



# Laser Applications in the Treatment of Dentin Hypersensitivity

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## Keywords

Dentin hypersensitivity; Tooth sensitivity; Dentin sensitivity; Dentin-desensitizing agents; Laser therapy; Lasers

## Editorial

Dentin Hypersensitivity (DH) is one of the most painful conditions in dentistry. This condition is characterized by short, sharp pain arising from exposed dentin in response to stimuli typically thermal, tactile, osmotic or chemical and cannot be ascribed to any other form of dental defect or disease [1-5]. DH occurs as a result of exposed dentinal tubules. Various methods and materials such as iontophoresis, desensitizing agents, adhesives, and resins have been tried in an attempt to occlude these tubules. Finally, laser therapies have been espoused for dentin desensitization [1-3].

Since the development of the Ruby laser by Maiman in 1960, lasers have been widely employed in medicine for a number of years [6]. The first laser use for treatment of DH was reported by Matsumoto et al., [7,8] by using Neodymium: Yttrium-Aluminum-Garnet (Nd:YAG) laser.

Various lasers, including Nd:YAG, Helium-Neon (He-Ne), Gallium-Aluminium-Arsenidediodide (GaAlAs), Carbondioxide (CO<sub>2</sub>), and Erbium:Yttrium-Aluminum-Garnet (Er:YAG) have been used for the treatment of DH by many investigators [1-5,9-11]. The exact mechanism of action of lasers in DH is not clearly understood, although several theories such as photobiomodulating effect on odontoblastic cells, obliterate the dentinal tubules, thermo mechanical ablation effect on dentinal fluid, and blocking C and Aβ nerve fibers have been proposed [1,3,5,11].

The recent systematic reviews conclude that laser applications in treating DH seem to be effective, be safe, and without adverse events [1-3]. Research is now beginning to focus on the use of lasers to manage DH on the grounds that laser therapy is more comfortable and faster than conventional methods.

Further studies are required to evaluate the long-term stability of the obtained positive results, efficacy and cost benefits of this treatment modality.

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