Major journals

Don't take the Top off the Pops!

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Pop drinks, or sugar-sweetened drugs, now have a very good evidence-base for their causative contribution to the diabetes and metabolic syndrome pandemic globally. Previous studies have shown that increased consumption of sugar-sweetened beverages (SSBs) carry an increased risk for diabetes even after adjustment for an increased BMI (InterAct Consortium, 2013). The Nurses' Health Study from the USA showed that a BMI of 26 kg/m^2 compared to a BMI of 21 kg/m^2 was associated with a relative risk for the development of T2D that was eight times higher in women and four times higher in men (Willet et al, 1999). In percentage terms, which is far more evocative, this is an 800% increase in women and a 400% increase in men. The corresponding relative risks for coronary heart disease (CHD) with the same increase in BMI were two times higher in women and one and a half times higher for men (Willet et al, 1999). Moreover, a study by Yang et al (2014) showed that regularly drinking as little as one 12 fl oz (360 mL) SSB a day may increase the risk of cardiovascular disease by about 30%. This would be independent of total calorie intake, obesity, or other risk factors.

The study by Briggs et al (summarised alongside) modelled the effect of a 20% tax on SSBs on the prevalence of overweight (BMI ≥25 kg/m^2) and obesity (BMI ≥30 kg/m^2) in the UK. What benefits would accrue from the 20% SSB taxation idea? The number of obese adults would reduce by 180 000, and the number of overweight adults would reduce by 285 000. This equates to putting 465 000 people at a much lower risk of diabetes and CHD. A reduced prevalence of dental caries would reduce human suffering as well! The greatest reduction in obesity would be expected in younger people.

A 20% taxation rate on SSBs would only increase the average spend on these drinks by 8.4 p per week per person in the UK. This would actually generate £276 million initially (and then less as people would reduce consumption). The initial tax windfall could be used to further promote healthy lifestyles in the community with a specific focus on healthy eating, physical activity, smoking cessation and weight optimisation.

The addition of sugar for taxation, particularly in SSBs, alongside tobacco and alcohol appears to be sound. The evidence of a distinct impact on reducing the global, and, specifically in this article, the UK prevalence of diabetes and CHD is compelling and deserves translation into everyday clinical practice as part of a healthy lifestyle advice. These commonly called "fat drinks" should be off the menu. The 20% taxation rate called for by the Academy of Medical Royal Colleges in 2013 should become a high public health priority (Academy of Medical Royal Colleges, 2013). ■

Academy of Medical Royal Colleges (2013) *Measuring up: the medical profession's prescription for the nation's obesity crisis.* Academy of Medical Royal Colleges, London. Available from: http://bit.ly/1otO8T2 (accessed 14.02.14)

InterAct Consortium (2013) Consumption of sweet beverages and type 2 diabetes incidence in European adults: results from EPIC-InterAct. *Diabetologia* **56**: 1520–30

Willett WC, Dietz WH, Colditz GA et al (1999) Guidelines for healthy weight. *N Engl J Med* **341**: 427–34

Yang Q, Zhang Z, Gregg EW et al (2014) Added sugar intake and cardiovascular diseases mortality among US adults. *JAMA Intern Med* 3 Feb [Epub ahead of print]

BMJ

Overall effect of a 20% tax on sugar-sweetened drinks

Readability	✓✓✓✓
Applicability to practice	✓✓
WOW! Factor	✓✓✓✓

1 The authors simulated a model to investigate the overall effect of a 20% tax on sugar-sweetened drinks on the prevalence of overweight and obesity in the UK.

2 The population investigated was those aged 16 years and older.

3 The primary outcome was the number of overweight or obese people after the implementation of the tax, and the secondary outcome was to examine if there were any differences among age groups and income groups.

4 Data from household surveys were used and suggested that the mean volume of sugar-sweetened drinks consumed was 123 mL per person per day.

5 The model suggests that a 20% tax on sugar-sweetened drinks would reduce the number of obese adults by 1.3% and the number of overweight adults by 0.9%, which would equate to 180 000 and 285 000 people respectively.

6 The tax is estimated to reduce the consumption of concentrated sugar-sweetened drinks by 15% and non-concentrated sugar-sweetened drinks by 16%.

7 The greatest beneficial effect of the 20% tax would be seen in young people because they had a higher consumption of sugar-sweetened drinks to begin with. There was no significant difference between income groups.

8 The tax would raise £276 million in revenue, which could be used to increase NHS funding.

Briggs AD, Mytton OT, Kehlbacher A et al (2013) Overall and income specific effect on prevalence of overweight and obesity of 20% sugar sweetened drink tax in UK: econometric and comparative risk assessment modelling study. *BMJ* **347**: f6189

Am J Med

Middle-school intervention for cardiac risk factors

Readability	✓✓✓✓
Applicability to practice	✓✓✓✓
WOW! Factor	✓✓✓

1 As part of the Project Healthy Schools (PHS) initiative, education and environmental changes were implemented at 23 middle schools in Michigan, USA, to investigate their effect of cardiac risk factors.

2 The educational programme consisted of a 20-minute interactive lesson once a week for 10 weeks.

3 In total, 8000 adolescents took part: over 4000 consented to complete the study surveys, and over 2000 consented to the clinical examinations before and after the educational intervention.

4 The average age of those that consented to the clinical examinations was 11.56 ± 0.47 years: their blood pressure (BP) was measured, BMI was calculated and blood samples were taken to measure total, LDL- and HDL-cholesterol, triglycerides and blood glucose levels.

5 After the 10-week educational programme, there was significantly more fruit and vegetables eaten, and participants were more likely to participate in moderate to vigorous exercise.

6 There were also significant decreases in systolic and diastolic BP; total, LDL- and HDL-cholesterol, triglyceride levels; and glucose values.

7 One limitation cited by the authors is the low percentage of participants that consented to take part in the surveys and clinical examination. The low number could mean that those that consented were more interested in the programme to begin with, so would be more likely to comply with the programme's goals.

Eagle TF, Gurm R, Smith CA et al (2013) A middle school intervention to improve health behaviors and reduce cardiac risk factors. *Am J Med* **126**: 903–8

Am J Med

Dietary fibre intake may reduce cardiovascular risk

Readability	✓✓✓✓
Applicability to practice	✓✓✓✓
WOW! Factor	✓✓✓

1 Eating dietary fibre is believed to decrease the risk of cardiovascular disease and related conditions.

2 The association between dietary fibre and cardiometabolic risk was investigated in an analysis among people who took part in the National Health and Nutrition Examination Survey (NHANES) 1999–2010 study (n=23 168 adults).

3 The actual daily intake of fibre remained consistently lower than the recommended intake among age and race groups (mean intake 15.7–17.0 g).

4 There was a statistically significant difference in the mean intake of dietary fibre among race and ethnicity.

5 Participants who were in the highest quintile for dietary fibre intake had a significantly lower risk of metabolic syndrome. Therefore, the authors conclude that more must be done to increase dietary fibre intake in the US population.

Grooms KN, Ommerborn MJ, Pham do Q et al (2013) Dietary fiber intake and cardiometabolic risks among US adults, NHANES 1999-2010. *Am J Med* **126**: 1059–67

BMJ

Effect of a 20% palm oil tax in India

Readability	✓✓✓✓
Applicability to practice	✓✓
WOW! Factor	✓✓✓✓

1 The authors simulated an environment where there was a 20% palm oil tax in place in India from 2014 to 2023. The main measure was the projected future mortality due to myocardial infarction (MI) and stroke.

2 It was estimated that a 20% palm oil tax would avoid 363 000 deaths due to MI or stroke (equating to a 1.3% reduction in cardiovascular death in the population of India) and would modestly reduce hyperlipidemia if palm oil was not substituted with another oil.

3 If the consumption of palm oil was substituted with another oil, which contained a higher polyunsaturated concentration, 421 000 deaths from MI and stroke could be avoided.

4 The 20% tax on palm oil would reduce the calories consumed by 1.3 kilocalories per day per person, and benefit men more than women and urban populations more than rural populations.

5 It is believed that the tax would modestly lower hyperlipidemia and cardiovascular mortality.

Basu S, Babiarz KS, Ebrahim S et al (2013) Palm oil taxes and cardiovascular disease mortality in India: economic-epidemiologic model *BMJ* **347**: f6048

JAMA

Exercise should not be ignored as an effective treatment

Readability	✓✓✓
Applicability to practice	✓✓✓✓
WOW! Factor	✓✓✓

1 Mike Mitka discusses previous studies and meta-analyses that suggest that exercise and drug interventions can provide similar mortality benefits for the prevention of diabetes and the secondary prevention of coronary heart disease.

2 One particular study that supported this argument was a metaepidemiological analysis that was published in *BMJ*. It included four exercise meta-analyses, 12 drug meta-analyses and three exercise trials, equalling 305 randomised controlled trials overall. In total, 339 275 participants were involved.

3 More should be done to promote the value of exercise as a effective and valid treatment option.

Mitka M (2013) Study: Exercise may match medication in reducing mortality associated with cardiovascular disease, diabetes. *JAMA* **310**: 2026–7

> ***"The 20% tax on palm oil would reduce the calories consumed by 1.3 kilocalories per day per person, and benefit men more than women and urban populations more than rural populations."***