

# First Dental Visit by Age One

## A guide to the new recommendations

Recommended by

American Dental Association  
American Academy of Pediatrics  
American Academy of Pediatric Dentistry  
Arizona Academy of Pediatric Dentists



# INTRODUCTION

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The American Academy of Pediatrics recently announced their recommendation that pediatricians perform an oral assessment, including anticipatory guidance and establishment of a dental home for children one year of age deemed at risk<sup>1</sup>. This parallels earlier recommendations by the American Academy of Pediatric Dentistry<sup>2</sup>, the American Dental Association and the Arizona Academy of Pediatric Dentists<sup>3</sup> calling for the first oral examination by one year of age. These recommendations reflect a growing knowledge of the need for early intervention and treatment of oral disease as well as the understanding that oral health is an integral part of overall health.

Dental disease “... is one of the most common childhood diseases...” and “ ... is five times more common than asthma...” according to a report from the Surgeon General in 2000.<sup>4</sup> Although there is a higher incidence in low socio-economic populations and certain cultural groups, it is found across all segments of our society.

The Centers for Disease Control and Prevention (CDC) reports that “Dental decay is one of the most common chronic infectious diseases among U.S children.”<sup>5</sup>

In Arizona, 35% of 3-year-old children and 49% of 4-year-old children were found to have dental caries in a survey of preschool children conducted by The Arizona Department of Health Services, Office of Oral Health.<sup>6</sup>

## **Continuing Education Credit**

**Earn 1 hour of continuing education credit by completing the attached quiz and returning it to the Office of Oral Health by fax (602-542-2936) or mail to ADHS, Office of Oral Health, 1740 W. Adams, Phoenix, AZ 85007 Attn.: R. Tuscano**

## **Course Objectives**

**Upon completion of this course, the participant will be able to:**

- **Describe transmissible nature of dental caries**
- **Assess risk for dental caries in children 3 years of age and younger utilizing the Caries Risk Assessment Tool (CAT)**
- **Describe knee-to-knee position for oral screenings**
- **Identify indications for fluoride varnish application in young children (under 3 years of age).**

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<sup>1</sup>American Academy of Pediatrics: [www.aap.org](http://www.aap.org)

<sup>2</sup>American Academy of Pediatric Dentistry: [www.aapd.org](http://www.aapd.org)

<sup>3</sup>Arizona Academy of Pediatric Dentists policy statement, page 7

<sup>4</sup>US Dept. Health and Human Services. Oral Health in America: A Report of the Surgeon General

<sup>5</sup>Centers for Disease Control and Prevention: [www.cdc.gov](http://www.cdc.gov)

<sup>6</sup>Arizona Dental Survey of Preschool Children, (1994-1995). Arizona Department of Health Services, Office of Oral Health

# DENTAL CARIES

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## DENTAL CARIES: A TRANSMISSIBLE BACTERIAL INFECTION

Dental caries is a transmissible disease and mutans streptococci is the principal bacteria responsible for its initiation. This bacteria is not present at birth but is acquired, usually from the mother, but also from another caregiver, through intimate contact, shared utensils, etc. The “window of infectivity” is estimated to be between 6 and 36 months of age. A high level of bacteria in the mother’s mouth increases the rate of transmission to the infant. Prolonged bottle or breastfeeding provides an environment that enhances the development of early caries by providing a substrate favorable to the proliferation of bacteria. Children who are infected at this early age have a higher lifetime incidence of dental caries.

## WHITE SPOT LESIONS

White spot lesions are the earliest sign of the caries process on smooth enamel surfaces. They present as areas of chalky white, opaque enamel typically seen under a layer of plaque at the gingival margin of tooth surfaces (near the gum, especially on newly erupted teeth). White spot lesions are an indication that the underlying enamel has become decalcified. Unless steps are taken to reverse this process the lesion will likely advance to cavitation.

The caries process is now understood to be a dynamic one in which the enamel mineral content may be partially lost and subsequently replaced with intact surface enamel functioning as a diffusion matrix. Demineralization occurs when acid production by bacterial plaque produces a lowered pH. Remineralization is facilitated by the presence of fluoride, even in very low concentrations in saliva, plaque and demineralized enamel. The “repaired” fluoridated hydroxyapatite crystals are more resistant to subsequent acid attacks. Remineralization can only occur when the surface is intact. **Penetration of a white spot lesion with an explorer creates an irreversible lesion.**



White spot lesions

The most efficient way to deliver fluoride to young children to facilitate remineralization is to apply fluoride varnish. Children with white spot lesions and/or hypoplasia or those deemed at risk (see Oral Health Assessment pg. 4) should receive fluoride varnish.

# ORAL HEALTH ASSESSMENT

The following is a method of performing an oral health assessment for infants and toddlers:

- 1. Perform a visual screening**
- 2. Determine risk**
- 3. Develop treatment plan/recommendations**

**1. A visual screening** can be performed using the knee-to-knee method as described below. The assistance of the child’s caretaker (mother, father, guardian) is of great benefit for this process to occur successfully. The caretaker is seated in a chair holding the child face-to-face on his/her lap. The caretaker’s legs are positioned so that his/her feet are in full contact with the floor. Instruct the caretaker to give the child a hug and put the child’s legs around the waist of the caretaker. In this position, the caretaker’s elbows can aid in stabilizing the movement of the child’s legs.

The health care provider (dentist, dental hygienist, physician, nurse practitioner, etc.) is seated in a chair with his/her knees approaching those of the caretaker. The child is then gently laid down on the “table” formed by the laps of the health care provider and the caretaker. The caretaker can assist by holding the child’s hands during the assessment. The child’s head should be in the health care provider’s lap. This non-traumatic and efficient method of performing a dental assessment on very young children can be used successfully in many settings.



**Knee-to-Knee position**

**2. Determine risk** by utilizing the Caries Risk Assessment Tool (CAT) found on page 6. The American Academy of Pediatric Dentistry developed CAT for both dental and non-dental personnel. The American Academy of Pediatrics states that pediatricians should use CAT to determine caries risk potential and refer to a dental provider.

**3. Develop a treatment plan** or make recommendations based on the findings from the visual screening, which could include:

- instructing parents to lift the child’s lip to check the upper front teeth for white spots monthly
- applying fluoride varnish (to high-risk children)

## **FLUORIDE VARNISHES**

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Fluoride varnishes contain a concentrated dose of sodium fluoride (5% NaF) which, when placed on the teeth topically, facilitates remineralization of the enamel. The application of fluoride varnish on the teeth of high risk infants/toddlers is warranted as a strong preventive tool. It is a non-invasive procedure which disrupts the progression from demineralization to cavitation and reverses incipient lesions.

While the use of fluoride has long been accepted as a highly effective caries prevention agent, delivery of topical fluoride to very young children has not been practical with gels or mouth rinse. Fluoride varnish finally provides an acceptable system of topical delivery to this population. It sets almost immediately on contact with saliva leaving little concern about ingestion. Its mild taste and quick application make it a nearly ideal product.

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The CDC states that the quality of evidence for the efficacy of fluoride varnish in preventing and controlling dental caries in children to be Grade I (highest quality).<sup>7</sup> The CDC further states, “A prescribing practitioner can use fluoride varnish for caries prevention as an ‘off-label’ use, based on professional judgment”.<sup>8</sup>

The following is a reprint of the recommendations from the American Academy of Pediatric Dentistry:<sup>9</sup>

**Purpose: The American Academy of Pediatric Dentistry affirms that fluoride varnish continues to be investigated as a caries-preventive agent due to the decline in dental caries observed with its use in many European countries.**

**Background: The increased emphasis on prevention-based dentistry has led to the development of new caries-prevention products. Fluoride varnish has been used extensively in Europe and Canada for approximately twenty-five years. While numerous randomized clinical trials have been conducted outside the United States and have shown the efficacy and safety of fluoride varnishes as a caries-preventive agent, there have not been enough clinical trials conducted in the United States for the U.S. Food and Drug administration (FDA) to approve fluoride varnish as a caries-preventive agent. However, in 1994, the FDA did approve fluoride varnishes as a medical device to be used as cavity liners and desensitizing agents.**

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<sup>7</sup> Centers for Disease Control and Prevention. Recommendations for Using Fluoride to Prevent and Control Dental Caries in the United States. MMWR 2001;50 (No. RR-14) [p.21]

<sup>8</sup> Centers for Disease Control and Prevention. Recommendations for Using Fluoride to Prevent and Control Dental Caries in the United States. MMWR 2001;50 (No. RR-14) [p.18]

<sup>9</sup> American Academy of Pediatric Dentistry, Policy Statement on Fluoride Varnishes, Originated May 2001, Council on Clinical Affairs

Because of the published data documenting the effectiveness and safety of fluoride varnish, many dental professionals are using fluoride varnish in an “off-label” manner as a topical fluoride to prevent caries in susceptible individuals.

## FLUORIDE VARNISH APPLICATION

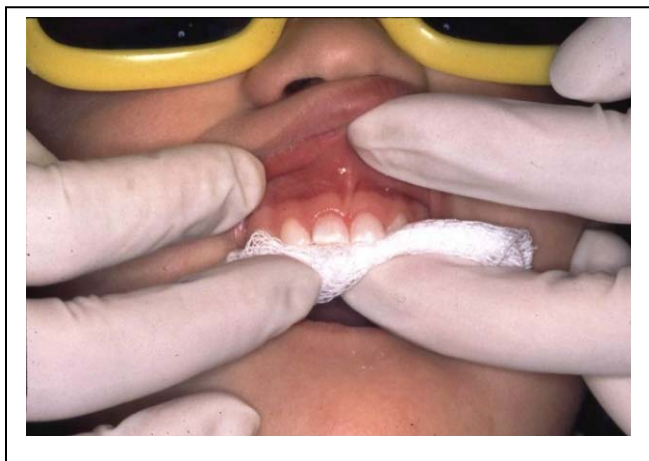
### Armamentarium

- Mouth mirror
- Gloves
- 2x2 gauze sponges
- Infant-size toothbrush
- Disposable brush (“Bend-a-brush”)
- Disposable dappen dish
- Two (2) drops fluoride varnish **OR**
- Pre-measured fluoride varnish units

Fluoride varnish should be available from your local supplier. For additional product ordering information and references to studies on fluoride varnish, visit the California Dental Association’s website at: [www.cda.org/member/pubs/journal/jour0303/donly](http://www.cda.org/member/pubs/journal/jour0303/donly)

### Procedure

- Assume the knee-to-knee position and have the caretaker lower the child’s head onto your lap.
- Dry the teeth to be treated with the 2x2 gauze sponges.
- Using the applicator brush, apply fluoride varnish to all surfaces of the teeth. The varnish will set upon contact with saliva.
- Advise the caretaker that the varnish is slightly yellow and that it may be visible for a few hours. Request that the caretaker not resume brushing until the next day or a minimum of 4-6 hours, to preserve the varnish coating as long as possible.
- In high-risk populations, it is generally recommended that fluoride varnish be re-applied at intervals of 3-6 months.



**Fluoride varnish application**

## AAPD Caries-risk Assessment Tool (CAT)

Caries-risk indicators	Low risk	Moderate risk	High risk
<b>Clinical conditions</b>	<ul style="list-style-type: none"> <li>• No carious teeth in past 24 months</li> <li>• No enamel demineralization (enamel caries "white-spot lesions")</li> <li>• No visible plaque; no gingivitis</li> </ul>	<ul style="list-style-type: none"> <li>• Carious teeth in the past 24 months</li> <li>• 1 area of enamel demineralization (enamel caries "white-spot lesions")</li> <li>• Gingivitis*</li> </ul>	<ul style="list-style-type: none"> <li>• Carious teeth in the past 12 months</li> <li>• More than 1 area of enamel demineralization (enamel caries "white-spot lesions")</li> <li>• Visible plaque on anterior (front) teeth</li> <li>• Radiographic enamel caries</li> <li>• High titers of mutans streptococci</li> <li>• Wearing dental or orthodontic appliances†</li> <li>• Enamel hypoplasia‡</li> </ul>
<b>Environmental characteristics</b>	<ul style="list-style-type: none"> <li>• Optimal systemic and topical fluoride exposure§</li> <li>• Consumption of simple sugars or foods strongly associated with caries initiation   primarily at mealtimes</li> <li>• High caregiver socioeconomic status¶</li> <li>• Regular use of dental care in an established dental home</li> </ul>	<ul style="list-style-type: none"> <li>• Suboptimal systemic fluoride exposure with optimal topical exposure§</li> <li>• Occasional (ie, 1-2) between-meal exposures to simple sugars or foods strongly associated with caries</li> <li>• Midlevel caregiver socioeconomic status (ie, eligible for school lunch program or SCHIP)</li> <li>• Irregular use of dental services</li> </ul>	<ul style="list-style-type: none"> <li>• Suboptimal topical fluoride exposure§</li> <li>• Frequent (ie, 3 or more) between-meal exposures to simple sugars or foods strongly associated with caries</li> <li>• Low-level caregiver socioeconomic status (ie, eligible for Medicaid)</li> <li>• No usual source of dental care</li> <li>• Active caries present in the mother</li> </ul>
<b>General health conditions</b>			<ul style="list-style-type: none"> <li>• Children with special health care needs#</li> <li>• Conditions impairing saliva composition/flow**</li> </ul>

\*Although microbial organisms responsible for gingivitis may be different than those primarily implicated in dental caries, the presence of gingivitis is an indicator of poor or infrequent oral hygiene practices and has been associated with caries progression

†Orthodontic appliances include both fixed and removable appliances, space maintainers and other devices that remain in the mouth continuously or for prolonged time intervals and which may trap food and plaque, prevent oral hygiene, compromise access of tooth surfaces to fluoride or otherwise create an environment supporting dental caries initiation

‡Tooth anatomy and hypoplastic defects such as poorly formed enamel, developmental pits and deep pits may predispose a child to develop dental caries

§Optimal systemic and topical fluoride exposure is based on the American Dental Association/American Academy of Pediatrics guidelines for exposure from fluoride drinking water and/or supplementation<sup>4</sup> and use of a fluoride dentifrice

||Examples of sources of simple sugars include carbonated beverages, cookies, cake, candy, cereal, potato chips, french fries, corn chips, pretzels, breads, juices and fruits. Clinicians using caries-risk assessment should investigate individual exposures to sugars known to be involved in caries initiation.

¶National surveys have demonstrated that children in low-income and moderate-income households are more likely to have dental caries and more decayed or filled primary teeth than children from more affluent households. Also, within income levels, minority children are more likely to have caries. Thus, sociodemographic status should be viewed as an initial indicator of risk that may be offset by the absence of other risk indicators.

#Children with special health care needs are those who have or are at increased risk for a chronic physical, developmental, behavioral or emotional condition and who also require health and related services of a type or amount beyond that required by children generally<sup>9</sup>

\*\*Alteration in salivary flow can be the result of congenital or acquired conditions, surgery, radiation, medication or age-related changes in salivary function. Any condition, treatment or process known or reported to alter saliva flow should be considered an indication of risk unless proven otherwise.

**Arizona Academy of Pediatric Dentists  
Oral Health Care For Infants and Toddlers  
Policy Statement, October 13, 2001**

The Arizona Academy of Pediatric Dentists represents the interests of the child patient in dentistry by promoting, maintaining, and improving the oral health of the children of Arizona.

The Academy recognizes that:

- Early Childhood Caries (ECC) is a complex, multifactorial disease and significant health problem, especially in the underserved and indigent populations
  
- an interdisciplinary approach is needed to decrease the prevalence of early childhood caries

The Academy endorses:

- Early assessment
  1. oral examinations within six months of the eruption of the first primary tooth and not later than twelve months of age
  2. the inclusion of oral health education in the anticipatory guidance provided by medical and dental professionals
  3. the referral of children by twelve months of age to dentists by other health professionals, in accordance with the recommendations of the American Dental Association and American Academy of Pediatric Dentistry
  
- Prevention and treatment
  1. the education and training of general dentists and other health professionals in an effective non-traumatic method of dental assessment for children less than three years of age
  2. the education and training of general dentists, medical professionals, and the public in the recognition of white spot lesions as the earliest sign of the caries process
  3. the use of fluoride varnish applications as an effective measure for the prevention of dental caries
  4. the education and training of general dentists in an immediate intervention method, alternative restorative treatment (ART), for children less than three years of age in which traditional cavity preparation and restoration are not feasible



# First Dental Visit by Age One

For continuing education credit, return completed quiz by fax (602-364-1494) or mail to Office of Oral Health, 150 N. 18<sup>th</sup> Ave, Rm. 302, Phoenix, AZ 85007. A certificate will be mailed to you.

Name \_\_\_\_\_ Address \_\_\_\_\_

Phone \_\_\_\_\_ Fax \_\_\_\_\_ email \_\_\_\_\_

Please circle one: General Dentist Pediatric Dentist Hygienist Other: \_\_\_\_\_

1. What percentage of 3 year old children in Arizona have been found to have dental caries?  
A. 10%                      B. 35%                      C. 75%
2. Early Childhood Caries (ECC) is found only in low socio-economic populations.  
A. True                      B. False
3. The level of mutans streptococci in the mother's mouth does not affect the rate of infectivity in the infant.  
A. True                      B. False
4. White spot lesions are the beginning of a carious lesion and should be restored immediately.  
A. True                      B. False
5. The CAT tool is intended for use by both dental and non-dental providers.  
A. True                      B. False
6. Mutans streptococci infection in young children affects development of early childhood caries, but has little or no affect on the level of caries in adult life.  
A. True                      B. False
7. An explorer should be used to determine whether a white spot lesion is cavitated.  
A. True                      B. False
8. One risk indicator in any area of the "high risk" category places a child at "high risk".  
A. True                      B. False
9. Parents of young children should be informed of the "lift the lip" technique in order to look for white spots and early signs of dental decay.  
A. True                      B. False
10. The application of fluoride varnish is a safe and effective method to apply topical fluoride to prevent caries in infants and young children.  
A. True                      B. False

Date: \_\_\_\_\_

Patient Name: \_\_\_\_\_

**AAPD Caries-risk Assessment Tool (CAT)\***

<b>Caries-risk Indicators</b>	<b>Low risk</b>	<b>Moderate risk</b>	<b>High risk</b>
<b>Clinical conditions</b>	<input type="checkbox"/> No carious teeth in past 24 mos.	<input type="checkbox"/> Carious teeth in past 24 mos.	<input type="checkbox"/> Carious teeth in past 12 mos.
	<input type="checkbox"/> No enamel demineralization	<input type="checkbox"/> 1 area of enamel demineralization	<input type="checkbox"/> More than 1 area enamel <input type="checkbox"/> Demineralization (enamel caries “white-spot lesion”)
	<input type="checkbox"/> No visible plaque; no gingivitis	<input type="checkbox"/> Gingivitis	<input type="checkbox"/> Visible plaque on anterior (front) teeth
			<input type="checkbox"/> Radiographic enamel caries
			<input type="checkbox"/> High titers of mutans Streptococci
			<input type="checkbox"/> Wearing dental or orthodontic appliances
<input type="checkbox"/> Enamel hypoplasia			
<b>Environmental characteristics</b>	<input type="checkbox"/> Optimal systemic and topical fluoride exposure	<input type="checkbox"/> Suboptimal systemic fluoride exposure with optimal topical exposure	<input type="checkbox"/> Suboptimal topical fluoride exposure
	<input type="checkbox"/> Consumption of simple sugars or foods strongly associated with caries initiation primarily at meal times.	<input type="checkbox"/> Occasional (ie, 1-2) between-meal exposures to simple sugars or foods strongly associated with caries	<input type="checkbox"/> Frequent (ie, 3 or more) between-meal exposures to simple sugars or foods strongly associated with caries
	<input type="checkbox"/> High caregiver socioeconomic status	<input type="checkbox"/> Midlevel caregiver socioeconomic status (ie eligible for school lunch program or SCHIP)	<input type="checkbox"/> Low-level caregiver socioeconomic status (ie, eligible for Medicaid)
	<input type="checkbox"/> Regular use of dental care in an established dental home	<input type="checkbox"/> Irregular use of dental services	<input type="checkbox"/> No usual source of dental care
<input type="checkbox"/> Active caries present in the mother			
<b>General health conditions</b>			<input type="checkbox"/> Children with special health care needs
			<input type="checkbox"/> Conditions impairing saliva composition/flow

\*AAPD, Council on Clinical Affairs, [www.aapd.org/pdf/policycariesriskassessment tool.pdf](http://www.aapd.org/pdf/policycariesriskassessment%20tool.pdf)