

Laboratory Evaluation of StaiNo® Dental Floss for Stain Removal and Abrasivity

OBJECTIVE

The primary objective of this study was to determine the stain removing ability of StaiNo dental floss.

The secondary objective was to evaluate the effect of the StaiNo dental floss on natural tooth enamel (safety evaluation).

RESULTS

Stain Removal

The Minolta Colorometer measurements show a significant decrease in the amount of stain on the test bovine tooth enamel surfaces when brushed for 10,000 reciprocal strokes. The amount of stain removal was dependent on the level of initial stain: lighter stains were removed more significantly and sooner than heavier stains.

Safety

Examination of human enamel under the SEM (Scanning Electron Microscope) at 1000X magnification shows no adverse changes in surface condition (i.e., no scratches) after 10,000 brush strokes. The brushes do not abrade human tooth enamel to any measurable extent.

1. Microscopy of the Floss

SEM Photomicrographs of the floss are shown in SEM 1 and SEM 2. The abrasive particles can be clearly seen at high magnification.

2. Stain Removal

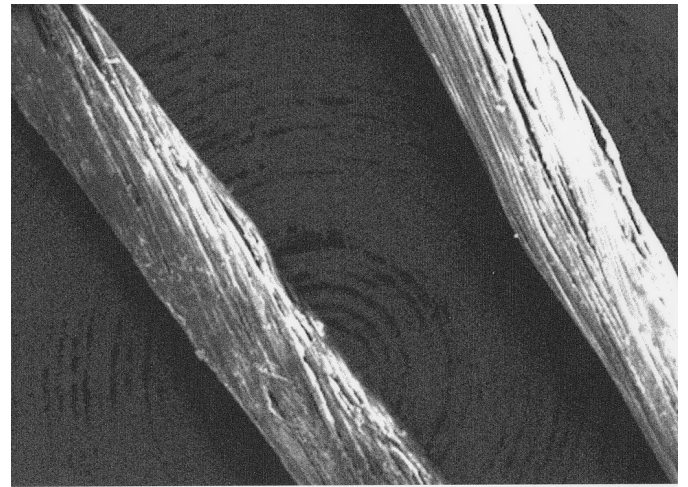
The data of the Minolta Colorometer for the average of all samples tested are shown in the table below. There was a significant progressive lightening of the tooth as compared to the baseline (unflossed) state as shown by the increase in the ΔE values.

# of Reciprocal Flossing Strokes	ΔE
20	10.34
50	17.17
100	23.76
200	30.76

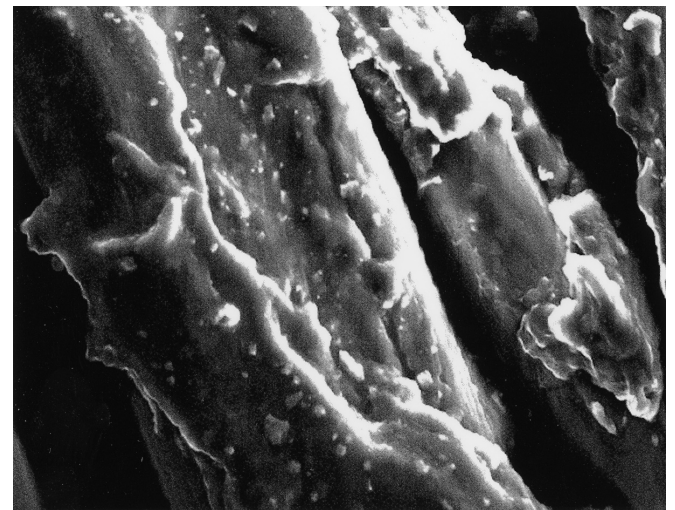
The digital images of the sequence of flossing stain removal for a representative sample are shown in SEM 3 and SEM 4.

3. Safety

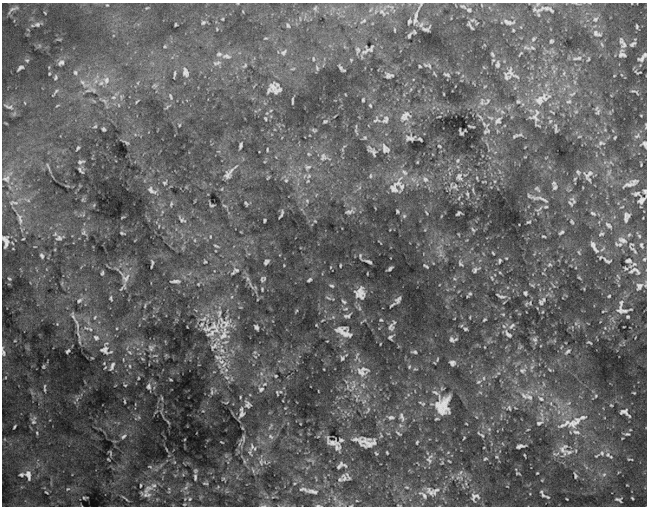
No adverse effect of the floss on natural tooth enamel was determined using the SEM at 25 and 100x. No scratches were seen on the enamel surfaces after 200 reciprocal strokes. The results of a representative sample are shown in Colorometer 1 and Colorometer 2.



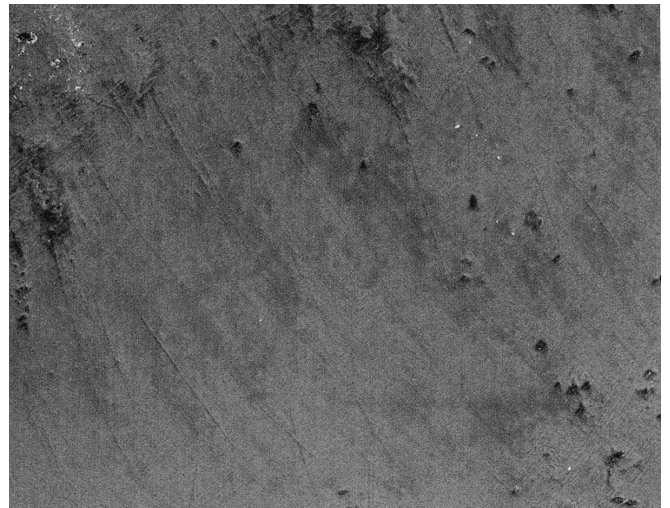
SEM 1
StaiNo Dental Floss 25x



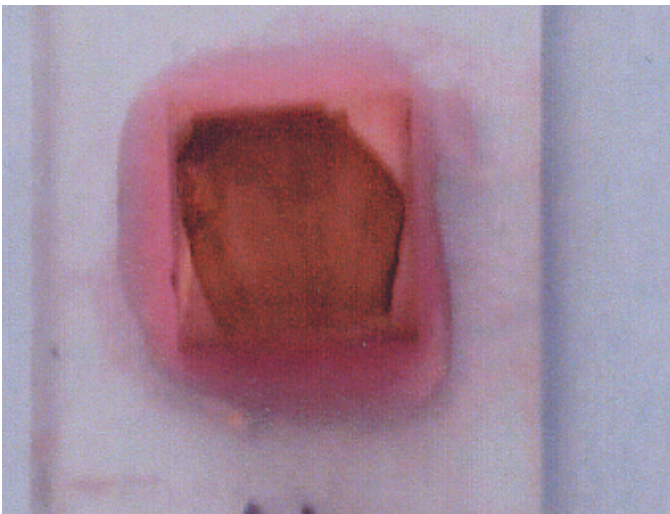
SEM 2
StaiNo Dental Floss 1000x



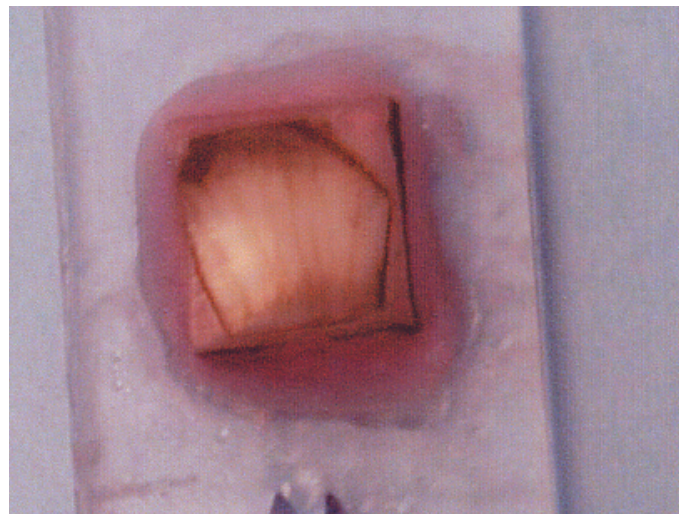
SEM 3
Enamel Surface Before Flossing 100x



SEM 4
Enamel Surface After StaiNo Floss 100x



Colorometer 1
Baseline Of Stained Tooth



Colorometer 2
After 200 Strokes With StaiNo Floss

Studies conducted at:
New Jersey Dental School (UMDNJ)
110 Bergen Street
Newark, New Jersey 07103
July 31, 2003
by Marc A Rosenblum, Ph.D., D.M.D
Associate Professor of Dentistry and Biomaterials
Dr. Rosenblum has been involved in the laboratory
and clinical research of dental products since 1971. He
lectures extensively to faculty and students in the area of
dental materials at NJDS and other institutions.

For more information:
1-866-4-STAINO (478-2466)
www.staino.com