

Hypersensitivity Treatment

Dentine Hypersensitivity

- A short, sharp, transient pain arising from exposed dentine in response to external stimuli such as:
 - ♦ tactile
 - ♦ thermal
 - ♦ evaporative
 - ♦ chemical
 - ♦ osmotic stimuliwhich cannot be ascribed to any other form of dental defect or disease.

Prevalence

- Ranges from 8% to 57%
- Peak age: 20-40 years
- Females > Males
- Periodontal patients > General population

Predisposing Factors

- Exposed dentine, and
- Open dentinal tubules

Exposed Dentine

Loss of enamel or cementum characterises exposed dentine and causes may be:

- Abrasion, attrition, erosion, abfraction, fracture, gingival recession or scaling; most often occurring in combination.

Open Dentinal Tubules

- Can be caused by abrasion, erosion, root planing or plaque; they are most common in conjunction with gingival recession.

Hydrodynamic Theory by Brännström

This is the leading theory on tooth sensitivity which states that:

- Fluid flow within dentine tubules is altered by a stimulus at the dentine surface leading to stimulation of the nerve fibres surrounding odontoblasts.
- This alteration in fluid flow leads to stimulation (depolarisation) of the nerve fibres surrounding the odontoblasts within the dental pulp.
- This mechanism implicates exposed, open dentine tubules as the cause of dentinal hypersensitivity.

Sensitive teeth tend to have a 100 times greater flow of fluid within dentinal tubules than non-sensitive teeth.

Management strategies

This includes either:

- Occluding the dentinal tubules, or
- Desensitising the nerves.

Occluding the Dentinal Tubules

- Pro-Argin™ Technology is an innovative and proprietary technology combining the key ingredients arginine, an amino acid, and insoluble calcium carbonate.
- Arginine is a bipolar molecule that interacts with calcium carbonate and promotes the precipitation of calcium and phosphate on the dentine surface.
- Pro-Argin™ occludes tubules rapidly and effectively to treat the cause of tooth sensitivity. Tubule occlusion is calcium rich and acid resistant.
- Efficacy in instant*, lasting hypersensitivity relief has been scientifically documented for both in-office and toothpaste formulations (Colgate Sensitive Pro-Relief™). Clinically proven superior relief for toothpaste formulation compared with placebo and potassium based toothpastes.
- Fluoride Varnish (Duraphat) also used for occluding the dentinal tubules.

Desensitising the Nerves

- Potassium (potassium citrate or potassium nitrate) salts cause desensitisation of nerve fibres.
- Potassium ions are thought to penetrate through dentine tubules to the nerve fibres surrounding odontoblasts.
- Nerve fibres are depolarised and prevented from repolarising, thereby preventing pain signals from reaching the brain.

Treatment Options

Should be based on severity and combine at-home with in-office management.

- Mild to medium sensitivity may require:
 - ♦ At-home management – Sensitive toothpaste plus soft toothbrush,
 - ♦ In-office treatment – Colgate® Sensitive Pro-Relief™ Polishing Paste.
- Medium to severe sensitivity may require:
 - ♦ Acute in-office treatment – Colgate® Sensitive Pro-Relief™ Polishing Paste,
 - ♦ At-home maintenance – Colgate® Sensitive Pro-Relief™ Toothpaste, and
 - ♦ Additional treatments may include fluoride varnish and gel.

* When applied directly to each sensitive tooth for 1 minute

The Colgate logo is displayed in white text on a red, ribbon-like background that tapers to the right.

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