

# No Preparation Strip Crowns – A Minimally Invasive Restorative Technique

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## Background

- Management of anterior carious lesions commonly includes restorations like anterior zirconia crowns, pre-veneered stainless-steel crowns, or composite strip crowns.
- While these restorative techniques are effective, they require patient cooperation for local anesthesia and tooth preparation, posing challenges for pre-cooperative children.
- Inspired by minimally invasive dentistry and the posterior "Hall crown" technique, this novel technique involves no caries removal and restoration of anterior carious lesions with strip crowns.

## Objective

- Compare the success of no preparation strip crowns with traditional preparation strip crowns completed in clinic.

## Methods

- A retrospective electronic chart review was completed on patients ages 5 months to 6 years who had at least one carious lesion in a primary anterior tooth with no pulp involvement.
- Patient charts were reviewed for follow up at 6 months, 1 year, 2 years, 3 years or until exfoliation or failure of restoration.
- The reason for failure of restoration was also recorded.

Pre-op radiograph and clinical photos (9/2023)



Post-op clinical photo and post-op x-ray from 1 year follow-up

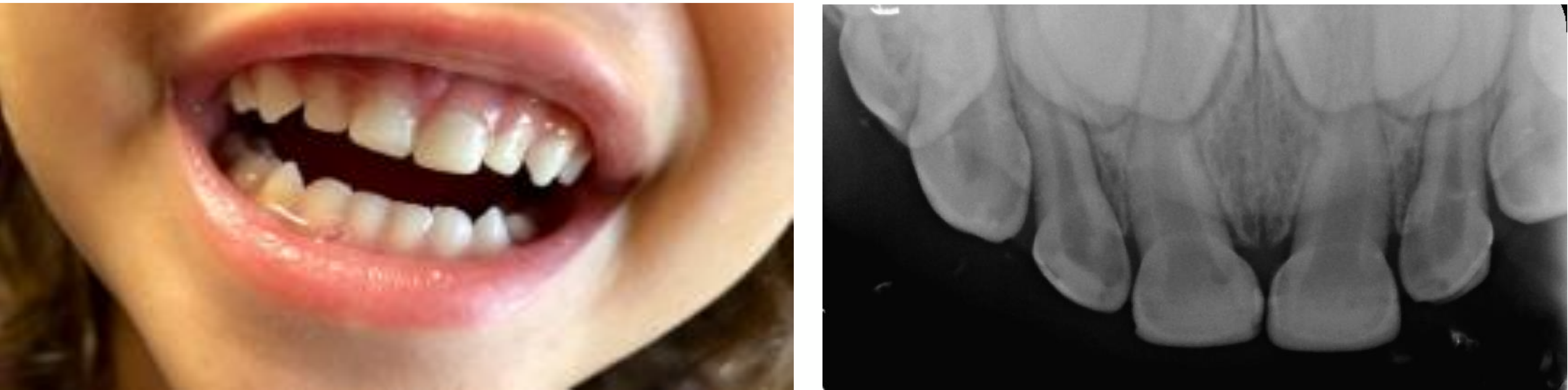


Table 1. Patient Demographics (n=113)<sup>a</sup>

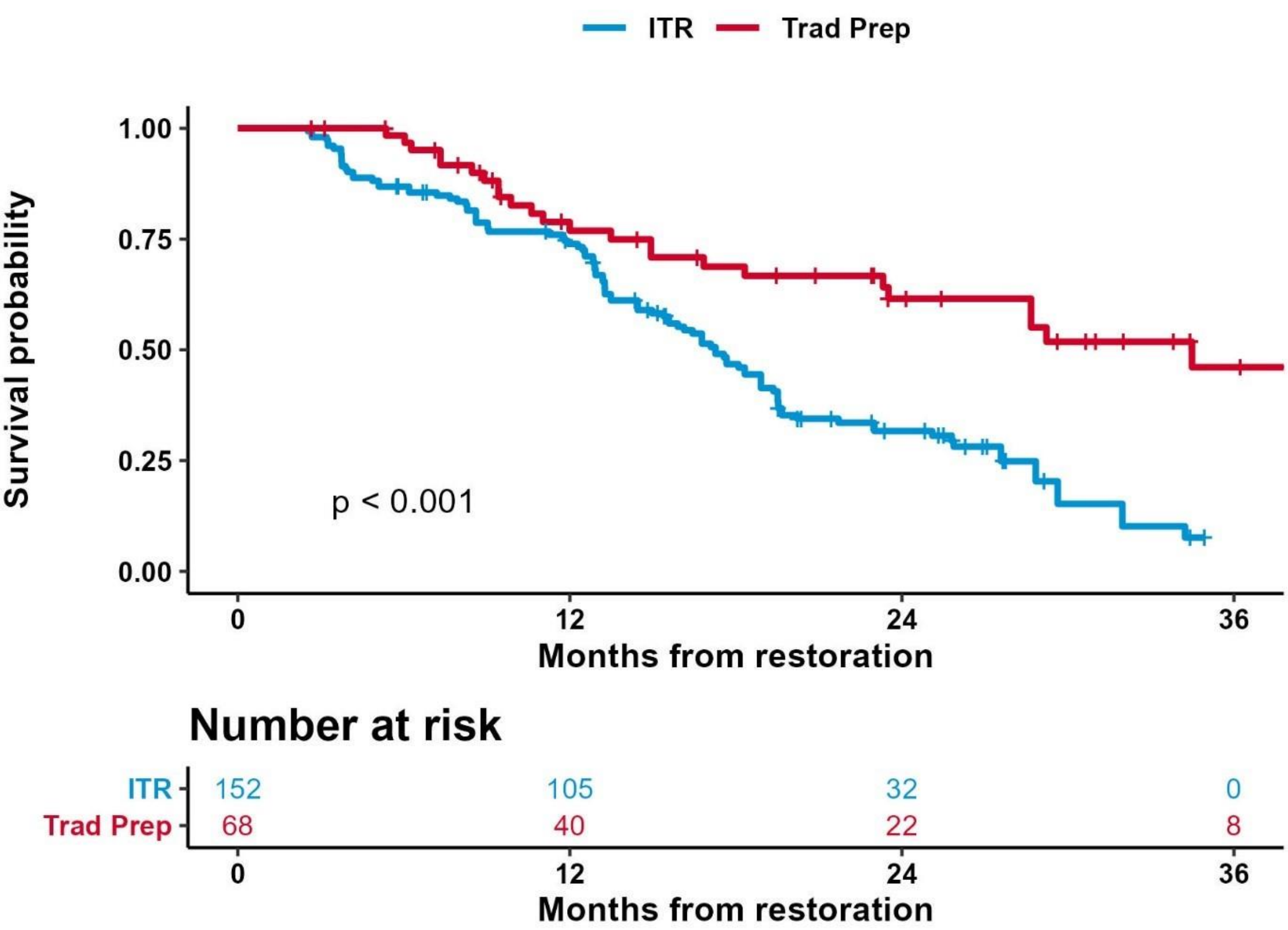
	ITR (n=69)	Trad Prep (n=44)	p-value
<b>Gender</b>			0.658 <sup>b</sup>
Female	39 (57%)	23 (52%)	
Male	30 (43%)	21 (48%)	
<b>Age (years)<sup>c</sup></b>			0.013 <sup>d</sup>
Mean (SD)	4.1 (1.1)	4.7 (1.2)	
Median (IQR)	4.0 (3.4, 4.7)	4.7 (3.8, 5.5)	
Range	1.8, 6.7	2.4, 6.9	

<sup>a</sup> Patients having both restoration types (n=2) were removed; <sup>b</sup> Pearson's Chi-squared test; <sup>c</sup> Age at first restoration for patients with more than one restoration date; <sup>d</sup> Wilcoxon rank sum test

## Results

Table 2. Survival of strip crown restorations (n=220)

	ITR (n=152)	Trad Prep (n=68)
Months of follow-up time, median (IQR)	15 (9,22)	17 (9,29)
<b>Status, n (%)</b>		
Tooth Exfoliated (0)	19 (13%)	35 (51%)
Restoration still present at last follow-up (0)	26 (17%)	8 (12%)
Restoration failed (1)	107 (70%)	25 (37%)
<b>Reason for failure, n (%)</b>		
Fractured restoration	22 (21%)	9 (36%)
Recurrent caries	81 (76%)	15 (60%)
Pathology	4 (3.7%)	1 (4.0%)
(#NA)	45	43



## Key Findings & Conclusion

- No preparation strip crowns had a higher rate of failure as compared to traditional preparation strip crowns.
- Most failures occurred due to recurrent caries.
- The mean time to failure for no preparation strip crowns was 15 months.
- This technique presents a minimally invasive restorative technique for treatment of anterior carious lesions in the primary dentition.
- A mean survival time of 15 months may allow time for the patient to seek final treatment in a sedation setting or be more cooperative for clinic treatment.
- Future studies will need to be completed to further refine this technique and help minimize failures.