Smiles for Life: Ensuring Oral Health Across the Lifespan

This Chapter Lecture Series is supported by a grant from the National Interprofessional Initiative on Oral Health
Program Objectives

At the conclusion of the program, participants will be able to:

1. Discuss the importance of oral health care as an integral component of PA practice.
2. Demonstrate knowledge of oral disease and prevention.
3. Discuss routine counseling for dental problems across the lifespan.
4. Discuss interventions that prevent and treat oral disease.
5. Describe reimbursement policies for oral health services.
6. Implement the Smiles for Life curriculum to improve oral health care for patients.
Faculty Disclosure Information

It is the policy of the American Academy of Physician Assistants to require the disclosure of the existence of any significant financial interest or any other relationship a faculty member has with the commercial interest of any commercial product discussed in an educational presentation. The participating faculty reported the following:

Denise Rizzolo & Mona Sedrak has no relationship with any commercial interests whose products or services may be mentioned during this presentation.

Off-Label Discussion: There are no references to unlabelled/unapproved uses of products in this program.

Disclaimer: The opinions and comments expressed by faculty and other experts, whose input is included in this program, are their own.
Medical-Dental Collaboration

- Oral health training for medical providers will increase referral to dentists
- Expanded medical knowledge for dental providers will increase referral to medical providers
Misperceptions of the General Public

- “They’re just baby teeth”
- “Bring him in when he’s 4 years old and can sit still”
- “My 3-year old brushes his own teeth”
- “Fluoride is dangerous”
- “You lose a tooth for each pregnancy”
- “Dentures are just a part of getting old”
The Smiles For Life Curriculum

Modules:

1. Oral-Systemic Connection
2. Child Oral Health
3. Adult Oral Health
4. Acute Dental Problems
5. Oral Health in Pregnancy
6. Fluoride Varnish
7. The Oral Examination
Caries Etiology Triad - How decay occurs

Oral bacteria (*s. mutans*) break down dietary sugars into acids which break down the tooth.
Dietary Influences

- Oral bacteria ferment sugars, producing acids that persist for 20-40 minutes after sugar ingestion.
- Oral acids demineralize tooth enamel.
- Remineralization occurs when acid is buffered.
- How often sugars are ingested is more important than how much sugar is ingested.

Dietary Influences

Safe zone

Danger zone

Bottle  Breakfast  Snack  Sippy-cup  Snack  Lunch
Cariogenicity of Foods

- Highly cariogenic:
  - Sweet sticky foods

- Less or minimally cariogenic:
  - Whole grain or non-carbohydrates (meat, nuts)
Can Caries be Transmitted?

- **S. mutans** is vertically transmitted from the primary caregiver, often the mother.
- Caregivers with high bacteria levels usually have:
  - A high frequency of sugar intake
  - Poor oral hygiene
  - High levels of decay
- Caregivers pass bacteria, dietary habits and oral care habits to the child.
Is there an Oral-Systemic Connection?

- **Good evidence for oral/systemic link**
  - Infective endocarditis (8% of cases)
  - Prosthetic device infection
  - Diabetes

- **Emerging evidence for oral/systemic link**
  - Obesity
  - Coronary artery disease
  - Lower respiratory disease
  - Adverse pregnancy outcome
    - Preterm birth and low birth weight
    - Preeclampsia
# A Review Common Oral Diseases Across the Lifespan

- Early childhood caries (ECC)
- Adult caries
- Gingivitis
- Periodontal disease
- Pregnancy complications
- Geriatrics
Prevalence of Early Childhood Caries (ECC)

- ECC is a public health crisis!
- Prevalence:
  - 5% of all U.S. children
  - 30-50% of low income children
- 80% of decay occurs in 20% of children
- Most common chronic disease in children
  - 5 times more common than asthma
Early Childhood Caries (ECC)

- Leads to tooth loss and/or infection
- Can be vertically transmitted
- Sequelae:
  - Pain: Impaired chewing and nutrition; school/work absences
  - Infection
  - Increased caries in permanent dentition
  - Extensive and expensive dental work

Is Preventable!
White Spots: The Early Stage of Caries

Photos: Joanna Douglass BDS DDS
White Spots, then Brown Cavitations

Photos: Joanna Douglass BDS DDS
Advanced Caries

Photos: Joanna Douglass BDS DDS
Brushing Techniques
(kids need help until age 6)

- Lift the lip
- Brush behind teeth

Photos: Joanna Douglass BDS DDS
Don’t Forget About Fluoride!

- **Topical (greater effect)**
  - Inhibits demineralization
  - Promotes remineralization
  - Produces anti-bacterial activity
  - Also effective in older adults

- **Systemic (lesser effect)**
  - Reduces enamel solubility by incorporation into its structure
# Well-child Visit Frequency—Opportunity to Talk About Oral Health

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Age</th>
<th>Birth</th>
<th>1 month</th>
<th>2 months</th>
<th>4 months</th>
<th>6 months</th>
<th>12 months</th>
<th>15 months</th>
<th>18 months</th>
<th>19–23 months</th>
<th>2–3 years</th>
<th>4–6 years</th>
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<tr>
<td>Hepatitis B&lt;sup&gt;1&lt;/sup&gt;</td>
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<td>Rotavirus&lt;sup&gt;2&lt;/sup&gt;</td>
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<td>Diphtheria, Tetanus, Pertussis&lt;sup&gt;3&lt;/sup&gt;</td>
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<td>Haemophilus influenzae type b&lt;sup&gt;4&lt;/sup&gt;</td>
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<td>Pneumococcal&lt;sup&gt;5&lt;/sup&gt;</td>
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<td>PCV</td>
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<td>PPSV</td>
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<tr>
<td>Inactivated Poliovirus&lt;sup&gt;6&lt;/sup&gt;</td>
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<td>IPV</td>
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<td>IPV</td>
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<td>Influenza&lt;sup&gt;7&lt;/sup&gt;</td>
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<td>Influenza (Yearly)</td>
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<td>Measles, Mumps, Rubella&lt;sup&gt;8&lt;/sup&gt;</td>
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<td>Varicella&lt;sup&gt;9&lt;/sup&gt;</td>
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<td>Hepatitis A&lt;sup&gt;10&lt;/sup&gt;</td>
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<td>HepA (2 doses)</td>
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<td>Meningococcal&lt;sup&gt;11&lt;/sup&gt;</td>
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<td>HepA Series</td>
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<sup>1</sup> Hepatitis B vaccination is recommended at birth and 1 month. Additional doses may be given 6–12 months after the primary series.  
<sup>2</sup> Rotavirus vaccination is recommended at 2 months.  
<sup>3</sup> Diphtheria, tetanus, and pertussis vaccination is recommended at 2 months.  
<sup>4</sup> Haemophilus influenzae type b vaccination is recommended at 2 months.  
<sup>5</sup> Pneumococcal vaccination is recommended at 4 months.  
<sup>6</sup> Inactivated poliovirus vaccination is recommended at 6 months.  
<sup>7</sup> Influenza vaccination is recommended annually.  
<sup>8</sup> Measles, mumps, and rubella vaccination is recommended at 12 months.  
<sup>9</sup> Varicella vaccination is recommended at 12 months.  
<sup>10</sup> Hepatitis A vaccination is recommended at 12 months and 4–6 years.  
<sup>11</sup> Meningococcal vaccination is recommended at 4–6 years.
Oral health-Adults
Oral Disease in Adults - Gingivitis

- Mildest form of gum disease
  - Mild gum swelling, tenderness, erythema
  - Gums bleed during brushing
  - Can occur acutely with foreign body
  - Reversible!

- Etiologies
  - Plaque
  - Pregnancy
  - Disease
  - Trauma
Oral Disease in Adults - Periodontitis

- More severe than gingivitis
- Infection and inflammation induce loss of bone and tooth attachment
- Periodontal ligament is attacked
Periodontitis - continued

- Can start in teen years
- Present in 50% of adults
- **Smoking is a major risk**
- Prevention:
  - good oral hygiene
  - brushing *and* flossing
  - avoid tobacco
Oral Cancer

- Two precursors
  - Erythroplakia
  - Leukoplakia
- Risk Factors
  - ETOH
  - Tobacco
- Most Common Location
  - Lateral Aspect of the Tongue
Precursors

Erythroplakia

Leukoplakia
Oral Exam

- Examine the anterior surfaces of the teeth for discoloration, caries, trauma, and heavy plaque.
- Inspect the teeth with mouth closed and open noting occlusion, missing, damaged, or decayed teeth.
Oral Exam

- Instruct patients to open their mouths wide to inspect the inner (lingual) aspect of the upper (maxillary) teeth and the molars.
- Use a mouth mirror to help view the inner (lingual) aspect of the teeth and a retractor to help view the molars.
- If you do not have a mirror, you must either advise patients to tilt their heads back or lower your head to see properly.
- Repeat the procedure to examine lingual aspects of the lower teeth and molars.
A mirror helps to view lingual surface

Lingual upper teeth

Lingual lower teeth

Mark Deutchman, MD
Oral Health - Pregnancy
Oral Health in Pregnancy

- Gingivitis is common in pregnancy
  - Postulated caused by increase in hormones
  - Usually resolves after birth
  - Pyogenic granulomas common

- Periodontal disease is associated with adverse pregnancy outcomes
  - Inflammatory response may cause the following:
    - Pre term birth
    - Low birth weight
Oral Health in Pregnancy

- Treatment during pregnancy is safe, but both medical and dental providers may be reluctant to treat
  - Avoid 1st and 3rd trimester
  - X-rays safe-But double shield
  - Urgent care can be done at anytime

- The best way to improve infant oral health is to improve maternal oral health:
  - S. mutans vertically transmitted
  - Mother’s oral health practices and diet influence child practices
Oral Health - Geriatrics
Geriatric Considerations

- The geriatric population is growing and has increasing oral health needs
- 70% of seniors lack dental insurance
- Dental health is often neglected
- Oral health behaviors are associated with longevity
- Mortality increases linearly with tooth loss
- Medications may have negative oral consequences which should be monitored and minimized whenever possible
- Quality of life and chronic disease management of elders are improved with attention to their oral health
- Osteonecrosis of the Jaws
Changes of Normal Aging

- Plaque and gingivitis develop more rapidly in older adults than younger cohorts.
- Common medical conditions may interfere with ability to cleanse teeth and oral cavity:
  - Dementia
  - Osteoarthritis
  - Visual impairment
  - Stroke
- Tendency to xerostomia even without medications.
Iatrogenic Xerostomia

- Decreased saliva promotes periodontal disease
- Many medications reduce salivary flow:
  - steroids
  - antihistamines
  - diuretics
  - antihypertensives
  - anticholinergics
  - antidepressants
Dentures

- Good fit essential but may be difficult to achieve and maintain
- Monitor for damage to plates and rough areas
- Should be removed for oral cavity exam at least 1/yr or when dental problems suspected
- Must be removed, brushed with denture cleanser (not toothpaste) and placed in water overnight
Oral Health Balance

Protective Factors
- Diet
- Brushing/flossing
- Salivary flow
- Fluoride

Pathologic Factors
- mutans strep
- Carbohydrates
- Reduced salivary flow
- Plaque
- Meds: xerostomia
- Tobacco

- No caries
- Healthy gums
- Cancer-free

- Caries
- Periodontal disease
- Oral cancer
The Opportunity

- Most children have access to primary care
  - 89% of poor children have a usual source of medical care
  - Primary care providers have regular, consistent contact with children for checkups and immunizations

- Adults with many chronic diseases see medical providers frequently-can discuss oral health during these exams

- Principles of risk assessment, screening and behavior change counseling are fundamental to primary care clinicians
## Medical Setting Opportunities

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<thead>
<tr>
<th></th>
<th>Infants &amp; Children</th>
<th>Pregnancy</th>
<th>Adults</th>
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<tbody>
<tr>
<td><strong>Risk assessment</strong></td>
<td>Diet</td>
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<td>Oral hygiene</td>
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<td>Family oral health</td>
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<td>Tobacco</td>
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<td>EtOH / Drugs</td>
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<tr>
<td><strong>Screening and counseling</strong></td>
<td>Caries</td>
<td>Periodontal Dz Self-care</td>
<td>Periodontal Dz Self-care</td>
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<td>Parental care</td>
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<td>Oral cancer</td>
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<td>Medications</td>
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<td>Self-care</td>
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<td><strong>Treatment and referral</strong></td>
<td>Fluoride</td>
<td>Rinses</td>
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<td>Dental visit</td>
<td>Xylitol</td>
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<td>Dental visit</td>
<td>Biopsy</td>
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<td>Dental visit</td>
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Oral Health Provider Education

- Awareness of the oral-systemic connection
- Importance of anticipatory guidance re: diet and oral hygiene
- Risk assessment
  - Diet
  - Oral hygiene
  - Oral cancer
  - S. mutans
  - Xerostomia
Education - continued

- Identification of:
  - periodontal disease and referral
  - oral cancers including sites often neglected by medical providers
  - acute problem/trauma
  - need for referral
Reimbursement

- Medicaid in most states now pays medical providers for child oral health services
  - Exam, risk assessment and guidance
  - Fluoride varnish application
  - Must be combined with well-child exam in CO

- Next steps:
  - Adult oral health benefits for Medicaid?
  - Affordable dental insurance
States with Medicaid Funding for PA Oral Health Screening and Fluoride Varnish

[Map showing states with Medicaid Coverage and those with No reimbursement]
Reimbursement by State

States With and Without MEDICAID Reimbursement for Primary Care Medical Providers to Perform Caries Prevention Services

Map of the United States showing states with Medicaid reimbursement for caries prevention services. States are color-coded to indicate different reimbursement statuses.

- Medicaid reimburses
- Medicaid reimbursement approved but not funded
- Medicaid reimburses in certain circumstances
- Reimbursement not yet approved

** Indicates state grade from *The Cost of Delay: State Dental Policies Fail One in Five Children*, Pew Children’s Dental Campaign

Smiles for Life: A National Oral Health Curriculum

Smiles for Life is the nation’s only comprehensive oral health curriculum. Developed by the Society of Teachers of Family Medicine Group on Oral Health and now in its third edition, this curriculum is designed to enhance the role of primary care clinicians in the promotion of oral health for all age groups through the development and dissemination of high-quality educational resources.

For Individual Clinicians

We’ve made it easy for individual physicians, physician assistants, nurse practitioners, students, and other clinicians to access the curriculum and learn on their own time and at their own pace. Each of the courses is available online. Free CME credit is available.

For Educators

The curriculum is available in a presentation format easily implemented in an academic setting. Included is a comprehensive set of educational objectives based on the Accreditation Council for Graduate Medical Education (ACGME) competencies, test questions, resources for further learning, oral health web links, an implementation guide, and detailed outlines of the modules.

Course Quick Links

- Course 1: The Relationship of Oral to Systemic Health
- Course 2: Child Oral Health
- Course 3: Adult Oral Health
- Course 4: Acute Dental Problems
- Course 5: Oral Health & the Pregnant Patient
- Course 6: Fluoride Varnish
- Course 7: The Oral Examination
- Course 8: Geriatric Oral Health

A Product of: Endorsed by:

- AAFP American Academy of Family Physicians
- AAPA American Academy of Physician Assistants
- PAEA Physician Assistant Education Association
- AAP National Academy of Pediatrics
- STFM Society of Teachers of Family Medicine
- NAPNAP National Association of Pediatric Nurse Practitioners
- NAOH National Interprofessional Initiative on Oral Health
- NIOH National Institutes of Health
<table>
<thead>
<tr>
<th>Modules</th>
<th>Other Resources</th>
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<tr>
<td>Each designed to take about 45 minutes</td>
<td>Videos</td>
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<tr>
<td>Can be completed online and followed by a test</td>
<td>- Knee-to-knee exam</td>
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<tr>
<td>Certificate of completion issued</td>
<td>- Fluoride varnish</td>
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<tr>
<td>Free CME</td>
<td>- Brushing a child’s teeth</td>
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<tr>
<td>Can also be downloaded</td>
<td>Posters</td>
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<td>Speaker notes</td>
<td>Pocket cards</td>
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<td>Learning objectives</td>
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<td>Curriculum implementation guide</td>
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<td>Test questions</td>
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Early childhood caries is an infectious, vertically-transmitted, preventable disease.

Oral health and systemic health are related across the lifespan.

Primary care providers are well-positioned to help patients improve their oral health through guidance, screening and referral.

The Smiles for Life National Oral Health Curriculum can improve knowledge and skills in oral health.
Mission

Engage primary care clinicians to be:

Alert to their patient’s oral health needs

Ready and willing to deliver oral health preventive services

Effective at partnering with dental specialists and other primary care providers to promote oral health through patient-centered collaborative care

Initiative activities are made possible as a result of funding from the DentaQuest Foundation, the Washington Dental Service Foundation, and the Connecticut Health Foundation.