

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

Review Council

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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 originally developed by the Council on Clinical Affairs and adopted in 2000. This document is a revision of the previous version, revised in 2014. The update used electronic and hand searches of English written articles in the dental and medical literature within the last 10 years using the search terms infant oral health, infant oral health care, and early childhood caries. Recent references to ECC, along with full text, can be found on the Early Childhood Caries Resource Center database (<http://earlychildhoodcariesresourcecenter.elsevier.com>). 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 U.S. preschool children.¹ 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.¹ The consequences of ECC often include a higher risk of new carious lesions in both the primary and permanent dentitions,^{2,3} hospitalizations and emergency room visits,^{4,5} high treatment costs,⁶ loss of school days,⁷ diminished ability to learn,⁸ and reduced oral health-related quality of life.⁹

Because restorative care to manage ECC often requires the use of sedation and general anesthesia with its associated high costs and possible health risks,¹⁰ and because there is high recurrence of lesions following the procedures,¹¹ there now is more emphasis on prevention and arrestment of the disease

processes. Approaches include methods that have been referred to as:

1. Chronic disease management, which includes parent engagement to facilitate preventive measures, and temporary restorations to postpone advanced restorative care;¹²
2. Active surveillance, which emphasizes careful monitoring of caries progression and prevention programs in children with incipient lesions;¹³ and
3. Interim therapeutic restorations (ITR) that temporarily restore teeth in young children until a time when traditional cavity preparation and restoration is possible.¹⁴

Those 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 where 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.¹⁵

The extent of the disease process as well as the patient's developmental level and comprehension skills affect the practitioner's management decisions. Definitive restorative treatment in young children, in many cases, can be postponed by use of ITR or silver diamine fluoride treatments.¹⁶ For advanced cases of ECC, the practitioner may need the aid of advanced behavior guidance techniques to complete the necessary treatment.¹⁷ Also in such situations, stainless steel crowns often are indicated to restore teeth with large carious lesions, interproximal lesions, and extensive white spot lesions since stainless steel crowns are less likely than other restorations to require retreatment.¹⁸ 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. General anesthesia, under certain circumstances, may offer a cost-saving alternative to sedation for children with ECC.¹⁹

Policy statement

The AAPD recognizes the unique and often virulent nature of ECC. Non-dental healthcare providers who identify ECC in a child should refer the patient to a licensed dentist for treatment and establishment of a dental home.²⁰ Immediate intervention is indicated, and non-surgical 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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