

POLA FRESH

Clinical Applications of a Novel 3% Hydrogen Peroxide Foam



Dr Miles Cone

Dr. Miles Cone graduated from Tufts Dental School and completed a 3-year Prosthodontic residency in the United States. Army. In addition to achieving board certification and diplomate status within his specialty, Dr. Cone has earned his designation as a Certified Dental Technician. Dr. Cone's career revolves around his role as a is Key Opinion Leader, international speaker, author, and co-owner of Nuance Dental Specialists in Yarmouth, Maine.

INTRODUCTION:

An 18-year-old female undergoing orthodontic therapy in preparation for full-coverage crowns on maxillary peg lateral incisors presented with difficulty maintaining oral hygiene, aligner discoloration, and a desire for pre-restorative tooth whitening. Conventional use of 3% Hydrogen Peroxide gel in custom-fabricated trays is a predictable method to improve oral hygiene and tooth color. To additionally address aligner staining associated with near-continuous wear, Pola Fresh, a novel 3% Hydrogen Peroxide foam with a two-part delivery system was utilized.

Application to the intaglio surface improved oral hygiene and whitening, while application to the cameo surface enhanced aligner clarity through non-abrasive chemical disruption of biofilm and stains.

CASE STUDY:

Dental aligners are typically worn for up to 23 hours a day and are frequently exposed to routine dietary exposure. Visible hyperchromatic staining and biofilm accumulation typically results and may compromise both aesthetics and hygiene (Figure 1). The patient expressed embarrassment regarding the appearance of the appliances and a desire for an easy and efficient tooth whitening and hygiene protocol that would not disrupt her on-going orthodontic treatment timeline.

To address these concerns, a novel 3% Hydrogen Peroxide foam with a straightforward delivery system was introduced. Two to three pumps of the foam were applied per aligner tray for both the maxillary and mandibular arches (Figure 2). The foam was distributed evenly across the intaglio and cameo surfaces, ensuring complete coverage of areas prone to retention of debris and food particles – especially recesses for the resin button attachment zones and tray borders.

Following application, the foam was allowed to remain on the aligners for 10–15 minutes outside the mouth. During this time, the 3% Hydrogen Peroxide foam decomposed into hydrogen peroxide and urea, initiating an oxidative chemical cleansing process. Effervescence and surfactant activity facilitated penetration into surface irregularities, scratches, difficult to clean topographical crevices of each aligner resulting in non-abrasive disruption.



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Fig 1 Maxillary aligner with hyperchromatic dietary staining.

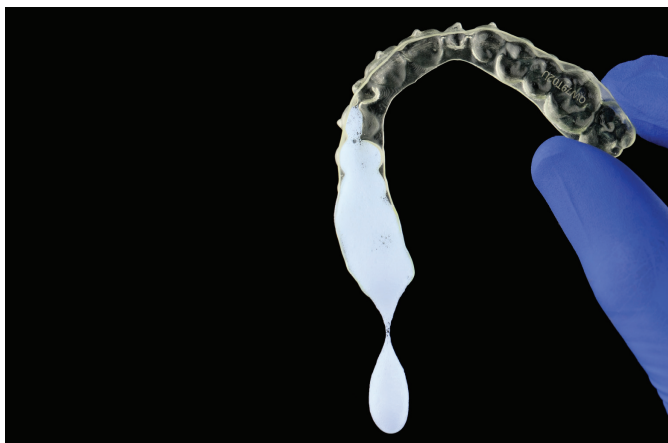


Fig 2 Pola Fresh application to intaglio surface of maxillary aligner.



Fig 3 Maxillary aligner with improved optical clarity following a single 15-20 minute Pola Fresh application.



Fig 4 Maxillary aligner with residual 3% Hydrogen Peroxide foam maintains continual contact with the tooth surface throughout the course of the day and night.



Fig 5 Before and after results of maxillary dentition and gingival demonstrating a marked improvement in oral hygiene and whitening effect after 4 weeks of daily aligner use with Pola Fresh.



Fig 6 A more confident smile that was achieved with the use of a unique foaming hydrogen peroxide system designed to improve hygiene, clean aligners, and simultaneously whiten teeth

CONCLUSION:

At the conclusion of the intervention the combined effects of enhanced aligner hygiene and effective whitening contributed to improved oral health and aesthetics during active orthodontic treatment. The patient reported increased confidence and satisfaction with both the appearance of her aligners and her smile. The final images demonstrate a clean, clear aligner system and a healthy, brighter dentition, reinforcing the clinical value of this foaming hydrogen peroxide approach as an adjunctive hygiene and whitening solution for patients with aligners (Figure 6).