# Primary Molar Failure by Treatment Modality After Oral Rehabilitation

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## Introduction

The field of Pediatric Dentistry recognizes general anesthesia (GA) as an advanced behavior management technique for children who are unable to cooperate with dental treatment due to various reasons that include medical , physical and psychological maturity.[1,2,4,8] According to the American Academy of pediatric dentistry (AAPD) guidelines, the goal of behavior management under GA should be to treat the disease in the best possible way so that the risk of these children returning for further intervention is reduced.[3,5,6,7]

**The purpose of our study is to evaluate restorative treatment outcomes on primary molars performed under general anesthesia setting on patients aged 7 and below.** We hypothesize that the treatment modalities other than full coverage restoration/SSC on primary molars are associated with higher retreatment, recurrent decay and/or failure rates.

The goals of this study are to :

- Identify restorative treatments performed under GA that provide the highest durability.
- To provide better information to parents regarding the potential for caries recurrence and the need for retreatment after treatments under GA.

## Methods

- A retrospective chart review of 199 dental charts was conducted at Franciscan Children's in Boston, MA. Subjects who were ages 7 and under, were seen for oral rehabilitation under general anesthesia from 2015 to 2017 and had at least one follow-up visit within 24 months after oral rehabilitation were included.
- Treatment failure was defined as a tooth requiring subsequent intervention such as extraction or restorative treatments. SPSS was used for data analysis.
- **1531** erupted primary molars were included for analysis.

## Results

**TABLE 1. Description of Sample- Erupted Teeth (n=1531 teeth)**

| | | % | n |
|---|---|---|---|
| Primary molar type | First molar | 51.0 | 781 |
| | Second molar | 49.0 | 750 |
| Treatment received | No treatment | 12.3 | 189 |
| | 1 surface restoration | 9.7 | 148 |
| | Multi surface restoration | 8.1 | 124 |
| | Stainless steel crown | 42.9 | 657 |
| | Pulpotomy & Stainless-steel crown | 10.6 | 162 |
| | Extraction | 7.6 | 120 |
| | Sealant | 8.6 | 131 |
| Treatment outcome | Failure noted at 24 months | 11.4 | 175 |
| | No failure noted | 88.6 | 1356 |

**TABLE 2. Description of Sample- Unerupted Teeth (n=61 teeth)**

| | | % | n |
|---|---|---|---|
| Primary molar type | First molar | 24.6 | 15 |
| | Second molar | 75.4 | 46 |
| Treatment outcome | Failure noted at 24 months | 37.7 | 23 |
| | No failure noted | 62.3 | 38 |

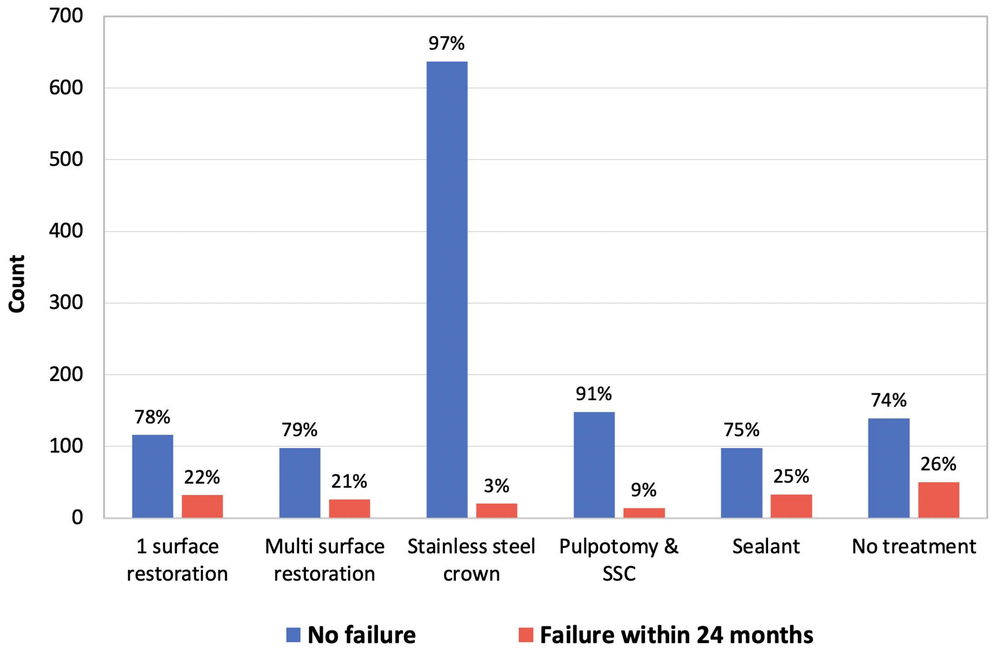


**Figure 1. Failure and success of different treatment modalities.** Percentages represent percent success and percent failure within a given treatment modality.

* SSCs had significantly higher success rate in comparison to 1 surface restorations, multi surface restorations, sealants, and no treatment ($p<0.001$).

## Conclusions

- Significantly lower failure rates of SSCs compared to other restorative modalities support their continued use for pediatric patients with high caries risk.
- Potential for future caries on unerupted teeth should be considered when planning for very young pediatric patients to have dental treatment under general anesthesia.

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