

Perinatal and Infant Oral Health Care

Latest Revision

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Abstract

This best practice presents recommendations regarding perinatal and infant oral health care, including caries risk assessment, anticipatory guidance, preventive strategies, and therapeutic interventions. Oral healthcare providers play an invaluable role in optimizing the oral health of infants, particularly through the establishment of a dental home, caries prevention, and management of common oral conditions. Relevant oral findings including developmental cysts, pathognomonic viral and fungal lesions, cleft lip and palate, natal and neonatal teeth, ankyloglossia, and tooth eruption are discussed. The document emphasizes the importance of dental visits during pregnancy and highlights feeding practices and caries risk factors during infancy. Strategies for prevention of early childhood caries, including dietary modifications and use of fluoride, are encouraged. Additional elements of anticipatory guidance addressed are oral hygiene instruction, frequency of dental examinations, consequences of nonnutritive sucking habits, and safety practices to avoid orofacial trauma. Providers may use this document to help frame discussions with expectant and new parents regarding essential aspects of perinatal and infant oral health.

This document was developed through a collaborative effort of the American Academy of Pediatric Dentistry Councils on Clinical Affairs and Scientific Affairs to offer updated information and recommendations regarding perinatal and infant oral health care.

KEYWORDS: ANTICIPATORY GUIDANCE, INFANT ORAL HEALTH, PERINATAL ORAL HEALTH, ORAL HYGIENE INSTRUCTION, CARIES RISK FACTORS, DENTAL HOME

Purpose

The American Academy of Pediatric Dentistry (AAPD) recognizes that perinatal and infant oral health are the foundations upon which preventive education and dental care must be built to enhance the opportunity for a child to have a lifetime free from preventable oral disease. Recognizing that dentists, physicians, allied health professionals, and community organizations must be involved as partners to achieve this goal, the AAPD proposes best practices for perinatal and infant oral health care, including caries risk assessment, anticipatory guidance, preventive strategies, and therapeutic interventions, to be followed by the stakeholders in pediatric oral health.

Method

Recommendations on perinatal and infant oral health care were developed by the Infant Oral Health Subcommittee of the Clinical Affairs Committee and adopted in 1986.¹ The *Guideline on Perinatal Oral Health Care* was originally developed by the Infant Oral Health Subcommittee of the Council on Clinical Affairs and adopted in 2009.² This document is an update of the 2016 merger of those guidelines³ utilizing a search of the PubMed®/MEDLINE database with the terms: infant oral health, infant oral health care, early childhood caries, perinatal, perinatal oral health, and early childhood caries prevention; fields: all; limits: within the last 10 years, humans, English, and clinical trials. The search resulted in 261 papers that were reviewed by title and abstract. From those, papers were selected to update this document. When data did

not appear sufficient or were inconclusive, recommendations were based upon expert and/or consensus opinion by experienced researchers and clinicians.

Background

Role of oral health providers in perinatal and infant oral health care

The perinatal period is the period beginning with the completion of the 20th to 28th week of gestation and ending one to four weeks after birth. The infant period extends to the child's first birthday. Oral health providers have an important role in perinatal and infant oral health care, particularly regarding the establishment of a dental home,⁴ educating new parents, and the timing of a child's first dental visit. Oral health providers need to be knowledgeable regarding the perinatal period and first year of a child's life with respect to common oral conditions, anticipatory guidance, and early dental caries preventive care including oral cleaning, dietary recommendations, and optimal fluoride exposure.

Common oral conditions in newborns and infants

Bohn nodules are small developmental anomalies located along the buccal and lingual aspects of the mandibular and maxillary

ABBREVIATIONS

AAPD: American Academy Pediatric Dentistry. **ECC:** Early childhood caries. **FDA:** U.S. Food and Drug Administration. **MS:** Mutans streptococci.

ridges and in the hard palate of the neonate. These lesions arise from remnants of mucous gland tissue. Dental lamina cysts may be found along the crest of the mandibular and maxillary ridges of neonates. These lesions arise from epithelial remnants of the dental lamina. Epstein pearls are keratin-filled cysts found in the mid-palatal raphe at the junction of the hard and soft palates. These three developmental remnants generally disappear shortly after birth, and no treatment is necessary.⁵ Fordyce granules are very common aberrant yellow-white sebaceous glands most commonly on the buccal mucosa or lips. No management is needed as these lesions are inconsequential and resolve on their own.⁵ Ankyloglossia is characterized by an abnormally short lingual frenum that can hinder the tongue movement and may interfere with feeding or speech. The frenum might spontaneously lengthen as the child gets older. Surgical correction, on an individual basis, may be indicated for functional limitations and symptomatic relief.⁶

Oropharyngeal candidiasis appears as white plaques covering the oropharyngeal mucosa which, if removed, leaves an inflamed underlying surface. Candidiasis is usually self-limiting in the healthy newborn infant, but topical application of nystatin to the oral cavity of the baby and to the nipples of breast-feeding mothers may have benefit.⁵ Primary herpetic gingivostomatitis presents with oral features such as erythematous gingiva, mucosal hemorrhages, and clusters of small vesicles throughout the mouth. Somatic signs may include fever, malaise, lymphadenopathy, and difficulty with eating and drinking. Usually, symptoms regress within two weeks, and lesions heal without scarring.⁵ Fluids should be encouraged to prevent dehydration, and analgesics may make the child more comfortable.⁵ Oral acyclovir may be beneficial in shortening the duration of symptoms.⁷ Caution by practitioners and parents is necessary to prevent autoinoculation or transmission of infection to the eyes, other body parts, and other individuals. Other less common viral conditions with oral symptoms in infants are herpangina and hand-foot-mouth disease.⁵

The prevalence of cleft lip with or without cleft palate in 2004-2006 was 10.6 per 10,000 live births in the U.S. and for cleft palate alone was 6.4 per 10,000 live births in the U.S.⁸ Cleft lip may vary from a small notch in the vermilion border to a complete separation involving skin, muscle, mucosa, dentition, and bone. Clefts may be unilateral or bilateral and may involve the alveolar ridge. Isolated cleft palate occurs in the midline and may involve only the uvula or may extend into or through the soft and hard palates to the incisive foramen. Rehabilitation for the child with a cleft lip or palate may require years of specialized treatment by a cleft lip/palate team. Surgical closure of a cleft lip usually is performed around three months of age; closure of the palate usually occurs around one year.⁵

Dental eruption (teething)

Natal teeth are present at birth, whereas neonatal teeth erupt in the first month of life. Attachment of natal and neonatal

teeth generally is limited to the gingival margin due to little root formation or bony support. These teeth may be a supernumerary or prematurely erupted primary tooth. Natal or neonatal teeth occasionally result in pain and refusal to feed and can produce maternal discomfort because of abrasion or biting of the nipple during nursing. Ulceration, bleeding, and discomfort of the tongue due to its repetitive rubbing across a natal tooth during swallowing and movement is called Riga-Fede disease.⁵ If the tooth is mobile with a danger of detachment and aspiration, extraction may be warranted. Decisions regarding extraction of prematurely erupted primary teeth and smoothing the incisal edge should be made on an individual basis.

Eruption of teeth (teething) can lead to intermittent localized discomfort, irritability, low-grade fever, and excessive salivation; however, many children have no apparent difficulties. Treatment of symptoms includes oral analgesics and teething rings for the child to ‘gum’.⁵ Use of topical anesthetic or homeopathic remedies to relieve discomfort should be avoided due to potential harm of these products in infants. Because of the risk of methemoglobinemia, benzocaine use is contraindicated in children younger than two years of age.⁹

Pregnancy and the perinatal period

The perinatal period plays a crucial role for the well-being of pregnant women and the health and well-being of their newborn children.¹⁰ Mothers’ poor oral health is associated with poor oral health of their offspring.¹¹ Yet, many women do not seek dental care during their pregnancy, and those who do often confront unwillingness of dentists to provide care.¹² A systematic review has shown the efficacy of prenatal dental education and preventive therapies in reducing Mutans streptococci (MS) in children.¹³ Physicians, nurses, and other health care professionals, when aware of the risk factors for dental caries, can help new parents make appropriate decisions regarding timely and effective oral health interventions for their newborns.¹⁴

Some medications may pose a risk to infants during the perinatal period, lactating mothers, and women and men of reproductive potential. Current U.S. Food and Drug Administration (FDA) recommendations can assist health care providers when using in-office, prescribed, and over-the-counter medications for these individuals.¹⁵ While in 2020 the FDA recommended that dental amalgam should be avoided in pregnant women, women planning to become pregnant, women who are nursing, and children under the age of six¹⁶, it is important to emphasize that dental visits during pregnancy are safe, effective, and should be encouraged.¹⁷

Newborns and infants frequently have non-nutritive habits, such as digit sucking or using a pacifier. Prolonged digit sucking can cause flaring of the maxillary incisor teeth, an open bite, and a posterior crossbite.¹⁸ However, there should be little concern about the effects of such oral habit during infancy.

Diet for newborns and infants

Benefits of breastfeeding in a child's first year of life are clear¹⁹; however, breastfeeding and baby bottle beyond 12 months, especially if frequent and/or nocturnal, are associated with ECC²⁰. Allowing a child to drink from a bottle, transportable covered cup, open cup, or box of juice throughout the day may be harmful.²¹ Importantly, frequent consumption of free sugars (i.e., sugars added to food and beverages and sugars naturally present in honey, syrups, fruit juices and fruit juice concentrates) promotes the carious process.²² Cohort studies provide evidence that two key characteristics of perinatal/infant dietary practices are critical to prevent dental caries: the age at which sugar is introduced to a child and the frequency of its consumption.^{23,24} The American Heart Association recommends that sugar in foods and drink be avoided by children under two years.²⁵ Additionally, the American Academy of Pediatrics recommends that 100 percent fruit juice not be introduced before 12 months of age and be limited to no more than four ounces a day for children between the ages of one and three years.²¹

Dental caries risk in newborns and infants

Early childhood caries (ECC) is defined as the presence of one or more decayed (non-cavitated or cavitated lesions), missing or filled (due to caries) surfaces, in any primary tooth of a child under six years of age.²⁶ ECC, like other forms of caries, is a bacterial-mediated, sugar-driven, multifactorial, dynamic disease that results in the phasic demineralization and remineralization of dental hard tissues.²⁷ Traditional microbial risk markers for ECC include acidogenic-aciduric bacterial species, namely *MS* and *Lactobacillus* species.²⁸ *MS* may be transmitted vertically from caregiver to child through salivary contact, affected by the frequency and amount of exposure.²⁹ Horizontal transmission (e.g., between other members of a family or children in daycare) also occurs.³⁰ Dental caries in primary teeth may lead to chronic pain, infections, and other morbidities. ECC has major impact on the quality of life of children and their families and is an unnecessary health and financial burden to society.²⁷

Prevention for ECC needs to begin in infancy. Physicians, nurses, and other health care workers may have more opportunities to educate the parent/caregiver than dental professionals because of the frequency of contact with the family in the child's first year of life.³¹ Therefore, they need to be aware of caries risk and protective factors and use this information to promote primary care preventive messages that include: limiting sugar intake in foods and drink; avoiding night-time bottle feeding with milk or drinks containing sugars; avoiding baby bottle usage and breastfeeding beyond 12 months, especially if frequent and/or nocturnal; and having the child's teeth brushed twice daily with a smear of fluoridated toothpaste.³² Additionally, for children who are at high risk for dental caries, professionally-applied fluoride varnish and dietary fluoride supplements (for infants living in non-fluoridated areas) may be part of an individualized

preventive plan.³³ However, a growing number of caregivers are hesitant about professionally-applied topical fluorides.³⁴ Fluoride hesitancy mirrors vaccination hesitancy observed in pediatric medicine.³⁵ Inaccurate information about fluoride may be shared among caregivers within online social networks.³⁶

Anticipatory guidance

Anticipatory guidance in the perinatal and infant period includes assessment of any growth and development considerations that the parents should be aware of or that need referral to the child's medical provider.³⁷ Assessment of caries risk should be considered when counselling the parents regarding the child's fluoride exposure which includes consuming optimally-fluoridated water, frequency of brushing with the appropriate quantity of fluoridated toothpaste, and need for professional topical fluoride applications.³⁸ Anticipatory guidance during this infant period also entails oral hygiene instruction, dietary counselling regarding sugar consumption, frequency of periodic oral examinations³⁷, and information regarding non-nutritive habits that, if prolonged, may result in flaring of the maxillary incisor teeth, an open bite, and a posterior crossbite.¹⁸ Counselling regarding safety and prevention of orofacial trauma would include discussions of play objects, pacifiers, car seats, electrical cords, and injuries due to falls when learning to walk.

Recommendations

1. Advise expecting and new parents regarding the importance of their own oral health and the possible transmission of cariogenic bacteria from parent/primary caregiver to the infant.
2. Encourage establishment of a dental home that includes medical history, dental examination, risk assessment, and anticipatory guidance for infants by 12 months of age.
3. Provide caries preventive information regarding: high frequency sugar consumption; brushing twice daily with an optimal amount fluoridated toothpaste; safety and efficacy of optimally-fluoridated community water; and, for children at risk for dental caries, fluoride varnish and dietary fluoride supplements (if not consuming optimally-fluoridated water).
4. Assess caries risk to facilitate the appropriate preventive strategies as the primary dentition begins to erupt.
5. Provide information to parents regarding common oral conditions in newborns and infants, nonnutritive oral habits (e.g., digit sucking, use of a pacifier), teething (including use of analgesics and avoidance of topical anesthetics), growth and development, and orofacial trauma (including play objects, pacifiers, car seats, electric cords, and falls when learning to walk).
6. When ankyloglossia results in functional limitations or causes symptoms, the need to surgical intervention should be assessed on an individual basis.

7. When a patient presents with a prematurely erupted primary tooth (i.e., natal or neonatal tooth), decisions regarding intervention should be individualized, based on the interference with feeding, the risk of detachment and aspiration, and any medical or contributing considerations.

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