

# The Long-term Prognosis of Silver Diamine Fluoride (SDF) Treated Primary Teeth



Anna Lam<sup>1</sup>, Amir Yavari<sup>1</sup>

<sup>1</sup>NYU Langone Dental Medicine Postdoctoral Residency Programs

NYU Langone Hospitals- Advanced Education in Pediatric Dentistry, Brooklyn, NY

Hansjorg Wyss Department of Plastic Surgery, Division of Dental Medicine, NYU Grossman School of Medicine

NYU Langone Dental Postdoctoral  
Residency Programs

## INTRODUCTION

Dental caries is considered one of the most prevalent childhood diseases. Patient education and prevention is critical to the prevention of dental caries. Early Childhood Caries (ECC) is a severe, rapidly progressing condition that affects many teeth in infants and young childddren.<sup>3</sup> Silver diamine fluoride (SDF), recently approved for use in the United States, has been shown to be an effective and inexpensive means of arresting caries lesions.<sup>1</sup> SDF contains approximately 24-28% silver and 5-6% fluoride.<sup>2</sup> SDF has been shown to be well-suited for young apprehensive children and are not able to cooperate for treatment of multiple cavitated caries.<sup>1</sup> Efforts should be made in order to meet the child’s dental needs within an appropriate time in order to limit infections, pain, and early loss of teeth, making SDF a great tool in pediatric dentistry.

After an one-time application of 38% SDF, the effectiveness in arresting dental caries ranges from 47-90%.<sup>1</sup> Additional applications of SDF is recommended, increasing the frequency to every 6 months can increase the caries arrest rate.<sup>4</sup> Studies have shown that efficacy of caries arrest up to 30 months, which will allow time for younger patients to mature and become cooperative to receive dental treatment.<sup>5</sup> Treatment with SDF caries arrest can allow for time for younger patients to mature and become cooperative to receive dental treatment.

## PURPOSE

The purpose of this study is to evaluate the long-term prognosis of primary dentition after receiving application of silver diamine fluoride (SDF). This research aims to evaluate treatment options after primary teeth have been treated with SDF and have a long waiting period before rendering treatment. Having this information will help dental professionals determine restorability of primary teeth treated with SDF and facilitate treatment planning.

## METHODS

This was a retrospective chart review of St. Joseph Pediatric Dental Clinic pediatric patients ages 0 to 12 years old. Data was collected for 100 SDF treated teeth in 100 children between September 2017 and January 2019. Exclusion criteria included permanent teeth treated with SDF. Data obtained included age, sex, final treatment outcome such as extraction, restored, or no treatment.

## RESULTS

### Participant Characteristics (N=100)

	N (%)
Age, mean(SD)	3.82 (1.60)
Gender	
Male	59 (59.0)
Female	41 (41.0)
Treatment Outcome	
No treatment	47 (47.0)
Extraction	16 (16.0)
Restored	37 (37.0)
Follow-up appointment	44 (44.0)

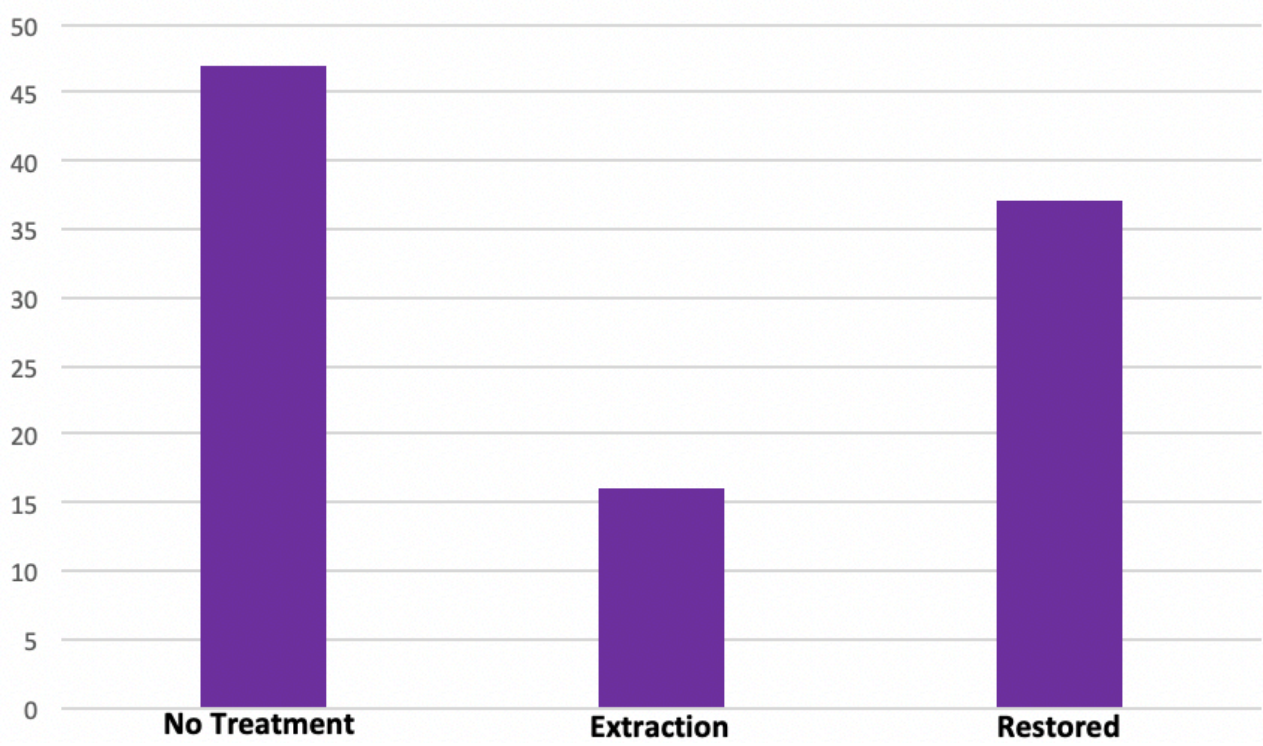
### Comparison of Gender and Treatment Outcomes

	Gender N(%)		P-Value
	Male	Female	
Treatment outcome			0.66
No treatment	26 (55.3)	21 (44.7)	
Extraction	9 (56.3)	7 (43.8)	
Restored	24 (64.9)	13 (35.1)	

### Comparison of Age and Treatment Outcomes

	Age, mean(SD)	
Treatment outcome		0.16
No treatment	4.1 (2.1)	
Extraction	3.4 (1.1)	
Restored	3.6 (0.9)	

### Treatment Outcomes



## RESULTS

- Of the 100 SDF treated teeth, the mean age was 3.82, 50 (59%) were male and 41 (41%) were female.
- Of the 100 SDF treated teeth, 47 (47%) required no treatment, 16 (16%) were extracted, and 37 (37%) were restored.
- 44 (44%) of the SDF treated teeth had a follow-up SDF application.
- There was no statistically difference in the proportion of different treatment outcomes for males and females ( $P= .66$ ).
- There was no statistically significant difference in the mean age for different treatment outcomes ( $P= .16$ ).

## CONCLUSIONS

The results of the treatment outcomes show that 47% of the teeth required no treatment and 37% of the teeth were restored. These results show that SDF treated teeth have a more long-term prognosis such as requiring no treatment or being restorable than an unfavorable prognosis of being extracted (non-restorable).

## REFERENCES

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