

# Oral Hygiene Improvement by Using Disclosing Agents in Pediatric Population

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## INTRODUCTION

- Early childhood caries (ECC) is defined as the presence of one or more decayed (non-cavitated or cavitated lesions), missing (because of caries), or filled tooth surfaces in any primary tooth in a child 71 months or younger
- ECC is a multifactorial etiologic process that has been influenced by many social and behavioral factors, including diet, oral hygiene procedures, and fluoride exposure
- Consequences often include a higher risk of new carious lesions, high treatment costs, emergency room visit, hospitalizations, loss of school days, diminished ability to learn, and reduced oral health related quality of life
- Considering its important role in early childhood caries prevention, it is mandatory that professional dental prophylaxis is capable of removing dental plaque effectively, thus enabling the counterbalance of oral hygiene performed at home
- Various educational tools can help children improve their oral hygiene techniques
- One of them is using a disclosing agent tablet by visualizing dental plaque
- Disclosing agents work by changing the color of dental biofilm in order to provide a contrast with the tooth surface. Using plaque disclosing agents can help reinforce good oral hygiene practices

## PURPOSE

The aim of this study is to determine if plaque disclosing agents lead to improvement in oral hygiene by acting as visual enforcement

## METHOD

### Sample

- 40 children, ages 6-16, who came in for their periodic appointments at Compass Pediatric Dental Clinic

### Inclusion Criteria

- Patients of record between ages 6-16 years old, proficient in English, presented for a 6 month exam

### Procedure

- Pre-survey was given before the disclosing agent was placed
- After the disclosing agent was applied, the patient and caregiver were both shown the areas of plaque accumulation with a hand held mirror
- Post-survey was given to assess if there was any self realization in improvement of oral hygiene

### Statistical Analysis

- In order to determine the association between use of disclosing agents and good hygiene practices, a chi-square test and t-test will be conducted
- All tests are two-tailed and will use a p-value of 0.05.

## FIGURES 1- 4 Dentition in Disclosing Agent



Figure 1



Figure 2



Figure 3



Figure 4

Table 1: How often children brush, floss their teeth before and after disclosing agent

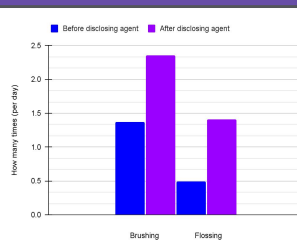


Table 2: Length of time children brush their teeth before and after disclosing agent



## RESULTS

- A total of 50 children (Mean age (SD)=9.38(2.92) were enrolled and randomized at their periodic appointment that met the inclusion criteria
- A total of 28 (56%) females and 22 (44%) males were enrolled in the study
- Height and weight were recorded for all children. The average BMI in the study was 66th percentile out of which 32 children were healthy weight, 7 children were overweight, and 11 were obese
- There were 3 (6%) children of hispanic descent, 27 (54%) children of caucasian descent, and 20 (40%) children of african american descent who participated in the study
- Overall, no caries were observed in 28 (56%) of children who participated in the study
- Caries was detected in 16 (50%) healthy weight children, 2 (29%) of overweight children, 4 (36%) of obese children
- 16 teeth (#B-#, #5-#12, #L-#,S, and #21-#28) were monitored for plaque accumulation using disclosing agent in all children
- A total of 44 (88%) children had plaque on all 16 teeth, 6 (12%) children had plaque on 7-12 teeth
- In the pre-survey, 94% of children thought they brushed well, on average children brushed 1.37 times per day, brushed for 1.56 minutes per day, and flossed 0.50 times per day
- In the post-survey only 46% thought they brushed well, however there was a significant increase in the frequency of brushing to 2.36 times per day ( $P<.0001$ ), there was an increase in duration to 2.12 minutes ( $P=.0001$ ), and frequency of flossing increased to 1.41/day ( $P<.0001$ )

## CONCLUSIONS

- Overall, using a disclosing agent has enabled children to visualize and remove plaque
- The visualization of plaque helped educate children on the importance of oral hygiene and ways to improve it at home
- Children were able to self evaluate their own oral hygiene habits
- There is a significant increase in realization of the need for improvement in oral hygiene behavior after using disclosing agent as a visual aid

## REFERENCES

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