

# The medical power of light

## Tooth desensitization

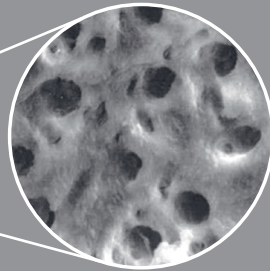
Relief from tooth sensitivity and unnecessary pain

- Long term solution for sensitive teeth
- Significantly increased patient comfort
- Simple, walk in, walk out procedure
- Faster, safer and more effective

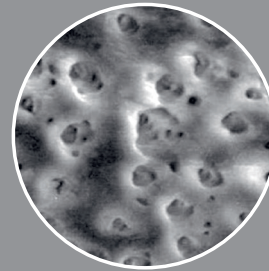
Available with  LightWalker<sup>®</sup> and SkyPulse<sup>®</sup>



Before



After Tooth Neck  
Laser Desensitization



Abed, A. M., Mahdian, M., Seifi, M., Ziaei, S. A., & Shamsaei, M. (2011). Comparative assessment of the sealing ability of Nd:YAG laser versus a new desensitizing agent in human dentinal tubules: a pilot study. *Odontology*, 99(1), 45–48.

## Dentin Hypersensitivity Affects a Patient's Quality of Life

Dentine hypersensitivity (DHS) or cervical dentinal sensitivity is one of the most commonly encountered dental problems. It is characterized by short, sharp pain arising from exposed dentine in response to stimuli, typically thermal, evaporative, tactile, osmotic or chemical and which cannot be ascribed to any other dental defects or pathology. Hypersensitivity may present on several teeth, in one area of the mouth, or on one specific tooth. It can significantly affect an individual's quality of life, impede effective oral hygiene, and subsequently affect aesthetics.

As dental professionals, you can be at the forefront of patient education and management of dentin hypersensitivity, and make positive changes to the lives of your patients.

## What are the Main Causes for DHS?

Dentin is covered by enamel in the crown region and by cementum in the radicular region. When the enamel or cementum is removed, the underlying dentin will be exposed along with the dentine tubules, producing dentin hypersensitivity. DHS occurs by loss of protective covering over the dentin, leading to the exposure and opening of dentinal tubules.

The main cause of DHS is gingival recession with the exposure of root surfaces, loss of the cementum layer and smear layer, and tooth wear. Receding gums can be a sign of long-term trauma from excessive or forceful toothbrushing, brushing with an abrasive toothpaste or a sign of chronic periodontitis. Other less common causes are acid erosion and periodontal root planing.

## Short & Sharp Pain

The most widely accepted model of dentin hypersensitivity is termed the hydrodynamic theory, which proposes that movement of fluid within these tubules (due to stimuli such as hot, cold, sweet, pressure, etc.) can stimulate pulpal nerves at the pulp-dentin border or within dentin tubules, giving rise to the 'short sharp pain' of dentin hypersensitivity.

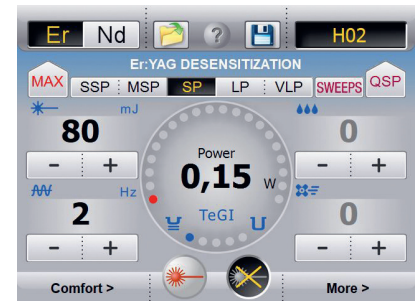
## Laser Can Help You Fight Dentin Hypersensitivity

Laser treatment achieves recrystallization of dentin, producing a nonporous surface that partially or totally obviates dentinal tubules and affects the neural transmission through coagulation of proteins in the dentinal fluid and hence reduces permeability and blocks fluid movement.

The laser-assisted treatment of dentine hypersensitivity is a good method to solve immediate and long-term pain. Compared to conventional desensitizing topical agents, laser treatment leads to rapid results with shorter treatment time and increased comfort for the patient. Fluoride gel or desensitizing substances used in combination with laser light can enhance the effects.

## Get Started with the Treatment of DHS

DHS can be treated with:



Er:YAG Desensitization



Nd:YAG Desensitization

**Overall prevalence of DHS 12.3%**



Cunha-Cruz, Joana, et al. (2013). The prevalence of dentin hypersensitivity in general dental practices in the northwest United States. *J Am Dent Assoc*; Mar; 144(3): 288–296

**DHS after traditional periodontal treatment 84.5%**



Chabanski, M.B., et al. (1996). Prevalence of cervical dentine sensitivity in a population of patients referred to a specialist Periodontology Department. *Journal of Clinical Periodontology*. *J Clin Periodontol*. 1996 Nov;23(11):989-92

To learn more about dentine hypersensitivity contact Fotona at [info@fotona.com](mailto:info@fotona.com) today.

For related patents see: [www.fotona.com/patents](http://www.fotona.com/patents)