

Other journals in brief

A selection of abstracts of clinically relevant papers from other journals.

The abstracts on this page have been chosen and edited by John R. Radford.

Tooth sensitivity

Non-surgical management of tooth hypersensitivity

Clark D, Levin L. *Int Dent J* 2016; **66**: 249–256

It would appear that toothpastes containing arginine and calcium carbonate (for example Colgate® Sensitive Pro-Relief™) are particularly effective at managing tooth sensitivity.

It is stated in this narrative review, that tooth sensitivity is experienced by up to one third of the population, it occurs mainly in females and affects canine and premolar teeth because of their position within the arches. But many of the studies reporting these findings are riddled with bias.

The authors state the obvious in that management should be focussed on addressing the aetiology. Invasive interventions, such as placing restorations, should only be carried out if less invasive approaches do not resolve the symptoms.

When the authors described the causes of tooth sensitivity, again little is new. But, they do refer to the Relative Dentin Abrasivity (RDA) score for measuring this property in toothpastes. Several websites give the RDA for a range of different toothpastes (for example see www.williamsonperio.com/wp.../07/Toothpaste-Abrasiveness-Ranked-by-RDA.pdf). Most of the regular toothpastes demonstrate low abrasion, whereas the whitening and some tartar control toothpastes are categorised as 'harmful'. When considering home oral care, a study has shown that teeth covered with plaque are less sensitive. However, this should be qualified in that gingival recession, induced by plaque, is associated with tooth sensitivity. Contrary to anecdote, scaling and root planing would not seem to exacerbate tooth sensitivity.

The following ingredients have been added to toothpastes which purportedly manage tooth sensitivity: potassium nitrate, strontium (acetate and chloride), arginine and calcium carbonate, calcium sodium phosphosilicate and high fluoride concentration toothpastes. When considering potassium nitrate [SENSODYNE® PRONAMEL® and Toms of Maine strength® SENSITIVE maximum (parent company Colgate-Palmolive)] it is suggested that this agent depolarises the nerves within the dentinal tubules. The efficacy of potassium nitrate, however, is disputed. Strontium (Sensodyne® 24/7 Protection® Original) facilitates the occlusion of dentinal tubules with strontium acetate but only to the depth of 5 µm. The combination of arginine and calcium carbonate (for example Colgate® Sensitive Pro-Relief™ from a stable of toothpastes containing these ingredients) also occlude the dentinal tubules by forming a positive complex with the negatively charged dentinal surface. It has been reported that toothpastes containing arginine and calcium carbonate are more effective than those containing strontium salts.

Despite the title of this paper, the authors describe the placement of cervical restorations and even root canal treatment in order to manage tooth sensitivity.

DOI: 10.1038/sj.bdj.2017.357

To also consider the anxiety of the mother

Emotional relationships between child patients and their mothers during dental treatments

Tanaka S, Uehara N *et al.* *J Dent Sci* 2016; **11**: 287–292

But did the 'uncooperative child' demonstrate higher sympathetic nervous activity because they were bound in the restraining device?

There is a complex interplay between the child, parent and the dental carer when a child receives treatment. The key aspect of the methodology used in this study, was that anxiety levels were measured objectively using an electrocardiogram, in contrast to other studies that recorded child anxiety using psychometric scales; children are poor historians and therefore such scales lack veracity. The study recruited 27 children, aged 3–6 years old, and their mothers. When tell-show-do and/or distraction methods did not allow restorative dental care (placement of a resin composite), the treating dentist placed the child in a restraining device (n = 13). This study was approved by the Ethics Committee of Faculty of Dentistry, Tokyo Medical and Dental University. The anxiety of mothers was quantified by a questionnaire. 'Uncooperative children' had higher sympathetic nervous activity and lower parasympathetic activity than 'cooperative children'. In addition, mothers of 'uncooperative children' had a higher state of anxiety.

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Hypnosis

Effect of hypnosis during administration of local anesthesia in six- to 16-year-old children

Obero J, Panda A *et al.* *Pediatr Dent* 2016; **38**: 112–115

Hypnosis improved the acceptance of local anaesthetic in children.

It is stated that children accept ideas uncritically and therefore are more easily hypnotised. Hypnosis may therefore be particularly helpful for children when carrying out comfortable administration of local anaesthetic. In this study, two hundred children aged 6–16 years old were randomly allocated to either an experimental group or control group. The hypnotic techniques included following a 'hypnotic script', 'arm levitation', breathing techniques and counting exercises. A second, blinded observer administered the local anaesthetic. Acceptance or otherwise of the local anaesthetic was gauged by high hand movements, leg movements, crying or verbal protests, and orophysical resistance. Children under hypnosis exhibited significantly less resistance to administration of local anaesthesia, a lower pulse rate but no differences in oxygen saturation. Of note, in the group that was hypnotised, as the age of the child increased so did their increase to resistance. Hypnosis requires increased time and a quiet dental surgery.

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