

Policy statement and recommended actions for lowering sugar intake and reducing prevalence of type 2 diabetes and obesity in the Eastern Mediterranean Region

Policy goal

Lower sugar intake and reduced prevalence of type 2 diabetes and obesity, in order to reduce the risk of noncommunicable diseases in children and adults, with a particular focus on the prevention of unhealthy weight gain and associated conditions, such as diabetes and dental caries.

Rationale

The policy is based on the WHO guidelines specifying that all individuals – children and adults – should consume less than 10%, or preferably 5%, of free sugars in their diet¹. Given the extraordinarily high rates of obesity and diabetes in the Region, 5% is seen as the most appropriate long-term goal. Free sugars include mono-saccharides and disaccharides added to foods and beverages by the manufacturer, cook or consumer, and sugars naturally present in honey, syrups, fruit juices and fruit juice concentrates. This will require a major change in food intake patterns and the proposed new low sugar goal of 5% will, realistically, require radical new policies as intakes are known to be far higher than 5% in most, if not all, countries of the Region.

Policy-makers and programme managers are now advised to assess current free sugar intake levels and their sources in both foods and drinks and consider how to develop nationwide measures that result in a transformation of the food chain in their country.

Governments should consider introducing a progressive and sustainable reduction in national sugar intake over the next 3–4 years. Substantial falls, e.g. of 50% or more in sugar intake, are now considered necessary to halt the rise in diabetes and obesity and reduce the burden of premature deaths due to noncommunicable diseases by 25% by 2025.

A more detailed analysis of why sugar leads to weight gain with all its complications of diabetes, heart disease and cancers, as well as the additional risk of diabetes independent of weight gain and major dental problems, such as tooth loss and dental infections in all age groups, and poor childhood growth, is summarized in Annex 1. However, given that the Region has the highest prevalence of diabetes in the world it is relevant that new systematic analyses estimate that an extra soft drink a day increases the risk of diabetes by nearly a fifth (18%)². Obesity rates are also extraordinarily high in both children

¹ Guideline: sugars intake for adults and children. Geneva: World Health Organization; 2015 (http://www.who.int/nutrition/publications/guidelines/sugars_intake/en/, accessed 22 March 2016).

² Imamura F, et al. Consumption of sugar sweetened beverages, artificially sweetened beverages, and fruit juice and incidence of type 2 diabetes: systematic review, meta-analysis, and estimation of population attributable fraction. *BMJ*. 2015;351:h3576.

and adults so sugar intakes, as well as total fat intakes, will need to be reduced as part of a coherent progressive public health strategy.

This policy statement and proposed action plan is part of WHO's effort to reach the targets set by the global target of halting the rise in diabetes and obesity and reduce the burden of premature deaths due to noncommunicable diseases by 25% by 2025.

Challenges of reducing sugar intake in the Eastern Mediterranean Region

Available data indicate that the contribution of sugar to the total average daily food energy supply is relatively high in most countries of the Region, especially in high- and middle-income countries ranging from 9% to 15%³. Even in low-income countries it can be as high as 12%. Children, especially school children and young adults, usually have exceptionally high intakes. Sugar intakes are also increasing as national incomes rise. Sugar consumption in almost half the countries of the Region exceeds 70 g a person a day, with consumption in some countries even exceeding 85 g per person a day⁴. The Region has the fastest growth in sugar consumption globally and this dietary transition has markedly reduced the quality of the diet of the population⁵.

Energy intake per person a day exceeds 2000 kcals in all countries of the Region, with almost half the countries reaching or almost reaching 3000 kcals a day⁶. Taking the WHO proposed figure of 5% limits for sugar intake and given the health problems of the Region, the average food and drink intake should correspond to a desirable average sugar intake of less than 28 g of sugar daily. Given the WHO guidelines, children and women should not consume more than about 20–25 g per day and men should not consume more than about 35 g per day. Therefore, average sugar intakes should fall by more than 50%.

Policy analyses of effective means for reducing sugar intakes

Public Health England⁷ has recently systematically assessed which options for reducing sugar intakes have been tried and which governmental measures, on the basis of health economics and potential efficacy, should be used. They considered and proposed eight main and one additional measure and specified that all should be used as no single measure would be effective on its own. In England, the desire was to reduce the average intake by 50%, whereas in the Region there is a need to reduce sugar intakes even further. Again, this means that radical progressive steps need to be taken over a number of years. Logically, therefore, the Region should consider reducing sugar intakes by at least 5%, and preferably by 10%, of the current sugar intake each year.

³ Abdulrahman O Musaiger. Overweight and obesity in the Eastern Mediterranean Region: prevalence and possible causes. 2011. doi:10.1155/2011/407237. *J Obes.* 2011.407237.

⁴ Sugar supply (kcal/capita/d) in Northern Africa and Western Asia between 1970 and 2010. In FAO/Statistics Division. Italy; Food and Agriculture Organization of the United Nations; 2013 (<http://faostat3.fao.org/browse/FB/FBS/E>, accessed 29 March 2016).

⁵ Ibid.

⁶ Musaiger AO. Food Consumption Patterns in the Eastern Mediterranean Region. Manama: Arab Center for Nutrition; 2011 (<http://www.acnut.com/v/images/stories/pdf/cov2.pdf>, accessed 29 March 2016).

⁷ Sugar reduction: the evidence for action. Public Health England; 2015 (<https://www.gov.uk/government/publications/sugar-reduction-from-evidence-into-action>, accessed 22 March 2016).

Suggested measures to minimize sugar intake

Reformulate sugar-rich foods and drinks to lower sugar intakes

This measure is recognized to be highly effective but it requires most, if not all, companies to agree on a common policy or for government to set appropriate food and drink standards. It is often thought that one can invite different companies, caterers and retailers to take part voluntarily but this often does not work effectively because if other companies or caterers continue to offer foods with a higher sugar content then the population does not become used to less sweetened foods and drinks. The need to help the population adapt to less sweetened foods also means that the use of sweeteners, while successful in reducing calories, does not help this adaptive process in people's sense of appropriate sweetness. Experience also shows that when responsible companies take measures to reduce sugar in food and drinks they become very concerned if other competitor companies do not do the same and gain a commercial advantage. Establishing common standards set by government allows all companies to operate on the same basis.

The reformulation scheme needs to be developed on the basis of quantitative estimates of the major sources of sugar in the national diet. Industrial groups involved in their production, importation, distribution and marketing need to be involved with relevant government departments. An analysis of sugar sources and negotiation involving all stakeholders will require considerable effort to initiate the process of reformulation.

Set standards for all food and drink served by government-sponsored institutions

Progressive policies should specify that within perhaps 2–5 years no sugar sweetened drinks should be offered for sale and the amount of sugar used by all caterers and food manufacturers supplying government facilities should be progressively reduced.

Restrict promotion of sugar-enriched products, especially drinks

It is well recognized that price promotions are key to increasing sales and this is particularly evident in the Eastern Mediterranean Region where sales of sugar-enriched soft drinks have been increasing rapidly over the last two decades⁸. Price promotions like presenting two items for the price of one, price reductions or increasing the portion size for the same price are known to be highly effective in luring consumers to purchase and consume more of a product.

Soft drinks (excluding fruit juice) may well be the largest single source of sugar for adolescents but there is a need to establish the major sources of sugar in the diet. Table sugar, confectionery and fruit juice are often large contributors to the sugar intake of adolescents in the Region. For younger primary school children, soft drinks, biscuits, buns, cakes, pastries and puddings, breakfast cereals, confectionery and fruit juice may be the major sources. In adults, table biscuits, buns, cakes, pastries and puddings, fruit juices and soft drinks may be the main sources. It will be much easier to formulate priority changes once a country knows the sugar content of the principal items in its diet but sugary drinks should be limited as much as possible and ideally be eliminated as a source of calories.

Impose restrictions on marketing, advertising and sponsorship of all sugar-enriched foods and drinks across all media platforms

The marketing of inappropriate sugar-enriched foods and drinks is becoming increasingly aggressive in the Region as the Region represents an ideal marketing opportunity due to limited regulatory restrictions. Special measures are needed to address the unopposed marketing on satellite television

⁸ Lobstein T et al. Child and adolescent obesity: part of a bigger picture. *Lancet*. 2015;385:2510–20.

channels and across all digital media. Several European countries now have major restrictions on sales promotions of inappropriate foods and drinks and these restrictions are sometimes accompanied by taxes and health warnings associated with each advertising slot and advertisement. Sponsorship of sporting events is a notorious avenue for promoting the consumption of sugary and fatty products and this form of advertising is increasingly seen as detrimental to public health.

Use nutritional profiling to establish clear definitions of foods and drinks high in sugar

Currently, there are too many opportunities for retailers and others involved in marketing to confuse or even mislead consumers with inappropriate claims and confusing specifications relating to the sugar content of products. There are now well established WHO-developed methods for assessing the appropriate levels of nutrients, including sugar, and a method has been established for use in marketing in the Region⁹ (there are also methods of setting the criteria for developing clear, understandable methods of food labelling, e.g. traffic light labelling, which is increasingly being used internationally and for which there is extensive evidence of its usefulness for interested consumers).

Eliminate sugar subsidies provided by national governments and introduce progressive taxes initially on sugary drinks and then on all foods and drinks with added sugar

An initial retail price increase of 10% on sugary drinks is often used but economic analyses suggest that a minimum of a 20% increase in retail price is needed to induce appreciable changes in intake¹⁰. There is new evidence of the impact of such measures in several countries and in the United Kingdom where the Government has proposed a price increase greater than 20% on sugary soft drinks.

There is a wealth of literature to show that the poorer the section of the community the greater their focus on the price of foods and the greater their change in purchasing habits if the price of products changes. The effect of price has an effect on all sections of the community, except the wealthy, with a graded effect depending on the socioeconomic status of households and communities. The Region has had a policy for many years whereby, as part of a strategy to help the poorer section of society, subsidizing the price of sugar has been used either as a general measure for the whole population or as a special policy measure confined to those registered as low-income.

The objection to eliminating a sugar subsidy or imposing a tax on sugary drinks and foods is that the poor would suffer the most and endure additional hardship if a further tax increase were imposed rather than a subsidy. They would, however, reduce their consumption so would likely derive the greatest health benefit from such price changes. The World Bank¹¹ and African Development Bank¹² analyses, e.g. for Tunisia, show, however, that the best way to help the poor is to tax inappropriate food, tobacco and alcohol products but then to provide better financial conditions for the poor by introducing selective financial support by means other than food subsidies. Most of the money used in food and other general subsidies benefits other wealthier groups, and as is the case with several countries in the Region with a substantial tourist industry, the catering and restaurant industry and visitors would

⁹ WHO nutrient profiling report for the Eastern Mediterranean. Cairo: World Health Organization (in press).

¹⁰ Briggs AD et al. 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*. 2013;347:f6189.

¹¹ The Unfinished Revolution. Bringing Opportunity, Good Jobs And Greater Wealth To All Tunisians. Poverty Reduction and Economic Management Department Middle East and North Africa Region. Tunisia: World Bank; 2014.

¹² Ayadi M, Castel V, Lannes L, Abderrahim K, Mansour S, Jmal Y. Food Subsidies and Direct Social Assistance: Towards Better Targeting of Monetary Poverty and Deprivations in Tunisia. Tunisia: African Development Bank; 2013 (http://www.afdb.org/fileadmin/uploads/afdb/Documents/Procurement/Project-related-Procurement/Food_Subsidies_and_Direct_Social_Assistance-_Towards_Better_Targeting_of_Monetary_Poverty_and_Deprivations_in_Tunisia.pdf, accessed 23 March 2016).

benefit rather than the poorest sections of society. So fiscal measures with the elimination of subsidies and imposing levies or a tax on inappropriate products is an excellent way for governments to help introduce changes in the food chain and improve public health. In some countries, substantial funds can be raised by appropriate taxes and these funds can be targeted to the health sector, if desired. Such hypothecated taxes have been clearly shown in France and elsewhere to be very popular, if the public understands that these are health taxes and that the funds raised are going to promote health in the community.

Detailed economic analyses of the different methods of taxing sugar show that it is administratively easier and less costly to tax the price of sugar as a commodity as taxing individual food and drink products is very demanding administratively. It assumes a robust national process exists for collecting these taxes at a retail level. These analyses explain, for example, why the Food Economic Institute in Copenhagen proposed that commodity sugar (and fat) taxes should be used in Denmark rather than retail taxes that are far more difficult to determine and collect¹³.

Improve accredited training on diet and health for individuals with opportunities to influence population food choices

This is an important area that is sometimes neglected by governments. Those eating in facilities provided in schools, hospitals, government departments and other national groups, e.g. the military or police are totally dependent on the choice of ingredients made by the caterers. In many countries, these caterers have little understanding of nutrition but in providing an appreciable part of the daily intake of those attending they have, in practice, a major influence on the dietary quality of a substantial number of people. So, if governments target these caterers with skilled practical advice to reduce sugar use, as well as salt and fat content of the foods that they serve, then these changes would automatically impact an appreciable proportion of the population in the Region. This approach, therefore, depends on a cross-government initiative.

Responsible businesses in many countries will follow government measures to improve catering if they are approached by government to limit the provision of sugar-rich drinks and reduce the use of sugar, salt and fat in their catering departments. This could then contribute further to automatically improving the dietary quality and well-being of their workers and is often seen by businesses in Europe as a means of emphasizing care for staff well-being.

Another avenue for improving the quality of the diet is to target not only the food industry to reformulate their products but also to include nutritional quality and the use of limited amounts of sugar, as well as salt and fat, in the criteria established for the food service industry, i.e. those catering to the public in canteens, restaurants and even street markets as part of any food safety criteria. This is what the Government of Singapore has been undertaking for several years with special initiatives by dietitians targeting the relevant groups in each region¹⁴. In Singapore, street marketers and other caterers will often highlight for the public dishes with additional nutritional value. This helps to highlight the importance of the diet's quality.

Finally, it needs to be recognised that some families employ the use of foreign workers who help in preparing the family's food. Often, these workers have little or no knowledge of the need for a high-quality diet with limited sugar, salt and fat content or the importance of including a substantial amount of vegetables and fruit in the diet. Targeting this group is more difficult and is usually dependent on public education.

¹³ Jensen JD, Smed S. Cost-effective design of economic instruments in nutrition policy. *Int J Behav Nutr Phys Act.* 2007;4:10.

¹⁴ Lee BL. Dietary guidelines in Singapore. *Asia Pacific Journal of Clinical Nutrition.* 2011;20:472-6.

Provide routine health education to populations

Populations should be provided with information about the principal causes of prevalent health problems in their country. Given that unhealthy diets are one of the main causes of disease and disability in the Eastern Mediterranean Region, health education about the importance of a varied diet low in fats, sugar and salt should become part of routine information provided both by doctors and the government in schools and in public information systems. The overall understanding of the need for a good diet is important and can help patients with specific problems, such as obesity, diabetes, high blood pressure and heart disease, but detailed analyses show that this approach, while a necessary background to inducing dietary change, is insufficient. So governments that rely only on health education alone to achieve change routinely fail to see the desired changes¹⁵. Providing health education should be seen as a background policy – it has to be combined with other measures, such as those listed above.

Suggested actions to reduce sugar intake

Phase 1: 2016

- 1) Establish a national task force on sugar reduction representing key stakeholders and partners.
- 2) Set up monitoring systems to ensure full implementation of procurement and food supply policies at different levels of the food supply chain (agriculture, trade, food manufacturing, distribution, retail, government procurement).
- 3) Conduct a national study to assess sugar intake and sources of added sugar in products.
- 4) Conduct a public education campaign focusing primarily on the public but also on policy-makers and practitioners at different levels of the food chain. Influence policy-makers using evidence of the disease burden, highlighting their role in changing the food system and also international experiences of the benefits that can result from proposed changes.
- 5) Increase awareness and sensitize health and media service providers to elicit their involvement in promoting healthy diets.
- 6) Reduce the content of free sugars in soft drinks. Artificial sweeteners should not be used as a replacement for the reduced free sugar content of food and drinks.
- 7) Review national food subsidies and progressively reduce and finally remove them as a policy mechanism for improving the health of the poor and access to health services.
- 8) Disseminate WHO recommendations and guidance on healthy diets to address noncommunicable diseases in emergencies to United Nations agencies and nongovernmental organizations/specialized agencies responsible for distributing food aid.
- 9) Generate data and identify priority research by:
 - » developing a national protocol or method for assessing national sugar intakes in different sectors of society.
 - » organizing a national meeting for researchers to standardize and update food composition tables to ensure that they include the sugar content, as well as the trans fat, saturated fatty acid and salt contents of foods and drinks, including traditional foods and dishes.
 - » setting a monitoring system for measuring consumption patterns of targeted products and overall dietary patterns.

¹⁵ Neuberger J et al. Science and Technology Select Committee. Behaviour Change. Second report of Session 2010–2012. London: UK House of Lords; 2011.

- » engaging research centres, institutes of public health, academia and WHO collaborating centres in research for nutrition in the Region to elicit their involvement in the new programme of work.

Phase 2: According to national context

- 1) Reduce and rebalance the number and type of price promotions in all retail outlets, including supermarkets and convenience stores, restaurants, cafes and takeaways.
- 2) Reduce substantially opportunities to market and advertise food and drink high in sugar to children and adults across all media, including digital platforms and through sponsorship.
- 3) Introduce a minimum price increase of 10% through tax or imposition of a levy on high sugar products, rising to 20% after a year.
- 4) Implement procurement policies at government institutions based on the WHO nutrient profile model and ensure that all foods and drinks served at government-supported institutions (universities, the police, the military, local government) comply with the new standards.
- 5) Continue to raise awareness of concerns around sugar levels in the diet to the public, as well as to health professionals, employers and the food industry. Encourage action to reduce intake and provide practical steps to help people lower their own and their families' sugar intake.

Phase 3: According to national context

- 1) Review national food standards and specifications for highly consumed soft drinks and sugary foods. Implement an annual 10% reduction in the sugar content of all moderate and high sugar foods and drinks.
- 2) Revise criteria for food labelling to reflect the sugar, trans fat and saturated fat, content of food. Implement mandatory Codex labelling, including legibility and readability. Consider implementing traffic light labelling.
- 3) Adopt, implement and monitor government buying standards for food and catering services across the public sector, including national and local government and the medical services to the ensure provision and sale of healthier food and drinks in hospitals, leisure centres, etc.

Phase 4

- 1) Ensure that accredited training in diet and health is routinely delivered to all of those who have opportunities to influence population food choices in the catering, fitness and leisure sectors and others within local authorities.
- 2) Continue to raise awareness of concerns around sugar levels in the diet to the public, as well as to health professionals, employers and the food industry, etc. Encourage action to reduce intakes and provide practical steps to help people lower their own and their families' sugar intake.
- 3) Regulate marketing of unhealthy food and drinks to children through the use of the WHO regional nutrient profile model.
- 4) Develop regional approaches to address the unopposed marketing of unhealthy foods and beverages.

Annex 1

The importance of a low sugar intake in maintaining a normal body weight, avoiding type 2 diabetes and also preventing dental caries in children and adults

Consuming too much and too many foods and drinks rich in sugar increases the concentration of energy per unit weight in foods and this means that, given the less effective brain regulatory systems for preventing weight gain rather than weight loss, children and adults, particularly if they are genetically sensitive, will gain weight (1). A high level of free sugars intake increases energy intake without children and adults realizing; it is also associated with a poor quality diet, which is often short of important nutrients.

There is now consistent evidence that the intake of free sugars – particularly in the form of sugar-sweetened beverages – not only increases overall energy intake but is also liable to reduce the intake of nutritious foods so the diet becomes more unhealthy. This then amplifies the increased risk that weight gain and obesity causes increases in heart disease, strokes, some cancers, as well as diabetes. Another reason why more sugary diets increase intake is not only that they trigger taste buds which specifically respond to sugar but brain scanning studies also now show that repeated high sugar intakes lead to neurochemical changes in that part of the brain involved in releasing dopamine which seems to be involved in the sense of reward. The primate drive for food involves an enhanced desire to obtain energy-rich foods, traditionally in the form of carbohydrate with fruit, e.g. dates and honey serving as sources of rapidly digested energy. These sugars then trigger the specific taste buds linked to the centres of the brain associated with reward. There is now some evidence that this can lead in our modern world environment to a state of dependency (2) and certainly we can become habituated as individuals and as a population to foods that are much sweeter. Therefore, as with salt, a steady progressive reduction in sugar in the diet allows the taste-reward system to readjust and respond well to much lower sugar intakes. This explains why individuals who give up sugary drinks by not adding sugar to tea or coffee after a few weeks then find these drinks far too sweet for their liking.

The other reason why sugar in the diet tends to make us consume too much energy is that sugar is, like fat, a concentrated form of energy so the energy density of the diet, i.e. in terms of kcal/100 g of food increases as diets are enriched in sugars. Many studies have now shown that the energy density of the diet is the key feature which allows individuals to “passively over consume”, i.e. they do not realize they have eaten so much energy because they have eaten so little food. So a poor diet rich in sugar and fat with little fibre, vegetables and fruit can satisfy our energy demands with only 750 g of food each day, whereas a low fat, low sugar fibre-rich cereal diet with vegetables and some fruit needs an input of 3 kg of these foods to provide the same energy intake as 750 g of a poor quality high fat and sugar-enriched diet (3). This “passive over-consumption” is therefore a key to inadvertently eating more calories in the diet (4) so this leads to weight gain unless physical activity is routinely increased. So given that reducing energy density of the diet leads to less energy being eaten this means that we should be progressively reducing both the sugar and total fat content of the Eastern Mediterranean diet. This progressive reformulation of foods is a key measure that can be expected to reduce progressively the national burden of ill-health.

Sugar in many forms of drink, i.e. soft drinks, milk shakes, etc. on the basis of clinical trials and some longitudinal studies leads to a greater likelihood of weight gain (5,6) because they are energy rich and these drinks seem to evade the normal brain regulatory processes to an even greater extent than energy-rich foods. So energy-rich drinks are particularly conducive to weight gain. Artificially sweetened drinks also seem to increase the risk of diabetes but mainly by promoting weight gain and obesity.

Some additional analyses by government scientific bodies also suggest that the intake of sugary drinks promotes the development of diabetes (7) not only by increasing weight but also by independently inducing the diabetic state, a feature that the latest WHO scientific committee did not assess (8). The mechanism in part involves the way that the fructose part of sugar has to be metabolized in the liver and too much dietary fructose then leads to a fatty liver which, in addition to being a hazard for future cirrhosis of the liver, leads to changes in insulin production and the sensitivity of the body to the insulin being produced. This then leads to a pre-diabetic state of poor glucose handling and then to diabetes itself. Weight gain itself is also known to induce the risk of heart disease, stroke, and some cancers, as well as diabetes.

New systematic analyses suggest that an extra soft drink a day increases the risk of diabetes by nearly a fifth (18%) and if the contribution of weight gain to the development of diabetes is removed then each daily sweet drink still increases the risk of diabetes by 13%. The evidence on fruit juice and the risk of diabetes is less impressive but the studies only considered countries with a far lower fruit juice intake than those seen in the Eastern Mediterranean Region (9). The UK Government's Scientific Expert Committee report also assessed these drinks in relation to the development of diabetes and found a clear link to the development of diabetes independent of weight gain. So sugary drinks are now considered to increase the risk of diabetes, as well as obesity.

Sugar intake is also the fundamental cause of tooth decay that affects children with their first set of teeth and carries on inducing serious dental erosion and decay throughout life, i.e. into the eighth decade of life. Caries is not only one of the most costly diseases affecting countries but it also induces infections in children leading to emergency hospital admissions. It also impairs their physical growth and their attendance and learning ability at school (10).

In practice, almost all countries globally now have too much sugar in their diet if the lower WHO advised figure for individuals is taken as 5% for all individuals (suggesting in practice an average optimum population intake of 2%–3%). Many European countries are now planning to reduce the average intake by half so, given the huge burden of diabetes and cardiovascular disease in the Eastern Mediterranean Region, there is a need to consider how to reduce the sugar in the Region's food chain by at least 50% over the next few years. This is a major challenge which can only be handled over a period of 5–10 years but where rapid benefits may well emerge as sugar intakes fall. It is therefore suggested that the avoidance of sugar-rich drinks should be one of the first priorities for improving health in the Eastern Mediterranean Region

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