Policy on baby bottle tooth decay (BBTD)/early childhood caries (ECC); classifications, consequences and preventive strategies

Originating Group
A collaborative effort of the American Academy of Pediatric Dentistry’s Liaison with Other Groups Committee and the American Academy of Pediatrics Review Council
Council on Clinical Affairs

Adopted
1978
Revised

Purpose
The American Academy of Pediatric Dentistry (AAPD) recognizes baby bottle tooth decay/early childhood caries (formerly termed baby bottle tooth decay) as a significant public health problem. The AAPD encourages oral health care providers and caregivers to implement simple preventive practices that can decrease a child’s risks of developing this devastating disease.

Methodology
This policy is based on a review of the current pediatric dental, medical and public health literature related to early childhood caries, including the proceedings of the 1997 Conference on Early Childhood Caries, Bethesda, MD. The literature includes studies that used sound scientific methodology, were reported in refereed journals and are accepted by the dental profession as state of the art in caries causes and prevention. The literature on the consequences of early childhood caries is based on both prospective and retrospective clinical studies that followed accepted clinical protocols.

Background/literature review
Early childhood caries (ECC) is defined as “the presence of 1 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. In children younger than 3
years of age, any sign of smooth-surface caries is indicative of severe early childhood
caries (S-ECC). From ages 3 through 5, 1 or more cavitated, missing (due to caries) or
filled smooth surfaces in primary maxillary anterior teeth or a decayed, missing or filled
score of >4 (age 3), >5 (age 4) or >6 (age 5) surfaces constitutes S-ECC.4

Carious lesions are produced from the interaction of 3 variables: cariogenic
microorganisms (mutans streptococci), fermentable carbohydrates (sucrose) and teeth
(non-shedding tooth surfaces).5 Given the proper time, these variables induce incipient
carious lesions that continue to progress.5 Frequent consumption of liquids containing
fermentable carbohydrates (e.g., juice, milk, formula, soda) increases the risk of dental
caries due to prolonged contact between sugars in the consumed liquid and cariogenic
bacteria on the susceptible teeth.6 Poor feeding practices without appropriate
preventive measures can lead to a distinctive pattern of caries in susceptible infants and
toddlers, commonly known as baby bottle tooth decay (BBTD), a form of severe early
childhood caries (S-ECC). Frequent bottle feeding at night, breast-feeding on demand
and extended and repetitive use of a no-spill training cup are associated with, but not
consistently implicated in, ECC. Children experiencing caries as infants or toddlers have
a much greater probability of subsequent caries in both the primary and permanent
dentitions. The major reservoir from which infants acquire mutans streptococci is their
mothers’ saliva.5,7 The success of the transmission and resultant colonization of maternal
mutans streptococci depends largely on the magnitude of the inoculum.8 Infants and
toddlers whose mothers have high levels of mutans streptococci, a result of untreated
caries, are at greater risk of acquiring the organism than children whose mothers have
low levels. Consequently, it has been shown that suppressing maternal reservoirs of
mutans streptococci via dental rehabilitation and antimicrobial treatments can prevent
or delay infant inoculation.9

Consequences of early childhood caries include a higher risk of new carious lesions in
both the primary and permanent dentitions,10-15 hospitalizations and emergency room
visits,16-19 increased treatment costs and time,20,21 insufficient physical development
(specially in height/weight),22,23 loss of school days and increased days with restricted
activity,24-26 diminished ability to learn,24,27-30 and diminished oral health-related quality
of life.31-34

Policy statement

The AAPD recognizes a distinctive pattern of caries known as BBTD, a form of S-ECC
early childhood caries associated with frequent or prolonged consumption of liquids
containing fermentable carbohydrates. To decrease the risks of this potentially
devastating nursing pattern of caries, the AAPD discourages inappropriate feeding
practices of infants and toddlers and encourages appropriate preventive measures.
These include:

1. Infants should not be put to sleep with a bottle. Ad libitum nocturnal breast-feeding
should be avoided after the first primary tooth begins to erupt.
2. Parents should be encouraged to have infants drink from a cup as they approach their first birthday. Infants should be weaned from the bottle at 12 to 14 months of age.

3. Repetitive consumption of any liquid containing fermentable carbohydrates from a bottle or no-spill training cup should be avoided. When juices are offered, they should be from a cup.

4. Oral hygiene measures should be implemented by the time of eruption of the first primary tooth.

5. An oral health consultation visit within 6 months of eruption of the first tooth and no later than 12 months of age is recommended to educate parents and provide anticipatory guidance for prevention of dental disease.

6. An attempt should be made to assess and decrease the mother’s/primary caregiver’s mutans streptococci levels to decrease the transmission of cariogenic bacteria and lessen the infant’s or child’s risk of developing ECC.

References


