

# Age and Gender as Risk Factors for Multiple Comprehensive Dental Treatments Under GA for the Healthy Child



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## INTRODUCTION

Early Childhood Caries (ECC) is a rapidly progressive chronic disease characterized by the presence of one or more decayed, missing, or filled teeth in children under the age of six. In cases where ECC is severe, treatment under general anesthesia may be the most appropriate option. However, even with treatment under general anesthesia, the disease may persist, necessitating repeat treatments under general anesthesia in some cases.

Although the etiology of ECC is multifactorial, research indicates that several factors may contribute to the need for multiple treatments under general anesthesia. These factors include the initial involvement of maxillary central incisors (majority being nonrestorable), continued use of a nursing bottle at the time of GA, child brushing their teeth, poor cooperation in medical and dental settings, and lack of follow-up dental care. Other research has identified that uncooperative behavior, dental fear, and an excessive need for treatment were the primary reasons for repeated treatments under general anesthesia.

The objective of this study is to determine whether a correlation exists between age, gender, and the need for repeat dental treatments under GA.

## PURPOSE

The purpose of this retrospective chart review is to examine whether age and gender are significant risk factors that could potentially indicate a higher risk for multiple comprehensive dental treatments under general anesthesia. By analyzing patient data, we aim to identify any potential associations between age, gender, and the need for repeat treatments under general anesthesia for comprehensive dental procedures. This information could help clinicians to better identify patients who are at risk of needing multiple treatments and develop more effective treatment plans tailored to individual patient needs.

## METHOD

This is a single-site retrospective chart review study that focuses on healthy pediatric patients between the ages of 0 and 12 years old who received comprehensive dental treatment under general anesthesia at the St. Joseph Pediatric Dental Clinic between January 1, 2018, and January 1, 2022. Patients who received comprehensive dental treatment under general anesthesia only once or had a medical or behavioral condition that made normal diet or oral hygiene difficult will be excluded from the study.

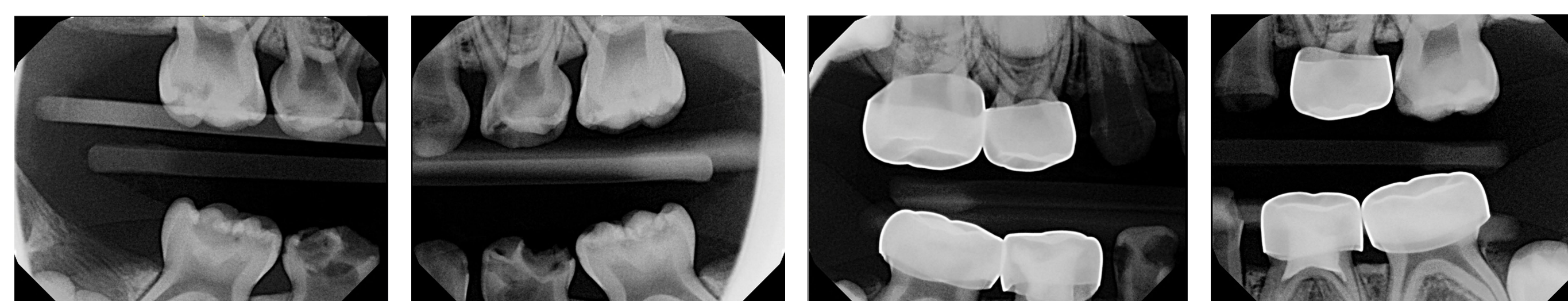
The data will be collected from electronic patient charts stored within the Dentrix software at the St. Joseph Pediatric Dental Clinic. The following information will be extracted from the patient charts:

- Age (0-12 years old)
- Gender (male/female)
- Initial treatment dates
- Additional treatment dates

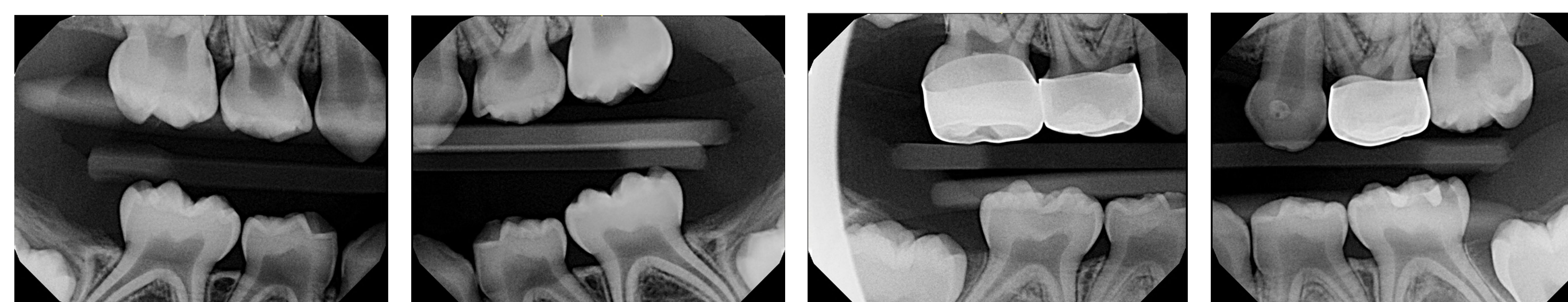
These data points will be used to evaluate whether age and gender are significant risk factors for multiple comprehensive dental treatments under general anesthesia.

## Pre-Op Bitewings From First and second GA Encounters

Examples of cases that required treatment under GA twice:



Case 1: CN, age 2y 11m, received multiple SDF treatments before first GA. Visible decay in all quadrants due to nighttime soda consumption. Second GA scheduled at age 4y 11m due to recurrent decay and anterior decay on #J despite MO composite and SSC on other primary molars. Radiographs show corresponding decay.



Case 2: ER underwent treatment under general anesthesia at the age of 2 years and 9 months. The patient had unrestricted access to crackers throughout the day and night, which likely contributed to the need for multiple extractions, including #D, E, F, and G, and the placement of SSCs on #A, B, and I. At the age of 5 years and 5 months, an attempt was made to provide treatment in-office with nitrous oxide, but the procedure was aborted due to behavior. Shortly after this, the patient received treatment under GA, during which SSCs were placed on the remaining primary molars.

## RESULTS

The study analyzed data obtained from Dentrix and treatment codes billed at Fatima Hospital in Rhode Island, focusing on 930 individuals who received treatment under general anesthesia within the selected date range. Out of the 930 individuals, 13 were identified as having received treatment under GA more than once. However, after reviewing these 13 cases, 7 were excluded from the analysis due to various reasons such as medical conditions that may have affected their need for treatment under GA, inaccuracies in the data including wrong dates in codes and notes, and duplication of patient records with variations in name spelling.

Of the 6 individuals included in this study, 3 were female and 3 were male, with the males being 2 years old and the females ranging in age from 5 to 8. Due to the limited sample size, it is not feasible to establish statistically significant trends regarding the correlation between age, gender, and the requirement for multiple comprehensive dental treatments under general anesthesia. In order to obtain meaningful statistical results, a larger sample size may be necessary. This could be achieved by expanding the data collection process to include multiple sites or broadening the date range. However, due to limitations in the data collection software used at this site, it was not possible to obtain a larger dataset for this study.

## CONCLUSIONS

Based on the findings of this retrospective chart review study, it is not possible to identify a statistically significant trend between age and gender and the need for multiple comprehensive dental treatments under GA. However, incidental findings in the radiographs of included individuals reflect the findings of previous studies, indicating that decay in the maxillary central incisors and incomplete coverage of primary molars with SSCs may increase the risk of requiring multiple treatments under GA. Further research with larger sample sizes and a broader range of data may be necessary to confirm these findings. Despite the limitations of this study, the results underscore the importance of early intervention and comprehensive care in preventing the progression of ECC and the need for extensive treatment under GA. Clinicians should be mindful of these risk factors when evaluating and treating pediatric patients with ECC.

## REFERENCES

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