

Review of commercial toothpastes available in India which flashes 'n' number of times for treating tooth sensitivity based on their clinical studies

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ABSTRACT

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Get closer than ever to your customer so close that you tell them what they need well before they realize it themselves." As the saying goes today marketing strategies have gone beyond the science. Innovations and marketing are the two eyes which make a name into trusted brand. Today customers are bombarded with many health claims to buy a toothpaste for sensitivity. Toothpastes are the at home" desensitizing agents which acts either by occluding the dentinal tubules or blocking the neural transmission. Day by day the science behind tooth pastes are growing which is known to the product developer and his/her competitor but common man only know the endorser who stands in front of the camera. This article deals with the science behind the toothpastes marketing for tooth sensitivity.

Keywords: Marketing and dentistry, Innovations in toothpastes, Dentin hypersensitivity, Toothpaste.

INTRODUCTION

Dentin sensitivity is one of the most commonly encountered problems in dental office. It is usually associated with exposed dentinal surfaces. Since there is no specific receptors in the pulp the perception of stimuli is always pain irrespective of the stimulus (Thermal, Chemical, Mechanical). Clinically it is described as an exaggerated response to application of stimulus to exposed dentine regardless of its Location[1,2]. The terms Dentine sensitivity or Dentinal hypersensitivity used interchangeably to describe the same clinical condition. To prevent dental hypersensitivity there are various treatment option like application of bonding agents, G.I.C and recent advancements like application of dental lasers. But at home treatment option includes toothpastes, mouth rinses, etc. Since it is a most common clinical and painful condition with an incidence ranging from 4 to 74% [3-7]. Due to its large prevalence rate there is large need of solution to the problem which ultimately paves the way for the various health and pharmaceutical companies to give various toothpastes as solution which reaches the needy through advertisements. "Whatever the product or brand maybe it should be enhanced with more credibility. The current strategy is using an endorser to get more authenticity to the product [8].

PATHOGENESIS

Dentin hypersensitivity occurs as two stages: Lesion localization and lesion initiation. Lesion localization occurs by loss of enamel by attrition, erosion, abfraction, etc. Lesion initiation is by three major mechanisms.

1. Direct innercarnation theory.
2. Odontoblast receptor.
- Fluid movement/ hydrodynamic theory.

TOOTHPASTES AND ITS ACTION

Colgate sensitive Pro-Relief Desensitizing Paste:

This tooth paste contains 8% arginine and calcium carbonate which helps in the formation of dentin-like

material over the applied tooth surface (i.e exposed dentinal tubules).

According to the study released by the company the claim is based on the pre-procedural cleaning offered by the dentist along with the tooth Paste [10].

Mechanism:

Arginine and calcium carbonate normally present in the saliva. Whereas in this toothpaste Arginine 8% and calcium carbonate works together to accelerated the natural mechanism of deposition of dentin-like material into the dentinal tubules.

The results are being confirmed by Scanning electron microscopy (SEM). This demonstrates that Arginine (8%) and calcium carbonate rapidly helps in action and completely occluding dentinal tubules [11].

Sensodyne Repair and Protect:

It contains NovaMin technology, which seeks out and forms a tooth-like layer over areas of the tooth where dentine is exposed.

What is NovaMin Technology?!

NovaMin is the brand name of a particulate bioactive glass that is used in dental care products for remineralisation of teeth. The active ingredient is the inorganic chemical calcium sodium phosphosilicate. NovaMin delivers silica and ionic calcium, phosphorus, and sodium, which are necessary for bone and tooth mineralization.[12]

How it works?!

NovaMin particles bind to the tooth surface. When the particle comes in contact with saliva and water reacts with the water to release calcium and phosphate ions. These ions are protected by glass particles so that they can be delivered to specific locations rather than as a liquid solution. Sodium ions in the particles exchange with hydrogen cations, which allows the calcium and phosphate ions to be released. A calcium phosphate layer then forms and crystallizes as hydroxylapatite a form of hard and strong mineral in teeth.

The chemical reaction that leads to hydroxylapatite is:



What other competitive companies says?!

Only 10+ published abstracts and studies mainly from the manufacturers. Used for the relief of root surface hypersensitivity and occlusion of dentinal tubules.[13]

Other products containing Novamin Tech:

NuCare prophylaxis paste

Densshield, etc...

Himalayas Herbals Sensitive Toothpaste:

Himalaya's Sensitive Toothpaste is a herbal formulation for tooth sensitivity. It contains natural substances which blocks exposed dentinal tubules that are sources of teeth sensitivity.

Key ingredients:

- **Miswak** inhibits the build-up of dental plaque and is therefore beneficial in the prevention of tooth decay. The herb reduces gum inflammation, prevents gum bleeding, and its astringent property strengthens gums.
- **Menthol** from mint oils has cooling and analgesic properties which also give long lasting fresh breath.
- **Almond**, rich in tannins, has astringent properties that tighten gums. Almond Shell contains triterpenoids, flavonoids and phenolics, which possess free radical scavenging properties.
- **Spinach** contains natural oxalate compounds, which help in forming phytocomplexes on teeth. This occludes dentinal tubules and blocks the transmission of pain from the surface to the tooth's nerves. These oxalate compounds produce protective films on the molars, and thus, help to prevent tooth destruction. Naturally derived Potassium nitrate inhibits pain in hypersensitive teeth through its desensitizing effect on dentinal nerves.[14]

Pepsodent Expert Protection Pro Sensitive:

Pepsodent Pro-Sensitive is the toothpaste with a combination of Hydroxyapatite, Zinc Citrate and Potassium Citrate.

It contains

1. Potassium Citrate

Soothes the sensitivity receptors.

2. Hydroxyapatite

The building block of tooth enamel crystals - it is deposited into the open dentinal tubules and helps to prevent painful stimulus reaching the pain receptors. HAP enters the open dentine channels and reduces its permeability thus giving relief from sensitivity.

3. Zinc Citrate

Inhibits plaque bacterial metabolism and is clinically proven to help keep gums healthy. This protects gums from future recession, thus reducing the risk of future tooth sensitivity.

4. Fluoride 1000ppm

For clinically proven protection against caries.

There is no clear explanation or component which helps in effective binding of the hydroxyapatite crystals to the tooth surfaces.

CONCLUSION

And let's be clear it's not enough just to limit ads for things that aren't healthy and promissory. It's also going to be critical to increase marketing for things that are healthy. Due to marketing competitions companies offers numerous claims which are not clear to the eyes of common man. Initiatives must be taken by the government of India, Dental council to scrutinize and approve the products and their marketing ads esp. for healthcare sectors.

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