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# Use of a toothpaste containing 8% arginine and calcium carbonate for immediate and lasting relief of dentin hypersensitivity: A simple and effective in-office procedure

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## Abstract

**Purpose:** To evaluate the effectiveness in reducing dentin hypersensitivity (DH) of a commercial toothpaste containing 8% arginine, calcium carbonate and fluoride when applied by a dental professional immediately prior to a professional dental prophylaxis and again after subjects brushed twice daily with the toothpaste at home for 2 weeks, and additionally to assess whether the % reductions in DH observed in the study are comparable to those found in previously published pivotal studies.

**Methods:** This clinical study was a single-center, user-blind, monadic study conducted in Mississauga, Canada. Adult subjects who presented with a tactile hypersensitivity score (Yeaple Probe) between 10 and 50 grams of force and an air blast hypersensitivity score of 2 or 3 (Schiff Cold Air Sensitivity Scale) and met all inclusion and exclusion criteria were entered into the study. Immediately following baseline assessment, qualifying subjects received a single topical application of the test toothpaste to two selected hypersensitive teeth by a dental professional using a fingertip and massage for 1 minute

per tooth, after which they received a professional dental prophylaxis. Subjects then brushed at-home twice daily for 1 minute with their assigned toothpaste for a period of 2 weeks. Tactile and air blast sensitivity examinations were conducted after the dental cleaning procedure and again after 2 weeks of routine twice daily tooth brushing.

**Results:** 39 subjects complied with the protocol and completed the clinical study. Immediately post-prophylaxis, subjects exhibited statistically significant reductions from baseline of 228.9% ( $P < 0.001$ ) in tactile hypersensitivity and 48.9% ( $P < 0.001$ ) in air blast hypersensitivity. Furthermore, after brushing twice daily (morning and evening) for a period of 2 weeks, subjects exhibited statistically significant reductions from baseline of 317.8% ( $P < 0.001$ ) in tactile hypersensitivity and 90.1% ( $P < 0.001$ ) in air blast hypersensitivity. These results are consistent with the results of previously published clinical studies, which demonstrated similar % reductions in DH to a single in-office professional application of the desensitizing prophylaxis paste and to a single direct topical self-application of the desensitizing toothpaste.

**Clinical significance:** The results of this clinical study, together with the results of published pivotal studies, demonstrate that a desensitizing toothpaste containing 8% arginine and calcium carbonate, with or without fluoride, provides statistically significant reductions in dentin hypersensitivity when applied by a dental professional prior to a professional dental prophylaxis. The results also demonstrate that this desensitizing toothpaste provides statistically significant reductions in dentin hypersensitivity when used subsequently as an adjunct to routine twice daily tooth brushing.

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