

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.

AMOUNT NOT FREQUENCY OF SUGAR

The shape of the dose–response relationship between sugars and caries in adults

Bernabé E, Vehkalahti MM *et al.* *J. Dent Res* 2015 Nov 9. pii: 0022034515616572

'...the association between (the amount of) sugars and caries remained the same regardless of participants' toothbrushing frequency and use of fluoride toothpaste' (personal communication from the first author).

The Vipeholm study, linking frequency of sugar intake and dental caries, is etched in the mind of every dental care professional. Yet more robust studies have reported that it is the amount of sugar, and not frequency of intake, that is associated with caries. The key finding from this high impact study was that it is indeed the amount and not frequency of sugar intake that was associated with DMFT, and this relationship was linear. Caries and sugar consumption data (using a validated food frequency questionnaire) from 1,702 Finnish adults were collected at three sampling frames. Not only would limiting the amount of sugar, have dental health benefits but would address the 'the risk of other noncommunicable diseases related to excess sugars.' The third author of this paper is Aubrey Sheiham; during his distinguished career he championed the disenfranchised and challenged the establishment. Aubrey Sheiham died on Tuesday 24 November 2015.

DOI: 10.1038/sj.bdj.2015.951

MANAGING STAINING OF AESTHETIC DENTAL MATERIALS

Comparative effects of turmeric, coffee, and chewable tobacco on the color stability of tooth-colored restorative materials

Bindal P, Bindal U *et al.* *Open J Dent and Oral Med* 2015; **3**: 59–67

Instead of replacing the stained restoration, bleaching could be considered.

This study revisited staining of some dental aesthetic materials, and the efficacy of 10% carbamide peroxide to reverse such staining. Nanocomposites were the most susceptible and surprisingly, conventional glass ionomers were the least susceptible to staining. Subsequent bleaching resulted in the greatest improvement of stained nanocomposites. This *in vitro* study was carried out on specimens of nanocomposite, microhybrid composite, conventional glass ionomer and resin-modified glass ionomer. Eighteen disc-shaped specimens were prepared of each material. These were subjected to a harsh staining regimen comprising immersion of each disc in either a solution of coffee, turmeric or tobacco for 3 hours for 45 days. The stained specimens were then bleached with carbamide peroxide. Colour changes over time were measured using CIE lab colour space system. Nanocomposites may be more susceptible to staining as a consequence as the methacrylate modified polysiloxane resin that has a higher hydrophilicity and water sorption, when compared with BIS-GMA.

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SWEETENED BEVERAGE CONSUMPTION

Preventing heart failure: sweetened beverages and healthy lifestyles

Martínez-González MA, Ruiz-Canela M. *Heart* 2015; **101**: 1935–1937. doi:10.1136/heartjnl-2015-308426

Apart from associations with dental caries and erosion, there was a dose–response effect with the consumption of sweetened beverages and heart failure.

The authors of this commentary drill into the substantive paper published in *Heart* (*Heart* 2015; doi.org/10.1136/heartjnl-2015-307542). This population-based cohort study, was carried out with over forty thousand men. After adjusting for confounders such as family history of cardiovascular disease, hypertension, diabetes, smoking, BMI and some dietary factors, the risk of heart failure 'among participants consuming ≥ 2 servings (200 ml) per day was 23% relatively higher (95% CI 1.12 to 1.35) compared to their non-consumer counterparts.' As background, in the UK there over half a million people living with heart failure with survival estimates of only 10% after 10 years. The findings of this study however, are in contrast with the Cardiovascular Health Study that found no association. But then, this latter study included elderly participants with lower consumption of moderate-to-high sweetened beverage consumption. It is conceded that sweetened beverages may comprise a component of a sub-optimal diet with a paucity, for example, of fruit and vegetables.

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ETCHING TIMES

The effects of acid etching time on surface mechanical properties of dental hard tissues

Zafar MS, Ahmed N. *Dent Mater J* 2015; **34**: 315–320

Prolonged etching times (more than 30 seconds), increase the surface roughness and decrease surface hardness of dental tissues and may compromise the longevity of the restoration.

The temptation is to always extend the etching time when placing a resin composite, particularly if the classical frosted appearance of the enamel is not achieved, or if the occlusion is considered unfavourable. The aim of this study was to look again, at the effect of different etching times. In this *in vitro* study, the investigators did not examine bond strengths, but instead measured non-contact surface roughness and surface hardness. Different etching regimens, using 37% phosphoric acid, were carried out on 1 mm buccolingual sectioned slices prepared from 36 extracted premolar teeth. Images of roughness profile showed an increased peak-to-valley distance with increased etching times. This would suggest 'larger resin tags and thicker hybrid layer' that may compromise bond strength. In addition, it was argued that the observed 'decrease in hardness can affect the enamel-materials interface and early failure of material bond.'

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