

Pediatric Oral Health: A Practical Guide for Family Physicians to Provide Healthy Smiles

Chih-Wen Shi, MD, PhD



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Chih-Wen Shi, MD, PhD

Faculty and Research Coordinator, Naval Hospital Camp Pendleton Family Medicine Residency Program, California.

Dr. Shi is a graduate of the David Geffen School of Medicine at the University of California, Los Angeles (UCLA), and completed her residency at the Harbor-UCLA Medical Center, Torrance. Dual-trained in family medicine and health services research, she is a former recipient of the Mentored Patient-Oriented Research Career Development Award (K23) from the National Institutes of Health (NIH)/National Institute on Drug Abuse (NIDA). She has more than 15 years of experience in academic medicine and enjoys teaching and mentoring medical students and residents. Her particular area of interest is promoting appropriate patient self-care.



Learning Objectives

1. Recognize the various stages of Early Childhood Caries (ECC) on oral examination.
2. Assess a child's risk of developing ECC.
3. Implement prevention of ECC through use of fluoride, proper hygiene, diet, and appropriate dental referral.
4. Diagnose pediatric patients for oral manifestations (e.g. oral mucosal lesion) that may be manifestations of immunologic diseases, endocrinopathies, hematologic conditions, systemic infections, and nutritional disorders.



Audience Engagement System



Audience Poll

- **What is the #1 chronic disease affecting children ages 0-6 years?**
 - A. Asthma
 - B. Allergies/Hay fever
 - C. Eczema
 - D. Dental Caries

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Poll Answer

- Dental Caries is the #1 chronic disease affecting children ages 0-6.
- 5 times more prevalent than asthma
- 7 times more prevalent than allergies

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Why is ECC important?

- Number one chronic disease affecting young children
- By age 9, 56% of U.S. schoolchildren have dental caries
- Toothache affects nutrition, school attendance, and learning
- Entirely preventable

Edestein BL, Douglass CW. Dispelling the myth that 60 percent of U.S. schoolchildren have never had a cavity. *Public Health Rep.* 1995;110:552-30
Brunelle JA. Caries attack in the primary dentition of U.S. children. *J Dent Res.* 1990;69:180.

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Role of Family Physician

- 11 well child visits between ages 0-3
- Care of pregnant mothers and infants
- Unique opportunity for risk assessment, prevention, detection, and referral

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Early Childhood Caries (ECC)

- Old terms—"nursing or bottle caries"
- Can develop as soon as teeth erupt
- Start as chalky white spots or line progress to yellow-brown cavities or holes
- Spread from maxillary incisor to posterior teeth

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ECC—White chalky lines/spots

Douglass AB, Douglass JM A practical guide to infant oral health. *American Family Physician.* 2004 Dec 1; 70(11):2113-2120.



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ECC—Yellow/Brown Discoloration

Douglass AB, Douglass JM. A practical guide to infant oral health. American Family Physician. 2004 Dec 1; 70 (11):2113-2120



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ECC—Yellow/Brown Cavities

Douglass AB, Douglass JM. A practical guide to infant oral health. American Family Physician. 2004 Dec 1; 70(11):2113-2120



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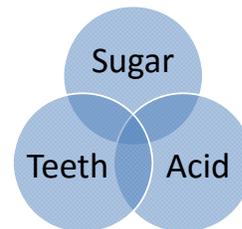
ECC-Etiology

- Streptococci mutans from mother to child via saliva
- Bacteria metabolize sugar into acid
- Acid damages enamel, causing cavities
- Saliva neutralizes/washes away acid in 20- 40 minutes

Kohler B, Brathall D. Intrafamilial levels of Streptococcus mutans and some aspects of the bacterial transmission. Scand J Dent Res. 1978;86:35-42.

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ECC-Etiology



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Audience Poll

- **When should ECC prevention start?**
 - A. Before birth
 - B. At birth starting with 1st feeding
 - A. When 1st tooth erupts

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POLL Answer

- ECC prevention starts before infant is born with assessing maternal dental status
- Assess women at preconception, prenatal, and postpartum visits

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ECC Prevention

- Maternal periodontal disease linked to preterm labor
- Assess pregnant women for cavities, poor oral hygiene, gingivitis, sugar consumption, and refer to dental care
- Monitor maternal oral health post-delivery to decrease *S. mutans* transmission
- Mothers with caries using xylitol gum QID associated with decreased caries in children

Lopez NJ, Smith PC, Coletroz J. Periodontal therapy may reduce the risk of preterm low birth weight in women with periodontal disease: a randomized control trial. *J Periodontol*. 2002;73:911-24.
Isokangas P, Soderling E, Pienihakkinen K, Alanen P. Occurrence of dental decay in children after maternal consumption of xylitol chewing gum: a follow-up from 0 to 5 years of age. *J Dent Res*. 2000;79:1385-9.

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ECC Prevention-0 to 3 months

- High caries risk--special needs infant, maternal caries, low socioeconomic status
- Reinforce good hygiene habits
- Breastfeeding preferred
- Avoid propping/placing bottle in bed
- Only breastmilk or formula in bottles, no fruit juice

Douglass AB, Douglass JM. A practical guide to infant oral health. *American Family Physician*. 2004 Dec 1; 70(11):2113-2120.

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ECC Prevention—4 to 5 months

- Cold teething rings, numbing gels not recommended
- Determine water fluoride level—
- CDC My water's fluoride
- No supplement needed if commercially fluoridated water or drinking water ≥ 6 ppm

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ECC Prevention—6 to 12 months

- Appropriate systemic and topical fluoride
- Caregiver brush child's teeth twice daily using fluoride toothpaste (pea-size)
- Introduce sippy cup
- Limit fruit juice, whole fruit preferred
- Plain milk/water between meals
- Restrict simple sugars to meal time
- See dentist by age 12 months per AAPD recommendation

Douglass AB, Douglass JM. A practical guide to infant oral health. *American Family Physician*. 2004 Dec 1; 70(11): 2113-2120.
American Academy of Pediatric Dentistry (AAPD). Definitions, oral health policies, and clinical guidelines. 2016. <http://www.aapd.org/policies/>.

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ECC Prevention—15 months & older

- Consistent practice of dental care
- Discontinue bottle
- No ad lib sippy cup use
- Restrict simple sugars to meals
- Limit number of snacks
- Only plain milk/water between meals
- Flossing if 2 teeth touch (typically 2-2.5 yo)

Douglass AB, Douglass JM. Common dental emergencies. *American Family Physician*. Feb 1 2003;67(3):511-516.

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Fluoride Supplementation

- Systemic or topical fluoride supplementation is one of the most effective measure to reduce dental caries
- Fluoride makes teeth more resistant to acid demineralization
- Only prescribe supplement when fluoride concentration of drinking water supply is determined suboptimal (≤ 6 ppm)

Tinanoff N, Douglass JM. Clinical decision-making for caries management in primary teeth. *J Dent Educ*. 2001;65:1133-42.

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Fluoride Supplementation Guide

Age	<0.3ppm	0.3-0.6ppm
6 mo-3 yo	0.25mg	0
3-6yo	0.50mg	0.25mg
6-16yo	1mg	0.50mg

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Fluoride Toothpaste

- Start at 6 months
- Caregiver brush children's teeth twice daily
- Stand behind child, support head
- Soft brush
- Rice size of toothpaste for <3 yo, pea size for ≥3 yo
- Spit out excess toothpaste, no rinse

American Academy of Pediatric Dentistry (AAPD), 2013-2014 Definitions, oral health policies, and clinical guidelines 2014: <http://www.aapd.org/policies/>

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Fluoride Varnish

- USPTF recommends for all children through age 5 (Grade B)

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Coding for Oral Health Services

- Can bill for fluoride varnish, oral health risk assessment, other services (trauma injury, etc)
- Most state Medicaid and private insurers accept

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Brush, Book, Bed

- Set bedtime routine
- Examples of oral health books for children
The Tooth Book—Dr. Seus
Ready, Set, Brush—Sesame Street

Brush, book, bed—A program of the American Academy of Pediatrics Implementation Guide Sept 2015 accessed at oralhealth@aapd.org

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Oral Manifestation of Systemic Disease

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Systemic Disease

- **Anemia**—pallor
- **Crohn's**—diffuse swelling, ulcers
- **Diabetes**—gingivitis, periodontitis, candidiasis
- **Thrombocytopenia**—petechiae
- **Behcet's**—recurrent painful aphthous ulcers
- **GERD**—dental erosion, halitosis

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Common Dental Emergencies

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Abscess/Cellulitis

- Abscess—localized pain & swelling
If untreated, progress to cellulitis
- Cellulitis—diffuse pain, erythema, swelling
If untreated, can progress to cavernous sinus thrombosis or Ludwig's angina
- Treatment—I&D, root canal or extraction
Antibiotics NOT sufficient

Douglass AB, Douglass JM. Common dental emergencies. American Family Physician. Feb 1 2003;67(3):511-516.

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Dental Trauma

- Common in children
- Exam—soft tissue injury, need for suture, tooth loosening/displacement, disturbance of bite
- Dental radiograph

Douglass AB, Douglass JM. Common dental emergencies. American Family Physician. Feb 1 2003;67(3): 511-516.

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Tooth Fracture (Broken Tooth)

- May involve crown, root, or both with/without pulp exposure
- Cold compress over injured face
- Save any broken tooth fragments
- Enamel only—keep fragment hydrated, asap dental referral
- Pulp exposure—painful, immediate dental referral
- Root—usually detected by radiograph

Douglass AB, Douglass JM. Common dental emergencies. American Family Physician Feb 1 2003;67(3):511-516.

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Tooth Luxation (Loose Tooth)

- If primary tooth at risk for aspiration—extraction
- If permanent teeth—repositioning, splinting, root canal

Douglass AB, Douglass JM. Common dental emergencies. American Family Physician Feb 1 2003; 67(3):511-516.

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Tooth Avulsion (Missing Tooth)

- **True emergency—time is critical**
- Primary teeth are not implanted
- Permanent teeth
Prefer on-scene re-implantation
Handle by the top (crown)—don't touch root
Reinsert in socket/hold by biting on gauze
or transport in pt's buccal sulcus, milk, or
specialized transport container.
Cannot re-implant if > 60 minutes extra-oral dry time

Douglas AB, Douglass JM. Common dental emergencies. American Family Physician. Feb 1 2003;67(3):511-516.

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Key Points

- Dental caries are the most common chronic disease of early childhood
- Family physicians are uniquely positioned to promote good oral health
- ECC can develop as soon as teeth erupts
- ECC is preventable
- Oral health promotions begin at prenatal visit
- Maternal periodontal disease is linked to preterm labor.

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Key Points

- At 0-3 months—avoid bottle propping
- At 6 months—prescribe systemic fluoride if drinking water \leq 6ppm, start daily brushing with fluoride toothpaste
- Systemic fluoride is one of the most effective tool in preventing dental caries
- AAPD recommends all children see dentist by 12 months

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Key Points

- Mucosal lesions may be manifestations of systemic disease
- Common dental emergencies include cellulitis, abscess, and tooth trauma.
- Family physicians can improve patient care and satisfaction by offering available strategies and prompt dental referral

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Key Points

- Antibiotics is not sufficient treatment for abscess
- In trauma cases, save all teeth fragments in saliva, milk, or transport medium.
- Tooth avulsion is true emergency—time is critical

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Practice Recommendations

- Maternal periodontal treatment can decrease the risk of prematurity (SOR B)
- Mothers with caries should use xylitol chewing gum four times daily as this may reduce the risk for caries in her child (SOR B)
- Systemic fluoride is one of the most effective tools in prevention of dental decay, reducing caries in young children by 40-50% (SOR A)
- Maternal oral health should be monitored after delivery because decreasing maternal level of streptococci mutans can reduce infant colonization and subsequent caries risk (SOR B)

Douglas AB, Douglass JM. A practical guide to infant oral health. American Family Physician. 2004 Dec 1; 70(11): 2113-2120.

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Questions?

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Contact Information

Chih-Wen Shi, MD PhD

chih-wen.shi.civ@mail.mil

760-725-1400

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Billing & Coding

When services performed in conjunction with:

Office Visit 992xx *

*Time-based selection documentation criteria:

- Face-to-face time
- greater than 50% spent counseling/coordinates care

Preventive 9938x/9939x

Preventive medicine counseling and/or risk factor reduction interventions 99401-99404 (billable in 15 minute increments)

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Billing & Coding (Continued)

Additional tests to confirm or monitor:

Be aware that not all insurance policies covered services submitted with oral health diagnoses. You should verify coverage and financial arrangements prior to delivering services focused on oral health

99188 Application of topical fluoride varnish by a physician or other qualified health care professional

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Interested in More CME on this topic?
aafp.org/fmx-kids

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