Sugar tax… sweet benefits?

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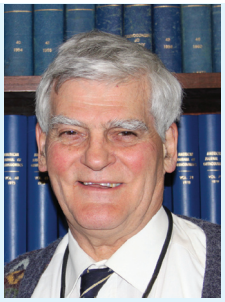
WG Evans



We have turned sugar, a biochemically harmful substance, into a comfort food, using it as a treat for rewarding good behaviours. - Frank Lipman.

It took a little time reading the various blogs on the proposed South African sugar tax, all those that I read targeted obesity as the basic reason for the introduction of the tax…. but I did find the comment I sought, yes it is there… a recognition that a reduction in caries may also be a favourable consequence of a reduction in sugar intake.[1]

If the tax does pass into law, South Africa will be joining a select group of countries who have either already implemented, or are contemplating the introduction of, a Sugar Tax, Denmark, France, Mexico, Norway, United Kingdom, St Helena, several states in the USA. It appears that in those countries the debate has also centred around obesity (and Type 2 diabetes) rather than caries.[2] A letter sent to the British Dental Journal, 220, April 2016, is relevant and is quoted: "Sir, the BDA should congratulate George Osborne on imposing a tax on sugary drinks in the recent Budget in an attempt to reduce the incidence of a major disease in the UK. Unfortunately he gave that disease the wrong name. It should have been dental caries rather than obesity! This is one disease where evidence supports sugars as having a contributory role. Obesity, however, is not a disease but a disorder with just one cause: calorie intake exceeding calorie expenditure." (Rebutting the decision to impose the sugar tax, a UK MP described the legislation as "patronising, regressive and the nanny state at its worst")![2]

It is an enduring proof of the commitment of the dental profession to high ethical standards that every effort continues to be made to eradicate the very disease on the management of which a significant proportion of our practice income is derived. Most certainly the profession will be keenly interested in the debate about the proposed tax on sugar. It may be observed that a second endeavour aimed at controlling caries has also over the years been the subject of intense controversy, fluoridation. Conflate the two, and we must recognise that the advent of fluoride, notably in toothpastes, has effected a change in caries experience, and any reduction in sugar intake may not then have the full effect which could otherwise have been expected.

The Journal of Dental Research published in 2013 a systematic review on the effects of restricting sugars intake on caries incidence.[2] Of the 55 eligible studies, 47 reported at least one positive association between sugars and caries. There was some evidence that the quantum of sugars ingested had an influence on the incidence of caries. This finding has been confirmed by a study on adults, conducted in Finland and reported in 2016 as concluding that "the amount of, but not the frequency of, sugars intake was significantly associated with DMFT."[3] However, that association was weaker in subjects who used fluoride toothpaste daily.

Now consider just how much sugar is actually taken in by sipping fruit juices, juice drinks and smoothies. A research team in the UK introduced a study with the comment "Free sugars are the most important dietary cause of dental caries".[4] The team investigated the sugar content of fruit juices, juice drinks and smoothies, reporting results which may be of concern. Sugar content ranged from 0 to 16 grams per 100ml. Of a total of 203 products surveyed, 85 contained at least 19 gms of sugars, an amount which is the entire recommended daily intake of sugars for a child in the UK. Smoothies contained *on average* 26gms per 200ml portion, translated into more than six teaspoons of sugar.

The etiology of dental caries is being revealed as truly complex. Coming from The Centre for Advanced Research in Public Health in Spain is the news that *Streptococcus mutans*, long considered the main causative agent, "accounts for only a tiny fraction of the bacterial community."[5] The conclusion is based on DNA and RNA studies that support the concept that multiple micro-organisms "act collectively in initiating and expanding the cavity." A disturbing conclusion is that antimicrobial therapies are unlikely to be effective against this polymicrobial disease.

The imposition of a tax on sugary drinks is certainly likely to result in a reduction of consumption. The corollary may well be a switching to alternative foods which are also high in calories, such as 100% fruit juices and chocolate milk, which it has been pointed out, at least have some nutritional value (Wikipaedia, Sugary Drinks Tax).[6]

WG Evans: Managing editor, E-mail:bill.evans@wits.ac.za

Are we in for a treat.. that another etiologic contributing factor to dental caries may be controlled… and that obesity reduced as an additional benefit?

References

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