

Clinical evaluation of a dentifrice containing calcium sodium phosphosilicate (NovaMin) for the treatment of dentine hypersensitivity.

Du MQ, Bian Z, Jiang H, et al. Am J Dent 2008 August;21(4):210-214

Key Points

- This study compares a toothpaste containing NovaMin with a commercially available toothpaste containing 10% strontium chloride.
- The 5% NovaMin toothpaste was more effective than the matched placebo control and commercially available toothpaste containing 10% strontium chloride, providing superior reduction of dentine hypersensitivity.

Aim

To compare the clinical efficacy of two commercially available toothpastes containing either 5% w/w NovaMin or 10% w/w strontium chloride and a matched placebo control toothpaste, on dentine hypersensitivity.

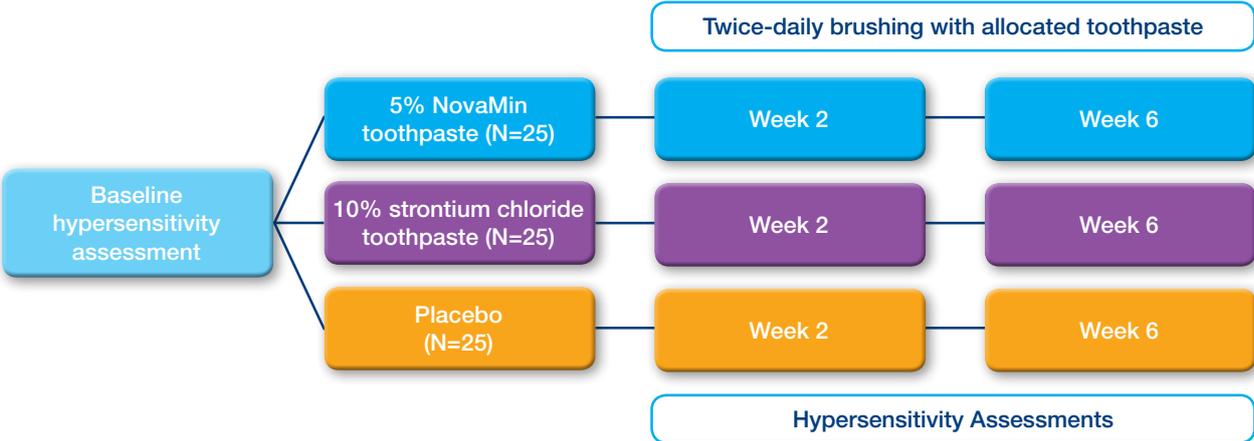
Methods

Study design

A 6-week, double-blind, single centre, parallel group, randomised clinical study involving subjects (aged 21-56 years) with at least two hypersensitive teeth in a Chinese population. After baseline assessments, subjects (n=75) were randomly assigned to one of three study treatment groups:

	NovaMin	Strontium Chloride	Placebo*
Anti-sensitivity ingredient	5% w/w NovaMin	10% w/w Strontium chloride	NIL
Fluoride	NIL	Not specified	NIL
Brand name & Manufacturer	Not applicable: Test product	Leng Suan Ling Chongqing Dencare Oral Care Co Ltd, China	Not applicable: Negative control

* The placebo (negative control) was the same formulation as the NovaMin-containing toothpaste without the NovaMin.



Subjects were provided with a toothpaste and a standard soft toothbrush and instructed to brush their teeth twice daily. Hypersensitivity assessment comprised two tests, which were conducted as shown in the diagram.

Assessment methods:

- **Air blast test:** an air blast from a standard dental air syringe was directed to the sensitive portion of the tooth. Immediately after the air stimulus subjects rated sensitivity on a 10 cm VAS, where 0 = none and 10 = severe.
- **Cold water test:** 5 minutes after the air blast test, approximately 10µL of ice cold water was applied to the exposed root surface with a micro pipette. Immediately following this stimulus subjects rated sensitivity on a 10 cm visual analogue scale (VAS), where 0 = none and 10 = severe.

Results

Improvements compared to baseline

- While changes in sensitivity from baseline to week 2 were similar for all three treatments, the percentage change from baseline to 6 weeks was far greater in the NovaMin group than for the other two groups.

	5% NovaMin	10% Strontium chloride	Placebo
Air blast test	- 17.6% (Week 2) - 34.8% (Week 6)	- 14.7% (Week 2) - 10.9% (Week 6)	- 15.2% (Week 2) - 21.3% (Week 6)
Cold water test	- 1.6% (Week 2) - 38.6% (Week 6)	- 1.3% (Week 2) - 21.6% (Week 6)	+ 2.1% (Week 2) - 17.9% (Week 6)

Improvements amongst treatment groups

- After 6 weeks of twice daily brushing use, NovaMin resulted in a greater reduction in sensitivity (air and cold water tests) than the placebo and 10% strontium chloride toothpastes
- At all time points, more subjects showed improvement when using NovaMin toothpaste than the other two treatments:

