

# Laboratory Evaluation of StaiNo<sup>®</sup> Tooth Stain Eraser for Stain Removal and Abrasivity

## OBJECTIVE

The primary objective of this laboratory study was to evaluate the potential of using the StaiNo<sup>®</sup> Tooth Stain Eraser product to effectively remove stain from natural tooth enamel.

The secondary objective of this study was to evaluate the abrasivity of the product relating to scratching or other deleterious effects on tooth enamel.

## RESULTS

### Stain Removal - On light coffee, tea, or tobacco stain.

Visual examination and colorimetric determinations showed that regardless of the type of stain, removal of the stain from the extracted teeth was generally accomplished after 30 strokes with the 400 grit StaiNo<sup>®</sup> Tooth Stain Eraser product.

### Stain Removal - On heavy tobacco stain with calculus

In general, for total stain removal using the 400 grit StaiNo<sup>®</sup> Tooth Stain Eraser 200 strokes were required. It should be noted that very heavy stains were generally associated with calculus build-up on the teeth. The degree of difficulty of removal of the stain was compounded by the removal of the underlying calculus.

Photographs of the stain removal of some heavily stained lower incisors are shown in figures 1- 4.



Figure 1  
Initial Stain



Figure 2  
Stain Removed With  
StaiNo Tooth Stain Eraser



Figure 3  
Sample #2 - Initial Stain



Figure 4  
Sample #2, Stain Removed With  
StaiNo Tooth Stain Eraser

## Scratching of Tooth Surface by the StaiNo<sup>®</sup> Tooth Stain Eraser

Using the stereomicroscope, it was observed that the enamel surface rubbed with the 400 grit Tooth Stain Eraser had no visible scratches and remained shiny in appearance.

Using the scanning electron microscope at 400 to 1000X, it was determined that the 400 grit StaiNo<sup>®</sup>

Tooth Stain Eraser created scratches which were generally less than 5 microns in width. See Figure 5.



Figure 5 - Scratches Produced By 400 Grit StaiNo<sup>®</sup> Tooth Stain Eraser SEM Magnification 500X

## CONCLUSIONS

1. The 400 grit StaiNo<sup>®</sup> Tooth Stain Eraser is capable of removing light and heavy stains of coffee, tea, and tobacco.
2. The 400 grit StaiNo<sup>®</sup> Tooth Stain Eraser creates no visible differences in the enamel surface after rubbing and the surface remains shiny. Microscopically, it appears that this instrument creates scratches in the enamel surface which are less than 5 microns in width. In the investigator's opinion these small scratches created may be remineralized by natural salivary constituents and by using remineralizing over-the-counter toothpaste formulation.

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