INTEGRAL ROLE OF ORAL HEALTH IN PHARMACY PRACTICE

BROUGHT TO YOU BY

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OBJECTIVES

- 1. Understand the role of the pharmacist in oral health.
- 2. Review common oral diseases and pathophysiology.
- 3. Identify high-risk patients.
- 4. Equip pharmacists with evidence-based oral hygiene practices.





WHAT IS YOUR MOST IMPORTANT RESPONSIBILITY TO YOUR PATIENTS?

 To improve patient health by providing evidence-based recommendations.

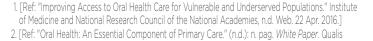
Pharmacists in the retail setting are arguably the most accessible HCP, thereby putting them in prime position to educate patients on a multitude of medical conditions.





WHY IS INTERPROFESSIONAL EDUCATION IN ORAL HEALTH IMPORTANT FOR PATIENTS?

- 33 Million Americans live in dental health professional shortage areas or "Dental Deserts".
- Oral disease exacts a heavy toll on patients, families, and communities.
- Results in unnecessary health care costs for public and private payers as well as consumers.
- Good oral health affects a person's appearance, self-esteem, comfort, speech, chewing, swallowing and nutrition, and contributes to an improved quality of life.²

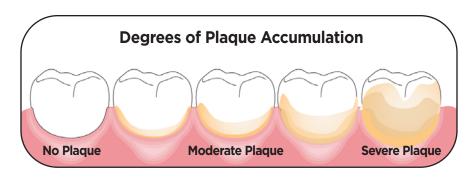


Health, June 2015. Web. 22 Apr. 2016.]



PREVENTABLE CONDITIONS IMPACTED BY POOR ORAL HEALTH: GUM DISEASE

- Periodontal (gum) disease begins with plaque.
- Plaque is a sticky matrix (dental biofilm) that allows bacteria to grow.
- 60-80% of microbial infections in the body are caused by bacteria growing as a biofilm.
- The accumulation of dental biofilm above and below the gumline stimulates the body's inflammatory response and starts to destroy the gum tissue, freeing up nutrients needed for more pathogenic species to thrive.²
- If this sticky dental biofilm is not kept in check by daily mechanical removal (brushing and flossing) and rinsing with an antimicrobial agent, gum disease can progress.





FOUR STAGES OF PERIODONTAL DISEASE:

STAGE 1

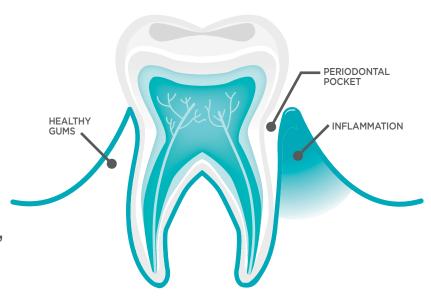
- 1. Nearly half of American adults (64.7 million) suffer from periodontitis¹.
- 2. Gingivitis is the mildest form of periodontal disease².
- 3. Symptoms: There is usually no pain, but gums may be red, puffy and bleed easily¹.
- 4. This condition is easily treated and completely reversible with professional treatment and good oral home care².



FOUR STAGES OF PERIODONTAL DISEASE:

STAGES 2-4

- Plaque can spread and grow below the gum line.1
- Toxins, produced by bacteria in plaque, stimulate a chronic inflammatory response causing tissues and bone that support the teeth, to breakdown.¹ The breakdown of tissue includes the destruction of connective tissue, which holds the sides of the tooth's root to the surrounding gingival tissue. As the connective tissue is progressively destroyed, detachment between the root and the tissue deepens, forming pockets below the gumline.



- Additionally, the pockets make plaque removal more difficult, requiring dental professional intervention (scaling and root planing).¹
- As the disease progresses, the pockets deepen and more gum tissue and bone are destroyed.¹

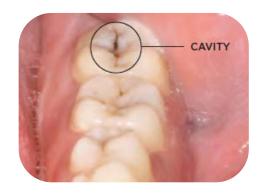


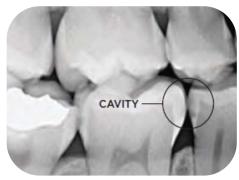
PERIODONTAL DISEASE CONTRIBUTING FACTORS



PREVENTABLE CONDITIONS IMPACTED BY POOR ORAL HEALTH: CARIES (CAVITIES)

- A cavity is a manifestation of a bacterial infection.¹
- Bacteria uses sugars from food and drinks to produce acid, which over time, breaks down the tooth surface and creates a cavity.¹
- If allowed to progress, the lesion will extend through the dentin located under the enamel to the pulp tissue, which is rich in nerves and blood vessels.¹
- The resulting toothache can be severe.
- At this point, the infection can only be treated by root canal or extraction.¹



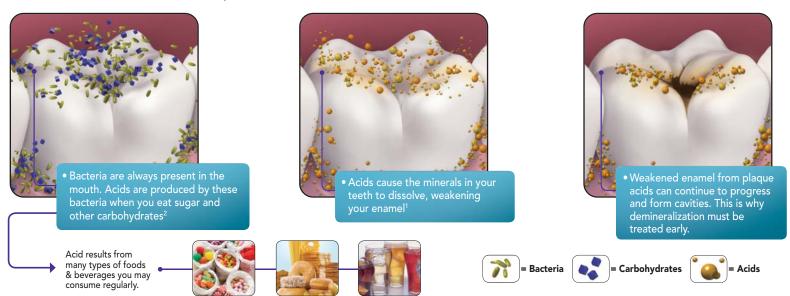




HOW DO CAVITIES FORM?

DEMINERALIZATION

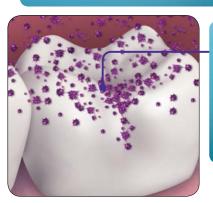
Tooth enamel is made up of minerals. When bacteria use sugars and carbohydrates as food they produce acids, which remove the minerals from your teeth. This is known as demineralization.



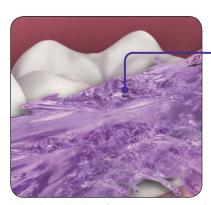
WHAT CAN YOU DO TO HELP PREVENT CAVITIES?

REMINERALIZATION

Remineralization occurs when tooth enamel regains the minerals lost during demineralization.¹



- Fluoride, known as Nature's cavity fighter, is a naturally occurring mineral³
- Fluoride helps inhibit demineralization and causes remineralization to help prevent cavities¹
- Fluoride can help stop tooth decay and make the tooth enamel more resistant to future acid attacks³



- Fluoride can be applied to teeth by a dental professional for extra protection^{1,3}
- Fluoride is also available in many toothpastes and mouthrinses for at-home use³
- Fluoride toothpaste and mouthrinse used regularly can help protect teeth from cavities between dental visits⁴

*Data on file, McNEIL-PPC, Inc. **In laboratory studies vs Act® Total Care Anticavity Fluoride Rinse, Act® Total Care Anticavity Fluoride Mouthwash, Act® Restoring Anticavity Mouthwash, and Act® Anticavity Kids' Fluoride Mouthwash. Compared to Anticavity Kids' Fluoride Mouthwash. REFERENCES: 1. Collins FM. The role of fluoride in caries control. The Academy of Dental Therapeutics and Stomatology.www.ineedce.com/course.aspx?cat=Disease+Risk+Management. Accessed July 9, 2009. 2. American Dental Association. Fluoridation facts. www.ada.org/public/topics/fluoride/facts/fluoride/facts/fluoridation_facts.pdf. Accessed June 16, 2009. 3. American Dental Association. Oral health topics A-Z: fluoride & fluoridation. www.ada.org/public/topics/fluoride/news.asp. Accessed June 16, 2009. 4. American Dental Association. ADA Seal of Acceptance Program. www.ada.org/ada/seal/mouthrinses.asp. Accessed June 16, 2009. Data on file. McNEIL-PPC, Inc. Use all products only as directed © J&JCI 2017

CAVITY CONTRIBUTING FACTORS'









POOR ORAL **PRACTICES**



CONTINUAL **BOTTLE/SIPPY CUP** FILLED WITH MILK, FORMULA, AND FRUIT JUICE



HIGH RISK POPULATIONS FOR DENTAL DISEASE



CHILDREN

 Tooth decay is the #1 chronic infectious disease among children in the US.¹



ELDERLY/SENIORS

• 25% of seniors have no natural teeth.²



PREGNANT WOMEN

 Pregnancy gingivitis is the most common oral disease in pregnancy, with a prevalence of 40%.



DIABETICS

• Diabetic patients are 3 to 4 times more likely to develop periodontal disease.³





HIGH RISK POPULATIONS: CHILDREN

Dental disease may affect learning, speech development, nutritional intake, self-esteem, social development, and quality of life.

1 IN 7 ELEMENTARY SCHOOL CHILDREN SUFFER FROM PAIN FROM A TOOTHACHE²

Negatively affecting performance/ attendance at school.



FACTORS THAT COULD LEAD TO TOOTH ISSUES IN INFANTS AND YOUNG CHILDREN³

- Using a pacifier
 Thumb sucking
- Tongue thrusting/Lip sucking
- Sugary snacks
 Sippy cups filled with milk, formula, and fruit juice

3. [Ref: Friedman, Michael, DDS. "Oral Health Problems in Children." WebMD, N.P., 29 Nov. 2015, Web, 22 Apr. 2016.1



^{1. [}Ref: Armijo, Dan. "Reducing the Burden of Atopic Dermatitis." Reducing the Burden of Childhood Dental Disease in Michigan 92.3 (2007): 279. Altarum Institute.

^{2. [}Ref: Lewis C, Stout J. Toothache in US Children. Arch Pediatr Adolesc Med. 2010;164(11):1059-1063. doi:10.1001/archpediatrics, 2010.206.1

RECOMMENDATIONS: CHILDREN

CHILDREN SHOULD HAVE ADOPTED A TOOTH BRUSHING ROUTINE AND USE A FLUORIDE CONTAINING TOOTHPASTE BY AGE 7

Should be taught not to swallow or ingest toothpaste.

APPLICATION OF FLUORIDE TO ALL CHILDREN IS REIMBURSED BY MEDICAID

- Children should see a dentist when the first tooth appears or no later than his/her first birthday.¹
- Tooth brushing should be performed for children 7-8 years old by a parent twice daily² with a soft toothbrush of age-appropriate size and the correct amount of fluoridated toothpaste.¹
- Start flossing your child's teeth once a day as soon as two teeth emerge that touch.¹
- For children 6 and older, a fluoride rinse can help prevent cavities. Ask your dentist which product is right.¹



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HIGH RISK POPULATIONS: PREGNANCY

HORMONE CHANGES DUE TO PREGNANCY MAY INCREASE THE RISK OF GINGIVITIS AND PERIODONTAL DISEASE.

Estrogen and progesterone can exaggerate the way gum tissues react to plaque.

Progesterone in your body can be much higher than normal, which may increase the amount of detrimental bacteria in your mouth.

OTHER ORAL HEALTH CONCERNS DURING PREGNANCY INC



BENIGN PREGNANCY TUMORS OF THE MOUTH



TOOTH. **SHIFTING**



TOOTH. **EROSION**



CAVITIES



XEROSTOMIA



EXCESSIVE SALIVA

1. [Ref: "Pregnancy and Early Childhood." "Children's Dental Health Project." 2016. Web. 07 July 2016.]



RECOMMENDATIONS: PREGNANCY

PREGNANCY IS A CRUCIAL PERIOD OF TIME IN A WOMAN'S LIFE AND MAINTAINING ORAL HEALTH IS DIRECTLY RELATED TO GOOD OVERALL HEALTH

- Continue to see your dentist during pregnancy for any necessary oral exams and cleanings.
- Brush 2x a day for two minutes at a time with a fluoride toothpaste.
- Floss daily between teeth to remove food particles.
- Use an antimicrobial mouth rinse that also may help you control your gum inflammation?





HIGH RISK POPULATIONS: ELDERLY/ SENIORS

DISPELLING SOME COMMON MYTHS¹



TEETH CAN LAST A LIFETIME²



TOOTH DECAY CAN DEVELOP AT ANY AGE*



GUM DISEASE IS PREVENTABLE

- Other conditions that contribute to poor oral health¹
 - -Neurological diseases can limit the ability to care for your oral health
 - -Malnutrition



^{*} As long as you have your natural teeth

^{1. [}Ref: "Factors Affecting Oral Health over the Life Span. "NIH. National Institute of Dental and Craniofacial Research, n.d Web. 22 Apr. 2016.]

^{2. [}Ref. Vargas, Clemencia M., D.D.S., Ph.D., Ellen A. Kramarow, Ph.D., and Janet A. Yellowitz, D.M.D.,M.PH. "The Oral Health of Older American." Centers for Disease Control and Prevention. Centers for Disease Control and Prevention, Mar. 2001, Web.1

RECOMMENDATIONS: ELDERLY/SENIORS

- Maintain a healthy diet for good oral health.
- With aging, calorie requirements decrease while protein needs increase.
- Carbohydrates should account for 50% to 60% of total intake.
- If you wear partial or complete dentures, clean them daily as your dentist instructs.
- Brush 2x a day for two minutes at a time with a fluoride toothpaste.
- Floss daily between teeth to remove food particles.
- Rinse with an ADA-Accepted antimicrobial rinse to reduce plaque and gingivitis or a fluoride mouthrinse to help prevent tooth decay.





HIGH RISK POPULATIONS: DIABETICS

- People with diabetes and their dental health care providers do not often discuss the relationship between their diabetes and oral health.¹
- Diabetes affects metabolism as well as the immune system by lowering the body's resistance to infection putting the gums at risk.²
- Poor gum health has been associated with poor glucose (blood sugar) control.³
- In a study, done by United Concordia Dental Insurance, periodontitis patients with type 2 diabetes who received treatment had more than \$2,800 lower total annual medical costs than those who did not.

1.[Ref: "What Dental Professionals Would Like Team Members to Know About Oral Health and Diabetes." "Center for Disease Control and Prevention." N.p., n.d. Web. 19 July 2016.]

 [Ref: "Causes of Diabetes." N.p.:n.p., n.d. National Institute of Diabetes and Digestive and Kidney Diseases. June 2014. Web. 19 July 2016.]

3.[Ref: "Diabetes and Periodontal Disease." WebMD. WebMD, n.d. Web. 19 July 2016.]



RECOMMENDATIONS: DIABETICS

- Maintain healthy levels of blood glucose.
- A dental care provider may recommend more frequent checkups and procedures to maintain good oral health and prevent problems from developing.
- Be alert to signs and symptoms of oral disease and contact a dental care provider immediately if a problem arises.
- Besides brushing twice daily and flossing (or using an interdental cleaner) at least once a day, using an antimicrobial rinse twice a day can help control gingivitis.¹



UNDERSTAND THE VALUE OF YOUR PROFESSIONAL RECOMMENDATION

- Your recommendation drives patient compliance for good oral care habits between visits to the dentist.
- 76% of patients go shopping directly following an office visit.¹
- 62% of patients visit the pharmacy post in-office visit.1
- **7 in 10** patients purchase OTC medications during their trip to the pharmacy.²







PHARMACIST INTERVENTION SUPPORTING ORAL HEALTH

PREVENTIVE INTERVENTIONS DELIVERED IN THE PRIMARY CARE SETTING MAY INCLUDE:

- Changes in the medication list to protect the saliva, teeth, gums and to protect "dry mouth."
- ✓ Dietary counseling to protect the teeth and gums, and to promote glycemic control for patients with diabetes.¹
- Educating patients on proper oral hygiene.¹
- Recommending oral health products with evidence-based benefits to oral hygiene.¹
- Cessation therapy for tobacco, alcohol, or drug addiction.¹



EVALUATE ORAL HEALTH HISTORY: PAST MEDICAL HISTORY, SOCIAL HISTORY, AND NUTRITION

CONTRIBUTING FACTORS OF POOR ORAL HEALTH INCLUDE:1



ABSENCE OF ORAL HYGIENE



SUGAR & CARBS



DRINKING SODA DAILY



SPECIAL HEALTHCARE CONDITION



GERD AND EATING DISORDERS



HEAVY PLAQUE



ORTHODONTIC APPLIANCES



DRUG ABUSE

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EVALUATE ORAL HEALTH HISTORY: ASSESS MEDICATION LIST

Common drug classifications that cause xerostomia (dry mouth):^{1,2,3}

- Analgesics
- Antidiarrheals
- Sedatives
- Antipsychotics
- Antiemetics
- Skeletal muscle relaxants
- Antihypertensives
- Antianxiety agents
- Bronchodilators
- Anticholinergics
- Decongestants
- Antidepressants
- Diuretics

Gingival inflammation may be influenced by:1,2,3

- Steroid hormones changes occurring during puberty known as puberty gingivitis
- Pregnancy gingivitis
- Gingivitis associated with birth control medication or steroid therapy

Certain prescription drugs can also lead to gingival overgrowth and inflammation. These include: 1,2,3

- Antiepileptic drug phenytoin (Dilantin)
- Cyclosporine, used for immunosuppressive therapy in transplant patients
- Various calcium channel blockers used in heart disease



EVALUATE ORAL HEALTH HISTORY: SIGNS AND SYMPTOMS OF ORAL DISEASE

- Warning signs for gum disease include: swollen gums, bleeding gums, bad breath, or changes in the way your teeth fit together when you bite.¹
- A pharmacist should look for the following or ask patients about:



DRY, CRACKED, OR BLISTERED LIPS



REDNESS, SORES, IRRITATION OR WHITE PATCHES ON THE MOUTH OR TONGUE



BLEEDING, SWELLING, OR EXTREME REDNESS OF THE GUMS



TOOTH EROSION



TOOTH SENSITIVITY





PATIENT EDUCATION: NUTRITION

- Supplement with vitamin C, D, and calcium.
- Limit sugary and starchy foods.
- Consume more water.
- Encourage saliva flow with chewing gum, citrus fruit and dairy products.





PATIENT EDUCATION: LIFESTYLES MODIFICATIONS

- Reduce stress.
- Smoking cessation.



PATIENT EDUCATION: PROPER ORAL HYGIENE TECHNIQUES

Recommend the following oral care routine to your patients:



BRUSH 2X A DAY

two minutes at a time with a fluoride toothpaste.



FLOSS DAILY

between teeth to remove food particles.



RINSE 2X A DAY

with an ADA-Accepted antimicrobial rinse to reduce plaque and gingivitis or a fluoride mouthrinse to prevent tooth decay.

- LISTERINE® Antiseptic: 2x/day for 30 seconds with 20 mL for gingivitis prevention.
- LISTERINE® Total Care: 2x/day for 60 seconds with 10 mL for fluoride uptake.





THANK YOU

FORMS OF PERIODONTITIS

THERE ARE MANY FORMS OF PERIODONTITIS. THE MOST COMMON ONES INCLUDE THE FOLLOWING:

- **Aggressive periodontitis** occurs in patients who are otherwise clinically healthy. Common features include rapid attachment loss, bone destruction, and familial aggregation.
- **Chronic periodontitis** results in inflammation within the supporting tissues of the teeth, progressive attachment and bone loss. This is the most frequently occurring form of periodontitis and is characterized by pocket formation and/or recession of the gingiva. It is prevalent in adults, but can occur at any age. Progression of attachment loss usually occurs slowly, but periods of rapid progression can occur.
- **Periodontitis manifestation systemic diseases** often begins at a young age. Systemic conditions such as heart disease, respiratory disease, and diabetes are associated with this form of periodontitis.
- Necrotizing periodontal disease is an infection characterized by necrosis of gingival tissues, periodontal ligament and alveolar bone. These lesions are most commonly observed in individuals with systemic conditions such as HIV infection, malnutrition and immunosuppression.

ORAL CANDIDIASIS (THRUSH)

- Opportunistic fungal infection caused by Candida albicans that accumulates on the oral mucosa.
- Oral thrush causes creamy white lesions (may have "cottage cheese" appearance), usually on the tongue or inner cheeks.
- Refer for anti-fungal treatment (e.g. Diflucan™).
- In a breast-feeding infant, both mother and infant may require antifungal treatment.



ORAL SELF-SOOTHING

- Digital sucking and pacifier use fill an infant's psychological need for self-soothing.
- Counsel caregivers to never clean pacifiers by putting them in their own mouths.
- Counsel caregivers to abstain from dipping any object used for oral self-soothing in sugary substances (e.g. honey, syrup, soda etc).



TEETHING

- Eruption of deciduous teeth may be painful causing an infant to be irritable and/or experience difficulty sleeping, but does not cause fever, upper respiratory or ear infection, diarrhea, rash or seizures. If any of these are reported, counsel caregiver to seek medical attention for the infant.
- Excessive drooling is normal.
- Warn caregivers not to utilize Lidocaine-containing products for teething pain (may be available over-the-counter).
- Apply cold teething ring or cloth to gums.
- Provide Acetaminophen or Ibuprofen if necessary.
- Remember tooth emergence may be preceded by a hematoma no treatment is needed in primary dentition.
- Recommend never to dip pacifier in honey or other sweetened food or drink.



^{1. [}Ref: Fontana, Margherita, Dr, Jan Mitchell, Dr, and Poonam Jain, Dr. "Children's Oral Health from Birth to the Eruption of Permanent Teeth," (n.d.): n. pag. Organization for Association of Degree Nursing, Organization for Association of Degree Nursing, June 2015. Web. 19 July 2016.]

HEALTH RISKS ASSOCIATED WITH CHANGES IN THE MOUTH OF THE ELDERLY

- Nerves in the teeth become smaller making the teeth less sensitive to cavity pain
- Tooth loss
- Root decay (receding gums)
- Dental caries
- Plaque/tartar formation
- Periodontal disease ranges from minor gum inflammation to more serious disease, affecting your teeth as well as gums and bone that support your teeth
- Dry mouth
- Bad breath

- Diminished sense of taste
- Tooth sensitivity
- Denture-related inflammation/infection
- Thrush
- Oral pain
 - Tooth decay
 - Abscessed tooth
 - Tooth fracture
 - A damaged filling
- Difficulty eating
- Oral cancer

