

What's Driving Infant Oral Health?

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Over my career of 30 years in pediatric dentistry, infant oral health has been called many things, like “preventive fantasy”, a way for struggling pediatric dentists to bolster income, and “the general dentists’ worst nightmare”. Even today, the value of reaching children before dental caries begins is seen by some as too costly, a diversion of workforce, and of little consequence to patient, family and society.

The research into early childhood caries (ECC) is clear—the disease is getting worse. We would have assumed that the preventive gains that reduced permanent tooth caries would have had as profound an effect on ECC, but for unknown reasons, this has not occurred. Once established, ECC can not be restored away, nor can our preventive armamentarium help many affected children who continue to experience the disease throughout childhood. Reducing bacterial counts through intense preventive therapy helps some children, but not all. ECC is now known to affect growth and development, learning and behavior. Finally, we know now that caries kills—the disease and its treatment can cause death and disability and does so for many children every year. All of these truisms drive us further and further toward the conclusion that we need to prevent ECC from beginning, if at all possible. That is the aim of early dental intervention or infant oral health.

The primary goal of infant oral health is to break the caries cycle, which once started, continues throughout childhood. A fear of epidemiologists who have tracked ECC over thirty years is that it will make the jump to the permanent dentition in more and more children. To alter that cycle, we need to wisely use the tools available to us. Whether the child is under the care of a dentist or physician for oral health management, the four interventions are the same, rhymingly—screen, wean, clean and fluoride. Said in other terms, these interventions are:

- **Identify risk factors and incipient disease as soon as possible**

The role of infant plaque in predicting eventual ECC is well established. Similarly, white spot carious lesions will ultimately progress to cavitation if no attempt is made to intervene. So, one major thrust of infant oral health is to identify risk and very early disease.

- **Control the child's exposure to sugar in the diet**

Consistently, for the last two decades, studies of caries prediction in children under five years have shown that sugar intake is a major risk factor. Some students of ECC place the blame for its increase directly on the changes in infant diet, now largely devoid of milk and high in sugar. Frequency of sugar exposure has emerged as the leading factor in dietary caries initiation, with three or more exposures the threshold.

- **Institute plaque removal to reduce the bacterial burden**

More literature each year points to bacterial acquisition as a factor in caries, with strong associations between bacterial populations of caretaker and affected child. Less powerful is the evidence on altering caries status of the child through bacterial change through hygiene and chemotherapy. Still, the predictive strength of tooth-borne plaque for later ECC supports plaque removal in very young children.

- **Impart maximal fluoride protection**

The failure of fluoride in drinking water to eliminate ECC remains troublesome, but the benefits of fluoride in dentifrice and in varnish to reduce caries offer alternatives that can be managed by parents and providers.

These four interventions should be the combined preventive regimen of the dental home – family therapeutic team, with the professionals providing anticipatory guidance and outcome assessment skills to parents who then implement home care between visits. Along with the primary thrust of caries prevention is alerting parents to issues of safety, habit management, and early identification of trauma and infection. Without a national commitment to infant oral health, ECC will continue to worsen as our society diversifies and elements of family and community change faster than information and behavior is absorbed and adopted.