

tobacco and 8.3% were current smokers.²⁻⁴ The survey reported the misconception in many youths that smoking is good for teeth and health and nearly half of smokeless tobacco users needed the tobacco first thing in the morning. The survey also reported that 68.5% of students who smoked wanted to stop and 71.4% had tried during the past year. This is a strong indicator of common quit attempts in youths and they should be provided with help to quit.

Dentists and other oral health professionals are recognised as ideally positioned to counsel against the use of tobacco products and should be encouraged to do so in India and other low and middle income countries.

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1. World Health Organisation. Report on the Global Tobacco Epidemic, 2008: The MPOWER package. Geneva: WHO, 2008.
2. Prevalence of tobacco use among the youth. In Reddy K S, Gupta P C (eds). *Report on tobacco control in India*. New Delhi: Ministry of Health and Family Welfare, 37. pp 61-67. Government of India, 2004.
3. Sinha D N, Gupta P C, Pednekar M S. Tobacco use among students in eight North-Eastern states in India. *Indian J Cancer* 2003; **40**: 43-59.
4. Tobacco use and reproductive outcomes. In Reddy K S, Gupta P C (eds). *Report on tobacco control in India*. New Delhi: Ministry of Health and Family Welfare. pp 108-110. Government of India, 2004.

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LIQUORICE ALERT

Sir, we bring to your attention concerns regarding possible adverse clinical effects of an innovative anti-caries lollipop containing a liquorice derivative.

Much fanfare has heralded the introduction of a new cavity-fighting lollipop containing a liquorice root extract that inhibits the growth of *Streptococcus*, important in initiating dental caries.^{1,2} Should global consumption of this liquorice-flavoured candy be adopted the prevalence of dental decay may be reduced. However, excessive lollipop use is cautioned because overconsumption of liquorice has potential clinical risks. Liquorice is a ubiquitously employed food flavourant that also possesses therapeutic properties.³ As such its commercial use is at an all-time high. The major active ingredient of liquorice, glycyrrhizin, is 100-200 times sweeter than processed sugar. In addition to its flavour-enhancing

qualities, glycyrrhizin exerts many pharmacological actions, such as its anti-cariogenic effects.

Excessive intake of glycyrrhizin is associated with adverse side effects including increased blood pressure, hypernatraemia and hypokalaemia. Glycyrrhizin blocks the activity of the enzyme, 11 beta-hydroxysteroid dehydrogenase type 2, that converts cortisol to inactive cortisone. Cortisol, in turn, binds to mineralocorticoid receptors (MR), promoting sodium reabsorption, potassium excretion and hypertension, a clinical triad characteristic of liquorice-induced pseudoaldosteronism,⁴ which is becoming a more frequent phenomenon with increased use of liquorice as flavourants.

Dosage needs consideration when assessing glycyrrhizin-related risks. The Joint FAO/WHO Expert Committee on Food Additives and the European Community's Scientific Committee on Food recommend a maximum of 100 mg/day. Glycyrrhizin consumption levels in USA are 0.03-3.6 mg/kg/d and at its upper limit, would exceed the above recommendations in individuals over 30 kg. Allowable glycyrrhizin content varies amongst foods: lowest in baked goods, highest in hard candy. Many published cases of pseudoaldosteronism involve excessive consumption of liquorice/glycyrrhizin. One could argue that these levels are higher than could be achieved through even heavy consumption of the anti-caries lollipops. Although the glycyrrhizin concentration in these lollipops is not available and it is reasonable to assume that each lollipop contains low levels of glycyrrhizin, cumulative effects of multiple lollipops and other sources of ingested glycyrrhizin (tobacco, herbal medicines, candy), may raise levels beyond the recommended limit.

Marketing of these lollipops is largely targeting children and the elderly, two sub-populations particularly susceptible to the mineralocorticoid actions of liquorice. For instance, with the rising incidence of childhood obesity and accompanying health complications including diabetes and hypertension, excessive liquorice intake in children may compound pre-existing health risks.

We feel that cavity-fighting lollipops are innovative anti-caries products, appealing to the public and economically attractive to the health care system. The fact that liquorice and its derivatives are exempt from FDA regulation may inadvertently project a false sense that liquorice ingestion is safe at even high levels. Here, we raise concerns regarding overconsumption of liquorice-containing food and medicinal products. We alert the dental community of the potential clinical risks of excessive or prolonged use of these lollipops and the importance of educating patients on complying with specified doses for the lollipops (ie two per day, for up to ten days).

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1. Belt D. Licorice root lollipop shows sweet promise in reducing tooth decay. *J Calif Dent Assoc* 2008; **36**: 243-249.
2. Segal R, Pisanty S, Wormser R, Azaz E, Sela M N. Anticariogenic activity of licorice and glycyrrhizine I: Inhibition of *in vitro* plaque formation by *Streptococcus mutans*. *J Pharm Sci* 1985; **74**: 79-81.
3. Isbrucker R A, Burdock G A. Risk and safety assessment on the consumption of Licorice root (*Glycyrrhiza sp.*), its extract and powder as a food ingredient, with emphasis on the pharmacology and toxicology of glycyrrhizin. *Regul Toxicol Pharmacol* 2006; **46**: 167-192.
4. Sontia B, Mooney J, Gaudet L, Touyz R M. Pseudo-hyperaldosteronism, liquorice, and hypertension. *J Clin Hypertens (Greenwich)* 2008; **10**: 153-157.

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VOICING SUPPORT

Sir, I write in response to a letter from Patel, Evans and McKechnie (*Fundamental training*; *BDJ* 2009; **207**: 51) to voice support for the fundamental training currently provided for our UK graduates. I believe that the authors have highlighted an important value of postgraduate training; however, are they confusing a lack of confidence with incompetence?

Dentists are now expected to be competent but not confident in all aspects of the profession upon graduation. It is well recognised that acquiring and improving skills ought to be a lifelong process. Continual professional development is significant from the outset of a dental career and this can be initiated by a two-year structured training pathway as set out in 'A Curriculum for UK Dental Foundation Programme Training'.¹ I urge all readers to familiarise

themselves with this document which was commissioned by the Department of Health and endorsed by the Faculty of Dental Surgery and the Faculty of General Dental Practice. This sets the standard for future postgraduate training and the way in which our profession is moving. This training 'provides trainees with a wider range of opportunities to develop communication, team working and clinical skills'. These opportunities include experimental learning within the workplace, coaching, mentorship, formal educational events and self-directed learning. The trainees must demonstrate achievement and readiness to progress through the stages of training, ensuring that their competence and confidence are ever increasing.

We, as a profession, need to move our thinking forward from the archaic view that at the point of gaining a BDS qualification we possess all knowledge and skills required for a whole career in dentistry. Young, new dentists, having started their career with foundation training, will be continually improving their practice and those who do not follow suit will soon be left behind.

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1. Committee of Postgraduate Dental Deans and Directors. A Curriculum for UK Dental Foundation Programme Training, 2006.

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WHO WILL PAY?

Sir, as an orthodontist working in specialist practice I read the paper by Shah *et al.*¹ with particular interest and a feeling of rising frustration. We are continuously improving our cross-infection control and the focus of this paper on orthodontics is relevant to this process. One should always aim to continuously improve standards for our staff and patients, but it feels like a seismic shift is approaching in the regulation of cross-infection control. As this happens, I have yet to come across examples of risk:benefit analysis, cost:benefit analysis, and in these days of global warming, carbon costings? These are three elephants in the room which this paper, as with all of the others I have read which quote various studies and committee

reports, fails to mention. My suspicion is that, if they were there, they would have quoted them. Furthermore, they do not discuss from where the money will come (elephant number 4!), and how many fewer patients will be able to have treatment as a result? As I read about such proposals, I ponder how recommendations for change come about. It seems that committees of experts get together to write new advice, but in the modern climate of blame one can imagine that members would, above all, want to create rules which have the least likelihood of future blame being laid at their doorstep. Cost:benefit doesn't seem to come into the equation, unlike the deliberations of NICE.

As a small example of a reasonable question regarding cost:benefit is the use of masks. This paper quotes guidelines that a mask's main function is to protect from splatter and that they should be changed for every patient. No distinction is made between a patient having a surgical procedure or a dental exam or an elastic changed on an orthodontic appliance. As an orthodontist, I wear a mask for a session at the moment, and tie it so that I can raise or drop the mask without touching it. It takes me half a minute to change a mask and a box of 50 masks costs £11.45. Following new guidelines, if I see 50 patients in a day and if surgery overheads are, say, £100 per hour, then the total extra cost for my nurse and I just to change masks for every patient is £72.90 per day. If I work five days per week for a 45-week year, the additional cost just for compliance in mask wearing, is more than £16,000! Who will pay and what is the benefit? I dread to think what the additional cost of all the guidelines in the offing will be when one considers the requirements for additional space, staff, equipment, time, and energy consumption, and I can anticipate the position of the PCT that there will be no additional funding for these regulations - they will force the change but they won't pay for it. This is bound to affect the quantity and quality of publicly funded treatment available. I would like to see the BDA force a debate with government on these related issues as a part of implementation. Even if the decision is to follow exactly the same path, it might ease the

frustration associated with the massive changes that will ensue.

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By email

1. Shah R, Collins J M, Hodge T M, Laing E R. A national study of cross infection control: 'are we clean enough'. *Br Dent J* 2009; **207**: 267-274.

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WARM SALINE RINSES

Sir, it was really admirable to read 'Hancocks' Law'¹ in the editorial *Does the team think?* as there is the same sorry state of affairs in India, even when the Dental Council of India (DCI) is striving hard to keep unauthorised dentists and doctors at bay. I am, however, quite hopeful that the DCI's efforts will bear fruit some day.

Also interesting was the letter titled *Water swishing*² stating that swishing of water³ and oral irrigation⁴ are an economical and easy means of maintaining oral hygiene and reducing bleeding and gingival inflammation, especially in developing countries.

Warming the water and adding a pinch of table salt to it can enhance its efficacy to a great extent. It can reduce or even be an alternative to anti-inflammatory drugs intra-orally. Its high osmolality reduces inflammation and can be microbicidal. Warm saline rinses have been used successfully in post extraction cases. We have also been using it in post surgical periodontal cases for many years and the results have been excellent.

Thus rinsing with 100-150 ml of warm saline three to four times a day can be an effective method for good oral hygiene. It can be of help in the removal of loosened food particles, dead cells and mucus from the oral cavity³ as well as in containing the local inflammatory process.

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1. Hancocks S. Does the team think? *Br Dent J* 2009; **207**: 301.
2. Math M V, Balasubramaniam P. Water swishing. *Br Dent J* 2009; **207**: 304.
3. Math M V, Balasubramaniam P. Oral health and water. *Indian J Nutr Diet* 2008; **45**: 388-391.
4. Barnes C M, Russell C M, Reinhardt R A, Payne J B, Lyle D M. Comparison of irrigation to floss as an adjunct to tooth brushing: effect on bleeding, gingivitis, and supragingival plaque. *J Clin Dent* 2005; **16**: 71-77.

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