

## **Caries Prevention Initiative Through Supervised School Toothbrushing**

### **INTRODUCTION**

According to the American Academy of Pediatric Dentistry (AAPD), it has been reported that dental caries is the most prevalent infectious disease in children in the United States<sup>1</sup>. Subsequently, more than 40% of children have caries by the time they reach kindergarten.

Early childhood caries (ECC) has been defined by the AAPD as the presence of one or more decayed, missing, or filled tooth surfaces (DMF score) in any primary tooth in a child under the age of 6. Severe early childhood caries (S-ECC) is defined as any smooth-surface caries in a child under the age of 3, and from ages 3-5 having a DMF score that is +1 to the child's age<sup>2</sup>.

### **ISSUE**

Many factors influence caries development, such as: dietary habits, socioeconomic status, and oral hygiene practices at home. Disadvantaged children have been shown to experience higher rates of caries, dental pain, and tooth loss. This is likely related to differences in behavior such as tooth brushing habits, patterns of soft drink and sweet consumption and of visits to the dentist<sup>4</sup>. The oral health of older groups has continued to improve however this is not true of younger children who still suffer from oral health inequalities<sup>5</sup>.

### **IMPORTANCE**

We advocate for school-based oral health education by elementary school educators who can then effectively decrease the rate of ECC in a community, as compared to current practices which usually leave it up to busy parents to teach their children.

Studies have shown that instruction in oral hygiene is more likely to succeed in reducing caries risk and gingivitis than attempts to change a patient's diet<sup>6</sup>. Furthermore, attempting to change the diet of patients is unlikely to be the most cost-effective way to prevent caries<sup>7</sup>. In a 1993 study looking at the preschool children, the authors concluded that regular brushing with a fluoride toothpaste may have a greater impact on caries in young children than restricting sugary foods<sup>8</sup>.

### **IMPACT**

Implementation of a school based toothbrushing program run by elementary school educators can decrease the rate of ECC and establish good oral hygiene habits in young children. This will lower the lifetime dental pain and costs experienced by disadvantaged youth.

### **RECOMMENDATION**

Our recommendation is to provide teacher-supervised toothbrushing, once a day, at school, during normal school days, with commercial toothbrushes and toothpaste containing fluoride. Background research indicates that this could reduce dental caries in primary school children by over 10% when

compared with children from the same community who did not receive this intervention<sup>4</sup>. The long-term goal would be to collect data on caries rate of children of children that have been exposed to this mandatory brushing and oral health education module and compare it to children who did not receive this education.

## FUNDING

Funding for this project will initially be acquired through research or public health grants in order to demonstrate efficacy and viability of the program. From there we would hope to secure long term program funding through larger state or national programs such as head start, the U.S. Preventive Services Task Force, or the Department of Education. We hope to become established part of public school education similarly to scoliosis screening or vision exams.

## GROUP SUPPORT

Our goal is to pilot this program at a local elementary school for kindergarten classes only, and gain the support locally before implementing this district-wide. In order to implement a new program, we will need support from the community, especially from parents and teachers. We plan to present our proposal to the school's Parent-Teacher-Association and gauge their interest and address any concerns. After successful implementation at the local elementary school, we plan to bring this proposal to the District Teachers' Union in order to create a plan that can be executed throughout the district.

Community outreach groups such as non-profit groups, local dental societies, dental schools, and community clinics will be our allies in forming helpful videos and other sources of information for teachers who will be present with the students for daily toothbrushing. These same local groups will be an important source to secure materials such as a toothbrush and toothpaste for every student which they will keep at school.

## IX. REFERENCES

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