



Pediatric Clips

Early childhood caries — Gordon W. Womack, DDS

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Pediatric Clips from The Children's Medical Center are quick reviews of common pediatric conditions.

The Children's Medical Center is the region's pediatric referral center for a 20-county area. As the only facility in the region with a full-time commitment to pediatrics, Children's offers a wide range of services in general pediatrics as well as in 35 subspecialty areas for infants, children and teens. We welcome your inquiries about services available — call 937-641-3666 or e-mail marketing@childrensdayton.org.



All kids need special care —
All kids need Children's.

CASE: TWO-YEAR-OLD WITH CARIOUS LESIONS

Vanessa is a two-year-old female that presented to the dental clinic with a white spot on her front tooth.

Although Vanessa's mother does not breast-feed her at night,

she does give Vanessa a bottle of orange juice to take to bed every other evening. Vanessa used to brush her teeth at night but now refuses. Her mother was tested for the level of *mutan streptococci* in her saliva. The level was too low to be

the cause of the white spot on Vanessa's tooth.

A history of going to bed with a bottle of juice and lack of oral hygiene was found to be the cause of the incipient lesion, white spot.

CASE DISCUSSION

Early childhood caries (ECC) has been known in the past as baby bottle tooth decay or nursing caries. ECC is defined as "the presence of one or more decayed (noncavitated or cavitated lesions), missing due to caries, or filled tooth surfaces" in any primary tooth in a child 71 months of age or younger.¹ In children younger than three years of age, any sign of smooth surface caries is indicative of severe early childhood caries (S-ECC).

Cariou lesions are produced from the interaction of cariogenic microorganisms (*mutans streptococci*), fermentable carbohydrates (sucrose) and teeth.² Given time, these variables induce incipient carious lesions that progress. Frequent consumption of liquids containing fermentable carbohydrates such as juice, milk, formula and soda increases the risk of caries due to prolonged contact between sugars in the consumed liquid and cariogenic bacteria on the susceptible teeth.

Frequent bottle-feeding at night, breast-feeding on demand and extended and repetitive use of no-spill training cups are associated with, but not consistently implicated in, ECC. The major reservoir from which infants acquire *mutan streptococci*

is their mothers' saliva.² Infants and toddlers whose mothers have high levels of *mutan streptococci*, a result of untreated caries, are at a greater risk of acquiring the organism than the children whose mothers have low levels.

Consequently, it has been shown that suppressing maternal reservoirs of *mutan streptococci* via dental rehabilitation and antimicrobial treatments can prevent or delay infant inoculation.

OUTCOMES

1. Higher risk of new carious lesions in both the primary and permanent teeth.
2. Increased hospitalizations and emergency room visits.
3. Increased treatment costs and time.
4. Insufficient physical development — especially in height and weight.
5. Increased school absences and restricted activity.
6. Diminished ability to learn.
7. Diminished quality of life.

PREVENTION

To decrease the risks of this potentially devastating pattern of caries, health care providers should discourage inappropriate feeding practices of infants and toddlers, and encourage preventive measures.

1. Infants should not be put to sleep with a bottle. Nocturnal breast-feeding should be avoided after the first primary tooth begins to erupt.
2. Parents should encourage infants to drink from cups as they approach their first birthday.
3. Repetitive consumption of any liquid containing fermentable carbohydrates from a bottle or no-spill training cup should be avoided.
4. Oral hygiene measures should be implemented by the time the first primary tooth erupts.
5. An oral health consultation visit is recommended within six months of first tooth eruption and no later than 12 months of age.
6. An attempt should be made to access and decrease the mother's/primary caregiver's *mutan streptococci* levels to decrease the transmission of cariogenic bacteria and lessen the infant's or child's risk of developing ECC.

Continued on the reverse side.

Continued from the front.

TREATMENT

Once an incipient lesion has occurred it is advisable to have the parents:

1. Increase oral hygiene. Brush at least twice daily with one being at bedtime.
2. Decrease the amount and frequency of consumption of the fermentable carbohydrates.
3. Have the child be evaluated by a pediatric dentist. He may prescribe a topical fluoride to be used daily.
4. Follow-up with the pediatric dentist or pediatrician every three to four months to monitor the carious activity.

REFERENCES

1. Kaste LM, Dryry TF, Horowitz AM, Beltran E. An Elevation of NHANES III Estimates of early childhood caries. *J Public Health Dent.* 1999; 59:198-200.
2. Loesche WJ. *Dental caries: a treatable infection.* Grand Haven, MI: Automated Diagnostic Documentation, Inc; 1993.

FEATURED SPECIALIST



Gordon W. Womack, DDS, is the director of dentistry and oral surgery at The Children's Medical Center of Dayton. He is **board certified in pediatric dentistry** and is the 1992 recipient of the Ohio Dental Association Humanitarian Award for his work to ensure dental services are available for at-risk children and families. Dr. Womack is a graduate of the University of Tennessee College of Dentistry.

DENTISTRY AND ORAL SURGERY

Pediatric dentists at Dayton Children's provide comprehensive preventive and therapeutic oral health care for infants,

children and adolescents, including those with special health care needs. Services include routine check-ups and restorations and treatments requiring sedation. Conditions treated include cleft lip, gingival problems and traumatic dental injuries.

CONTACT INFORMATION

To speak to Dr. Womack or to make a referral, call dentistry and oral surgery at **937-641-3455**.



For further information about The Children's Medical Center or its specialists contact us at 937-641-3666 or marketing@childrensdayton.org.



One Children's Plaza
Dayton, Ohio 45404-1815

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