

## Invited Commentary

# Global sugar guidelines: an opportunity to strengthen nutrition policy

The 2014 draft WHO sugars intake guidelines<sup>(1)</sup> reiterate the 2003 recommendations of the Joint WHO/FAO Expert Consultation on Diet, Nutrition and the Prevention of Chronic Diseases<sup>(2)</sup>, which recommended that sugar intake should be limited to less than 10% of dietary energy intake. These new WHO draft guidelines present a stronger evidence base on the health benefits of limiting sugar intake to 10% of dietary energy intake as well as indicative evidence of the benefits associated with a further reduction to 5% of dietary energy intake<sup>(3,4)</sup>.

These WHO draft sugars intake guidelines represent an opportunity to review and strengthen sugar-related nutrition policy, as they provide a benchmark by which to assess current population sugar intakes. Available data (likely to be underestimated due to under-reporting<sup>(5–7)</sup>) show that sugar intakes in many countries are higher than the recommended amount, for both children and adults. Adults' intakes of added sugar as a percentage of dietary energy are about 13–15% in Canada, the USA and the UK<sup>(8,9)</sup>. Studies of children have found that added sugar contributes about 14% of total dietary energy in Belgium, Cyprus, Estonia, Germany, Hungary, Italy, Spain Sweden and the USA<sup>(10,11)</sup>.

The guidelines put forward a clear case that sugar consumption above the recommended levels has negative personal, social and economic costs, particularly through its contribution to dental caries and overweight and obesity, which is a risk factor for a range of other non-communicable diseases. Governments concerned about population health and rising health-care costs thus stand to benefit from population-level interventions to reduce sugar consumption. The question is how to translate these new recommendations into policy action at the global, national and local level. A large part of the answer lies in policy actions to create supportive environments in which high-sugar foods are less affordable, acceptable and available, and healthier alternatives are accessible.

The challenge for public health nutritionists is to support the development and implementation of a comprehensive approach to sugar policy that considers not only the most effective way to support behaviour change, but also changes in food environments and food systems, the special needs of infants and young children and specific target populations most at risk, the broader context of total dietary improvement and sugar as an economic and political issue.

### What policies are available to support individuals to consume less sugar?

The current food environment is characterized by a cheaper and more abundant sugar supply than ever before<sup>(12,13)</sup>. In such an environment, individuals need to be not only educated regarding healthy dietary choices, but also equipped with necessary food skills and supported through an environment in which the healthy choices are relatively more affordable, available and acceptable.

A range of policies are available to inform and educate consumers directly, create supportive environments and improve the healthfulness of the food supply. The World Cancer Research Fund International NOURISHING framework describes a systematic approach to developing contextually appropriate policy options to improve diets and health<sup>(14,15)</sup>. This framework describes three critical policy domains for action, all mutually reinforcing: (i) policies to create a supportive food environment (letters N–S); (ii) policies to increase healthy foods in the food system (H); and (iii) policies to improve public awareness and skills related to healthy diets (I–N–G) (Table 1). For example, more supportive environments to reduce sugar consumption can be created through reducing the offering of sugary foods in public settings, reorienting the 'choice architecture' in retailers away from impulse purchases of sugary foods, taxing the sugar level of foods and drinks, and restricting advertising and commercial promotion of high-sugar foods. Public awareness campaigns about sugar, giving advice to parents in dental-care settings and nutrition education and teaching food preparation skills in schools can be used to target individuals by improving the information and skills available to them.

At the food system level, actors responsible for public and private procurement can engage with the supply chain to encourage a supply of foods with lower sugar levels. In food systems, consideration should also be given the incentives created by current agricultural, trade and other economic policies. These policies, combined with the power structures in supply chains and the nature of international competition, mean that a flow cheap and abundant sugar is readily available to consumers, to the food companies that use sugar (or high-fructose corn syrup) in manufacturing processed foods and to food-service operators who serve it to their customers<sup>(16)</sup>.

Implementing these actions is feasible: Table 1 provides examples of sugar-related policy actions which have been implemented in countries around the world.

**Box 1. An example of a mutually reinforcing, comprehensive policy approach: the case of sugary drinks**

To be mutually reinforcing, policies need to ensure that people are fully informed about healthy diets, and surrounded by a healthy food environment which is reinforced by a supportive food system. Such a comprehensive approach will be needed to effectively reduce intake of sugary soft drinks<sup>(17,35,36)</sup>. A starting point is to ensure all age ranges are fully informed through basic public awareness and education campaigns delivered through multiple avenues. National dietary guidelines should make it clear that sugary drinks should be consumed infrequently. Children should be educated on healthy beverages in schools and receive information and advice about sugar and dental caries from dental-care providers.

These messages should be reinforced by changing beverage environments. For example, adults are less likely to be stimulated to consume sweetened drinks if none are available for purchase in the workplace, if they are more expensive than alternatives and if they are not subject to price promotions. Examples for children might include removing sugary drinks from schools and child-care facilities, removing them as the default beverage in fast-food outlets and regulating advertising of sugary beverages to children.

Policies also need to be considered that target the soft drinks supply chain to influence the incentives to supply sugary soft drinks into venues like schools relative to water or lower-calorie alternatives. This should be further reinforced by measures to make these water and other healthier substitutes more accessible, for example through installation of taps for safe drinking water.

**A comprehensive approach**

This range of policies represents the foundation of a comprehensive policy approach to effectively support individuals to reduce sugar intake. By tackling a range of factors in the food environment, supporting individual consumers to change behaviour and leveraging incentives for the food manufacturers to use less, a comprehensive approach is more likely to lead to lower sugar intake<sup>(17)</sup>. An example of such an approach is illustrated in Box 1 for soft drinks. A fully comprehensive approach also needs to consider: (i) actions targeting infants and young children; (ii) specific interventions targeting high sugar consumers; (iii) the wider context of total dietary improvement; and (iv) sugar policy as an economic issue.

**Actions supporting low sugar consumption among infants and young children**

Taking action among infants and young children is particularly important for sugar owing to the genetic predisposition of infants and young children to prefer sweet tastes over bitter tastes<sup>(18)</sup>. This predisposition is widely exploited by food companies and retailers to boost sales. Repeated exposure to sugary complementary foods and fortified milks, very sweet foods (e.g. soda, candy) and 'savoury' foods that contain added sugar (e.g. breakfast cereals, peanut butter, breads) can encourage babies and very young children to become accustomed to consuming 'sweetness' regularly and frequently – a habit that can become hard to change.

This implies a need to provide a supportive environment for infants and very young children, and their parents and caregivers<sup>(19)</sup>. For example, complementary foods and fortified milks could have lower levels of added sugars<sup>(20)</sup> and confectionery eliminated from pre-school settings. Actions are needed to reduce demand for sugary foods from the very earliest ages. Breast-feeding – which can help babies

develop preferences for a wide variety of foods – should be protected and promoted. New mothers need to be provided with accurate information about infant growth curves to discourage them from introducing sweet foods too early as a means of encouraging unnecessarily rapid growth. Alternatives to sugary snacks – notably fruit – need to be made available, affordable and attractive for young children and their caregivers, such as by providing vouchers for fruit or fruit boxes<sup>(19)</sup>. In general actions are needed to help parents and caregivers provide a home environment that is positive for the development of healthy eating preferences and habits as children grow.

**Interventions targeting high sugar consumers**

In developing comprehensive policies to reduce sugar intake, it is important to consider both broad population-based policies and policies that differentially target high sugar consumers. Taxation or other price-based policies may also be more effective among those who consume excessive amounts of sugar<sup>(21)</sup>. For example, a study by Gustavsen in Norway found that tax-induced price increases in soft drinks could reduce consumption by more than twice as much among high consumers as among those who consumed the lowest amounts<sup>(22)</sup>. Similarly, if a particular sub-population – such as adolescents – are identified as being high sugar consumers in a particular context, then social marketing and education efforts can be targeted towards this group and those influencing their food habits.

**Wider dietary context**

Importantly, policies to address sugar consumption should be implemented in the broader context of the many dietary factors which influence health. Indeed, in practice, as shown by the examples in Table 1, policy actions concerning sugar to date have typically been implemented in the context of improving diets overall. Failure to embed sugar policy in the

**Table 1** Policy options and examples to reduce population-level sugar intake: the NOURISHING Framework

	Policy area	Potential policies and examples
N	Nutrition label standards and regulations on the use of claims and implied claims on foods	Clearly visible 'interpretative' labels <ul style="list-style-type: none"> <li>E.g. The UK's voluntary 'traffic light' labelling for use on front of pre-packaged products. The label uses green, amber and red to identify whether products contain low, medium or high levels of energy, fat, saturated fat, salt and sugar</li> </ul>
O	Offer healthy foods and set standards in public institutions and other specific settings	Mandatory standards for food available in schools, including restrictions on unhealthy foods <ul style="list-style-type: none"> <li>E.g. US Healthy, Hunger-Free Kids Act of 2010 sets nutrition standards in the National School Lunch and School Breakfast Programs. Standards include limits on the amount of fat, saturated fat, salt and added sugars permitted in foods. Beverages are also restricted to water, low-fat or non-fat milk</li> </ul>
U	Use economic tools to address food affordability and purchase incentives	Health-related food taxes <ul style="list-style-type: none"> <li>E.g. Mexico has a sugary drinks tax: an excise duty of 1 peso (\$US 0.80) per litre is applied to sugary drinks – about a 10% price increase – at point of production (simplifies implementation)</li> </ul>
R	Restrict food advertising and other forms of commercial promotion	Mandatory regulation of food advertising to children <ul style="list-style-type: none"> <li>E.g. South Korea prohibits television advertising for specific categories of food that do not meet set nutritional standards (including maximum levels for energy, sugar, saturated fat, sodium and minimum levels of protein per serving) before, during and after programmes shown between 17.00 and 19.00 hours and during other children's programmes</li> </ul>
I	Improve the quality of the whole food supply	Voluntary reformulation of food products <ul style="list-style-type: none"> <li>E.g. As part of the French National Programme for Nutrition and Health, the Ministry of Health has established a Charter of Engagement with the food industry (2007). One area of action is improvement of the nutritional composition of food products by reducing the amount of salt, free sugars total and saturated fats. To date, thirty-four companies have made commitments. The voluntary commitments are reviewed and validated by a committee to ensure they are 'significant'</li> </ul>
S	Set incentives and rules to create a healthy retail environment	Initiatives to increase the availability of healthier foods <ul style="list-style-type: none"> <li>E.g. New York City's Shop Healthy NYC is an initiative in which the Department of Health works with communities to increase access to healthy foods. It targets both supply and demand by helping retailers stock and promote healthy foods, and by collaborating with distributors and suppliers to facilitate wholesale purchases. For example, Shop Healthy NYC works with shop owners to sell more low-fat milk, low-salt and no-sugar-added canned goods and to improve the quantity, quality and display of fresh foods</li> </ul>
H	Harness the food supply chain and actions across sectors to ensure coherence with health	Healthier retail procurement <ul style="list-style-type: none"> <li>E.g. As part of the Healthier Hawker Food Programme launched in Singapore in 2011, street food vendors are encouraged to use healthier ingredients such as oils with reduced fat content, fibre-enriched noodles, brown rice, low-fat milk, salt with reduced sodium content and drinks with lower sugar content. The government absorbs part of the cost associated with the use of healthier ingredients. Vendors providing healthier options can display certified labels such as 'I will use LESS SUGAR/SYRUP if you ASK' on their stalls</li> </ul>
I	Inform people about food and nutrition through public awareness	Public awareness campaigns concerning specific unhealthy foods and drinks <ul style="list-style-type: none"> <li>E.g. New York City's Pouring on the Pounds, 2009 advertising campaign urges subway and bus riders: 'Don't drink yourself fat. Cut back on soda and other sugary beverages. Go with water, seltzer or low-fat milk instead'. In November 2013, a new obesity prevention campaign was launched in New York City with the tagline 'Your kids could be drinking themselves sick'. The adverts encourage consumers to swap sugary drinks for water, fat-free milk and fresh fruit, and appear on television and on the subway</li> </ul>
N	Nutrition advice and counselling in health care settings	Nutrition in primary care <ul style="list-style-type: none"> <li>E.g. Brazil has a system of Family Health Support Nuclei. These are multi professional teams, including nutritionists, which support the <i>Programa Saúde da Família</i> (Family Health Program – one of the main means of delivering primary care in Brazil).</li> </ul>
G	Give nutrition education and skills	Nutrition education in schools <ul style="list-style-type: none"> <li>E.g. Slovenia's national nutrition policy requires nutrition education to be included in school curricula. Nutrition education in primary schools is delivered mainly through science subjects, but also in home economics, and is designed to aid both knowledge and skills acquisition (e.g. understanding healthy eating guidelines, classifying foods according to nutritional content (including sugar), interpreting food labelling, understanding energy values of food and cooking skills)</li> </ul>

Source: Derived from information in the World Cancer Research Fund International NOURISHING framework<sup>(15)</sup>.

context of improving the total diet introduces considerable risks that the policies will be inefficient and ineffective from a broader healthy eating perspective. For example, if regulations for the use of a 'low sugar' nutrient claim on foods permit the claim to be used on fatty and salty foods, the 'health halo' effect it creates may mislead consumers into thinking it is healthy and thus to consume it more regularly and frequently<sup>(23)</sup>. Similarly, while encouraging food processors to reformulate foods with reduced sugar content is a positive step, the health benefits may be minimal if the salt or fat content increases as the sugar content decreases.

### ***Recognizing sugar policy as an economic issue***

Effective policies that enable individuals to meet the draft WHO guidelines on sugar intake have upstream implications for sugar producers, processors and refiners, and for producers of commodities used in other sweeteners (e.g. corn in the USA<sup>(24)</sup>). Sugar consumption is an important determinant of profitability for these actors. Policies to reduce sugar consumption also have implications for the users of sugar, such as food manufacturers<sup>(25)</sup>. Sugar is thus an economic issue and policies to reduce sugar intake are likely to encounter resistance from a range of stakeholders.

The reality of this opposition by economic interests was shown clearly by the controversy surrounding the release of the report of the Joint WHO/FAO Expert Consultation on Diet, Nutrition and the Prevention of Chronic Diseases, in 2003<sup>(26–28)</sup>. This report, and the role it played in informing in the WHO's Global Strategy on Diet, Physical Activity and Health in 2004, was met with heavy criticism from sugar-producing countries and trade groups representing sugar interests<sup>(26,29)</sup>. Sugar producers likewise oppose the current WHO draft sugars intake guidelines. For example, organizations funded by the sugar industry have criticized the evidence base for the WHO guidelines and argue that no limits should be set on sugar consumption<sup>(30,31)</sup>. Some users of sugar – food manufacturers – appear to support the 10% of energy limit but are concerned about the suggested lowering to 5%<sup>(32)</sup>.

The WHO has openly acknowledged the resistance from sugar producers, and is actively promoting these guidelines as the product of a transparent and rigorous process as part of an approach designed to counter excessive lobbying<sup>(33)</sup>. This highlights the need for public health nutritionists to recognize sugar policy as a political issue and to constructively engage in the policy-making process to support strong nutrition policy.

### **Opening the policy window**

It is evident that there are policies available to support individuals to reduce sugar intake and contribute to an overall healthier diet. The challenge for public health nutritionists is to place these policies on political agendas and encourage their effective implementation.

The US political economist John Kingdon describes policy change as the intersection of three parallel and concurrent streams: (i) the policy stream, where policy options and approaches are generated; (ii) the problem stream, where policy problems are identified and translated onto political agendas; and (iii) the politics stream, in which political factors shape the context and policy environment<sup>(34)</sup>. When these three streams intersect 'windows of opportunity' for policy change open; usually with the help of policy entrepreneurs (individuals who act as advocates and invest effort and resources in joining up 'problem' and 'solution' streams).

In the case of sugar policy, the new draft WHO sugars intake guidelines represents a change in the 'problem' stream. More robust evidence of the poor health outcomes arising from high sugar intakes and a clear statement of the associated personal, social and economic costs raise urgent concerns about the current situation. Evidence supporting the recommendations is stronger and more conclusive than a decade ago<sup>(9)</sup>.

The policies we discuss here represent the policy stream – we know there are policies available and there is an opportunity for public health nutritionists to clearly articulate and disseminate a constructive response for the 'policy' stream.

The main challenge is the 'political' stream. The identification of champions who can act as policy entrepreneurs will be critical for a strong nutrition policy response to the new WHO guidelines. Public health nutritionists will need to think strategically and contextually, and develop more effective advocacy coalitions to support the development and implementation of comprehensive nutrition policy. An important aspect to emphasize will be the benefits of a policy approach for protecting young children and allowing them to develop healthy food habits and preferences that will contribute to their overall health. It will also be essential to identify concrete policy options that align incentives for sugar production with desired outcomes for sugar consumption.

Public health nutritionists must approach this policy challenge from a systematic and politically engaged perspective. Action has been urgently needed to improve the world's diet for many years. The sugar guidelines are an opportunity we should not miss to influence policies that promote healthier diets.

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