

The Role of Community Dentistry in Childhood Dental Care

CHRISTINE ARMENIAN, DDS, MPH

CO-OWNER, KIDS DENTAL PLACE

GLENDALE, CALIFORNIA



The Reality of the “Silent Epidemic” of Poor Oral Health in Children

- ▶ Dental caries remains the most prevalent childhood chronic disease in United States, five times more common than asthma.
- ▶ In California, 54 percent of kindergarteners and 70 percent of third graders have experienced dental caries, and nearly one-third of children have untreated tooth decay
- ▶ Dental problems cause California students to miss an estimated 874,000 days of school each year.
- ▶ Children who reported having recent tooth pain were four times more likely to have a low grade-point average.



Severity of Childhood Dental Decay in California

	Healthy People 2020 Objective	U.S. Target HP 2020 (%)	U.S. Baseline (various years) (%)	California Baseline (various years) (%)
OH-1	Dental caries experience			
	Young children, aged 3–5 (primary teeth)	30	33.3 ^a	53.6 ^k
	Children, aged 6–9 (primary and permanent teeth)	49	54.4 ^a	70.9 ^l
	Adolescents, aged 13–15 (permanent teeth)	48.3	53.7 ^a	
OH -2	Untreated dental decay in children			
	Young children, aged 3–5 (primary teeth)	21.4	23.8 ^a	27.9 ^k
	Children, aged 6–9 (primary and permanent teeth)	25.9	28.8 ^a	28.7 ^l
	Adolescents, aged 13–15 (permanent teeth)	15.3	17 ^a	

Healthy People 2020 is a comprehensive, nationwide health promotion and disease prevention agenda designed to improve health of all people in the US during the second decade of the 21st century.

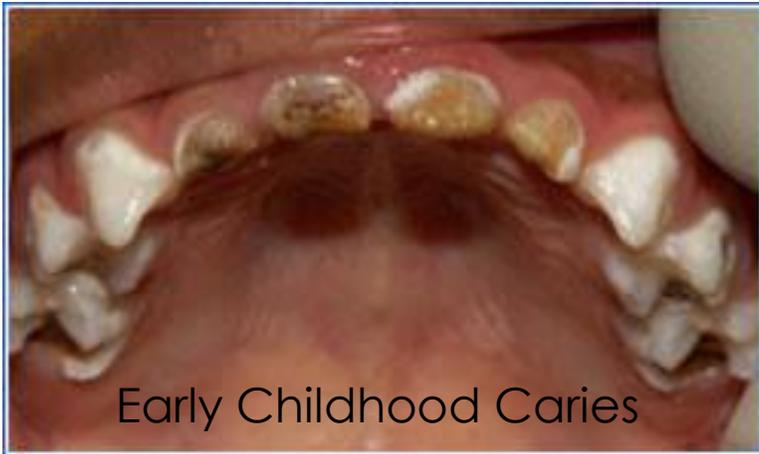


Childhood Dental Caries is a Public Health Problem

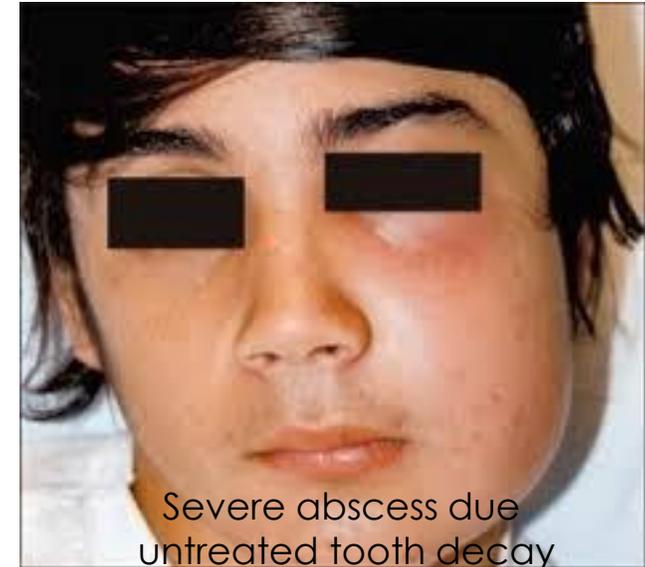
- ▶ Tooth decay is a preventable disease, yet it remains the most common chronic disease of children aged 6 to 11 years and adolescents aged 12 to 19 years.
- ▶ Children with untreated tooth decay experience unnecessary pain, difficulty chewing and speaking. In California, 28 percent of kindergarteners and 29 percent of third graders have untreated tooth decay
- ▶ This can impair a child's intellectual and social development and cause missed days of school.
- ▶ The American Academy of Pediatric Dentistry (AAPD) describes childhood dental caries as a public health problem that threatens the overall health and development of young children.



Severity of Untreated Dental Decay



Cost to treat ECC is \$1000-2000/child and can increase to \$6000 if GA is required at the hospital.



Where do we begin....

- ▶ To successfully prevent oral disease in children, dentists and other health care professionals must begin preventive interventions during the perinatal stage.
 - A. Dental care during pregnancy is considered safe, and the minimal risk of providing dental care to pregnant women (e.g., possible infection, bleeding, allergic reactions) is outweighed by the risk of not treating oral health conditions.
 - B. According to California perinatal oral health guidelines, pregnant women should receive at least one dental visit during pregnancy. In addition, maternal oral health correlates with the oral health status of the woman's children.
 - C. Pregnancy offers a window of opportunity to ensure good oral health for the mother and to educate her about oral health practices for herself and her children.
 - D. California's perinatal oral health guidelines encourage medical providers to educate their patients and refer them to dental care. Despite barriers to receiving dental care during pregnancy, promotion of oral health by medical providers has been associated with a higher prevalence of dental care.



Where do we begin....

- ▶ The American Dental Association, the American Academy of Pediatric Dentistry, and the American Association of Public Health Dentistry recommend all children to have their first dental visit by 12 months of age.
- ▶ Parents and care providers need to help every child establish a “Dental Home” by age 1.
- ▶ The intention of a “Dental Home” is to provide an environment that is accessible, continuous, comprehensive, family-centered, safe, and compassionate.



“Dental Home”

- ▶ If Physicians and Community Care Providers are to refer children at age 1, the practicing dental community must take on the responsibility of being willing and well-prepared to accept them!
- ▶ Purpose of a “Dental Home”
 - a. Provide caries risk assessment
 - b. Education and Motivation for parents and care givers
 - c. Anticipatory guidance on the prevention of dental disease.
 - d. Provide appropriate dental treatment
 - e. Make oral health fun!



“Dental Home”

- ▶ Purpose of a “Dental Home”
 - a. Provide caries risk assessment
 - b. Education and Motivation for parents and care givers
 - c. Anticipatory guidance on the prevention of dental disease.
 - d. Provide appropriate dental treatment
 - e. Make oral health fun!



TABLE 1

CAMBRA for Dental Providers (0-5) Assessment Tool

Caries Risk Assessment Form for Age 0 to 5

Patient name: _____ I.D.# _____ Age _____ Date _____

Initial/base line exam date _____ Caries recall date _____

Respond to each question in sections 1, 2, 3, and 4 with a check mark in the "Yes" or "No" column	Yes	No	Notes
1. Caries Risk Indicators — Parent Interview**			
(a) Mother or primary caregiver has had active dental decay in the past 12 months			
(b) Child has recent dental restorations (see 5b below)			
(c) Parent and/or caregiver has low SES (socioeconomic status) and/or low health literacy			
(d) Child has developmental problems			
(e) No dental home/episodic dental care			
2. Caries Risk Factors (Biological) — Parent Interview**			
(a) Child has frequent (greater than three times daily) between-meal snacks of sugars/cooked starch/sugared beverages			
(b) Child has saliva-reducing factors present, including: 1. Medications (e.g., some for asthma or hyperactivity) 2. Medical (cancer treatment) or genetic factors			
(c) Child continually uses bottle - contains fluids other than water			
(d) Child sleeps with a bottle or nurses on demand			
3. Protective Factors (Nonbiological) — Parent Interview			
(a) Mother/caregiver decay-free last three years			
(b) Child has a dental home and regular dental care			
4. Protective Factors (Biological) — Parent Interview			
(a) Child lives in a fluoridated community or takes fluoride supplements by slowly dissolving or as chewable tablets			
(b) Child's teeth are cleaned with fluoridated toothpaste (pea-size) daily			
(c) Mother/caregiver chews/sucks xylitol chewing gum/lozenges 2-4x daily			
5. Caries Risk Indicators/Factors — Clinical Examination of Child**			
(a) Obvious white spots, decalcifications, or obvious decay present on the child's teeth			
(b) Restorations placed in the last two years in/on child's teeth			
(c) Plaque is obvious on the child's teeth and/or gums bleed easily			
(d) Child has dental or orthodontic appliances present, fixed or removable: e.g., braces, space maintainers, obturators			
(e) Risk Factor: Visually inadequate saliva flow - dry mouth			
**If yes to any one of 1(a), 1(b), 5(a), or 5(b) or any two in categories 1, 2, 5, consider performing bacterial culture on mother or caregiver and child. Use this as a base line to follow results of antibacterial intervention.	Parent/Caregiver	Child	
	Date:	Date:	
(a) Mutans streptococci (Indicate bacterial level: high, medium, low)			
(b) Lactobacillus species (Indicate bacterial level: high, medium, low)			
Child's overall caries risk status: (CIRCLE) Extreme	Low	Moderate	High
Recommendations given: Yes _____ No _____ Date given _____	Date follow up: _____		
SELF-MANAGEMENT GOALS 1) _____ 2) _____			
Practitioner signature _____ Date _____			

Caries management by risk assessment (CAMBRA)

- Historically, much of Dentistry has focused on restoring the symptoms of tooth decay rather than treating its etiologic cause, which is by prevention.
- Caries management by risk assessment (CAMBRA) is a great tool to get control of the etiologic cause by decreasing the infectious bacteria that causes decay.
- Based on these responses, dentists can correct problems by managing risk factors such as recommending specific behavioral, chemical, and minimally invasive treatments (such as use of antimicrobials, fluoride, sealants, and frequency of radiographs and periodic oral exams)



CAMBRA Treatment Guidelines (0-5 years)

Caries Management by Risk Assessment (CAMBRA) Clinical Guidelines for Patients 0-5 years

Risk Level	Saliva Test	Antibacterials	Fluoride	Frequency of Radiographs	Frequency of Periodic Oral Exams (POE)	**** Xylitol and/or Baking Soda	Sealants ***	Existing Lesions
Low risk	Optional (Base line)	Not required or if saliva test was performed; treat main caregiver accordingly	Not required	After age 2: Bitewing radiographs every 18-24 months	Every 6-12 months to re-evaluate caries risk AND ANTICIPATORY GUIDANCE**		Optional	
Moderate risk	Recommended	Not required or if saliva test was performed; treat main caregiver accordingly	OTC fluoride-containing toothpaste twice daily (a pea-sized amount) Sodium fluoride treatment gels/rinses	After age 2: Bitewing radiographs every 12-18 months	Every 6 months to re-evaluate caries risk AND ANTICIPATORY GUIDANCE	Xylitol gum or lozenges Two sticks of gum or two mints four times daily for the caregiver Xylitol food, spray or drinks for the child	Sealants for deep pits and fissures after two years of age. High fluoride conventional glass ionomer is recommended	Lesions that do not penetrate the DEJ and are not cavitated should be treated with fluoride toothpaste and fluoride varnish
High risk*	Required	Chlorhexidine 0.12% 10 ml rinse for main caregiver of the infant or child for one week each month. Bacterial test every caries recall. Health provider might brush infant's teeth with CHX	Fluoride varnish at initial visit and caries recall exams OTC fluoride-containing toothpaste and calcium phosphate paste combination twice daily Sodium fluoride treatment gel/rinses	After age 2; Two size #2 occlusal films and 2 bitewing radiographs every 6-12 months or until no cavitated lesions are evident	Every 3 months to re-evaluate caries risk and apply fluoride varnish AND ANTICIPATORY GUIDANCE	Xylitol gum or lozenges. Two sticks of gum or two mints four times daily for the caregiver Xylitol food, spray, or drinks for the child	Sealants for deep pits and fissures after two years of age. High fluoride conventional glass ionomer is recommended	Lesions that do not penetrate the DEJ and are not cavitated should be treated with fluoride toothpaste and fluoride varnish ART might be recommended
Extreme risk*	Required	Chlorhexidine 0.12% 10 ml rinse for one minute daily at bedtime for two weeks each month. Bacterial test at every caries recall Health provider might brush infant's teeth with CHX	Fluoride varnish at initial visit, each caries recall and after prophylaxis or recall exams OTC fluoride-containing toothpaste and phosphate paste combination twice daily Sodium fluoride treatment gel/rinses	After age 2; Two size #2 occlusal films and 2 bitewing radiographs every 6 months or until no cavitated lesions are evident	Every 1-3 months to re-evaluate caries risk and apply fluoride varnish and anticipatory guidance	Xylitol gum or lozenges. Two sticks of gum or two mints four times daily for the caregiver Xylitol food, spray, or drinks	Sealants for deep pits and fissures after two years of age. High fluoride conventional glass ionomer is recommended	Holding care with glass ionomer materials until caries progression is controlled (ART) Fluoride varnish and anticipatory guidance/self-management goals

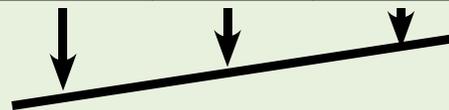


Caries Risk Assessment Form — Children Age 6 and Over/Adults

Patient Name: _____ Chart #: _____ Date: _____

Assessment Date: Is this (please circle) base line or recall

Disease Indicators (Any one "YES" signifies likely "High Risk" and to do a bacteria test**)	YES = CIRCLE	YES = CIRCLE	YES = CIRCLE
Visible cavities or radiographic penetration of the dentin	YES		
Radiographic approximal enamel lesions (not in dentin)	YES		
White spots on smooth surfaces	YES		
Restorations last 3 years	YES		
Risk Factors (Biological predisposing factors)			
MS and LB both medium or high (by culture**)		YES	
Visible heavy plaque on teeth		YES	
Frequent snack (> 3x daily between meals)		YES	
Deep pits and fissures		YES	
Recreational drug use		YES	
Inadequate saliva flow by observation or measurement (**If measured, note the flow rate below)		YES	
Saliva reducing factors (medications/radiation/systemic)		YES	
Exposed roots		YES	
Orthodontic appliances		YES	
Protective Factors			
Lives/work/school fluoridated community			YES
Fluoride toothpaste at least once daily			YES
Fluoride toothpaste at least 2x daily			YES
Fluoride mouthrinse (0.05% NaF) daily			YES
5,000 ppm F fluoride toothpaste daily			YES
Fluoride varnish in last 6 months			YES
Office F topical in last 6 months			YES
Chlorhexidine prescribed/used one week each of last 6 months			YES
Xylitol gum/lozenges 4x daily last 6 months			YES
Calcium and phosphate paste during last 6 months			YES
Adequate saliva flow (> 1 ml/min stimulated)			YES
**Bacteria/Saliva Test Results: MS: LB: Flow Rate: ml/min. Date:			



VISUALIZE CARIES BALANCE
 (Use circled indicators/factors above)
 (EXTREME RISK = HIGH RISK + SEVERE SALIVARY GLAND HYPOFUNCTION)
 CARIES RISK ASSESSMENT (CIRCLE): EXTREME HIGH MODERATE LOW

Doctor signature/#: _____ Date: _____



**Caries Management by Risk Assessment
Clinical Guidelines for Patients Age 6 and Older**

Risk Level ### ***	Frequency of Radiographs	Frequency of Caries Recall Exams	Saliva Test (Saliva Flow & Bacterial Culture)	Antibacterials Chlorhexidine Xylitol ****	Fluoride	pH Control	Calcium Phosphate Topical Supplements	Sealants (Resin-based or Glass Ionomer)
Low risk	Bitewing radiographs every 24-36 months	Every 6-12 months to re-evaluate caries risk	May be done as a base line reference for new patients	Per saliva test if done	OTC fluoride-containing toothpaste twice daily, after breakfast and at bedtime. Optional: NaF varnish if excessive root exposure or sensitivity	Not required	Not required Optional: for excessive root exposure or sensitivity	Optional or as per ICDAS sealant protocol (TABLE 2)
Moderate risk	Bitewing radiographs every 18-24 months	Every 4-6 months to re-evaluate caries risk	May be done as a base line reference for new patients or if there is suspicion of high bacterial challenge and to assess efficacy and patient cooperation	Per saliva test if done Xylitol (6-10 grams/day) gum or candies. Two tabs of gum or two candies four times daily	OTC fluoride-containing toothpaste twice daily plus: 0.05% NaF rinse daily. Initially, 1-2 app of NaF varnish; 1 app at 4-6 month recall	Not required	Not required Optional: for excessive root exposure or sensitivity	As per ICDAS sealant protocol (TABLE 2)
High risk*	Bitewing radiographs every 6-18 months or until no cavitated lesions are evident	Every 3-4 months to re-evaluate caries risk and apply fluoride varnish	Saliva flow test and bacterial culture initially and at every caries recall appt. to assess efficacy and patient cooperation	Chlorhexidine gluconate 0.12% 10 ml rinse for one minute daily for one week each month. Xylitol (6-10 grams/day) gum or candies. Two tabs of gum or two candies four times daily	1.1% NaF toothpaste twice daily instead of regular fluoride toothpaste. Optional: 0.2% NaF rinse daily (1 bottle) then OTC 0.05% NaF rinse 2X daily. Initially, 1-3 app of NaF varnish; 1 app at 3-4 month recall	Not required	Optional: Apply calcium/phosphate paste several times daily	As per ICDAS sealant protocol (TABLE 2)
Extreme risk** (High risk plus dry mouth or special needs)	Bitewing radiographs every 6 months or until no cavitated lesions are evident	Every 3 months to re-evaluate caries risk and apply fluoride varnish.	Saliva flow test and bacterial culture initially and at every caries recall appt. to assess efficacy and patient cooperation	Chlorhexidine 0.12% (preferably CHX in water base rinse) 10 ml rinse for one minute daily for one week each month. Xylitol (6-10 grams/day) gum or candies. Two tabs of gum or two candies four times daily	1.1% NaF toothpaste twice daily instead of regular fluoride toothpaste. OTC 0.05% NaF rinse when mouth feels dry, after snacking, breakfast, and lunch. Initially, 1-3 app. NaF varnish; 1 app at 3 month recall.	Acid-neutralizing rinses as needed if mouth feels dry, after snacking, bedtime and after breakfast. Baking soda gum as needed	Required Apply calcium/phosphate paste twice daily	As per ICDAS sealant protocol (TABLE 2)

* Patients with one (or more) cavitated lesion(s) are high-risk patients. ** Patients with one (or more) cavitated lesion(s) and severe hyposalivation are extreme-risk patients. *** All restorative work to be done with the minimally invasive philosophy in mind. Existing smooth surface lesions that do not penetrate the DEJ and are not cavitated should be treated chemically, not surgically. For extreme-risk patients, use holding care with glass ionomer materials until caries progression is controlled. Patients with appliances (RPDs, prosthodontics) require excellent oral hygiene together with intensive fluoride therapy e.g., high fluoride toothpaste and fluoride varnish every three months. Where indicated, antibacterial therapy to be done in conjunction with restorative work. ### For all risk levels: Patients must maintain good oral hygiene and a diet low in frequency of fermentable carbohydrates. **** Xylitol is not good for pets (especially dogs).



“Dental Home”

- ▶ Purpose of a “Dental Home”
 - a. Provide caries risk assessment
 - b. Education and Motivation for parents and care givers
 - c. Anticipatory guidance on the prevention of dental disease.
 - d. Provide appropriate dental treatment
 - e. Make oral health fun!



Parent and Caregiver Interview, Education, and Motivational Goals

- ▶ Goal is to have a Parent-Patient approach to oral health promotion and caries prevention.
- ▶ It's a 2-way communication that includes the following steps:
 - a. Establish trust and rapport.
 - b. Help Parents identify problems.
 - c. Encourage self motivational changes to habits, including nutritional and oral hygiene instructions and recommendations.
 - d. Answer questions and respond to resistance.
 - e. Schedule follow up appointments.



Parent/Caregiver Recommendations Form

Parent/Caregiver Recommendations for Control of Dental Decay in Children 0-5 Years

Daily Oral Hygiene/Fluoride Toothpaste Treatment

(These procedures reduce the bacteria in the mouth and provide a small amount of fluoride to guard against further tooth decay as well as to repair early decayed areas.)

_____ Brush child's teeth with a fluoride-containing toothpaste (small smear or pea-sized amount on a soft small infant-sized toothbrush) twice daily (gently brushed by parent or caregiver)

_____ Selective daily flossing of areas with early caries (white spots)

_____ Other: _____

Diet

(The aim is to reduce the number of between-meal sweet snacks that contain carbohydrates, especially sugars. Substitution by snacks rich in protein, such as cheese will also help.)

_____ OK as is

_____ Limit bottle/nursing (to avoid prolonged contact of milk with teeth)

_____ Replace juice or sweet liquids in the bottle with water

_____ Limit snacking (particularly sweets)

_____ Replace high carbohydrate snacks with cheese and protein snacks

_____ Other _____

Xylitol (Parent/caregivers)

Xylitol is a sweetener that the bacteria cannot feed on. Using xylitol-containing chewing gum or mints/lozenges is a way that parents/caregivers of high-risk children can reduce the transfer of decay-causing bacteria to their baby/toddler. This is most effective when used by the parent/caregiver starting shortly after the child's birth. Parents/caregivers with dental decay place their children at high risk for early childhood caries. Xylitol is not good for pets (especially dogs).

_____ Parents/caregivers of children age 3 and under with high bacterial levels should use xylitol mints/lozenges or xylitol gum two to four times daily.

Antibacterial Rinse (Parents/caregivers)

(In addition, parents/caregivers of high-risk children may require antibacterial treatment to decrease the transmission of cariogenic bacteria and lessen the infant/child's risk of early childhood caries.)

_____ Parents/caregivers of children age 3 and under with high bacterial levels should rinse with 10 ml of chlorhexidine gluconate 0.12 percent (Periogard, Peridex, Oral Rx by prescription only). Rinse at bedtime for 1 minute 1x/day for one week. Repeat each month for one week until infection is controlled. Separate by one hour from fluoride use. Continue for six months or until bacterial levels remain controlled.

Practitioner signature _____ Date _____

Parent/caregiver signature _____ Date _____



Motivational Goals

Self-management Goals for Parent/Caregiver

Patient Name _____ DOB _____



Regular dental visits for child



Family receives dental treatment



Healthy snacks



Brush with fluoride toothpaste at least twice daily



No soda



Less or no juice



Wean off bottle (At least no bottle for sleeping)



Only water or milk in sippy cup



Chew gum with xylitol



Drink tap water



Less or no candy and junk food

IMPORTANT:
The last thing that touches your child's teeth before bedtime is the toothbrush with fluoride toothpaste.

Circle the goals you will focus on between today and your next visit.

On a scale of 1-10, how confident are you that you can accomplish the goals? 1 2 3 4 5 6 7 8 9 10

Not likely

Definitely

My promise: I agree to the goals circled and understand that staff may ask me how I am doing with my goals.

Date: _____ Signed by: _____

Review Date: _____ Comments: _____ Staff Initials: _____

Review Date: _____ Comments: _____ Staff Initials: _____



“Dental Home”

- ▶ Purpose of a “Dental Home”
 - a. Provide caries risk assessment
 - b. Education and Motivation for parents and care givers
 - c. Anticipatory guidance on the prevention of dental disease.
 - d. Provide appropriate dental treatment
 - e. Make oral health fun!



Age Appropriate Anticipatory Guidance

- ▶ Anticipatory Guidance is designed to take advantage of time-critical opportunities to implement preventive oral health practices and reduce the child's risk of preventable oral disease.
- ▶ These guidelines include information about oral hygiene, growth and developmental issues, oral habits, diet, and injury prevention.
- ▶ Each guideline is very specific to each child and the results of their risk assessment.



Age-Specific Anticipatory Guidance (from Ramos-Gomez, reference 21)

	PRENATAL	BIRTH TO ONE YEAR	TWO TO THREE YEARS	THREE TO FIVE YEARS
Take home message for caregivers	<ul style="list-style-type: none"> • Baby teeth are important. • Parents'/caregivers' oral health affects baby's oral health. • Parents'/caregivers should obtain regular dental check-up and get treatment if necessary. • Schedule child's first dental appointment by age 1. • Use of fluorides, including toothbrushing with fluoride toothpaste, is the most effective way to prevent tooth decay. 	<ul style="list-style-type: none"> • Baby teeth are important. • Parents'/caregivers' oral health affects baby's oral health. • Parents'/caregivers should obtain regular dental check-up and get treatment if necessary. • Parents'/caregivers should avoid sharing with their child things that have been in their mouths. • Schedule child's first dental appointment by age 1. • Prevention is less costly than treatment. • Use of fluorides, including toothbrushing with fluoride toothpaste, is the most effective way to prevent tooth decay. 	<ul style="list-style-type: none"> • Baby teeth are important. • Parents'/caregivers' oral health affects baby's oral health. • Parents'/caregivers should obtain regular dental check-up and get treatment if necessary. • Parents'/caregivers should avoid sharing with their child things that have been in their mouths. • Schedule child's first dental appointment by age 1. • Prevention is less costly than treatment. • Use of fluorides, including toothbrushing with fluoride toothpaste, is the most effective way to prevent tooth decay. 	<ul style="list-style-type: none"> • Baby teeth are important. • Parents'/caregivers' oral health affects child's overall health. • Parents'/caregivers should obtain regular dental check-up and get treatment if necessary. • Parents'/caregivers should avoid sharing with their child things that have been in their mouths. • Prevention is less costly than treatment. • Use of fluorides, including toothbrushing with fluoride toothpaste, is the most effective way to prevent tooth decay.
Oral health and hygiene	<ul style="list-style-type: none"> • Encourage parents'/caregivers to obtain dental check-up and, if necessary, treatment before birth of baby to reduce cavity-causing bacteria that can be passed to the baby. • Encourage parents'/caregivers to brush teeth with fluoride toothpaste. 	<ul style="list-style-type: none"> • Encourage parents'/caregivers to maintain good oral health and get treatment, if necessary, to reduce spread of bacteria that can cause tooth decay. • Encourage parents'/caregivers to avoid sharing with their child things that have been in their mouths. • Encourage parents'/caregivers to become familiar with the normal appearance of child's gums. • Emphasize using a washcloth or toothbrush to clean teeth and gums with eruption of the first tooth. • Encourage parents'/caregivers to check front and back teeth for white, brown, or black (signs of cavities). 	<ul style="list-style-type: none"> • Encourage parents'/caregivers to maintain good oral health and get treatment, if necessary, to reduce spread of bacteria that can cause tooth decay. • Encourage parents'/caregivers to avoid sharing with their child things that have been in their mouths. • Review parent's/caregiver's role in brushing toddler's teeth. • Discuss brush and toothpaste selection. • Problem solve on oral hygiene issues. • Schedule child's first dental visit by age 1. 	<ul style="list-style-type: none"> • Encourage parents'/caregivers to maintain good oral health and get treatment, if necessary, to reduce spread of bacteria that can cause tooth decay. • Encourage parents'/caregivers to avoid sharing with their child things that have been in their mouths. • Discuss parents'/caregivers continued responsibility to help children under age 8 to brush their teeth. • Encourage parents'/caregivers to consider dental sealants for primary and first permanent molars.
Oral development	<ul style="list-style-type: none"> • Describe primary tooth eruption patterns (first tooth usually erupts between 6-10 months old). • Emphasize importance of baby teeth for chewing, speaking, jaw development and self-esteem. 	<ul style="list-style-type: none"> • Discuss primary tooth eruption patterns. • Emphasize importance of baby teeth for chewing, speaking, jaw development and self-esteem. • Discuss teething and ways to soothe sore gums, such as chewing on teething rings and washcloths. 	<ul style="list-style-type: none"> • Emphasize importance of baby teeth for chewing, speaking, jaw development, and self-esteem. • Discuss teething and ways to soothe sore gums, such as teething rings and washcloths. 	<ul style="list-style-type: none"> • Emphasize importance of baby teeth for chewing, speaking, and jaw development.

Age-Specific Anticipatory Guidance (from Ramos-Gomez, reference 21) *continued*

	PRENATAL	BIRTH TO ONE YEAR	TWO TO THREE YEARS	THREE TO FIVE YEARS
Fluoride adequacy	<ul style="list-style-type: none"> • Evaluate fluoride status in residential water supply. • Review topical and systemic sources of fluoride. • Encourage mother to drink fluoridated tap water. 	<ul style="list-style-type: none"> • Evaluate fluoride status of residential water supply. • Review topical and systemic sources of fluoride. • Encourage drinking fluoridated tap water. • Consider topical needs (e.g., toothpaste, fluoride varnish). 	<ul style="list-style-type: none"> • Re-evaluate fluoride status of residential water supply. • Review topical and systemic sources of fluoride. • Encourage drinking fluoridated tap water. • Review need for topical fluorides. 	<ul style="list-style-type: none"> • Re-evaluate fluoride status in residential water supply. • Review sources of fluoride. • Review need for topical or other fluorides..
Oral habits	<ul style="list-style-type: none"> • Encourage mother to stop smoking. 	<ul style="list-style-type: none"> • Encourage breastfeeding. • Advise mother that removing child from breast after feeding and wiping baby's gums/teeth with damp washcloth reduces the risk of ECC. • Review pacifier safety. 	<ul style="list-style-type: none"> • Remind mother that removing child from breast after feeding and wiping baby's gums/teeth with damp washcloth reduces the risk of ECC. • Begin weaning of non-nutritive sucking habits at 2. 	<ul style="list-style-type: none"> • Discuss consequences of digit sucking and prolonged non-nutritive sucking (e.g. pacifier) and begin professional intervention if necessary.
Diet and nutrition	<ul style="list-style-type: none"> • Emphasize eating a healthy diet and limiting number of exposures to sugar snacks and drinks. • Emphasize that it is the frequency of exposures, not the amount of sugar that affects susceptibility to caries. • Encourage breastfeeding. • Remind parents'/caregivers never to put baby to bed with a bottle with anything other than water in it or to allow feeding 'at will'. 	<ul style="list-style-type: none"> • Remind parents'/caregivers never to put baby to bed with a bottle with anything other than water in it or allow feeding 'at will'. • Emphasize that it is the frequency of exposures, not the amount of sugar that affects susceptibility to caries. • Encourage weaning from bottle to cup by 1 year of age. 	<ul style="list-style-type: none"> • Remind parents'/caregivers never to put baby to bed with a bottle or allow feeding 'at will'. • Discuss healthy diet and oral health. • Emphasize that it is the frequency of exposures, not the amount of sugar that affects susceptibility to caries. • Review snack choices and encourage healthy snacks. 	<ul style="list-style-type: none"> • Review and encourage healthy diet. • Remind parents'/caregivers about limiting the frequency of exposures to sugar. • Review snacking choices. • Emphasize that child should be completely weaned from bottle and drinking exclusively from a cup.
Injury prevention	<ul style="list-style-type: none"> • Review child-proofing of home including electrical cord safety and poison control. • Emphasize use of properly secured car seat. • Encourage caregivers to keep emergency numbers handy. 	<ul style="list-style-type: none"> • Review child-proofing of home including electrical cord safety and poison control. • Emphasize use of properly secured car seat. • Encourage caregivers to keep emergency numbers handy. 	<ul style="list-style-type: none"> • Review child-proofing of home including electrical cord safety and poison control. • Emphasize use of car seat. • Emphasize use of helmet when child is riding tri/bicycle or in seat of adult bike. • Remind caregivers to keep emergency numbers handy. 	<ul style="list-style-type: none"> • Emphasize use of properly secured car seat. • Have emergency numbers handy. • Encourage safety in play activities including helmets on bikes and mouthguards in sports. • Remind caregivers to keep emergency numbers handy.

Fluoride

- ▶ Systemic: Ingested, incorporated into developing enamel, enamel more resistant to acid attack.
 - A. Optimally Fluoridated water (well water or bottle water with fluoride)
 - B. Dietary Fluoride Supplements

- ▶ Topical: Coats erupted teeth, promotes remineralization, enamel more resistant to acid attack.
 - A. Fluoridated toothpaste: OTC or Rx (i.e. Cleanpro 5000)
 - B. Professionally applied
 - Gels: 1.23% APF, 12,300 PPM
 - Foams
 - Varnishes: 5% NaF (2.26%F) 22,600 ppm



Sealants



Bottom Line on Sealants:

- Use resin-based sealants.
- Moisture control is essential.
- 4 hands are better than 2 or use Isodry.
- Do not mechanically prepare the enamel.
- However tooth needs to be cleaned with a bristle brush and pumice.
- Do not apply fluoride before sealants.
- Total etch with 37% H₃PO₄ for 15 seconds.
- Then use one bottle bonding agent (adhesive and primer) .
- Apply sealant and cure.



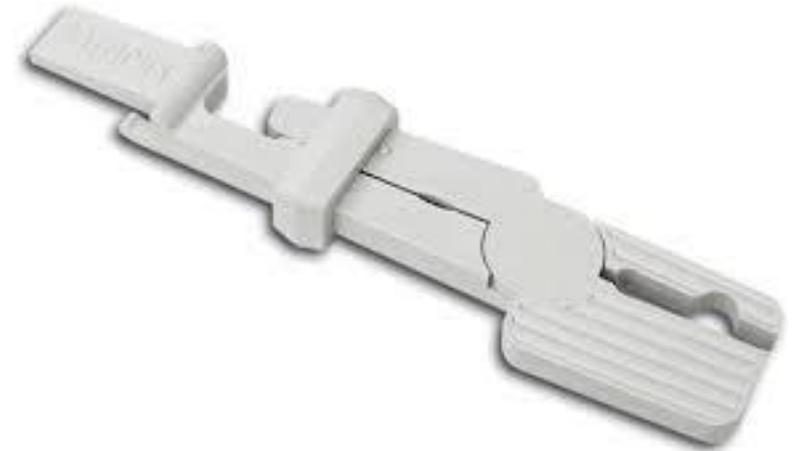
Before Sealant



After Sealant

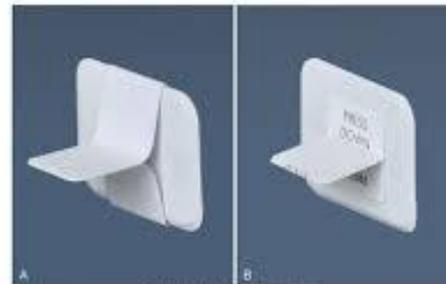
How to take Radiographs in Children

- ▶ Use Snap-A-Ray
- ▶ Bitewing Tabs
- ▶ Use Size 0 for BWs and Periapicals
- ▶ Use Size 2 for Maxillary Occlusals
- ▶ Always take the occlusal first



Snap-A Ray

Bite-wing Tab



Rationale for X-rays Birth to 3 years

- ▶ Birth to 3 years: Maxillary occlusal, periapicals only when child has ECC
 - a. Further evaluate pathology or trauma
 - b. Early Childhood Caries



Early Childhood Caries



Dental Trauma

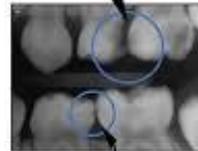
Rationale for X-rays 3-6 years old

- ▶ 3-6 years: 2 bitewings only when contacts are closed or caries present, maxillary occlusal, selected periapicals, 2x2 is standard
 - a. interproximal decay
 - b. large caries
 - c. pulpally involved teeth
 - d. supernumerary teeth
 - e. congenitally missing teeth
 - f. eruption sequence and pattern

Radiographs (X-Rays):

X-rays check for cavities between teeth that are touching that cannot be visualized on an exam.

They can also detect infection around the tooth.

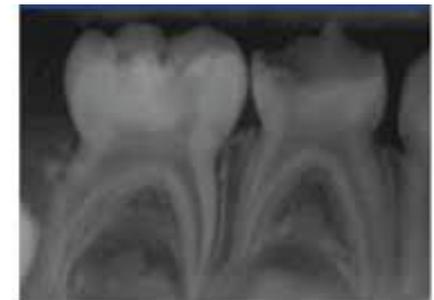
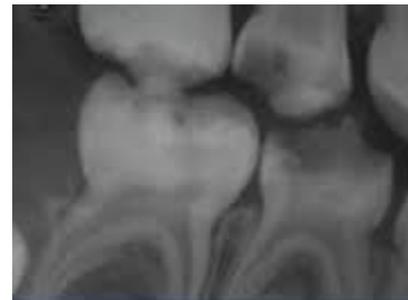


Large Cavities

Small Cavities



Supernumerary tooth



Large Cavities

Rationale for X-rays 6-12 years

- ▶ 6-12 years: 2 bitewings, selected periapicals as needed, panorex in early mixed and late mixed dentition
 - a. Comprehensive diagnosis
 - b. Evaluate caries, potential pathology
 - c. Growth and development
 - d. Eruption times/sequences/abnormalities
 - e. Evaluate number of teeth present

Missing Teeth



Ectopic Eruption



Extranumerary
Teeth



“Dental Home”

- ▶ Purpose of a “Dental Home”
 - a. Provide caries risk assessment
 - b. Education and Motivation for parents and care givers
 - c. Anticipatory guidance on the prevention of dental disease.
 - d. Provide appropriate dental treatment
 - e. Make oral health fun!



Common type of decay by age group

- ▶ Birth to 3 years old: Early Childhood Caries or Pit & Fissure
- ▶ 3-6 years old : Start to see interproximal caries on primary teeth after the closure of spaces between teeth, especially molars.
- ▶ 6-12 years old: Pit and fissure caries on permanent teeth and interproximal caries especially since there is a closure of space after eruption of permanent molars



How are Primary teeth different then Permanent teeth

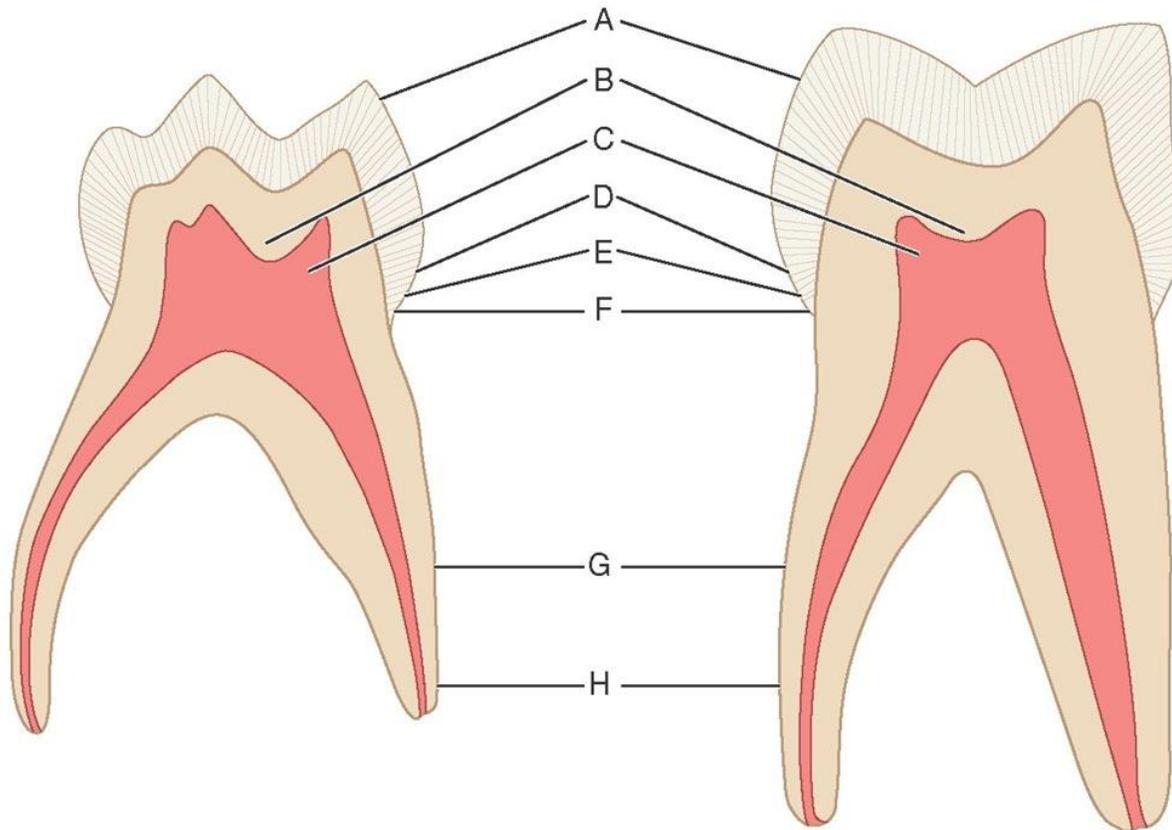
Anatomical Consideration of Primary Teeth:

1. Thinner Enamel and Dentin thickness.
2. Pulp chambers are larger in relation to crown size.
3. Pulp horns are closer to outer surface of the tooth.
4. Enamel rods extend occlusally compared to cervically in permanent teeth.
5. Greater cervical constriction of the crown.
6. Have broad, flat proximal contact areas (versus contact points).
7. Are whiter than permanent teeth.
8. Relatively narrow occlusal surface compared to permanent teeth.

✧ For this reason, do not place large fillings on primary teeth since more chance for failure such as infections or fractures.



Primary vs. Permanent Teeth



- A. The enamel cap of primary molars is thinner and has a more consistent depth.
- B. A comparatively greater thickness of dentin is over the pulpal wall at the occlusal fossa of primary molars.
- C. The pulpal horns are higher in primary molars, especially the mesial horns, and pulp chambers are proportionately larger.
- D. The cervical ridges are more pronounced, especially on the buccal aspect of the first primary molars.
- E. The enamel rods at the cervix slope occlusally instead of gingivally as in the permanent teeth.
- F. The primary molars have a markedly constricted neck compared with the permanent molars.
- G. The roots of the primary teeth are longer and more slender in comparison with crown size than those of the permanent teeth.
- H. The roots of the primary molars flare out nearer the cervix than do those of the permanent teeth.

Common Materials Used in Pediatric Dentistry

- Amalgam: Used effectively for restoring Class I and II. Appropriate when moisture control and patient cooperation is a concern.
- Composite Resin: Great strength and wear. Esthetic but very technique sensitive and intolerant to moisture control.
- Glass Ionomers: Release fluoride and less moisture sensitive. Esthetic, wear, and strength are compromised and not as good as Resins.
- Stainless Steel Crown: Used when caries is extensive, hypoplastic teeth, and following pulpal procedures.
- Veneered or zirconium crowns



Various Levels of Sedations

- Sedation dentistry uses medications to help children relax during dental procedures.
- There are various levels of sedation:
 - A. **Minimal sedation -- Child is awake and relaxed.** For example, Nitrous Oxide: Children who experience anxiety due to the sights, sounds, or sensations of dental treatment may respond more positively with the use of nitrous oxide. Nitrous oxide is perhaps the safest sedative in dentistry. It can reduce anxiety and gagging, and make long appointments more bearable for the child. The child remains fully conscious during treatment and recovery is rapid.
 - B. **Moderate sedation -- Child is conscious but may not remember much of the procedure.** For example: Oral sedation is administered to the child via various medications. They'll take the medication an hour before the procedure. Oral sedation can produce a mild or moderate sedation depending on the dose. A lower dose will make the child drowsy but keep them conscious and relaxed.
 - C. **Deep sedation -- Child is on the edge of consciousness, but easily awakened.** For example, IV Sedation: IV sedation is administered by licensed anesthesiologists who are dedicated to the child's comfort and safety. The child receives the sedative drug through a vein, so it goes to work more quickly. This method allows the anesthesiologist to continually adjust the level of sedation throughout the entire procedure.
 - D. **General anesthesia -- Child is completely unconscious.** Many parents feel General Anesthesia is usually the most comfortable option for children that have extreme apprehension, disabilities, or require extensive treatment. We refer our patients to CHLA for General Anesthesia.
- ▶ Regardless of which type of sedation a child receives, they will need a local anesthetic in the mouth in order to relieve pain.



“Dental Home”

- ▶ Purpose of a “Dental Home”
 - a. Provide caries risk assessment
 - b. Education and Motivation for parents and care givers
 - c. Anticipatory guidance on the prevention of dental disease.
 - d. Provide appropriate dental treatment
 - e. Make oral health fun!



Make Oral Health Fun!



In Summary:

- ▶ We can no longer put the responsibility of addressing this growing epidemic to pediatric dental specialists.
- ▶ Our profession must expand the approach to infant/toddler caries risk assessment and prevention to include general dentists, medical care providers (pediatricians and parents' physicians), public health programs, and community clinics.
- ▶ In order to effectively treat Early Childhood Caries, we need to prevent the disease rather than treat the results of the disease.
- ▶ All dental providers need to be trained and educated to use an age appropriate risk assessment tool that help manage and monitor each patient on an individual level to prevent future dental caries in the pediatric population.
- ▶ Physicians and other non-dental providers need to be trained to screen pediatric patients and refer them to a “dental home” in a timely manner.



References

- ▶ Status of Oral Health in California: Oral Disease Burden and Prevention 2017, California Department of Public Health
- ▶ The American Academy of Pediatric Dentistry, Comprehensive Pediatric Dentistry for the General Practitioner, 2011
- ▶ Journal of California Dental Association, October 2007 Publication, Caries Risk Assessment
- ✧ Most of the statistical data for childhood oral health indicators are more than 10 years old. There is definitely a need for more current surveys to get more accurate up to date data.

