

Probing for alternatives

The prevention of dental fear

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The following video recently went viral as it illustrates how dental fear impacts both patient and dentist:



Literature

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- [2] Kani, E.; Asimakopoulou, K.; Daly, B.; Hare, J.; Lewis, J.; Scambler, S.; Scott, S.; Newton, J. T.: Characteristics of patients attending for cognitive behavioural therapy at one UK specialist unit for dental phobia and outcomes of treatment. *British Dental Journal* 2015; 219(10): 501–506.
- [3] Walther, W.: Der Einfluss von Präparationen mit Turbine und Schnellaufwinkelstück auf die menschliche Pulpa. Vergleichende histologische Untersuchungen. Inaugural-Dissertation, Albert-Ludwigs-Universität, Freiburg i. Br., 1984.
- [4] Pantas, E.; Jöhren, H.P.: Zahnbehandlungsangst – eine prospektive Studie zur anxiolytischen Wirkung von Musik während der Zahnbehandlung. *Deutsche Zahnärztliche Zeitschrift* 2013; 68(5):288–295.

After scientists from the University of São Paulo have recently investigated a method to replace injection needles—one of the main triggers of dental anxiety—by a technique entailing less potential for dental fear, this article discusses the factor which is seen as the most prominent cause for dental phobia worldwide: the dental drill.¹

In a study recently published by the *British Dental Journal*, 77 per cent of the patients surveyed stated to be very afraid of upcoming dental drill treatments.² Although the electrical dental drill, which was already patented in 1875 by US dentist George F. Green (US-Patent No. 171121 A) is seen as the gold standard for caries therapy and preparation procedures, most patient anxieties are related with this traditional dental tool, as its causing pain and tissue damages seems to be an inherent principle of its application.³ For this reason, anaesthetic injections prior to treatment are inevitable in most cases.

Thus, in their prospective clinical investigation of dental fear, authors Pantas and Jöhren refer to a number of analyses which indicate that 75 per cent of the adult population are battling dental anxiety. In 5 to 12 per cent of the patients, dental phobia is so pronounced that they refuse to be treated.⁴ Moreover, some studies imply that about 95 per cent of all dental offices do not offer any strategies to prevent dental anxiety in the first place, according to Pantas and Jöhren.

Ultrashort pulsed lasers form an alternative to both fear-inducing dental drills (turbine, high-speed engine) and all dental lasers on the market so far. Applying pulse durations of less than 10 picoseconds and pulse energies of less than 50 µJ stop heat and shock waves from spreading towards the dental pulp, resulting in a pain-free dental treatment without any tissue damages. After 141 years



of technical advances in dental therapy, the arrival of ultrashort pulsed lasers has finally achieved complying to the Hippocratic principal of "primum non nocere" (First, do no harm).5

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