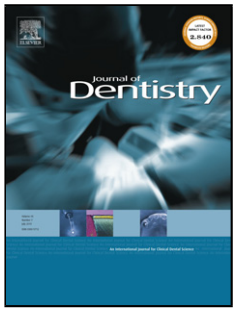

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Title

Effects of tooth-brushing force with a desensitising dentifrice on dentine tubule patency and surface roughness

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Abstract

Objectives: To investigate the effects of a 5% NovaMin containing dentifrice on dentine tubule patency and surface roughness at 100g and 400g tooth brush abrasion forces.

Methods: 75 polished human dentine samples were prepared and randomly allocated into one of five groups; control (1), Na_2PFO_3 100 g abrasion force (2), NovaMin 100 g (3), Na_2PFO_3 400 g (4) and NovaMin 400 g (5). The control group underwent two 2-minute cycles of artificial saliva (AS), one 2-minute erosion cycle; the rest underwent two toothbrush abrasion cycles in an AS/dentifrice slurry and one 2-minute erosion cycle. All samples were imaged at baseline and post intervention using Tandem Scanning Microscopy and Profilometry to analyse tubule patency and roughness.

Results: Mean tubule patency increased significantly between baseline and post intervention in groups 1,2 and 4 and decreased significantly post intervention in groups 3 and 5 ($p<0.01$). Post intervention, there were statistically significant differences in mean patent tubules between NovaMin and the Na_2PFO_3 and control groups ($p<0.001$). Surface roughness increased for all groups