.
Residents of nursing homes were interviewed about how their oral health affected their lives. Since only about one-half were able to complete the quality of life assessment due to levels of cognitive impairment, the results represent only the patients who remained relatively cognitively intact and probably underrepresent the actual impact.

Perhaps because dentistry, as a profession, developed independently from medicine, the mouth became an organ viewed separately from the body. With a growing body of evidence demonstrating bi-directional associations between oral health and systemic health, this presentation addresses key links that are particularly relevant to the ADRD populations. The provision of holistic health care requires that we put the mouth back into the body.

**Oral implications of systemic disease—I**

- Persons with ADRD commonly are also afflicted by one or more additional chronic diseases prevalent in people of advanced age.
- Many persons with ADRD experience impaired access to regular dental assessment and care.
- Persons with ADRD may no longer practice, or adequately practice, their own daily oral care.
- Persons with ADRD may not express, or may not be able to express, symptoms of incipient oral disease whose development might be facilitated by chronic disease and/or its management.
- Primary care teams therefore need to be well-informed of the potential oral implications of non-oral diseases and their treatments.
Dental personnel often contact primary care teams, seeking medical clearance and/or guidance regarding dental care for persons with ADRD who have, or are at risk for:

- Aspiration pneumonia;
- Diabetes mellitus;
- Anticoagulation regimen;
- History of irradiation of the head and neck;
- History of administration of bisphosphonate;
- Requiring antibiotic prophylaxis prior to dental care; or
- Medications with adverse oral side effects

Aspiration pneumonia

- Mouth and pharynx are in the airway and are coated by excretions with $10^{12}$-10^{14} microorganisms/cc
- Oral cavity and throat become rapidly populated by organisms in the health care setting, many of which will be multi-drug resistant.
- Gram (-) anaerobes populating the gingiva are the most common pathogens in facility-acquired pneumonia.
- Incidence of facility-acquired pneumonia can be reduced through a program of regular oral hygiene, including once-daily tooth- and denture-brushing and antimicrobial mouth rinse.

Diabetes and Oral Health

- Periodontitis is a chronic inflammatory bacterial infection of the tissues surrounding teeth that is highly prevalent in adults of advanced age, particularly those with inadequate daily oral care.
- The chronic inflammation of periodontitis, like other inflammatory processes, interferes with glycemic control.
- In turn, impaired glycemic control results in an exacerbated inflammatory response to the local factors responsible for periodontitis and gingivitis.
- Daily provision of oral hygiene—which may be beyond the ability of the person with ADRD, and which then becomes a caregiver’s responsibility--can interrupt this pernicious cycle.
- Diabetic persons who undergo extensive dental care (particularly oral surgery, e.g., extractions) may miss re meals. They and their caregivers may need to be counseled to adjust the insulin regimen on the day of care.


Anticoagulation

- The mouth is highly vascularized and prone to hemorrhage following mucosal trauma if coagulation is suppressed.
- It is extremely common to see anticoagulation regimens in persons with ADRD (particularly multi-infarct dementia), as part of managing atrial fibrillation, deep venous thrombosis, and elevated stroke risk.
- In such patients, the risk of thrombosis due to a disruption in the anticoagulation regimen far outweighs the hemorrhagic risk of oral trauma.
- If INR is 4 or less, dental care may not require adjustment of anticoagulation regimen as long as it is augmented as necessary with local measures (e.g., limit number of extractions in a single sitting; gelatin sponge/primary closure)

Head and neck irradiation

- Over 95% of intraoral and oropharyngeal malignancy is squamous cell carcinoma--a cancer found almost exclusively in persons age 50 and older.
- Ionizing irradiation plus excision and (if there is nodal involvement) chemotherapy is the treatment of choice.
- Therapeutic irradiation that passes through bone (particularly the more vascular mandible) and salivary gland tissue causes irreversible fibrosis of microvasculature, resulting in irreversibly impaired bone healing and partial or total destruction of salivary glands.
- Impaired salivary supply leads to rapidly destructive dental caries; and avascular bone is highly susceptible to osteonecrosis arising from tooth extraction.
- For these reasons, the person with ADRD who is about to undergo treatment for squamous cell cancer of the mouth or oropharynx MUST have a pre-procedural dental assessment and extraction of teeth at elevated risk for caries BEFORE irradiation therapy commences.
- After treatment, intense dental follow-up for maintenance of the dentition is essential to prevent the subsequent need for extractions.

Bisphosphonates

- Intravenous administration of bisphophonate (BP) for management of multiple myeloma has been linked to a small (<5%) but definite risk for osteonecrosis following intraoral trauma.
- The risk is less well established for oral therapy, for example for osteoporosis or Paget’s Disease.
- The risk is greatest for mandibular trauma in females.
- For this reason, an individual slated for IV BP treatment should undergo a dental assessment so that necessary extractions can be performed and bone healing may commence prior to the administration of the BP.
Antibiotic prophylaxis prior to dental care? --the issue

- As noted earlier, the oral cavity is highly vascular and densely populated with microorganisms, predisposing to frequent transient bacteremias in dentate adults.
- Bacteremia of oral origin has been documented following daily oral hygiene—and substantially higher titers are reported following professional dental care and especially following dental extractions and other oral surgical procedures.
- Bacteremia of oral origin has been anecdotally linked to metastatic infections of multiple organs (e.g., kidney, brain, heart).
- For this reason, those with elevated risk for metastatic infection of oral origin (e.g., those with history of infective endocarditis, those with prosthetic heart valves or major joint replacements) need to be educated by their primary care teams on the importance of fastidious daily oral hygiene and regular dental care, in order to minimize the risk of metastatic infection due to an orally-seeded bacteremia.

Antibiotic prophylaxis prior to dental care? --the guidance

- Assessments by multiple health professional organizations have concluded that the risks of widespread prophylactic administration of broad spectrum antibiotics (e.g., emergence of resistant organisms) prior to dental care far outweigh the benefits of coverage in most cases, including for those with a history of rheumatic heart valve disease and fully healed major joint prostheses.
- Two exceptions to the preceding are:
  - those with a prosthetic heart valve or a history of infective endocarditis;¹
  - and those with prosthetic major joint replacement who are determined to be at high risk for infection²
- The recommended regimen for these exceptions is a single dose, 30-60 minutes prior to a dental procedure anticipated to cause bleeding, of:
  - 2g oral amoxicillin; or 2g IV or IM ampicillin; or 1g cefazolin or ceftriaxone IM or IV; OR
  - for those allergic to penicillins or ampicillin: 2g oral cephalaxin; or 600 mg clindamycin; or 500 mg azithromycin or clarithromycin; or 1g IM or IV cefazolin or ceftriaxone; or 600 mg IV or IM clindamycin.
- There are no compelling population-based data supporting the prophylactic administration of antibiotic prior to dental care for patients with other “devices”, such as arterio-venous shunts, ventriculo-peritoneal shunts, transdermal catheters, minor joint prostheses, penile prostheses or esthetic augmentation implants.

¹Wilson W et al. JADA. 2007; 138(6); 739-745: 747-760
²Sollecito TP et al. JADA 2015; 146(1): 11-16
Oral impact of medications

• “Dry mouth” is one of the most frequently listed medication side effects, reported for a broad range of agents. “Dry mouth” is NOT a normal consequence of aging, but represents a significant and potentially destructive state that should be minimized whenever possible.
• “Dry mouth” is reflective in most cases of a change in salivary quantity and/or quality (e.g., electrolytic, antimicrobial, mucinous content).
• Saliva is a critically important exocrine fluid that protects and nurtures mucosa in the mouth and aerodigestive passages, lubricates and maintains the mineralization of teeth, and suppresses oropharyngeal microbial growth.
• Salivary modification and particularly its absence are accompanied by rampant acceleration in dental decay, increased susceptibility to oral mucosal trauma and infection, and exacerbated predisposition to infectious pulmonary disease.

Oral Assessment

Two critical roles for care providers are to
1. Assess the oral health status of people with ADRD and make appropriate referrals and to
2. Provide education for patients and caregivers regarding oral health maintenance and strategies for supporting oral health

To build the foundation for both, the steps for completing a quick but thorough assessment of oral health follows. The assessment begins outside the mouth with observation of the skin of the face, scalp and neck for changes and observation and palpation of nodes.
Preparation for entering the mouth

• Set up the following:
  – Light source
  – Disposable mouth mirrors
    • Available at low cost
    • Tongue blades work but not as well
  – 2x2 gauze
  – Gloves

Oral Assessment:
Skin of face, scalp and neck
Nodes of the head and neck

• Extra-oral examination
  – Observe first
  – Then palpate

• ASSESS:

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Oral Assessment:
Lips and labial mucosa

Observe first
Then palpate

Color  Texture
Contour  Function
Consistency  Symmetry

Angular cheilitis (probable fungal infection)

Oral Assessment:
Buccal (cheek) mucosa

Observe first
Then palpate

Color  Texture
Contour  Function
Consistency  Symmetry
Oral Assessment
Hard and soft palate
Oropharynx

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Oral Assessment: Tongue

- Grasp with 2x2 gauze and stretch out for visualization
- Lateral border of the tongue is the most common site for oral cancer

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Oral Assessment:
Floor of the mouth

- The second most common site for oral cancer

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Oral Assessment:
Teeth and supporting structures

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<th>Intact and clean?</th>
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<td>Gingiva</td>
<td>Healthy: pink and firm?</td>
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<td>Alveolar bone support</td>
<td>Solid with minimal recession?</td>
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Oral diseases common to older adults

- Caries (tooth decay)
- Periodontal disease (diseases of the supporting structures for the teeth)
- Edentulism (loss of teeth)
- Oral Cancer

Caries

Dental caries is a transmissible microbial disease that results in the dissolution of calcified tooth structure of the crown or the root of the tooth, eventually progressing into the tooth creating a cavitation that can be observed clinically or radiographically.
Caries: Epidemiology in patients with dementia

- Yearly incidence of new caries lesions in nursing home residents
  - Coronal caries = 64.4%
  - Root caries = 48.5%
  - Significantly higher than community-dwelling older adults
- 3 x the rate of caries compared with a similar cohort (Finland)
- Mean number of teeth with caries (North Carolina)
  - 6.0 (nursing home residents)
  - 5.5 (community-dwelling)
  - 5.3 (assisted living)
- Among ADRD subjects, 89% had at least one caries lesion (Denmark)

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1 Chalmers JM et al. Spec Care Dentist 2005; 25(2): 96-105
3 Syrjälä AM et al. Gerodontology 2012; 29: 36-42
4 Chen X et al. Spec Care Dentist 2013; 33(5): 239-247

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Caries

- Enamel
- Dentin
- Pulp

The surfaces of teeth, whether enamel on the crowns of teeth or exposed dentin on roots, undergo a constant dynamic mineral exchange with the oral environment.
Caries development...

...occurs when the microorganisms in the plaque that colonizes the teeth metabolize carbohydrates and produce acids that demineralize the tooth structure—to a greater degree than the calcium in saliva can remineralize the tooth

Caries risk is increased in the presence of:

1. Undisturbed plaque (biofilm)
2. Frequent exposure to fermentable carbohydrates (diet)
3. Reduced salivary flow (host factor)
4. Teeth with low fluoride exposure (host factor)
5. Exposed roots (less densely mineralized tooth structure)
Caries risk in people with ADRD

1. Undisturbed plaque
   - High correlation between cognitive status and ability to perform oral hygiene
   - High correlation between cognitive status and caries severity when not adjusted for ability to perform oral hygiene
   - Insignificant correlation between cognitive status and caries when adjusted for ability to perform oral hygiene
   - Significantly higher in persons with severe ADRD

2. Frequent exposure to fermentable carbohydrates
   - Commonly available in long term care settings
   - May be used as “comfort”

3. Reduced salivary flow is most commonly associated with medications
   - Mean number of drugs = 8

4. Teeth with low fluoride exposure
   - Depends on community water fluoridation
   - May be supplemented by caregivers / care providers

5. Exposed roots

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Plaque biofilm reduction

- Tooth brushing
  - Electric brushes may help if tolerated
  - Collis-curve brush attempts to cover more surface area in less time
  - Adaptations to brushes may need to be made

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References:

3. Foltyn P. Australian Dental Journal 2015 60(1 Suppl): 86-94
Assisting with oral hygiene

- Technique will vary depending on the ability of the patient to cooperate

- **Brushing**: Stand behind the patient and either support the patient’s head with the non-dominant hand or rest it firmly on the shoulder on the side to be brushed to divert the attention of the patient.

![Image of brushing technique](image1.png)

**Brushing**

- Place a soft-bristled brush (manual or electric) at a 45% angle to the teeth with the bristles pointing into the gingival tissue and vibrate or create small circles. Then move to the next site.

- When this level of brushing is simply not allowed by the patient, aids like the Collis-Curve brush may help to cover more tooth surface with each attempt.

![Image of brushing with Collis-Curve brush](image2.png)
Cleaning between the teeth

Although floss is the gold standard, anything that safely cleans between the teeth is encouraged.

- Flossing is most easily accomplished from the front of the patient. A flossing device may protect the care provider from risk of biting.
- Many other devices for interproximal cleaning are commercially available and may be easier to manage than floss.

Fluoride

- Facilitates remineralization (reversal) of early caries lesions
- Renders tooth mineral more resistant to dissolution in bacterially-excreted acid
- Impairs bacterial metabolism of carbohydrate into acid
- Major forms available
  - NaF
  - SnF$_2$, which has the added benefit of suppressing periodontal pathogens
  - Silver diamine fluoride
Delivery of fluoride

- Community water supplies
  - Available in some communities since 1949
- Over the counter dentifrice/mouthwash
  - Little evidence to support efficacy in high risk patients
  - Readily available
- Professionally-applied and prescribed preparations (higher concentration gel, varnish)

Sources of fluoride effective for reducing caries risk


- 1.1% neutral sodium fluoride dentifrice or gel
  - Prescription required
  - Recommended by the American Dental Association for use twice daily
- 2.26% fluoride varnish
  - Professionally applied
  - Recommended by the American Dental Association for application every 3-6 months
  - For patients at high risk for caries, recommended application every 3 months
- 38% silver diamine fluoride
  - Professionally applied 1-2 times/year

2http://www.ada.org/sections/professionalResources/pdfs/topic_caries_over6.pdf
Case presentation

The patient was a World War II veteran who had been a prisoner of war in the Philippines. He had been treated in a VA Dental Clinic for many years and maintained an intact dentition. Declining cognitive function led to residence in a nursing facility. When he came to dental appointments, his teeth were completely covered with plaque, and he began developing caries at an alarming rate. Efforts at encouraging the facility to provide more support for oral hygiene were unsuccessful. In response to the needs of this veteran, the staff at the dental clinic looked for a solution and decided to bring him into the clinic once a month, and an auxiliary staff member would brush his teeth and apply fluoride varnish. The strategy effectively decreased the rate of new caries for this veteran and he maintained a functioning dentition until his death.

As a result of this outcome, the clinic established a program to provide this service for veterans who could no longer maintain oral health. The toothbrushing does not require the skills of a dental professional and the application of fluoride varnish is legal in many states in other health care settings.

Salivary Flow

Functions of saliva

- Maintenance of tooth integrity (ions for remineralization)
- Initiation of digestion
- Lubrication of tissues
- Mastication and bolus formation
- Buffering
- Antibacterial, antiviral, antifungal activity

Causes of xerostomia or salivary hypofunction

- Medications
- Autoimmune diseases
- Radiation
- Salivary gland infection, obstruction, tumor, excision
- Fluid and electrolyte problems
Management of Xerostomia/Salivary Hypofunction

- As a complex bodily fluid that supports the health of the dentition and oral mucosa as well as initiating digestion, salivary stimulation, when physiologically feasible, is the most effective management tool.
- Salivary replacement provides comfort in eating, speaking and swallowing.
- Protecting the teeth with effective oral hygiene measures and use of agents such as fluoride mitigates some of the increased risk associated with a dry mouth.

Salivary stimulation

- Sugarless gum and candy
  - Sweetened with polyols (e.g., xylitol, sorbitol)
    - Replace fermentable carbohydrates with sweeteners of low cariogenicity
    - May have a direct anti-plaque effect
- Prescription sialagogues
  - Pilocarpine hydrochloride
    - Head and neck cancer/Sjogren’s syndrome:
      - 5-10 mg 3-4 times per day not to exceed 30 mg*
      - Titrated to lowest effective dose
  - Cevimeline
    - Sjogren’s syndrome
    - 30 mg tid *

*Package insert
Salivary replacement

• Water
  – A cup with a lid filled with ice and water is convenient
  – Sugared beverages greatly increase the risk of oral diseases; artificial sweeteners are less worrisome

• Artificial saliva, mouthwashes
  – Several manufacturers market products for persons with salivary hypofunction
  – The products may support speech, swallowing and oral comfort by providing oral lubrication
  – The products do not possess the disease-suppression or –reversal properties of natural saliva

Diet

• Reduce **frequency** of intake of fermentable carbohydrates
• Replace with foods rich in proteins
Periodontal Disease

• Diseases of the periodontium (supporting structures of the teeth) arise in response to pathogenic microorganisms in dental plaque.

• The initial soft tissue reaction to plaque ("gingivitis") is gingival inflammation with redness and bleeding. This can be resolved by thorough cleaning of tooth surfaces.

• A variable blend of host and microbial factors may trigger the release of destructive inflammatory factors that irreversibly destroy hard and soft tissues surrounding affected teeth ("periodontitis").

• In the advanced stages of periodontitis, disease, the teeth become mobile and may eventually be lost, impairing mastication.

Periodontal Disease

• Advanced periodontal disease is more common with advanced age because of the accumulation of tissue loss over the life span.

• Diminished or absent oral self-care of ADRD patients places them at elevated risk for gingival and periodontal diseases,¹ and makes it imperative that daily oral hygiene is faithfully and effectively provided by caregivers.

Oral Cancer

- Over 45,000 new cases per year in US, mostly in individuals age 50 and over; male preponderance.
- Associated with tobacco/heavy alcohol use and human papilloma virus.
- Most common sites: base and lateral border of the tongue and floor of the mouth.
- Red and mixed red/white lesions far more concerning, mandating immediate evaluation by an oral health professional.
- White lesions less likely malignant. Potential causes (e.g., trauma from fractured tooth, denture irritation, etc.) should be addressed and the lesion re-evaluated in 7-14 days. If it persists, referral for professional assessment should occur.
- Generally favorable prognosis when disease is localized; lymphatic or metastatic involvement substantially worsens morbidity and mortality.

Edentulousness = Toothlessness

- Long-lived, multi-cultural characteristic of the stereotypical “old person”.
- Prior to better understanding of oral disease and widespread access to preventive dentistry, the chronic and progressively destructive nature of caries and periodontitis did lead to widespread total tooth loss with advancing age.
- Dramatic drop in toothlessness in developed countries during the second half of 20th century due to fluoridated drinking water and dentifrice, and increased access to increasingly sophisticated dental care. Presently affects under 25% of Americans age 75 and over.
- In US, still more prevalent in rural areas, in the southeast states, persons with less formal education, sociodemographically disadvantaged populations, and immigrants.
- Because of the decades of dental disease that are a typically antecedent to loss of all the teeth, prevalence of edentulousness among persons with ADRD is little different than what is observed among age-matched, non-ADRD populations.
- In contrast, incidence is likely greater in persons with ADRD due to the impact of impaired self-care and the likelihood for dental professionals to opt for extractions for diseased teeth due to ADRD-related behavioral factors impacting the provision of care.
Diminishing prevalence of edentulism over the past 50+ years

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Toothlessness and Dentures

- Edentulousness is not clearly correlated with suboptimal nutritional intake, particularly in industrialized nations with widely available processed foods.
- Provision of artificial dentitions (“dentures”) to edentulous persons may anecdotally lead to improved dietary intake, but population-based studies of this question are not compelling.
- Dentures restore the appearance of teeth and fill out the lips and lower face; improve the clarity of speech; and may result in an expanded range of foods textures.
- Once teeth have been removed from the jaws, the alveolar processes (the bone in the jaws that held the teeth) diminish in volume at a variable rate over the ensuing years. This means that dentures usually require periodic adjustment and remaking several times during the wearer’s life.
- Adapting to and using dentures requires a level of tolerance, learning, and orofacial neuromuscular proprioception and control that a cognitively impaired individual may or may not still possess to an adequate degree.
Denture Care for Persons with ADRD

- Like teeth, dentures in the mouth are readily and copiously populated with adherent microbial colonies. Unlike teeth, dentures preferentially support yeast colonies.
- For this reason, dentures should be brushed at least daily. If a dentifrice is used it must be less abrasive than toothpaste.
- Soaking dentures in a cleansing solution without mechanical cleaning either before or after does not clean dentures adequately.
- Dentures should be left out of the mouth for some part of every day, to allow the oral mucosa to recover and aerate. Often the most convenient time for this is during sleep.
- While dentures are out of the mouth, they should be stored in clean water or denture soaking solution.
- If using soaking solution (generally a mildly proteinolytic detergent with sodium hypochlorite) on behalf of an individual with ADRD, do not permit the individual access to the soaking denture. This is to reduce the chance for either accidental ingestion of the solution or mucosal burns arising from inserting a denture from which the solution has not been rinsed.

Dentures in congregate settings

- Every denture is individually fabricated to fit one person’s mouth, but to the untrained eye, they all pretty much look the same once outside the mouth.
- For this reason, persons who reside in or attend settings largely populated by persons of advanced age and particularly with ADRD, must have their dentures labelled in some identifiable and indelible manner.
- If a denture has not already been labeled, the user’s name should be written on a clean but hidden surface of the appliance with a felt-tip pen.
Dental Treatment Options

Planning and delivering dental care to persons with ADRD can be challenging emotionally, ethically, and technically. The approach ultimately chosen will need to be selected by the patient, which in most cases requires some or a great deal of input from the caregiver or surrogate decision-maker, educated and assisted by the health care team. The following slides describe factors that will bear on the final decision as to how to proceed. No one consideration stands above others: any may be the overriding factor at one point but may yield to another as time passes and the situation changes:

- Early intervention
- Access and finance
  - Quality of life
- Patient behavioral issues
- Realistic expectations

Early Intervention

- ADRD are progressive diseases that diminish, with the passage of time, a patient’s capacity for input to treatment decisions, self-care, and impulse suppression.
- Identification of patient priorities and preferences as early as possible during the neurological disease process will help inform later decision-making.
- Undertaking dental care that requires more patient cooperation, learning, and adaptation will become increasingly challenging with the passage of time.
- Initiation of daily oral care behaviors by the patient or by others on the patient’s behalf must be initiated at soon as possible to limit progression and onset of disease. Even so, there are no guarantees that patient tolerance and cooperation earlier in the disease process will sustain over time.
Access and Finance

• Dental care can be prohibitively costly for a person or family on a fixed budget; Medicare does not include dental care and in most states adult Medicaid offers limited coverage or no coverage at all. Most dental insurance does not continue coverage into retirement.
• Financial barriers may limit care options to prevention, extractions, and fillings—placing treatment of severely diseased teeth (e.g., root canal) or replacement of missing teeth out of the question.
• Most dental offices have limited capacity to accommodate patients in wheelchairs, adults who display aversive behaviors or who require conscious sedation to be treated.
• Limited toleration of unfamiliar settings on the part of the person with ADRD may necessitate seeking services of dental personnel with the capacity to render care in the home or extended care facility; or under general anesthesia in a hospital setting.

Behavioral issues in the dental setting

• Dental patients with ADRD may tolerate dental care in a typical office setting.
• Dental patients with ADRD may also react negatively to an unfamiliar setting, introduction of unexpected and especially uncomfortable devices into their mouths, their own recumbent and vulnerable posture, and the necessary physical proximity of dental personnel. These reactions may be mitigated if care is delivered in the patient’s home or extended care facility.
• Dental personnel with advanced training in treating patients with aversive behaviors may be able to manage patients with ADRD through verbal and non-verbal techniques to the point that routine dental care can be delivered successfully. These techniques apply as well in the patient’s home or extended care facility.
Behavioral issues in the dental setting

• In consultation with the primary care team, some dentists will prescribe low-dosage oral benzodiazepine to facilitate cooperation during dental care. Some have training in intravenous administration of sedative-hypnotics but all such agents carry real risk for triggering a delirious episode that can be disturbing to staff, patients, and family.

• Nitrous oxide administration may not be tolerated due to the apparatus placed over the face. Furthermore the reduced oxygenation that is part of this procedure is more risky in a person of advanced age, who is more likely to have subclinical or overt cardiovascular compromise.

Realistic expectations

• Dental care involving fabrication of prosthetic tooth replacements (dentures and bridges) and other sophisticated dental procedures (root canal, periodontal surgery) require patient cooperation and tolerance for dental procedures lasting over an hour.

• Most prosthetic tooth replacements will require a greater commitment to technically challenging daily oral care for the lifetime of the prosthesis than does the natural dentition.
Realistic expectations

• The exception to the preceding generalization is removable dentures that replace all the teeth, and can be removed from the mouth for cleaning. But adaptation to dentures can be challenging even to persons without cognitive difficulties and providing new dentures to a person with ADRD always carries a significant risk that the prosthesis will be intolerable to the patient.

• If a patient’s reaction to receiving dental care is so severe that it requires sedation or general anesthesia, treatment must usually be limited to removal of all or at least diseased teeth and prophylaxis (cleaning).

Quality of Life

• Pain from dental and oral disease can overwhelm all other conscious experience, represent a potentially life-threatening infection, disrupt oral intake, complicate management of other chronic disease conditions, and/or result in behavioral disturbance.

• Dental care is terrifying to a proportion of healthy adults but it is variable whether this reaction will be diminished, worsened, or unchanged by neurological deterioration.
Quality of Life

• Untreated dental and oral disease can impede socialization due to diminished self-image, oral malodor, and change in personal appearance.

• Reduction in number of teeth is correlated with a diminishing range of tolerable foods. Although this does not presage starvation or even undernourishment, it does mean that whatever sensory enjoyment the person with ADRD once experienced from eating is likely reduced as the number of teeth is diminished.

Resources

• https://www.youtube.com/watch?v=93ixNssks1c
• https://www.youtube.com/watch?v=JP2wnMydNfs
• https://www.youtube.com/watch?v=AVsMmppYXrl