

New breakthrough in prophy polishing

New Enamel Pro incorporates amorphous calcium phosphate into a prophy paste

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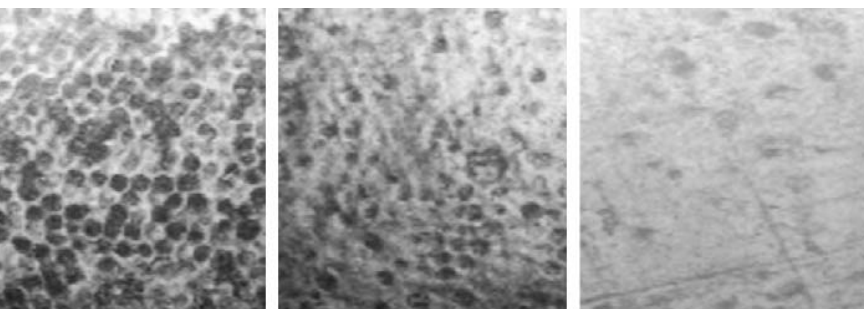
Prophy polishing is part of the dental hygiene appointment that patients expect. In fact, many patients associate polishing with the oral prophylaxis. Without the polishing, some patients believe that they did not get their teeth cleaned. There have been no real advances in prophylaxis paste until recently. Advancements in remineralization technology has reached the prophy market with the introduction of Enamel Pro by Premier.

Remineralization, as well as demineralization, is a dynamic ongoing process on the tooth surface. In healthy individuals with good oral hygiene, the

One type of remineralization technology designed to reverse the demineralization process involves the strategy of introducing amorphous calcium phosphate (ACP) to the tooth surface. The ACP reacts with saliva or water to release calcium and phosphate ions, filling in enamel surface defects. During this chemical reaction, ACP is converted into apatite, the building blocks of the tooth enamel. ACP compounds have the highest rates of solubility among calcium phosphates. As cited in “Dental Application of Amorphous Calcium Phosphates”, The Journal of Clinical Dentistry, dated 1999, the conversion of ACP to apatite depends on the oral conditions, but generally occurs within 6 minutes, even after rinsing.

In addition to preventing enamel loss, the ACP-forming ingredients in Enamel Pro also strengthen teeth by acting as an enhanced fluoride delivery system. Although Enamel Pro prophy paste contains the same amount of fluoride as all other fluoridated prophy pastes, it increases fluoride ions. This is due, in part, to the presence of the released calcium and phosphate ions on the tooth surface. The process acts to optimize the tooth surface for the uptake of available fluoride ions. A recent study has shown that fluoride uptake is increased by 31% with Enamel Pro¹ (Fluoride is well recognized within the dental community for its ability to prevent caries and harden tooth enamel. With Enamel Pro, smiles are actually strengthened during the polishing procedure).

Studies also demonstrate that Enamel Pro with ACP delivers a more lustrous enamel surface.^{2,3} Using a non-contact profilometry intensity map profile, one can view the tooth enamel surface prior to a prophy polishing. The outline of the enamel prisms are



Figures 1-3. Tooth enamel prior to prophy polishing. Enamel prisms are clearly visible; and there is little change after a traditional polish; while Enamel Pro fills the intercrystalline spaces between the prisms.

competing effects of remineralization and demineralization result in no net gain or loss in the mineral content of enamel; however, when acidogenic bacteria or erosive substances push this equilibrium effect over to the demineralization side, tooth mineral can be lost and the potential for decay is increased significantly. Demineralization is the loss of calcium and phosphate ions from the enamel.

clearly visible, and are created when organic acids dissolve the enamel (Figure 1). The tooth-enamel surface after a polishing with a leading competitor's paste resulted in the same prism surface pattern (Figure 2). The tooth surface after polishing

A paramount milestone in prophy polishing, Enamel Pro with ACP comes in four pleasant flavours - mint, strawberry, grape and cinnamon - combined with the standard grits. The colourful swirl design and aroma appeal to patients. Dental pro-

quickly, creates less splatter and is easy to rinse. With Enamel Pro, today's patients can receive the polishing they expect and dental professionals can deliver a benefit that they seek. It is a win-win.



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with Enamel Pro revealed that the intercrystalline spaces between the prisms have been filled in (Figure 3). The immediate impact of ACP is what helps strengthen the teeth and improve their glossy shine.

fessionals benefit from its popularity and great functionality. There is no need to mix the Enamel Pro prior to application; the ACP formula is equally distributed among the colours. Enamel Pro cleans

References

1. Final Report: Enamel Fluoride Uptake Study #05-106, Modified FDA Method #40, Dental products Testing, Indiana University Technologies Centre, December 2005.
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3. Tung, M.S., O’Farrell, T.J., Liu, D.W., Paffenberger Research Centre. ADAHF NIST. Gaithersburg, MD “Remineralization by Amorphous Calcium Phosphate Compounds” Journal of Dental Research, Vol 72, Abstract No. 1738, 1993.

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