

Management Of Early Childhood Caries A Perpetual Challenge To Clinician

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ABSTRACT

The incidence of Early Childhood caries is increasing due to complex behavioral variations among the children; the dental professionals are facing an uphill task to manage this condition in their routine practice. Many treatment protocols have been designed, each one claiming a distinct advantage over the other. Early childhood caries still remains an incompletely managed oral disease leading to prevalence of increased disease load among children.

Keywords: Early childhood caries, Nursing bottle, Prevention.

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INTRODUCTION

Dental caries is the single most common chronic disease of childhood, occurring five times as frequently as asthma and seven times more commonly than hay fevers (1). Dental diseases continue to plague children and, in particular, the very young groups. Dental caries in primary teeth is a preventable and reversible infectious disease process that when left untreated results in pain, bacteremia, high treatment costs, reduced growth and development, speech disorders, and premature tooth loss with its sequelae of compromised chewing, loss of self esteem, and harm to the permanent dentition (2).

The multitude of terms to describe dental caries in children aged 0 to 5 is emblematic of the confusion that exists in the literature. The following expressions are used interchangeably: *Baby bottle tooth decay*, *Early childhood caries*, *Early childhood dental decay*, *Early childhood tooth decay*, *Comforter caries*, *Nursing caries*, *Maxillary anterior caries*, *Rampant caries*, and many more (3).

Some of these designations are used specifically to illustrate the causes of tooth decay in preschool children. Baby bottle tooth decay is used in the literature to identify inappropriate baby bottle use as the main cause of caries disease. Other authors prefer the term *Nursing caries*

because it designates inappropriate bottle use and nursing practices as the causal factors.

However, the term *Early childhood caries* is becoming increasingly popular with dentists and dental researchers alike. This broader term encompasses other, less understood, practices as etiological factors, such as malnutrition, cariogenic childhood foods, and bacterial transmission from mothers or caregivers to children.

Early childhood caries in pre-school children has been discussed extensively in the scientific literature over the past 40 years. A review of the most recent studies shows that the dental community is looking at the problem with renewed interest and that more information is needed in regard to the epidemiology, etiology, diagnosis, prevention and treatment of caries in children aged 0 to 5 years (4).

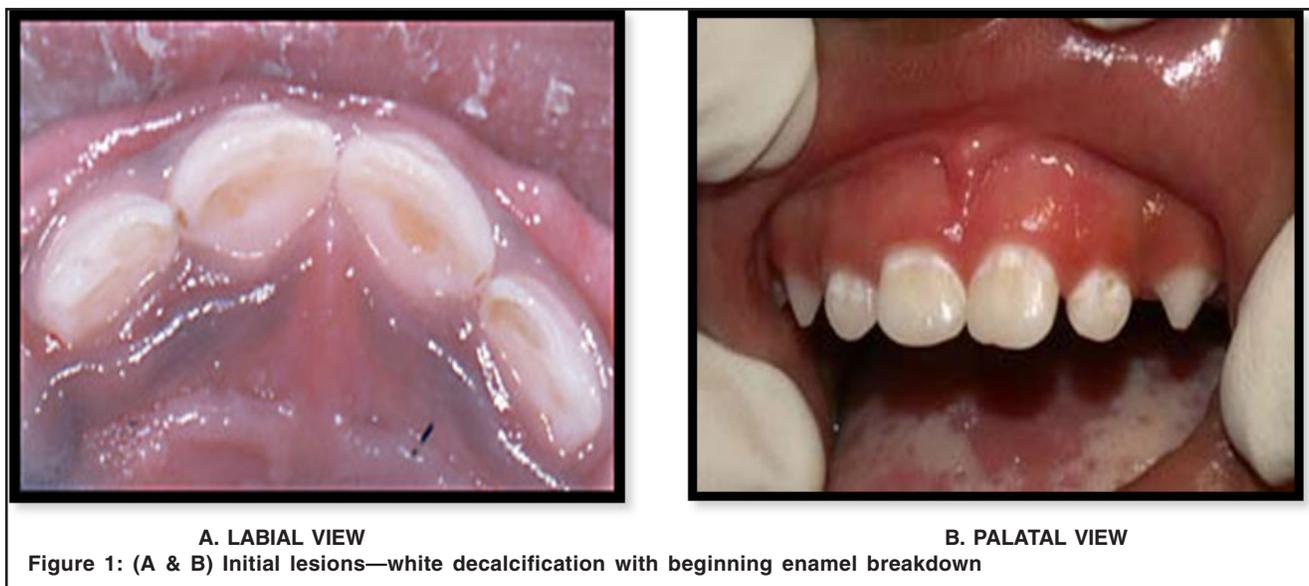
EPIDEMIOLOGY

Despite the decline in the prevalence of dental caries in children in the western countries, caries in preschool children remains a problem in both developed and developing countries. ECC has been considered at epidemic proportions in the developing countries. Numerous studies have been conducted to find the prevalence of ECC. In England and USA the prevalence is reported to be 6.8 – 12% and

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11-53.1% respectively (4). A comprehensive review of the occurrence of the caries on maxillary anterior teeth in children including numerous studies from Europe, Africa, Asia, the Middle East, and North America found the highest caries prevalence in Africa and South-East Asia (4).

While in India a prevalence of 44% has been reported for caries in 8 to 48 month olds, very few prevalence studies have been done in India. Studies done in Udupi and Davangere (Karnataka) have reported nursing caries prevalence of 19.44% and 19.2% respectively (5).

DEFINITION OF EARLY CHILDHOOD CARIES

A group of experts designated by the American Academy of Pediatrics (AAP) to develop and adopt a consensus regarding a clinical definition and diagnostic criteria for these types of caries has also adopted the term *Early childhood caries* to describe caries in preschool-age children (6). The following clinical definition of *Early childhood caries (ECC)* has been proposed:

The presence of one or more decayed (non-cavitated or cavitated lesions), missing (due to caries) or filled tooth surfaces in any primary tooth in a preschool-age child between birth and 71 months of age (6).

More specifically, experts recommend using the term Severe Early Childhood Caries (SECC) to designate all caries considered atypical, progressive, acute or rampant. Many researchers consider that SECC is merely an incidence of ECC under special or specific conditions (6).

THE CARIES PROCESS

ECC is normally first noticed as the presence of white spots on the labial (facial) surfaces of the six maxillary primary incisors (Figure 1). The basic mechanism for all types of dental caries is demineralization or tooth mineral loss through attack of acid generated by cariogenic bacteria. The presence of a fermentable carbohydrate (glucose, sucrose, fructose, cooked starch) biofilm on the teeth supports the metabolism of acidogenic microorganisms resulting in an acidic substrate whose hydrogen ions dissolve the carbonated hydroxyapatite crystal lattice of enamel, cementum, and dentin. Continued demineralization results in cavitation of the tooth enamel surface(7).

It is more difficult to remove biofilm from rough, cavitated surfaces, thus potentiating rapid bacterial replication and subsequent growth of bacterial colonies. In the primary dentition, when demineralization progresses past the outer enamel layer to the more highly organic dentin layer, caries progression is rapid and restorative care is

often required (8). The body's natural repair mechanism for dental caries or demineralization is remineralization, a process whereby minerals from saliva diffuse back into the porous subsurface region of the caries lesion. The cycle of demineralization and remineralization continues throughout the day (9).

WHICH TEETH ARE MOST SUSCEPTIBLE TO EARLY CHILDHOOD CARIES?

ECC affects the primary teeth of infants and pre-school children. The lesions in their severest form sometimes appear as fast developing lesions on the surface of teeth with low susceptibility to caries following the usual eruption sequence. Typically, the maxillary primary incisors are hit the hardest, followed by the first primary molars. The mandibular incisors normally are spared because they are covered by the tongue during sucking movements and are thus buffered against cariogenic liquids. Saliva produced by nearby sublingual and submaxillary glands also buffers the mandibular incisors against acids produced by dental plaque. When the mandibular incisors are affected it is usually an indication that the caries is caused by inappropriate pacifier use or simply that the child has rampant caries(10).

Similarly, the primary canines and second primary molars because of their late

eruption are usually spared or little affected by ECC. The ECC attack pattern therefore depends on three factors:

- The timing of the tooth eruption
- The time span of the harmful oral habit
- The type of muscle movements the child makes when sucking(10)

Many authors agree that the attack pattern of ECC changes at age of three years, when it begins to affect the first and second primary molars (10). It is suggested that a caries attack pattern should be established for different age categories of children aged 0 to 71 months. Drury *et al* recommend the use of six categories: under 12 months, 12-23, 24-35, 36-47, 48-59 and 60 to 71 months (10).

RISK FACTORS

There are a number of factors that may affect the risk for ECC like ethnicity, socioeconomic status, fluoride use, bedtime baby bottle use, oral hygiene, cariogenic diet, and breastfeeding. It is important to remember that these factors do not directly cause ECC. They may simply increase the likelihood of caries in children who have been colonized with cariogenic bacteria on their dentition.

Ethnicity and Socioeconomic Status

Scientists have found that poor immigrant children were three times more likely to have dental caries. There is a strong inverse relationship between socioeconomic status and the incidence of caries. Studies show that poor children have twice the number of cavities compared to their more affluent peers and their disease is more likely to be untreated (11).

Fluoride

The Centers for Disease Control and Prevention ranks community water fluoridation as one of the 10 great public health achievements in the 20th century. Data show that children in communities with water fluoridation experienced 29% fewer cavities (12). While the beneficial effect of fluoride on dental caries is well established, some health professionals urge

caution in the use of fluoride.

Bedtime Baby Bottle Use

Early Childhood Caries was previously referred to as Nursing Bottle Caries, Baby Bottle Tooth Decay, Nursing Bottle Syndrome, and Nursing Caries. While these terms suggest a cause and effect, data show comparable rates of bedtime baby bottle use in both children without caries and children with caries. The more important risk factor seems to be use of the baby bottle during bed time. Theoretically, diminished swallowing during sleep may allow sugary liquid to remain in the mouth and pool around the teeth leading to dental caries (13).

Diet

Frequent intake of foods that support the growth of cariogenic bacteria are thought to increase the risk for ECC. These foods include fruit juices, soft drinks, and foods containing a large amount of simple sugar.

QUESTIONS TO HELP DETERMINE THE CARIOGENICITY OF FOOD(14)

- What are its ingredients? If it contains mainly fats and/or protein, it is least cariogenic.
- If it contains carbohydrates, are they in the form of sugar or starch?
- What is the food's sugar content? For example, 10g of sugar in a product that weighs 30 g has a content of 33%. Does the product contain starch that has been cooked at high temperatures? Does it also contain sugar, even in small quantities?
- Does the product have a chewy consistency which might make it adhere to the teeth and become lodged in places where it is difficult to remove?
- Is it an acidic food that can directly cause erosion?
- Is it eaten only occasionally or frequently? Can we avoid nibbling or sipping it?
- Is it a food that is usually eaten alone? Can we eat cheese or nuts after eating this food in order to reduce its negative effects?

The simplest and safest answer to all these

questions is to choose foods that have been processed as little as possible, i.e. milk products, vegetables and fruits and grain products. They are the best choices we can make for a healthy diet. The foods that are harmful to teeth are also harmful to our health in general. They all contain fermentable carbohydrates and are concentrated sources of energy.

The worst offenders are:

- All types of biscuits and cookies
- Cakes and pastries
- Acidic drinks of all sorts

Oral Hygiene

Effective removal of debris from the mouth may limit the growth of cariogenic bacteria and decrease the risk for caries.

Breastfeeding

There is some evidence that breastfeeding may actually reduce the risk for ECC, due to the low cariogenic effect of human milk. Colostrums from breastmilk contain agglutinating antibodies for all normal streptococcal bacteria. This suggests that breastfeeding may give children some type of immunity against cariogenic bacteria(15).

Frequent feeding at night including bottle-feeding, breastfeeding on demand and frequent use of spill-proof drinking cups is associated with ECC but is not consistently implicated. It is recommended that infants should not be put to bed with the baby bottle and that ad libitum breastfeeding at night should be avoided after the eruption of the first tooth. This view is ambiguous and arguable because the American Association of Pediatric Dentistry no longer includes breastfeeding among cariogenic factors (15).

Moreover, no scientific evidence exists that human milk is cariogenic, even if ingested ad libitum and during the night. Concomitantly, the view of the AAPD can also result in practical problems regarding the counseling and guidance of parents of those infants who wake up crying at night in order to be breastfed, simply expressing a need that should be met for infant's proper development. Finally, given the irreversible nature of caries, an actual test

involving humans could be regarded as unethical.

Although there is no scientific evidence that confirms the association between breastfeeding and caries, many professionals still express disbelief at the fact that human milk is non-cariogenic, thus cultivating the myth into which this association turned. We believe that breastfeeding at night should not be discouraged and no strict diet should be adopted for a nursing infant. At this age, infants are still adapting to complementary foods, adjusting themselves to new eating patterns and learning to regulate their schedules.

Therefore, exclusive breastfeeding should be encouraged up to the sixth month of life, maintained at least up to the second year of life, with flexibility of schedules or shifts, and complemented with appropriate weaning foods.

Microorganisms

Early childhood caries (ECC) is caused by an overgrowth of bacteria in the mouth—most often *Streptococcus mutans* (*S. mutans*). Because *S. mutans* is site-specific, there must be at least one tooth present for the bacteria to thrive. *S. mutans* feed on sugar and produce acid as a byproduct. Anyone who has close contact with an infant can be a source of the bacteria. Mothers or primary caregivers are the most likely source. Studies have shown that approximately 70% of mother-infant pairs have the same genotypes of *S. mutans* and altering the bacteria in a mother's mouth reduces her child's risk for caries. It has also been recognized that cariogenic bacteria can be transmitted from mother to child through certain practices, for example, tasting the baby's food with the same spoon, or testing the temperature of the nipple. The poor oral hygiene in mothers has been associated with a higher concentration of micro-organisms in the mouth of their children (16).

ORAL HEALTH RISK ASSESSMENT

Most of the pediatric health care workers recommend an oral health risk assessment for all children by 6 months of age. They

also recommend that families (if the child is an infant) be assessed as well. This will assure early identification of those children at greatest risk for dental caries including:

- Children with special needs
- Children of mothers with a high caries rate
- Children with visible caries, plaque, demineralization or staining
- Children who sleep with a bottle or breastfeed throughout the night
- Children with older siblings (second and third infants tend to be colonized earlier and may be at greater risk for caries)
- Children in families of low socioeconomic status

IMPORTANCE OF EARLY DIAGNOSIS

Early childhood caries (ECC) is a particularly virulent type of dental caries that can destroy the primary dentition of babies and pre-school children. ECC is considered a severe and rampant disease of the primary teeth that begins immediately after tooth eruption.

Early childhood caries is a serious and sometimes painful disease characterized by early onset and very rapid progression. The caries develop quickly, usually right after the teeth erupt. Several teeth may be affected, beginning with the maxillary incisors, at the junction near the gums, followed by the canines. If the disease continues to progress, the molars are affected too, while only the mandibular incisors are spared.

There are four stages in the development of ECC (Figure 2)

- The *initial stage* is characterized by the appearance of chalky, opaque demineralization lesions on the smooth surfaces of the maxillary primary incisors when the child is between the ages of 10 and 20 months, or sometimes even younger. A distinctive whitish line can be seen in the cervical region of the vestibular and palatal surfaces of the maxillary incisors. At this stage the lesions are reversible but are frequently

unrecognized by parents or the first physicians to examine the mouths of these very young children. Moreover, the lesions can be diagnosed only after the affected teeth have been thoroughly dried (17).

- The *second stage* occurs when the child is between the ages of 16 and 24 months. The dentin is affected when the white lesions on the incisors develop rapidly, causing the enamel to collapse. The dentin is exposed and appears soft and yellow. The maxillary primary molars present initial lesions in the cervical, proximal and occlusal regions. At this stage, the child begins to complain of sensitivity to cold. The parents sometimes notice the change of colour on their own and become concerned (17).
- The *third stage*, which occurs when the child is between 20 and 36 months and is characterized by large, deep lesions on the maxillary incisors, and pulpal irritation. The child complains of pain when chewing or getting his teeth brushed and of spontaneous pain during the night. At this point, the maxillary primary molars are at stage 2, while stage 1 can be diagnosed on the mandibular primary molars and the maxillary canines (17).
- The *fourth stage*, which occurs between the ages of 30 and 48 months, is characterized by coronal fractures of the maxillary anteriors as a result of amelodentinal destruction. At this stage the maxillary incisors are usually necrotized, and the maxillary primary molars are at stage 3. The permanent molars and maxillary canines and the first mandibular molars are at stage 2. Some young children suffer but are unable to express their toothache complaints. They experience sleep deprivation and refuse to eat (17). A positive diagnosis is established on the basis of questions to parents regarding risk factors and a clinical oral examination, completed by x-rays. A differential diagnosis is based on observations of hereditary tooth structure anomalies such as infantile melanodontia, which primarily affects

the maxillary incisors, and amelogenesis imperfecta, which affects the enamel of every tooth, and is a hereditary disease of the dentin, characterized by an opalescent, brownish tooth colour, and typical short roots. Enamel hypoplasia caused by malnutrition during the perinatal period or by a deficit in Vitamin A promotes high caries susceptibility and is often associated with early childhood caries (18).

REPERCUSSIONS

Early childhood caries can have serious general and local repercussions in the short and long terms. Following pulp necrosis, infection spreads to the pulpal-periodontal region in one of two clinical forms: the acute form, characterized by cellulitis, adenopathy and mobility of the affected teeth, and the chronic form, which is the most common, characterized by abscesses and interdental septum syndrome. Depending on the severity of the disease, infection can spread to the buds of the permanent teeth, causing irreversible lesions. Complications from subsequent infections can occur in children already compromised by a generally weakened state of health.

Contrary to popular belief, the effects of caries in young children extend beyond the mouth. Tooth loss is sometimes inevitable, and it can cause not only orthodontic and esthetic problems, but more importantly, difficulties in pronunciation. Esthetic problems and pronunciation difficulties may result in psychological and relationship problems. In addition, children with ECC

usually weigh less and are shorter than average. Their growth is affected because they have difficulty sleeping and eating as a result of the infection and pain, and their quality of life is greatly diminished. Furthermore, it is very complicated and costly to treat caries in very young children, who must undergo general anesthesia. ECC therefore can be a burden to both parents and society.

With these repercussions in mind early diagnosis of early childhood caries and the identification of risk factors are essential to the implementation of preventative and curative measures to mitigate complications and the repercussions of the disease. Physicians and nurses have more opportunities to see expectant mothers and their newborns than dentists do. It is therefore vital to emphasize parental awareness of the seriousness of ECC so that proper attention is placed on early detection and the elimination of risk factors.

PREVENTION OF EARLY CHILDHOOD CARIES

In view of the infectious nature of ECC and the transmission mode of the microorganisms responsible for the development of caries it is important to develop a hygiene education and prevention plan with parents during the first visits. This plan should take into account the family's living conditions and socio-cultural environment.

PREVENTION OF ECC AT THE DENTIST'S OFFICE AND COMMUNITY CENTRES

Working together with other stakeholders

in the community gives dentists access to skills and tools that aid in the prevention of ECC. A dental health promotion program presented in books, brochures, stickers or videos which are made available in dentists' offices and community centers can potentially lower the incidence of ECC in communities at high risk for caries.

This type of dental health promotion program must be geared to expectant parents or the parents of very young children. The dentist's office can become the centre of a new prevention concept aimed at families as the dentist acts in tandem with other health professionals to meet the full range of family needs. The dentist could make the pediatricians in his area aware of the importance of preventing ECC and being on the lookout for the disease during the child's first visits (for instance, during vaccination appointments). In addition, practitioners can work in cooperation with the public dental health network. Multidisciplinary collaborations of this nature are essential to an effective program (19).

PREVENTING ECC BEFORE CONCEPTION AND DURING PREGNANCY

The expectant mother should be monitored for dental problems during pregnancy and given the appropriate prevention recommendations before the birth of her baby. This step is all the more necessary because the parents will not be seeing the dentist again for several months, when bad habits may be entrenched and already causing a proliferation of carious lesions at advanced stages of decay. An



Figure 2 (A) depicting the characteristic appearance of chalky, opaque demineralization lesions on the smooth surfaces of the maxillary primary incisors



Figure 2 (B) depicting the brownish discoloration of the carious lesions



Figure 2 (C) depicting the necrotized appearance of the carious lesions with destruction of the tooth structure.

evaluation of individual risk for caries is very necessary, as it is the first step in defining and optimizing preventive and therapeutic strategies. This step should only be carried out when the dentist has noted poor oral health and/or eating habits or when there is a high incidence of active caries in the expectant mother or her family.

The evaluation of the risk for caries during pregnancy must take the following into account:

- The presence of carious lesions and the degree of caries activity.
- A quantitative and qualitative evaluation of dental plaque (colour, number of *streptococcus mutans* and/or lactobacillus colonies).
- Evaluation of the salivary pH, the saliva's buffering effect, and salivary flow.
- An analysis of the mother's diet.
- Evaluation of the extent of individual resistance by looking at the morphological structure of the teeth, the presence of numerous initial carious lesions, and past fluoride use.

Together, these tests will help confirm the dentist's clinical impressions determine the existence of one or more preponderant risk factors (bacteria, nutrition, saliva or individual resistance) and prepare a preventive and therapeutic strategy that will provide a more targeted and effective response to the etiological factors identified. At this stage, the provider will have to control the bacteria and eliminate the sources of infection, in view of the risk of bacterial transmission.

The bacteria control phase consists of reducing the number of bacteria, and more specifically, reducing the amount of *streptococcus mutans* on the surface of the teeth. A number of treatments are available for this purpose, including the application of varnishes with a high fluoride concentration or Chlorhexidine varnishes (with or without a mouth guard). The sources of infection must be eliminated as soon as possible by debriding the carious lesions and placing temporary fillings (zinc oxide eugenol, calcium hydroxide, or glass ionomer cements) in order to stabilize the

patient's condition and lower contamination risks. Further restorations should not be contemplated until the level of carious activity has been fully controlled.

The mother could use substitutes like xylitol (gum or candy) during the pregnancy. She may continue this habit after the birth as well. Given hormone fluxes that occur during pregnancy and regardless of the risk level for caries, it is important to periodically monitor the dental health of expectant mothers. However, fluoride supplements are not recommended before the baby is born. Lastly, it is important to talk to expectant parents about the importance of the first dentist's visit (19).

AFTER THE BIRTH

Once the baby's first tooth erupts, the child's mouth must be cleaned with a wet cloth or with a child's toothbrush and a small amount of fluoride toothpaste (about the size of a grain of rice). Parents should be taught how to brush their baby's teeth, either by resting the baby against them or laying the baby on their lap with his head between their legs. These positions will give them the control they need to accomplish the task. When the baby reaches the age of one, his teeth should be brushed twice a day with a small toothbrush and water and fluoride toothpaste (about the size of a pea). Between the ages of 18 and 24 months, the child can learn to brush his teeth under adult supervision. In addition, parents should not try to soothe a crying or agitated baby with candy, a pacifier dipped in sugar, or a bottle containing a sweet drink.

Baby's first dental visit should be during the first year of life, preferably during the first six months following the eruption of his first teeth, but no later than his first birthday. During the first visit, the dentist will examine the baby's mouth and give specific oral care advice for preventing ECC. It is important to talk with parents about the following points:

- Verifying and reinforcing the information and advice given during pregnancy.
- Reinforcing that the child should not

be given cariogenic substances in his bottle at bedtime.

- Encouraging healthy eating and limiting sugary foods by suggesting other types of sweeteners.
- Cleaning the child's teeth as soon as they begin to erupt.
- Encouraging the child to drink out of a cup around his first birthday, and then progressively limiting the use of the bottle between the ages of 12 and 16 months.
- Observing the baby's early habits such as thumb sucking, so that the caregiver can receive timely instructions in correcting it, even if that means giving the child a pacifier. No connection has been noted between pacifier use (as long as it has not been dipped in a sweetener) and ECC (19).

If the provider notices ECC once the primary teeth have erupted, he must evaluate the child's risk for caries just as he did with the expectant mother. He must also prepare a personalized prevention program and choose a fluoride therapy (systemic and topical) according to the caries risk and the patient's age in order to enrich the fluoride of the budding teeth's enamel and increase the caries resistance of the teeth that have already erupted. Fluoride supplements are not recommended for low-risk children under the age of three. For high-risk children, fluoride tablets are recommended beginning at the age of 6 months, i.e. when the child first visits the dentist.

In all cases, before prescribing it is very important to:

- Evaluate the risk for caries
 - Ensure that the child is not drinking fluoridated water or taking fluoride supplements (in vitamins).
- Adjust the dosage schedule in consultation with the attending pediatrician
- Evaluate other possible sources of systemic ingestion (total daily ingestion must not exceed 0.05-0.07 mg F / kg body weight). The success of fluoride therapy depends on the parent's motivation and participation, regular

check-ups and adjusting the dose depending on the dosage schedule.

- The use of topical fluoride in the form of a varnish or gel is beneficial but not recommended before the child turns one. It could be used to foster the protection of the smooth surfaces of primary teeth and the remineralization of the first carious lesions.

Chlorhexidine varnishes can be used in children between the ages of 3 and 4 years with a high risk for caries, in order to reduce the quantity of streptococci within the dental plaque and as a tool for the bacterial control phase. This may be a preferred method when traditional methods are not enough. Sealing agents are evidently entirely indicated to prevent occlusal caries of the primary molars, and should be used beginning at age 3 after considerations of the caries risk and clinical recommendations (20).

Substituting sugar with xylitol or other artificial sweeteners (sorbitol and mannitol) in candy, and the recent appearance of products made with casein phosphopeptide or amorphous calcium phosphate (in chewing gum and toothpaste) will have interesting applications in preventing ECC in the future. These products may help remineralize teeth by binding themselves to the biofilm, the dental plaque and the hard and soft tissues of the mouth and liberating calcium and phosphate ions into the saliva (21). Lastly, it would be important to schedule children at risk for regular three month check-ups and to stay in touch with parents in order to provide proper follow up and assessment.

THE CHALLENGES AHEAD

Despite a dental health provider's efforts to implement a prevention program, sometimes the outcome does not meet expectations. The prevention program must be accompanied by individual counseling of the parents. A psychological approach should be emphasized, one that provides feedback on performance and encourages children to be proactive (by learning and integrating oral health techniques and adopting a healthy daily

diet). The collaboration of practitioners with the public health network, particularly with respect to coordinating and developing dental health promotion activities, must be strengthened so that greater numbers of parents and/or children will receive advice and preventive care under the programs of the public dental health care network.

CONCLUSION

Cariou activity involving temporary dentition begins early and develops rapidly. By kindergarten age, the incidence of ECC is already high. Furthermore, it is mainly concentrated among a small, vulnerable group of children who mostly come from disadvantaged backgrounds. The literature moreover advocates standardizing the terminology, diagnostic criteria, and definition of caries in preschool-age children with a view to making better comparisons of the prevalence of caries in children around the world.

The etiological factors of ECC are known, and there is an arsenal of preventive and curative therapies available to help practitioners prevent and properly control ECC. ECC prevention is an essential component in any dental health promotion program, providing a solid foundation for the optimal development of oral health in children.

ECC is a public health problem and it requires involvement of all health professionals that provide care to children. Oral health cannot be seen as separate from general health. The objective of dentistry surpasses the preservation of the teeth; it aims at maintaining oral and systemic health. Children receive notions of oral care and values from their families. Therefore, we should change the risk factors for caries development by establishing a partnership with the family, having prevention as the main focus.

To facilitate prevention and early treatment of ECC all children should be seen by a qualified dentist 6 months after the first tooth erupts or by 12 months of age. Because mothers are the primary source of

the bacteria that cause ECC, mothers or other primary care givers of children in high risk groups should be given detailed instructions about how to care for their own teeth as well as those of their children. Topics for discussion should include oral hygiene, diet, fluoride, caries removal, delay of colonization, and use of xylitol chewing gum during pregnancy and the colonization period (first 2-3 years after birth).

Prevention is inexpensive, but it demands efforts from family members, who sometimes are not aware of the consequences that caries can bring, or when they realize the problem, the disease is already installed resulting in consequences to the child and family's life. It is important that the health professionals who provide care to children know how to recognize and change risk factors for disease development, since events that take place during childhood can have an impact on adulthood, influencing the child's future health status.

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