Growing Older with a Smile: Promoting Oral Health for Older Adults

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Walker Methodist Health Center
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Disclosures

Current sponsors
- University of Minnesota School of Dentistry
- Walker Methodist
- Gerontological Society of America
- ASTER Labs, NIH/NIDCR, CDC

No off-label or investigational product use will be discussed.

Permission for use of photos was obtained as necessary.

I have occasionally accepted gifts from patients.
With Age Comes a Mouthful of Trouble

Paula Span
THE NEW YORK AGE

Alex Maddalena had gone five years without seeing a dentist. He knew that he needed to. It hurt to chew. A couple of teeth had grown discolored, so he tried not to smile broadly. His daughter kept urging him to get a checkup.

The reason he didn’t: money.

Medicare has never provided dental care, except for certain medical conditions, and California’s Medicaid program covers only some services, at reimbursement rates so low that most of the state’s dentists do not accept Medicaid patients at all.
Objectives

1. Describe key oral health problems and trends in our aging population.
2. Recognize and appreciate the close interrelationship between oral and overall health in older adults.
3. Discuss special concerns and barriers to care for the older population and potential strategies to address them.
4. Identify effective models and resources available for the interprofessional team to help improve oral health for older adults.

Today’s Cases

1. Patient I.O.
   “Better Living Through Chemistry?”

2. Patient H.G.
   “Have You Looked in His Mouth?”

3. Patient H.O.
   “A Costly Delay”
Whaddya know?

1. The most common oral effect of medications in older adults is:
   A. Gum overgrowth  
   B. Dry mouth  
   C. Yeast infections  
   D. Staining of teeth  
   E. Excessive bleeding

Case 1: Patient I.O.  
“Better Living Through Chemistry”

“Food keeps getting caught between my front teeth.”
Patient I. O.

89 years old; retired teacher; lives independently

<table>
<thead>
<tr>
<th>Medical History (self-reported)</th>
<th>Medications</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Hypertension</td>
<td>1. Allopurinol</td>
</tr>
<tr>
<td>2. Osteoarthritis</td>
<td>2. Metoprolol</td>
</tr>
<tr>
<td>3. High cholesterol</td>
<td>3. Lovastatin</td>
</tr>
<tr>
<td>5. Osteoporosis</td>
<td>5. Oxybutynin</td>
</tr>
<tr>
<td></td>
<td>6. Calcium/Vitamin D</td>
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<td></td>
<td>7. Acetaminophen</td>
</tr>
</tbody>
</table>

Oxybutynin = Urinary Incontinence

Soft tissue exam: severe dry mouth (xerostomia)

Root decay (caries)
- Upper central incisors, very deep (#8, 9)
- All lower incisors, moderate depth
Diagnosis: Active Root Caries 
(probably secondary to drying medication, especially oxybutynin)
Caries Prevalence in Older Adults

Untreated caries in 19% of US 65+ adults (2011-12)

Figure 2. Prevalence of dental caries in permanent teeth among adults aged 65 and over, by age and race and Hispanic origin: United States, 2011–2012

<table>
<thead>
<tr>
<th>Dental caries experience</th>
<th>Total</th>
<th>65–74</th>
<th>75 and over</th>
<th>Non-Hispanic white</th>
<th>Non-Hispanic black</th>
<th>Hispanic</th>
<th>Non-Hispanic Asian</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>96.2</td>
<td>96.0</td>
<td>96.6</td>
<td>86.1</td>
<td>92.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>65–74</td>
<td>18.9</td>
<td>18.5</td>
<td>19.4</td>
<td>15.5</td>
<td>26.7</td>
<td>27.3</td>
<td></td>
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<tr>
<td>75 and over</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Hispanic white</td>
<td>97.8</td>
<td>97.8</td>
<td>97.8</td>
<td>97.8</td>
<td>97.8</td>
<td>97.8</td>
<td></td>
</tr>
<tr>
<td>Non-Hispanic black</td>
<td>80.5</td>
<td>80.5</td>
<td>80.5</td>
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<td>80.5</td>
<td>80.5</td>
<td></td>
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<tr>
<td>Hispanic</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Hispanic Asian</td>
<td>92.0</td>
<td>92.0</td>
<td>92.0</td>
<td>92.0</td>
<td>92.0</td>
<td>92.0</td>
<td></td>
</tr>
</tbody>
</table>

NHANES
1999-2004 vs. 2011-14

- Untreated caries
  - Low income kids: 33% → 25% (-24%)
  - Low income adults: 42% → 48% (+14%)
  - Low income seniors: 31% → 42% (+34%)
Impact of Medications in Dental Care

- **General**
  - Dry mouth
  - Soft tissue pathology (yeast, ulcerations, gum overgrowth, etc.)
- **Sedatives**
  - Over-sedation, confusion/delirium, falls, aspiration
- **Anticoagulants**
  - Excessive bleeding
- **Analgesics**
  - NSAID’s: fluid retention/CHF, GI ulcers
  - Narcotics: confusion, falls, constipation
- **Bisphosphonates**
  - Possible necrosis of jawbones

Public Enemy #1: Dry Mouth (Xerostomia)

- Mostly due to drugs
  - 400+ medications
  - Anticholinergics, diuretics, etc.
- Some due to disease or treatment
  - Sjogren’s Disease
  - Head & neck radiation therapy
- Impact
  - Caries (especially roots)
  - Soft tissue irritation, infections
  - Chewing, swallowing problems
  - Taste disturbances
  - Speech problems
  - Denture retention problems
What can we do about dry mouth?

- Inform patient and caregivers
- MD/NP consultation
- Preventive measures ASAP!
  - Fluorides (home and office)
  - More frequent dental recalls
- Moisturizers
  - Moisturizing mouthwashes, gels, or artificial salivas
  - Ice chips, sugarless candy, gums (with xylitol)

Patient I.O.

<table>
<thead>
<tr>
<th>P) Tx Option #1</th>
<th>P) Tx Option #2</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Consult on medications</td>
<td>• Consult on medications</td>
</tr>
<tr>
<td>• Tooth-colored fillings, lower incisors</td>
<td>• Tooth-colored fillings, lower incisors</td>
</tr>
<tr>
<td>• Extract upper central incisors (teeth #8, 9)</td>
<td>• Extract or root canals, upper central incisors (teeth #8, 9)</td>
</tr>
<tr>
<td>• Upper removable partial denture to replace teeth #8, 9</td>
<td>• Posts/build-ups as needed</td>
</tr>
<tr>
<td></td>
<td>• Fixed bridgework teeth #7-10</td>
</tr>
<tr>
<td>P) Tx Option #1</td>
<td>P) Tx Option #2</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------</td>
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<tr>
<td></td>
<td>• Fixed bridgework teeth #7-10</td>
</tr>
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</table>
Take Home Messages

✓ Many older adults have worked a lifetime to maintain oral health, but chronic diseases, disabilities and medications can take a toll.
✓ Drugs are now associated with significant oral health problems.
✓ Patients with dry mouth need dental care to save teeth, function and money.
✓ Cost is the most significant barrier to dental care among US older adults.
Whaddya know?

2. Which of the following systemic health problems has NOT been linked to poor oral health in older adults?
   A. Type II diabetes mellitus
   B. Aspiration pneumonia
   C. High blood pressure
   D. Infective endocarditis
   E. Atherosclerotic vascular disease

Case 2: Patient H.G.

“Have You Looked in His Mouth?”

76 years old, admitted to Walker Methodist Transitional Care Unit after hospitalization for pneumonia; no reported dental problems
Patient H.G.

Retired construction worker; unmarried; was living independently; 3 episodes of pneumonia in past year.

<table>
<thead>
<tr>
<th>Diagnoses</th>
<th>Medications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>Amlodipine</td>
</tr>
<tr>
<td>Diabetes, Type II</td>
<td>Metformin</td>
</tr>
<tr>
<td>Atrial fibrillation</td>
<td>Furosemide</td>
</tr>
<tr>
<td>Strokes in 2006, 2008</td>
<td>Warfarin</td>
</tr>
<tr>
<td>Peripheral vascular disease</td>
<td>Tamsulosin</td>
</tr>
<tr>
<td>Mild cognitive impairment</td>
<td>Acetaminophen</td>
</tr>
<tr>
<td>Dysphagia</td>
<td>Multivitamin</td>
</tr>
<tr>
<td>Benign prostatic hyperplasia</td>
<td>Simvastatin</td>
</tr>
<tr>
<td>Hyperlipidemia</td>
<td></td>
</tr>
</tbody>
</table>

Case discussion at Walker geriatric rounds…

“So did you look in his mouth?”

Dry mouth, multiple decayed roots; inflamed gingival tissues (and abscesses evident on x-rays)
Diagnoses: Xerostomia, gingivitis, extensive caries with abscessed teeth (could contribute to aspiration pneumonia)

Plan: Extract retained roots; consider dentures after healing.
Aspiration Pneumonia

Diabetes Mellitus
Infective Endocarditis

Studies support association but not causation

Common risk factors (smoking, diabetes, age); studies are difficult

Perio therapy reduces inflammation in short-term studies; less evidence it prevents ASVD or modifies outcomes.

Inflammation-mediated?
Dental Consequences of Cognitive Impairment

Increased oral/dental pathology due to:

- Forgetting daily oral hygiene
- Forgetting to remove dentures
- Lost dentures
- Dietary alterations
- Forgetting regular professional care
- Bruxing/abnormal facial movements

D.D. 9/19/2016
Lower removable partial denture embedded in soft tissues behind lower front teeth
Outcomes of Dental Care

- Dementia patients had much poorer oral health on arrival for care (caries, broken teeth, etc.)

- With regular treatment, tooth loss equalized with non-demented pts.

- Conclusion: Dentition can be maintained if good dental care is provided!

(Chen, et al, JAGS 2010)

Take Home Messages

✓ Poor oral health is now strongly associated with aspiration pneumonia, diabetes control and other systemic health problems.

✓ Dementia is associated with some serious oral health problems and deserves special attention.

✓ It can really pay off when other health professionals look in the mouth too!
Whaddya know?

3. Most oral disease found in long-term care facilities is primarily related to:

A. Lack of available dental providers
B. Inadequate daily oral hygiene
C. Lack of financing for dental care
D. Lack of motivation among residents
E. All of the above
Case 3: Pt. H.O.
“A Costly Delay”

89 year old male nursing home resident with left jaw swelling and pain (3:00 Friday afternoon)

H.O. Medical History

<table>
<thead>
<tr>
<th>Diagnoses</th>
<th>Medications</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Dementia</td>
<td>1. Citalopram</td>
</tr>
<tr>
<td>2. Depression</td>
<td>2. Risedronate</td>
</tr>
<tr>
<td>3. Osteoporosis</td>
<td>3. Calcium/Vitamin D</td>
</tr>
<tr>
<td>4. Osteoarthritis</td>
<td>4. Metoprolol</td>
</tr>
<tr>
<td>5. Scoliosis</td>
<td>5. Furosemide</td>
</tr>
<tr>
<td>7. Hypertension</td>
<td>7. Oxycodone prn</td>
</tr>
<tr>
<td>8. Atrial fibrillation</td>
<td>8. Multivitamin</td>
</tr>
</tbody>
</table>

• **Findings:**
  - Multiple decayed lower teeth and retained roots; #21 root floating out
  - Intra- and extraoral swelling & drainage area #21; additional infection areas #20-22

• **Diagnosis:**
  Multiple abscessed teeth

• **Plan:**
  Extractions ASAP

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**Post-op course:**

- Poor wound healing after one week
- Continued swelling, discomfort
- Development of fistula draining through chin
- Antibiotics, chlorhexidine rinses, pain meds
- Oral surgery referral
- Over a year required for healing

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*Medication-related Osteonecrosis of the Jaw (MRONJ)*
Patient H.O. x-rays 11 months prior

Necrotic Palatal Bone
Long-term Care Oral Health Barriers

- Staff time, training, motivation, support to provide daily hygiene
- Complexity of residents and care (e.g., medical, behavioral, etc.)
- Financing
- Supply of trained, interested dental professionals
- Lack of dental facilities
Bisphosphonate therapy calls for enhanced oral care, especially in patients taking IV forms or with co-morbidities.

Basic daily oral hygiene and access to professional dental services remain problematic in long-term care.

Dental care delays in older adults can be costly.
Interdisciplinary Players in Geriatric Care

- MD’s, NP’s, PA’s
- Nursing staff
- Social workers
- Pharmacists
- Rehabilitation (OT, PT, Speech)
- Dental team!

So Why Care About Oral Health in Older Adults?

**Strongly Associated with Quality of Life:**
- Comfort
- Speech
- Chewing, food selection, food enjoyment
- Appearance
- Self-esteem, socialization

**Strongly Associated with Systemic Health Problems:**
- Nutrition
- Diabetes control
- Aspiration pneumonia
- Infective endocarditis
- Medication-related osteonecrosis of jaws

**Possibly implicated in:**
- Other inflammation-mediated disorders (e.g., ASVD)
Key Points

1. Older adults have more teeth and higher expectations for maintaining oral health than ever before.

2. Oral health is an essential element of overall health in older adults.

3. Systemic health, drugs, and functional status can significantly affect oral health and dental care.

4. Significant oral health access barriers can exist for older adults, especially the poor, functionally dependent, and those in long-term care.

Helpful Resources
Oral Health Services for Older Adults Program
University of Minnesota School of Dentistry

Walker Methodist Dental Clinic Model

- Provides training for UMN dental professionals at all levels
- Serves community elderly, Walker, & area long-term care facilities
- Open to all 3rd party & Minnesota Medicaid plans
- MN Critical Access Provider
- Since opening in 2006:
  - 400+ dental professionals trained
  - 15,000+ visits to 2000+ patients
  - $3 million in services provided
  - $1 million in uncompensated care
Minneapolis clinic gets award for senior dental care using UMN students

By MAJA BECKSTROM | Pioneer Press
PUBLISHED: November 2, 2016 at 11:33 am | UPDATED: November 8, 2016 at 6:52 pm

Walker Methodist Health Center's dental clinic received a national award this week for its innovative way of providing dental care for seniors. The Minneapolis clinic is staffed by University of Minnesota dental students, a model recognized with an innovation award from LeadingAge, a national association of senior housing and health care organizations.

UMN Continuing Dental Education: www.dentistry.umn.edu/continuing-dental-education

Miniresidency in Geriatrics & Long-Term Care for the Dental Team

Wednesday-Saturday, Oct. 11 – Oct. 14, 2017

A special opportunity to learn about the long-term system, dental program development, as well as geriatric dental care considerations.

250+ attendees; 45 states; 6 provinces; 5 countries
Oral Health: An Essential Element of Healthy Aging


• Searchable community program database
• Oral health program implementation guide
• https://oralhealth.acl.gov
ORAL HEALTH AMERICA’s WISDOM TOOTH PROJECT

ORAL HEALTH AMERICA’S MISSION is to change lives by connecting communities with resources to drive access to care, increase health literacy and advocate for policies that improve overall health through better oral health for all Americans, especially those most vulnerable.
ABOUT ORAL HEALTH AMERICA

America’s leading national oral health nonprofit focused on the nation’s oral and overall health for 63 years, with programs and campaigns with particular emphasis on children and youth, older adults and Americans’ whose voices are not well-represented in oral healthcare conversations.

OHA employs strategic partnerships and communications to connect the dots between oral and overall health.
TOOTHWISDOM.ORG

Website designed to connect consumers, caregivers and professionals with older adult oral health information and resources

- Clickable map to locate state-based resources
- Resources & blog on oral health topics written in plain-language

New: Coming August 2017

Content Focus – Consumer-facing material on oral health topics

Responsive Design – Desktop & Portable Devices

‘Find Care’ Section – database-driven, searchable list of low-cost dental care services using geolocation

Organization of Health Resources – “Health Topics A-Z”

HEALTH EDUCATION

TOOTH WISDOM: GET SMART ABOUT YOUR MOUTH

Goal: The first national oral health curriculum for older adults, aging in their communities, offered in senior centers and other places seniors congregate.

2015 – 2016 Pilot Results:
129 workshops for 2,700 older adults by 237 dental hygienists trained in-person by OHA in 5 pilot states: MI, IL, TN, OR, MN

2018: Online Training

94% of participants in 2016 (n=587) reported that the workshop has helped them feel more confident to manage their oral health.
THANK YOU!

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Thank You!

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