

# Primary Molars Proximal Silver Diamine Fluoride Application After Elastic Separation

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## INTRODUCTION

Behavior and medical conditions limit restorative techniques in the pediatric patient population. Silver diamine fluoride (SDF) application has shown high efficacy as a cariostatic agent on smooth surfaces of anterior teeth but has yet to be implemented for treatment for the hard to clean proximal surfaces of posterior teeth.

## OBJECTIVE

To investigate if SDF directly applied to proximal, enamel-only carious lesions in primary molars exposed by orthodontic elastic separators is effective in preventing caries progression into dentin.

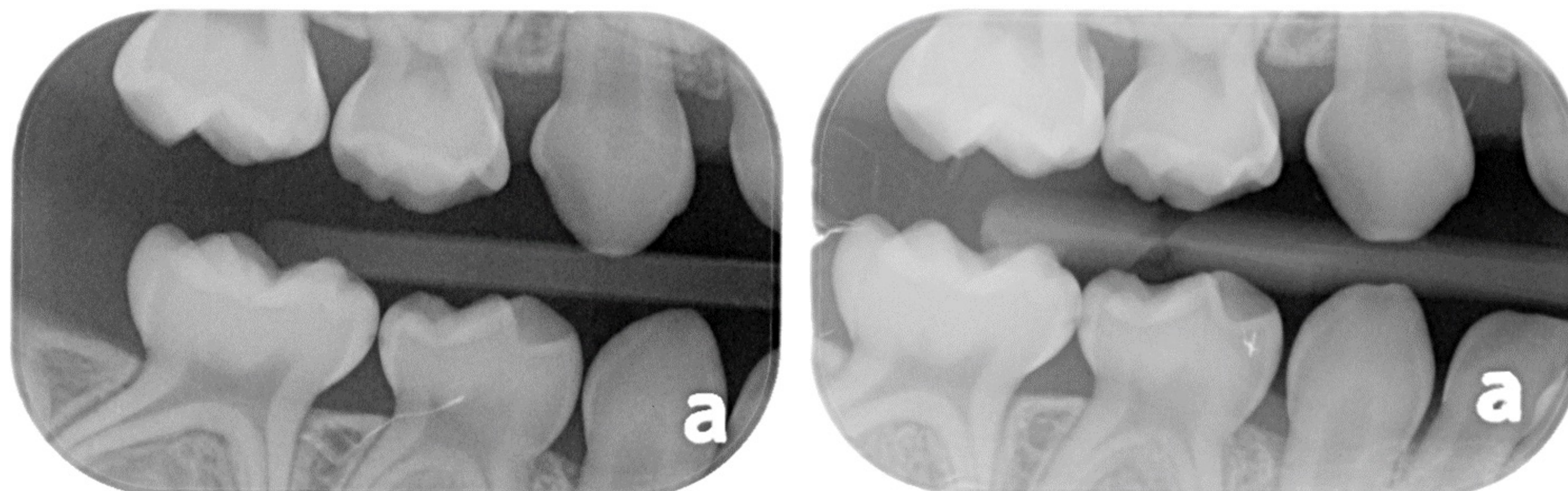
## MATERIALS AND METHODS

A retrospective chart review was completed for patients ages 3 to 10 years who received direct SDF application on proximal surfaces of posterior primary teeth using elastic separators at the University of Florida Pediatric Resident Clinic between 2021 and 2023. Records notes and bitewing radiographs from initial and subsequent recall appointments were evaluated by two independent and calibrated investigators to analyze caries progression.

## RESULTS

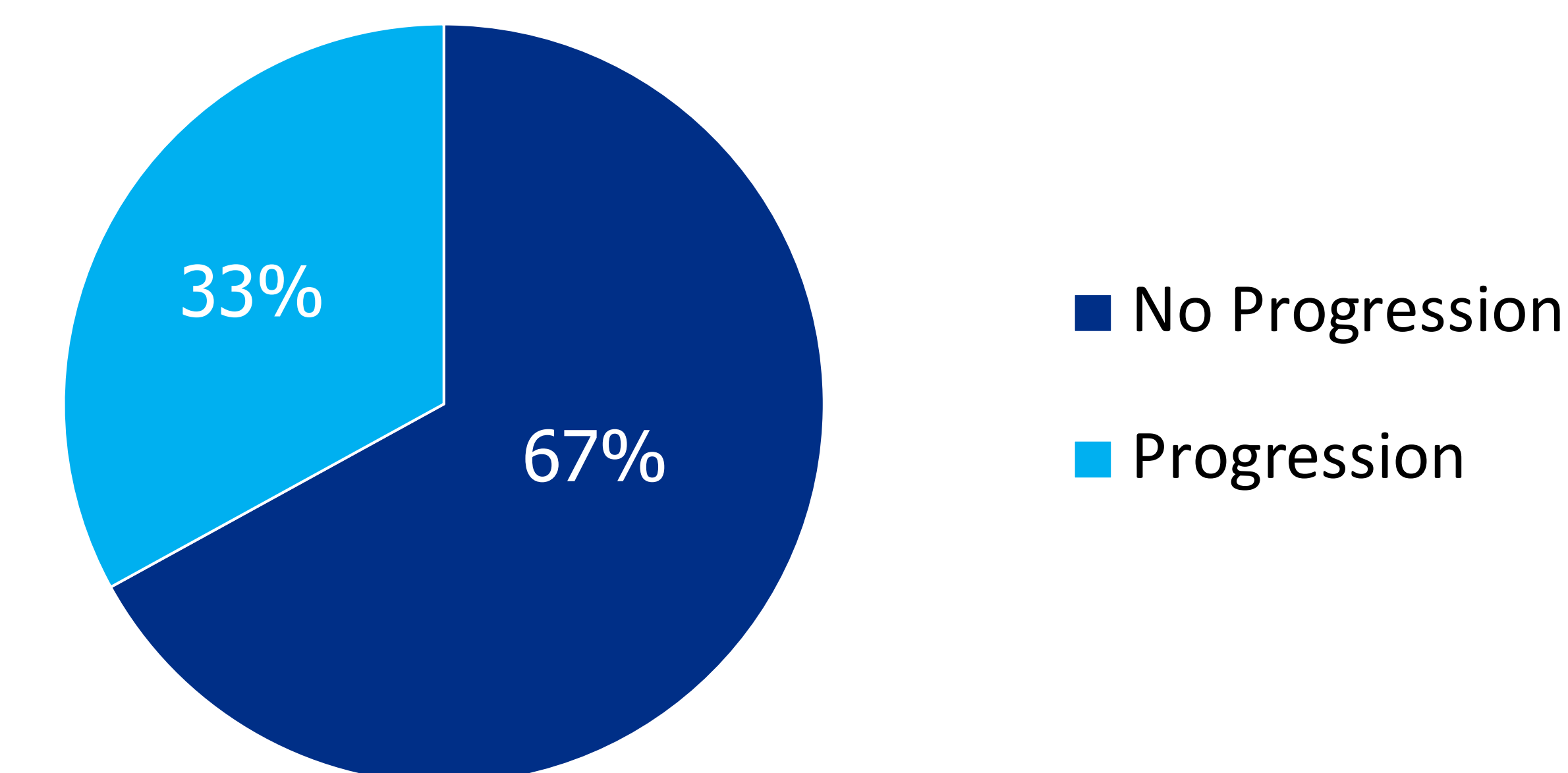


Orthodontic separators are a clinically non-invasive method to separate teeth for direct SDF application to an interproximal lesion.



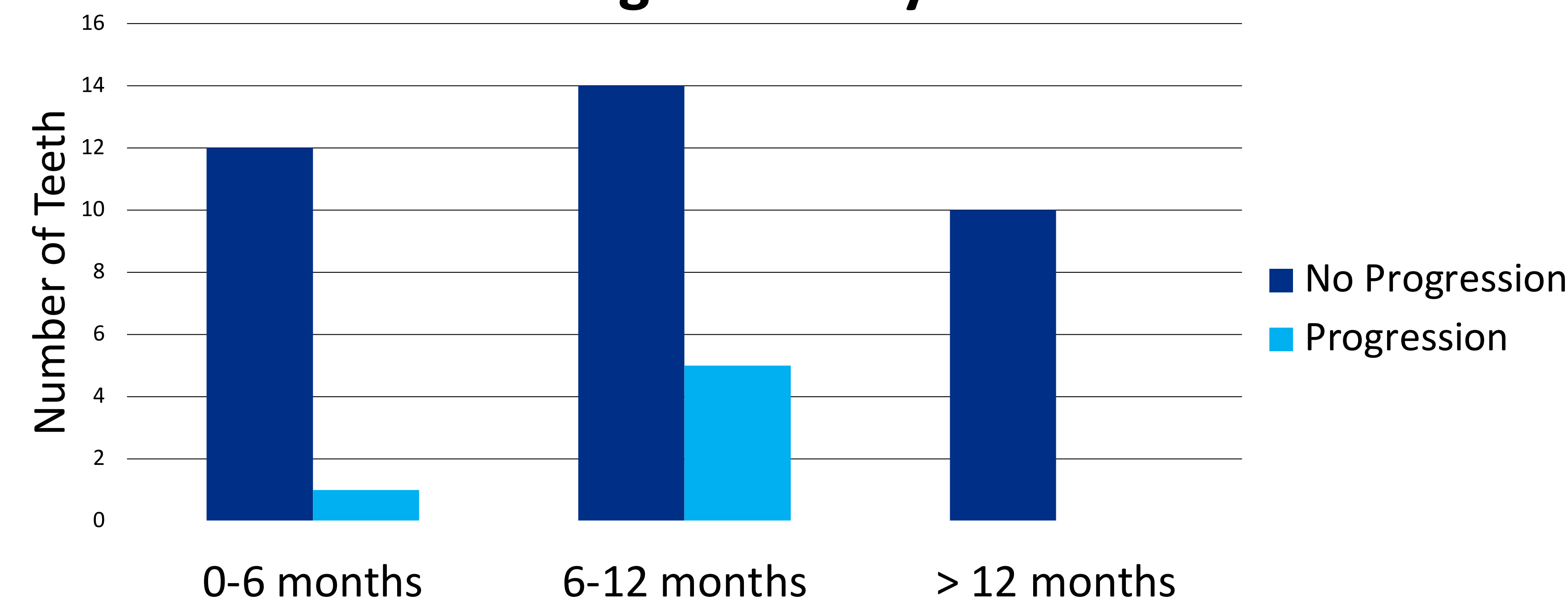
Initial enamel only lesions on #S(D) and T(M) treated with separators and direct SDF application. At the 6-month recall, no lesion progression is observed, indicating the treatment has arrested caries.

### Cariou Lesions After SDF Application

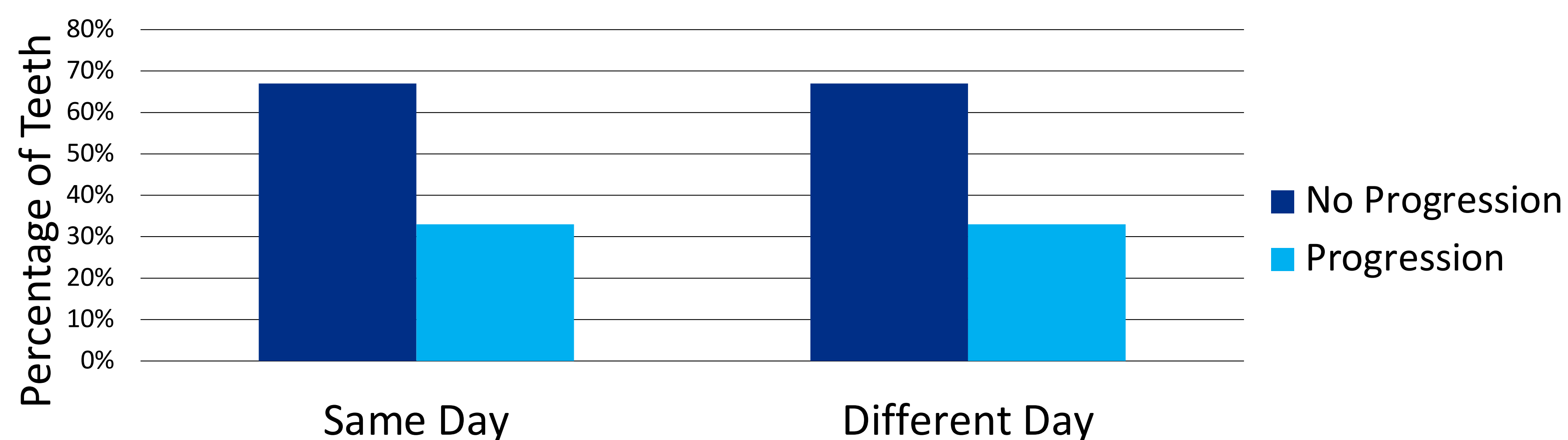


- Out of 226 records, 12 patients with 42 teeth were evaluated.
- Two-Sided Probability test revealed no significant difference in progression based on tooth or surface ( $p=0.2596$ ).
- Mann-Whitney test ( $p=0.34$ ) revealed no significant difference between lesion progression and recall time.

### Lesion Progression by Recall Time



### Separator Placement on Same Day vs. Different Day



## CONCLUSIONS

Orthodontic separator placement followed by direct SDF application may be considered as a conservative treatment option for interproximal enamel only lesions in primary molars.