

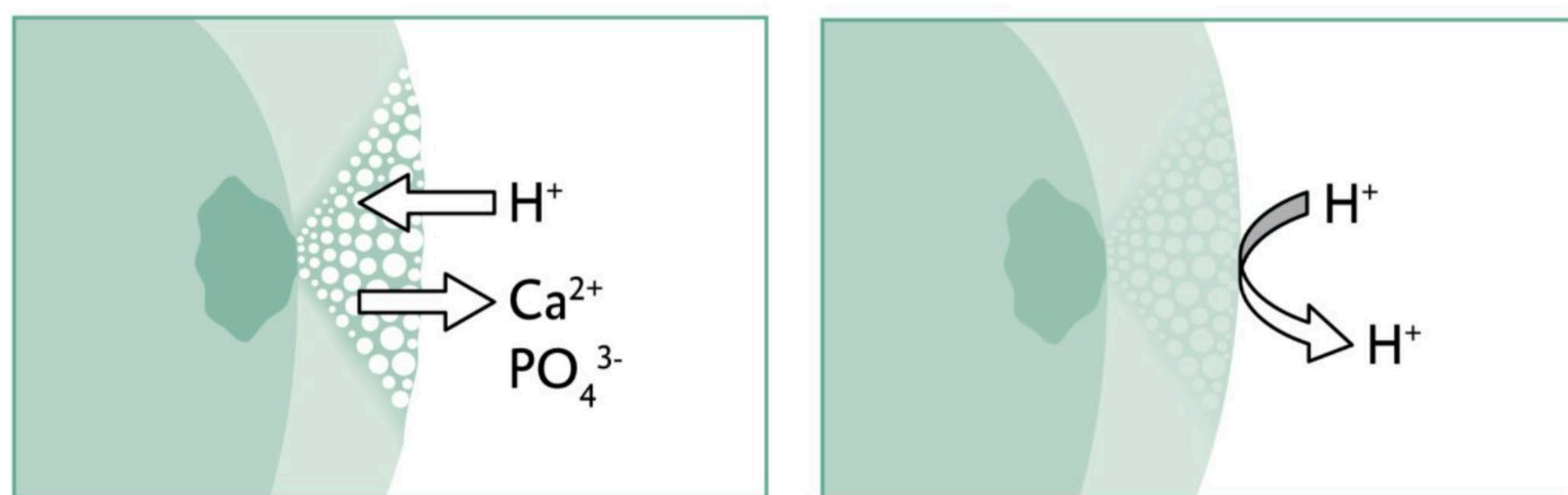
INTRODUCTION

- ICON is a resin infiltrant listed on the ADA website as a restorative material, advertised as a “breakthrough caries infiltrant”
 - “Arrests caries progress without loss of healthy teeth”
 - “Cosmetic treatment of cariogenic white spots in one visit”
 - “No drilling or anesthesia required”
 - “Prolonged life expectancy of tooth”
 - “Enables immediate treatment of lesions”
- This poster highlights the ability of ICON resin infiltrant (RI) to maintain structural integrity of Molar Incisal Hypomineralization (MIH) -affected teeth

RESIN INFILTRATION USAGE

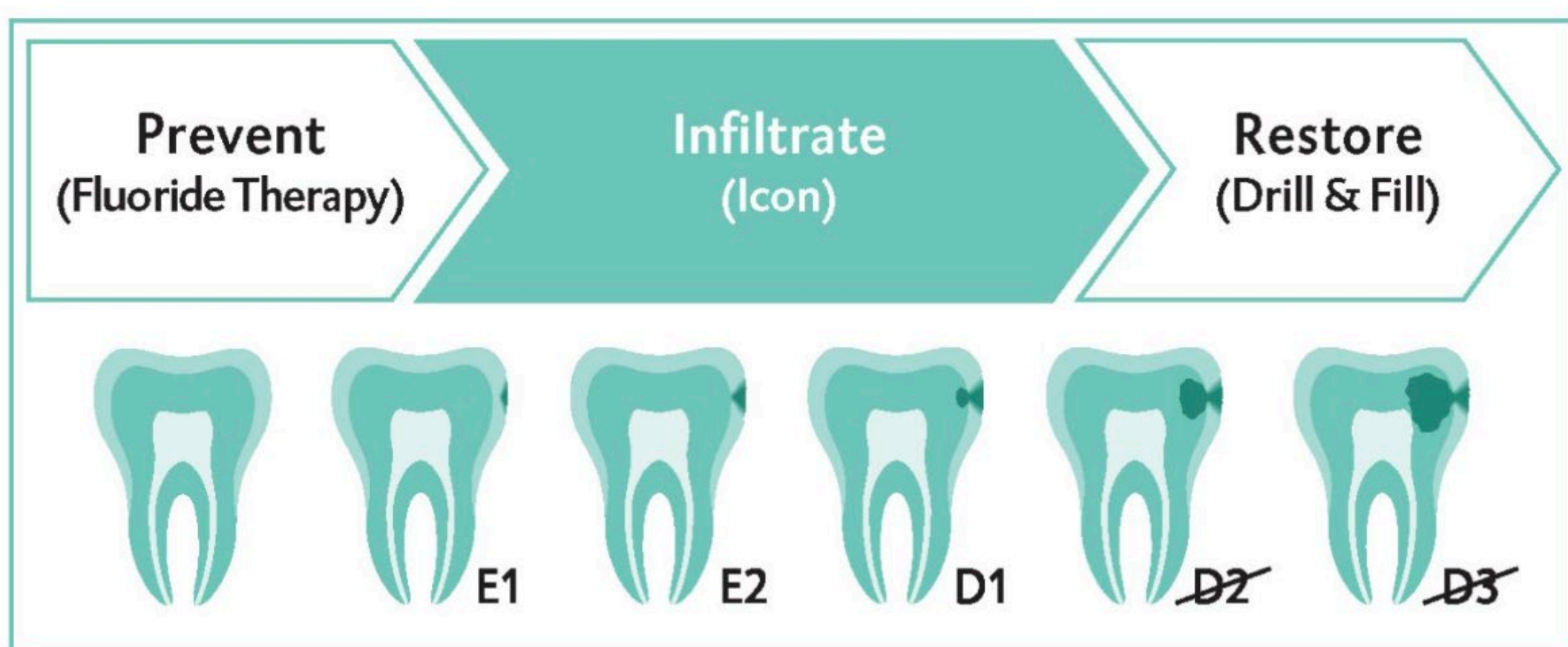
- Etch with acid (HCl gel) to remove pseudo-intact surface layer and gain access to pore system of tooth
- Dry with ethanol and air
- Apply infiltrant (highly fluid resin) and light cure for 40 seconds

How Icon effectively infiltrates early caries



With the onset of caries, cariogenic acids attack the enamel and draw out minerals.

After treatment with Icon, the pore system is closed, blocking the progression of caries.



FLUORIDE VARNISH VS RESIN INFILTRATION

Structural integrity of MIH-affected teeth after treatment with fluoride varnish or resin infiltration: An 18-Month randomized clinical trial

Vinícius Krieger Costa Nogueira^{a,*}, Igor Paulino Mendes Soares^b, Camila Maria Bullio Fragelli^a, Talita Boldieri^a, David John Manton^{c,d}, Diego Giroto Bussaneli^a, Rita de Cássia Loiola Cordeiro^a

- Objective: to evaluate the impact of fluoride varnish (FV) or resin infiltration (RI) therapies on the structural integrity of Molar Incisor Hypomineralization (MIH) -affected teeth.

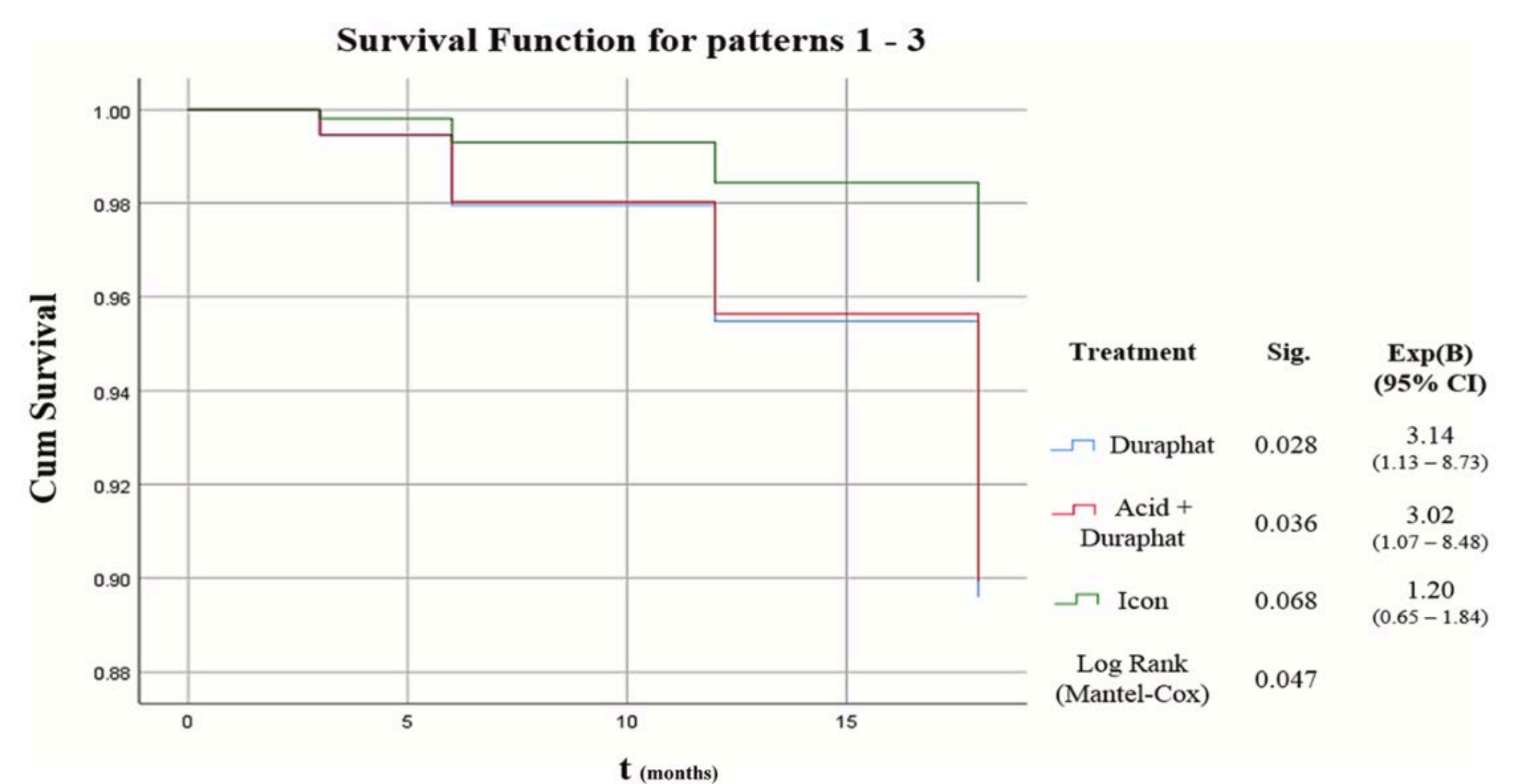
MOLAR INCISOR HYPOMINERALIZATION

- Molar Incisor Hypomineralization (MIH) is defined as qualitative developmental defects affecting one first permanent molar with or without involvement of incisors.
- MIH-affected enamel features inferior mechanical properties, alongside higher caries risk stemming from lower mineral content, more disorganized enamel structure, and eventual development of post-eruptive enamel breakdown (PEB) after tooth eruption.

MATERIALS AND METHODS

- 51 children (6-12 years old) with at least one incisor and a permanent molar affected with MIH were included. The subjects were randomly allocated into three groups and opacity monitored for 18 months. The primary outcome studied was post-eruptive enamel breakdown (PEB).
- Single-blinded randomized control trials tested three treatment groups consisting of: Fluoride Varnish (FV), Fluoride Varnish + Phosphoric Acid Pre-Treatment (FV+ETCH), or Resin Infiltrate (RI)

RESULTS



- From a total of 235 teeth, the PEB rate for RI (6.1%) was significantly lower than the FV (17.9%; OR 3.0, 95% CI 1.07-8.48) and FV+ETCH (17.3%; OR 3.1, 95% CI 1.13-8.73) groups.
- DMFT index >3, brown opacities, cuspal involvement, and age between 6-8 years predicted PEB (<0.05)

Table 1
Absolute and relative frequency distribution of failure – post-eruptive enamel breakdown (PEB) associated or not with carious lesions development (CL) – according to the intervention groups and MIH-affected teeth after 18 months follow-up.

Group ¹	Molars		PEB + CL		Incisors		PEB + CL		Molars + Incisors		Total		
	N	(%)	N	(%)	N	(%)	N	(%)	Not Failure	Failure			
FV	10	22.2	2	4.4	2	6	-	-	64	82.1	14	17.9 ^A	78
FV+etch	9	20.9	1	2.3	3	9.3	-	-	62	82.7	13	17.3 ^A	75
RI	5	10.6	-	-	-	-	-	-	77	93.9	5	6.1 ^B	82

CONCLUSION

- Resin infiltration is a significantly more effective method of preventing post-eruptive enamel breakdown in MIH-affected teeth versus treatment options of fluoride varnish with phosphoric acid pre-treatment or fluoride varnish alone.
- Factors to consider during treatment include depth of lesions and patient caries risk.
- Future research should investigate results of long-term therapeutic effect.

REFERENCES

- American Dental Association. “Product Profile.” ADA Dental Product Guide: Icon (DMG America LLC), www.ada.org/en/publications/ada-dental-product-guide/product-category/product-profile?productid=417&catid=100.
- Nogueira, V. K., Mendes Soares, I. P., Fragelli, C. M., Boldieri, T., Manton, D. J., Bussaneli, D. G., & Cordeiro, R. de. (2021). Structural integrity of MIH-affected teeth after treatment with fluoride varnish or resin infiltration: An 18-month randomized clinical trial. *Journal of Dentistry*, 105, 103570. <https://doi.org/10.1016/j.jdent.2020.103570>