

Breastfeeding and Oral Health

Background

Breastfeeding is one of the most important activities in infancy and early childhood. More than a nutritional choice, breastfeeding is a parenting choice, with proven benefits for mothers, infants, children, and families. Eighty million babies are born each year—four million in the United States alone—and according to the American Academy of Pediatrics, breastfeeding and human milk are the best choice for every baby with few exceptions.^{1,2}

The benefits of breastfeeding, both for the child and mother, are numerous. The benefits to the infant include ideal nutrition, resistance to infectious diseases, enhanced immune system, physical and developmental growth benefits, and reduced risk of chronic diseases and allergy. Benefits to maternal health include increased physiologic postpartum recovery and reduced long-term risk of obesity, osteoporosis, and breast and ovarian cancers. The improved health of child and mother reduces health care costs.³

Given all of these benefits, the United States Breastfeeding Committee (USBC) joins the U.S. Department of Health and Human Services (HHS) in recommending that infants be exclusively breastfed for six months, and continue to breastfeed for the first year of life and as long afterwards as mutually desired by mother and child.

The Office of the Surgeon General of the United States recently issued a call to action to support breastfeeding. The *HHS Blueprint for Action on Breastfeeding* is the culmination of the efforts of a panel of experts representing 14 federal agencies and 23 health care professional organizations.

The United States Breastfeeding Committee has developed *Breastfeeding in the United States: A National Agenda*, a comprehensive plan for the nation with well-defined implementation strategies to protect, promote, and support breastfeeding.

One of the obstacles to continued breastfeeding beyond six months, as recommended by the HHS Healthy People 2010 goals, is the conflicting information about breastfeeding and oral health. Some dental health experts have stated that early weaning is recommended to promote oral health. This is in conflict with breastfeeding expert recommendations, the statements of the Institute of Medicine and American Academy of Pediatrics, and the health goals of the nation.^{1,2,4,5}

While implementation strategies have been identified and prioritized for breastfeeding in general, specific issues in relation to oral health need to be addressed by a thorough review of the medical and dental research literature regarding oral health in the young child.

This issue paper has been developed to reconcile the traditionally conflicting opinions held by experts in the breastfeeding community with those held by the pediatric oral health community regarding breastfeeding and oral health.

A literature search of current scientific data was conducted and an expert panel was convened to resolve the issues.

The goals were:

- To assure access to comprehensive, current, and culturally appropriate oral health care and services that protect, promote, and support breastfeeding for the first year of life and as long afterwards as mutually desired by mother and child.
- To ensure that breastfeeding is recognized as the normal and preferred method of feeding infants and young children by all oral health practitioners.
- To increase the research with respect to oral health and breastfeeding.
- To promote knowledge of the value of breastfeeding for oral health to both practitioners and the public.

In order to assess the current scientific data regarding oral health and dental caries as related to feeding practices in the first years of life and recommended weaning patterns, a thorough systematic search was conducted of the pediatric and dental literature published in English since 1980. Appropriate controlled studies that met basic scientific accuracy requirements were reviewed thoroughly. These resources include examination of the role of bacteria, nutrition, method of feeding (exclusive or partial breastfeeding), introduction of training cup, and proper oral hygiene practices. There were not adequate numbers that met Cochrane criteria. Reports of laboratory research on the cariogenic properties of human milk, formula, and other liquids given to infants were reviewed and included. The literature search also includes research that addresses the decay potential of human milk.

Literature Review

The Centers for Disease Control and Prevention report that caries is perhaps the most prevalent of infectious diseases in our nation's children.⁶ More than 40% of children have caries by the time they reach kindergarten.⁷ Early childhood caries (ECC) can be a particularly virulent form of caries, beginning soon after tooth eruption, developing on smooth surfaces, progressing rapidly, and having a lasting detrimental impact on the dentition.⁸⁻¹³ This disease affects the general population but is 32 times more likely to occur in infants who are of low socioeconomic status, whose mothers have a low education level, and who consume sugary foods.¹⁴

It had been long assumed that human milk was naturally protective to the teeth. Human milk was associated with similar dental erosion to that of formula and more than that of plain cow milk.¹⁵ Caries in primary teeth can affect a child's growth, result in significant pain and potentially life-threatening infection, and diminish overall quality of life.¹⁶⁻²³ Since physicians, nurses, lactation consultants, and other health care professionals are far more likely to have an opportunity to counsel and educate breastfeeding mothers than dentists, it is essential that they be aware of the infectious pathophysiology and associated risk factors of ECC and make appropriate decisions regarding timely and effective intervention.^{8,24-26}



Caries

Caries is a complex disease caused by an imbalance in physiologic equilibrium between tooth mineral and a biofilm that is produced by communities of normal oral bacteria.^{27,28} Caries results from an overgrowth of specific organisms that are part of normally occurring human oral flora.²⁹ *Streptococcus mutans* and *Lactobacillus* species are considered to be principal indicator organisms of those bacteria responsible for caries.

Human oral flora is site specific, and an infant will not develop stable oral flora until the eruption of the primary teeth at approximately 6 – 30 months of age.^{30,31} The vertical colonization/transmission of *S mutans* from mother to infant is well documented.³² In fact, genotypes of *S mutans* in infants appear identical to those present in mothers in approximately 71% of mother-infant pairs.³³ Additionally, fingerprint genotypes of *S mutans* matched 88% among mother-infant pairs who breastfed.³⁴

The significance of this information becomes focused when considering three points. First, high caries rates occur in families and usually are passed from mother to child, generation to generation.³⁵ The children of mothers with high caries rates have an increased risk of caries.³⁶ Second, approximately 70% of carious lesions are found in 20% of our nation's children.³⁷ Third, modification of the mother's oral flora at the time of the infant's colonization can significantly impact the child's caries rate.^{38,39} Therefore, an early oral health risk assessment and preventive intervention provided by a dentist—beginning ideally at 7–9 months of age and no later than one year of age, in all breastfed infants—affords the opportunity to identify high risk patients, optimize the natural oral colonization process, and control multiple risk factors associated with ECC.

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