Oral health is vital to overall health.

COC: The Great Divide

Oral Health Basics

Stephanie Baca, RDH MS
Biofilm -- the root of the solution
Objectives

• Demonstrate basic oral health techniques in order to maintain health in those with special needs

• Develop educational strategies to help caregivers perform daily oral care

• Recognize and differentiate oral health conditions of patients with developmental disabilities
Oral microbial biofilms are three-dimensional structured bacterial communities attached to a solid surface like the enamel of the teeth, the surface of the root or dental implants and are embedded in an exopolysaccharide matrix.

The bacterial diversity in the oral cavity is estimated to be more than 700 different species and phylotypes, belonging to nine phyla; *Deferrribacteres, Spirochaetes, Fusobacteria, Actinobacteria, Firmicutes, Bacteroidetes, Proteobacteria.*
Oral Biofilm

• Oral cavity is an open growth system

• Biofilms are ubiquitous; forming on virtually all surfaces immersed in a natural aqueous environment

• Biofilm-associated bacteria mediated gene expression or “communication”
• Organisms in a biofilm are 1000-1500 times more resistant to antibiotics

• Biofilms have been found to be involved in a wide variety of microbial infections (by one estimate 80% of all infections)
Periodontal infection

Whole bacteria

Bacteria Products (LPS, Fimbriae)

Inflammatory Mediators (IL-1, TNF, IL-6, IL-8)

Blood Stream

Systemic Inflammatory Process

Heart & Blood Vessel
Endothelial injury, Lipid deposition, monocyte migration, smooth muscle proliferation

Liver & Pancreas
Insulin Resistance

Atherosclerosis
Cardiovascular Disease

Placenta/Uterus
Contraction of uterine smooth muscle, preterm rupture of membranes

Acute Phase Proteins
CRP, SAA, IL-6, TNF-α, IL-1

Diabetes

Preterm / low birth weight

Chart illustration designed by Dr. Salomon Amar, professor of periodontology and oral biology, and director of the Center for Anti-inflammatory Therapeutics, at Boston Univ. Henry M. Goldman School of Dental Medicine. Jan. 2010 AGD Impact
## Oral - Systemic Conditions

<table>
<thead>
<tr>
<th>Pathogen</th>
<th>Oral findings</th>
<th>Systemic Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actinomyces</td>
<td>gingivitis necrotic pulp</td>
<td>hepatobiliary disease</td>
</tr>
<tr>
<td>Bacteriodes</td>
<td>adult periodontitis</td>
<td>brain abscess</td>
</tr>
<tr>
<td>Candida</td>
<td>oral candidiasis adult periodontitis</td>
<td>vertebral osteomyelitis</td>
</tr>
<tr>
<td>Fusobacterium</td>
<td>gingivitis adult periodontitis necrotic pulp</td>
<td>hepatobiliary brain abscess vertebral osteomyelitis</td>
</tr>
<tr>
<td>Lactobacillus</td>
<td>dental caries</td>
<td>aspiration pneumonia</td>
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<tr>
<td>---------------------</td>
<td>--------------------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>Peptostreptococcus</td>
<td>adult perio</td>
<td>brain abscess</td>
</tr>
<tr>
<td>Staphylococcus</td>
<td>adult perio</td>
<td>vertebral osteomyelitis, brain abscess, prosthetic joint infection, meningitis</td>
</tr>
<tr>
<td>Streptococcus</td>
<td>dental caries periapical abscess</td>
<td>vertebral osteomyelitis, brain abscess, bacterial endocarditis, meningitis, hepatobiliary disease</td>
</tr>
</tbody>
</table>
Target: Biofilm
Performing an Oral Assessment
Toothbrushing *Best Practices*

1. *Rub* check to single starting
2. Brush *twice* daily
3. Ensure to have all tools *ready* prior to cleaning
4. Use *less* products than more
5. *Change* toothbrush often and store in a *clean* place to dry out
The Great Debate...
Toothpaste...

- Cleansing and polishing
- Humectants
- Water/Binders
- Detergents
- Flavoring/Coloring Agents
- Sweeteners
- Preservatives

Therapeutic/Medicinal Agents:
- Anticaries agents
- Desensitizing agents
- Antigingivitis/biofilm reduction agents

Other Agents:
- Anticalculus agents
- Antistain agents
- Antihalitosis agents
Toothpaste *Best Practices*

- Types
- Ingredients
- SLS free

- Amount
  - Grain of Rice
  - One green pea
Don’t forget the finish...
Toothbrushing sequence Best Practices

- Always use *circular* motions
- *Massage* the tissues (gums)
- Brush 3 surfaces (check, bite, and tongue sides)
- *Gentle* and slow; bottom to top
- Don’t forget the *tongue*
Interproximal Care options
Partially/Edentulous Patient

- Cleaning dentures/partials *always* requires REMOVAL
- *Wipe* tissues with baby washcloths and water, *clean* appliance
- Always *remove* dentures at night
- *Yearly* dental visits
General **Best Practices**

- Choose 2
- Be *consistent*
- Roll and *move* with not against
- Find *modifications* or alternatives
- *Practice TACT*
  - *Time*
  - *Ask for involvement*
  - *Communicate with voice & body clear & simple*
  - *Tell, Show, Do*
Thank you