



EITI Newsletter

Early Intervention Training Institute

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ORAL HEALTH FOR INFANTS AND YOUNG CHILDREN

A number of recent studies have revealed correlations between oral health status and overall health. The promotion of good oral health should begin before the eruption of a child's first tooth. The American Academy of Pediatric Dentistry recommends that a child's initial dental visit occur at approximately six months after the eruption of the first primary teeth. This is usually about one year of age. Many children, however, do not visit the dentist for the first time until a much later age. For this reason, other individuals who have frequent interaction with children, such as pediatricians, nurses and child care workers, may have greater opportunity to direct early preventive dental care and detect pathology.

Development of the Dentition

The primary teeth start to develop at approximately 5-6 weeks in utero. Adequate intake of calcium, phosphorus and vitamins A, C and D by the expectant mother will help to ensure proper formation of the unborn infant's teeth. Although the first permanent teeth do not erupt until around six years of age, the enamel of these teeth starts to form at or around birth. Parents should be aware that certain medications (the most well-known one being tetracycline), if taken during the first few years of life, might permanently discolor the developing enamel of the permanent teeth. Also, early childhood illnesses that result in prolonged high fevers or poor nutrient absorption can disrupt the proper formation of the teeth.

Mothers-to-be should be careful not to neglect their own oral hygiene during pregnancy. In addition to reducing the incidence of gingivitis and tooth decay in their own mouths, optimal oral hygiene, which reduces oral bacterial counts, can help reduce the incidence of dental disease in their children.

Teething

The average age for eruption of the first primary teeth is six months. There is, however, wide variability, and some children may be as old as one year before the first teeth appear. All twenty primary teeth have usually erupted by three years of age.

Parents sometimes attribute a wide range of physical symptoms in their infants to teething. However, a great deal of disagreement exists in the medical and dental communities as to whether a true relationship can be found between tooth eruption and these disturbances. Symptoms attributed to teething include increased drooling, irritability, gastrointestinal (GI) upset, lack of appetite and fever. Any young child with fever, prolonged GI problems or loss of appetite should be evaluated by a physician to rule out causes other than teething. It should never be assumed that these symptoms are secondary to tooth eruption.

Oral Habits

The sucking reflex is natural and necessary for infants; it is the only means of obtaining nutrition in the first few

months of life! Because sucking is such a pleasurable experience for infants, a significant number go on to develop what is termed a "non-nutritive" sucking habit as they grow into toddlerhood. The most common sucking habits involve fingers and pacifiers. There is no evidence that bottle-fed infants are more prone to develop a sucking habit than those that are breast-fed.

The effects of the sucking habit on the dentition vary widely from child to child. They are dependent on frequency, intensity and duration of the habit. Many children will, on their own, discontinue a sucking habit by three to four years. In most cases, a habit that stops at that point will have little to no residual effect on the permanent dentition. Although pacifier sucking affects the dentition in much the same way as finger sucking, it is probably an easier habit to discontinue. This is simply because a pacifier can be taken away from a child; fingers can't!

If a child continues to suck his/her fingers as the permanent teeth erupt, it may result in a "malocclusion" or poor alignment of the teeth. An older child may require the assistance of parents and/or the dentist to discontinue the habit. A number of different methods exist and each family must explore what will be successful with their child. The most important factor in successfully stopping a finger habit is the child's understanding of the need to stop and his/her desire to do so.

Tongue thrusting, which is characteristic of infantile swallowing, is another behavior that may persist to an older age. A persistent tongue thrust may prevent the normal eruption of the front teeth (incisors), and be related to a type of malocclusion called an anterior open bite, in which the upper and lower incisors do not come together in the proper way. As with sucking habits, the extinction of a tongue thrust may require the assistance of parents, the dentist and possibly the speech therapist.

Bruxism, or tooth grinding, is reported in a significant number of preschool children. The etiology of bruxism in this age group is not clear, and it has not been linked conclusively with any illnesses. Although bruxism produces a sound that can be very annoying to parents and caregivers, it is, in most cases, not harmful to the primary dentition. The majority of children will spontaneously stop tooth grinding as the permanent teeth erupt. Some older children may revert to the habit during times of stress. This can lead to soreness of the jaw muscles and, if persistent enough, cause excessive wear and loosening of the teeth. Although a night guard (or "bite guard") may be useful in helping some older children break a grinding habit, it is important to determine sources of stress that may be occurring in the child's life and to address those issues. Some children with developmental disabilities may continue to grind their teeth. This can be an extremely difficult habit to break in a child who is resistant to wearing a bite guard and may be engaging in it as a form of self-stimulation.

Dental Caries

Although dental caries (tooth decay) is still thought by many to be simply an inevitable result of consuming excess “sweets”, it is, in fact, a preventable, infectious bacterial disease. Several components are needed for the decay process to advance. First, and most obviously, there must be teeth! Second, the *specific* bacteria responsible for dental decay must be present in the mouth. Third, the bacteria require a source of fermentable carbohydrates (sugar in any form). The bacteria will manufacture acid as a byproduct of digesting the carbohydrates, and it is this acid that actually causes the destruction of tooth structure. Other factors, such as frequency of eating and salivary composition (which may be genetically determined), also contribute to caries levels in children’s mouths.

A number of studies have shown that the bacterial group “mutans streptococci” (*ms*) is strongly associated with dental caries. The mouths of newborn infants do not harbor this particular organism. It seems that teeth must be present to provide a surface suitable for *ms* colonization. If the bacteria are not present at birth, how exactly does the young child acquire it? Several studies have shown that children infected with *ms* display the same bacterial strain of *ms* that is present in the mouths of their mothers or primary caregivers. A critical level of *ms* must be present for dental decay to proceed. One study found that children with less than 10,000 units of *ms*/ml. of saliva were generally caries-free. Most children with extensive oral colonization by *ms* are probably infected sometime between the ages of one and two years. The transmission from mother to child can occur in any number of ways: kissing, sharing eating utensils, an infant putting his hand into mom’s mouth and then into his own.

Early Childhood Caries (ECC), formerly termed “nursing bottle” or “baby bottle” decay is a particularly rampant form of dental decay seen in young children. While extensive and prolonged bottle-feeding may be a contributing factor to dental caries in this age group, it was felt that the name should be changed to ECC to reflect the growing recognition of the multifactorial nature of the dental caries process.

ECC typically affects the upper incisors (front teeth) first and, if left untreated, may spread throughout the dentition. The process often starts on the palatal (back) surface of the incisors and can easily go unrecognized until the teeth become so extensively decayed that they have large, unsightly holes or actually break. With the presence of enough bacteria and carbohydrates in the child’s mouth, the breakdown of the teeth can be quite rapid.

Prevention of Dental Caries

Ideally, the prevention of dental caries should start in the pre-natal period. As discussed earlier, dental caries is a transmissible disease. Although it is virtually impossible to completely stop the transmission of oral bacteria from mother to child, reducing the bacterial count in the mother’s mouth can minimize it. Mothers-to-be should be counseled to maintain good oral hygiene

during pregnancy. They should be informed that, in most cases, routine dental visits during pregnancy are not contraindicated.

Once the child is born, it is a good idea to establish regular oral hygiene habits, even before teeth erupt. The baby’s gums should be wiped gently with a moist gauze or washcloth after each feeding. This routine should continue as the primary teeth erupt.

Children can start using a brush by about age two. A child should never be allowed to apply toothpaste to the brush or to brush their teeth without supervision at the toddler and preschool ages. Parents should be instructed to place only a small, pea-sized amount of toothpaste on the child’s brush. They should be aware that, although “children’s toothpastes” may have milder flavors than their adult counterparts, they *do* contain fluoride. Excessive ingestion of fluoride at this age can cause later problems with staining of the permanent teeth, whose enamel is forming throughout early childhood. By about age six, many children are capable of brushing on their own. Parents, however, should continue to monitor the mouth for good hygiene.

The incidence of dental decay increases with greater duration and frequency of carbohydrate ingestion. Milk, juice or other sweetened beverages should only be given at specific meal or snack times. Small children should not be allowed to walk around drinking from a bottle or “sippy cup” throughout the day, unless it is filled with plain water. A nighttime bottle containing anything other than water should also be discouraged as early as possible.

Fluoride supplementation has been proven over a period of many years to be effective in dental caries prevention. Fluoride works topically by remineralizing areas of tooth enamel that may have become decalcified by bacterial acid. People who live within New York City should be aware that the NYC municipal water supply is supplemented with optimal levels of fluoride and no additional supplementation is required on a routine basis. Many families today, however, utilize bottled waters for most of their drinking and cooking needs. The amount of fluoride in bottled waters varies widely between different brands. Parents should be aware of the amount of fluoride in the bottled waters they are using and discuss with their child’s primary health professional the need for any additional supplementation. People residing in municipalities outside of NYC proper should know that fluoride varies on a town-by-town basis. They should be aware of the amount of fluoride in their towns’ water supplies and, again, discuss the need for additional fluoride with a health care provider.

In conclusion, optimal oral health for a child starts before birth, with the mother-to-be taking care of her own oral needs. Dental caries is a multifactorial disease process that can be prevented through a combination of good daily hygiene and dietary practices. Pediatricians, nurse practitioners, child care workers and any other individuals who are involved with small children on a daily basis can contribute to a child’s oral health by helping them to establish good habits at an early age. Regularly scheduled preventive dental visits started at an early age will help to alleviate some of the anxiety associated with going to the dentist. A healthy smile is a gift that lasts a lifetime.

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