

Enamel Protection: OTC vs. Rx: Crest Pro-Health vs. ClinPro™ 5000

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ABSTRACT

While U.S. OTC toothpastes generally contain 1000-1100ppm Fluoride (F), Rx toothpastes often contain 5000ppm F. Some researchers believe that since F, in general, provides a low level benefit to the enamel against acid attack, more F will work even better. A previous study in our laboratory demonstrated superior enamel protection for an 1100ppm F stabilized SnF₂ formulation vs. conventional Rx products (Eversole, 2009), in spite of having a lower level of F. A new 5000 ppm F Rx product, ClinPro™ 5000 contains an 'innovative tri-calcium phosphate ingredient' and claims to 'deliver more fluoride, help strengthen enamel and help reverse white spot lesions better than conventional 5000 ppm prescription fluoride toothpastes'.

Objectives: Purpose of this study was to compare the relative ability of Crest Pro-Health toothpaste, with 1100ppm F as stabilized SnF₂ to this new, calcium containing, Rx toothpaste to protect human enamel against acid induced damage.

Methods: Cores of enamel were removed from extracted human teeth and prepared using standard procedures, soaked in pooled saliva (pellicle formation), then treated in a 1:3 slurry of product: saliva. Toothpastes compared were: A) Crest Pro-Health (1100ppm F as SnF₂); B) ClinPro™ 5000 (5000ppm F as NaF + tricalcium phosphate); and C) Crest Cavity Protection: 1100ppm F as NaF. Specimens were subjected to erosion cycling conditions (Eversole et al., Poster #3369, IADR 2009) using 1% citric acid challenges representing a common dietary acid.

Results: Specimens from Group A demonstrated significantly less damage (p=0.05, ANOVA) than both control and the other test groups, losing an average of 5.8µm of enamel. Group B lost an average of 19.8µm, while Group C lost an average of 18.0µm.

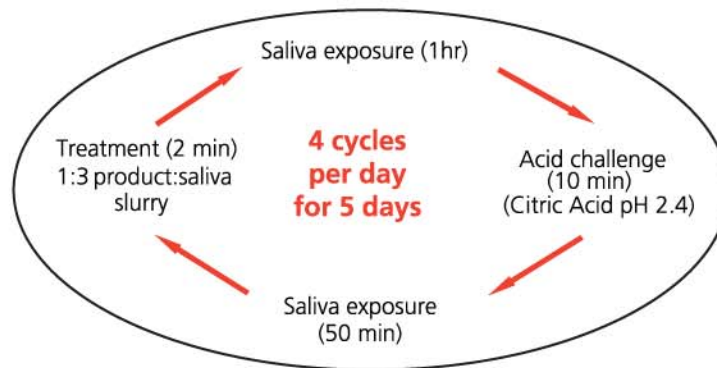
Conclusions: This study demonstrates Crest Pro-Health toothpaste provides superior protection to enamel against dietary acid attack compared to the new, "calcium enhanced" prescription product containing 5000ppm F.

TEST PRODUCTS

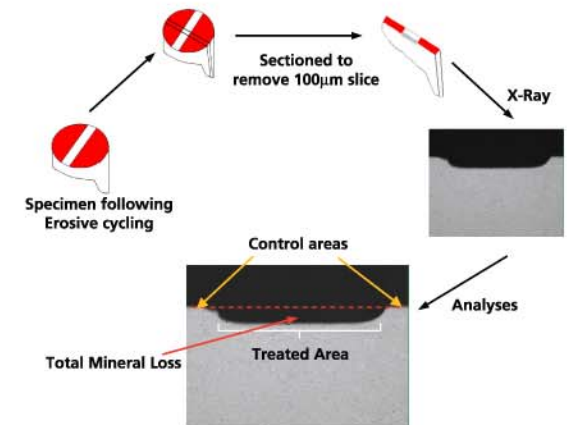
Crest Cavity Protection: 1100ppm F as NaF
Crest Pro-Health: 1100ppm F as SnF ₂
ClinPro™ 5000: 5000ppm F as NaF + tricalcium phosphate

MATERIALS AND METHODS

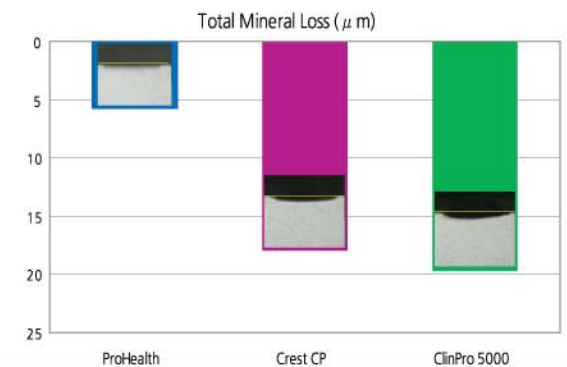
Specimens are prepared from human enamel, controlled then placed into groups of 4 specimens per test cell. Following a 1hr. exposure to human saliva to initiate pellicle formation, the cycling procedure begins.



ANALYSIS OF SPECIMENS: Following the 5-day cycling procedure, specimens are analyzed to determine microns of actual surface loss as compared to the controlled areas



RESULTS



CONCLUSIONS

This study demonstrates Crest Pro-Health toothpaste provides superior protection to enamel against dietary acid attack compared to the new, "calcium enhanced" prescription product containing 5000ppm F.