

Policy on Early Childhood Caries (ECC): Unique Challenges and Treatment Options

Latest Revision

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Purpose

The American Academy of Pediatric Dentistry (AAPD), to promote appropriate, quality oral health care for infants and children with early childhood caries (ECC), must educate the health community and society about the unique challenges and management of this disease, including the need for advanced preventive, restorative, and behavioral guidance techniques.

Methods

This policy was developed by the Council on Clinical Affairs and adopted in 2000.¹ This document is a revision of the previous version, last revised in 2016.² Electronic and hand searches of English written articles in the dental and medical literature within the last 10 years were conducted using the search terms infant oral health, infant oral health care, and early childhood caries. When information from these articles did not appear sufficient or was inconclusive, policies were based upon expert and/or consensus opinion by experienced researchers and clinicians.

Background

Epidemiologic data from a 2011-2012 national survey clearly indicate that ECC remains highly prevalent in poor and near poor United States preschool children.³ For the overall population of preschool children, the prevalence of ECC, as measured by decayed and filled tooth surfaces (dfs), is unchanged from previous surveys, but the filled component (fs) has greatly increased, indicating that more treatment is being provided.³ The consequences of ECC often include a higher risk of new caries lesions in both the primary and permanent dentitions^{4,5}, hospitalizations and emergency room visits^{6,7}, high treatment costs⁸, loss of school days⁹, diminished ability to learn¹⁰, and reduced oral health-related quality of life¹¹.

Because restorative care to manage ECC in young children often requires the use of sedation and general anesthesia with its associated high costs and possible health risks,¹² and because there is high recurrence of lesions following the procedures,¹³ more emphasis now is placed on prevention and arrestment of the disease processes. Approaches include methods that have been referred to as 1) chronic disease management in combination with 2) active surveillance and 3) minimal intervention.

Chronic disease management includes parent engagement to facilitate and promote preventive measures while encouraging the identification and reduction of individual risk factors. The

aim is to sustain oral health in the long term.^{14,15} Active surveillance emphasizes careful monitoring of caries progression and prevention programs (e.g., frequent fluoride varnish applications) in children with incipient lesions.^{16,17} Minimal intervention approaches includes caries arrest with silver diamine fluoride¹⁸, interim therapeutic restorations (ITR)¹⁹ that temporarily restore teeth in young children until a time when traditional cavity preparation and restoration is possible, and the use of Hall-style crowns²⁰.

Children with known risk factors for ECC should have care provided by a practitioner who has the training and expertise to manage both the child and the disease process. The use of anticariogenic agents, especially twice daily brushing with fluoridated toothpaste and the frequent application of fluoride varnish, may reduce the risk of development and progression of caries. In some children for whom preventive programs are not successful, areas of demineralization and hypoplasia can rapidly develop cavitation and, if untreated, the disease process can rapidly involve the dental pulp, leading to infection and possibly life-threatening fascial space involvement. Such infections may result in a medical emergency requiring hospitalization, antibiotics, and extraction of the offending tooth.²¹ The extent of the disease process as well as the patient's developmental level and comprehension skills affect the practitioner's management decisions. The establishment of a dental home²² when the first tooth erupts is imperative to be able to implement preventive and early intervention treatments before advanced disease becomes established. Definitive restorative treatment in young children, in many cases, can be postponed by use of ITR or silver diamine fluoride treatments.²³ For advanced cases of ECC, the practitioner may need the aid of advanced behavior guidance techniques²⁴ to complete the necessary treatment. Also in such situations, stainless steel crowns often are indicated to restore teeth with large caries lesions, interproximal lesions, and extensive white spot lesions since stainless steel crowns are less likely than other restorations to require retreatment.²⁵ The success of restorations may be influenced by the child's level of cooperation during treatment, and general anesthesia may provide better conditions to perform restorative procedures.

ABBREVIATIONS

AAPD: American Academy of Pediatric Dentistry. **ECC:** Early childhood caries. **ITR:** Interim therapeutic restorations.

Policy statement

The AAPD recognizes the unique and often virulent nature of ECC. Nondental healthcare providers who identify ECC in a child should refer the patient to a dentist for treatment and establishment of a dental home.²² Immediate intervention is indicated, and nonsurgical interventions should be implemented when possible to postpone or reduce the need for surgical treatment approaches. Because children who experience ECC are at greater risk for subsequent caries development, preventive measures (e.g., dietary counseling, reinforcement of toothbrushing with fluoridated toothpaste), more frequent professional visits with applications of topical fluoride, and restorative care are necessary.

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