

Available online at www.sciencedirect.com

Public Health

journal homepage: www.elsevier.com/puhe

Conference Report

Scientific evidence and daily food for a better life: Milan, 19 June 2015

A B S T R A C T

Keywords:

Dietary guidelines

Sugar

Fat

Saturated fat

This paper presents a report of a nutrition conference held at EXPO 2015 in Milan. Over the course of a day, seven speakers from four continents discussed the evidence and scientific processes that underpin the development of dietary guidelines, highlighting issues and challenges at each stage. These include the quality of studies associating disease outcomes with diet, specifically a reliance on observational studies, short duration of intervention trials, low statistical power and lack of follow-up. Concerns were raised over the over-simplification of dietary messages which promote carbohydrates in general without evidence of benefit, while restricting fats when meta-analyses suggests that different fatty acids have different effects on disease risk. The merits of food-based dietary guidelines and holistic dietary patterns were described, whereas the impact of increasing or reducing consumption of individual food groups or macronutrients remains unclear. The meeting ended with a restatement of the importance of dietary guidelines, and associated education, to improve public health, but a plea was made to ensure that the process of setting guidelines is evidence based, responsive and considers the impact of the whole diet.

Delivering nutrient-based targets for populations is an important aspect of public health policy, with guidelines produced by expert bodies at global,¹ European² and country levels.^{3,4} Typically, macronutrient-specific guidelines, with a focus on sugar and fat, underpin food and health policy, encompassing food-based dietary guidelines, nutrient profiling of foods, food labelling and health claims.⁵

There have always been nutrition controversies, some which were resolved fairly easily (e.g. the role of starchy carbohydrates in weight management), while others continue to polarize opinion (e.g. saturated fat and heart disease). Dietary advice has evolved over time in response to advancements in nutrition science although the pace of change is slow.

Populations often receive contradictory or confusing dietary advice via stories in the popular media, e.g., in relation to sugar and fat where there has been considerable debate on the roles of these nutrients in chronic disease. This has led to re-evaluation of advice to follow diets low in fat and saturated fat

driven, e.g., by analyses which report a lack of impact on total or cardiovascular disease (CVD) mortality.⁶

Further re-evaluation has been prompted by rising obesity levels (e.g. in the USA from 42% in 1971 to 66% in 2011⁷) which coincided with a reduction in fat consumption from 45% to 34% total energy. This suggests that blanket population advice to reduce fat intake was ineffective as a means to control body weight rises.

Sugar has attracted attention in recent months with the World Health Organization (WHO)⁸ calling for a reduction in the added sugars guideline from 10% to 5% daily energy, based on evidence from ecological studies on dental caries. A similar recommendation of 5% energy from free sugars was adopted by the UK Scientific Advisory Committee on Nutrition.⁹ These positions conflict with an earlier opinion of the European Food Safety Authority which declined to set an upper limit for sugars due to a lack of consistent, high-quality evidence.²

Abbreviations: CVD, cardiovascular disease; WHO, World Health Organisation; BMI, body mass index; NNEd Pro, Need for nutrition education/innovation programme; FBDG, food-based dietary guidelines; IHD, ischaemic heart disease; LDL, low density lipoprotein; PUFA, polyunsaturated fatty acids; MI, myocardial infarction; CD, coeliac disease; RCT, randomized controlled trial

The effect of nutrient-based vs whole-diet guidelines must be critically evaluated to ensure that the approach which best effects dietary change is adopted. The reductionist approach focussing on single nutrients is questionable as attempts to distil complex concepts into practical advice intended to influence lifestyle have not met with great success.

These ideas, and others relating to the development of contemporary dietary and nutrient guidelines, were the topic of a recent conference held in Milan as part of the EXPO 2015 conference entitled 'Feeding the Planet'. The present paper summarizes the proceedings of this conference.

Professor Maria Makrides (Australia) began by restating the first law of thermodynamics: that *energy cannot be created nor destroyed*. This has implications for weight management which depends more on energy balance than other nutritional or lifestyle factors.

Genetics are often cited as a cause of obesity, but this was not borne out by the results of the GIANT (Genetic Investigation of ANthropometric Traits) consortium¹⁰ which identified genetic loci that modulate body mass index (BMI). Analysing 339,224 individuals, 97 BMI-related loci were identified, accounting for just 2.7% of BMI variation. So, for a 50-kg woman with a BMI of 20, this equates to just 1 kg, and for the same woman with a BMI of 30, differences in genes only account for 2 kg variation. Consequently, genes do not explain much of the variation in BMI nor do genes make increases in BMI inevitable.

Many weight loss regimes are popular today, Atkins, 5:2, low carb, low fat, Paleo, but all of these have some element of energy restriction. A recent meta-analysis¹¹ estimated the relative effectiveness of three diet types (low carb, moderate macronutrients, and low fat) for weight change relative to baseline in overweight adults. After 6 months or 12 months, significant weight loss was achieved with any diet. The largest weight loss was associated with the low-carb diets (−7.25 kg [95% CI: 5.33–9.25] at 12 months) and the low-fat diets (−7.27 kg [95% CI: 5.26–9.34] at 12 months), but weight loss differences between the individual diets were small. This supports the practice of recommending any weight loss diet to which a patient will adhere.

Prof. Makrides cited two other significant papers, based on WHO systematic reviews^{12,13} to understand the effect of fat and sugars on body weight. Such information is crucial to WHO's role in making global recommendations for tackling overweight and obesity. The reviews included randomized controlled trials (RCT) as well as cohort studies. The fat review¹² found that a lower total fat intake leads to small (~2 kg) but clinically meaningful and sustained reductions in body weight, most likely as a result of lower total energy intake. The sugar review¹³ reported that, although sugars and sugar-sweetened beverages are determinants of body weight, the change in body fatness appears to be mediated by energy intake. Thus, isoenergetic exchange of sugars with polysaccharide carbohydrates or other macronutrients was not significantly associated with weight change (Table 1), and it is more likely that diets which contained a large proportion of sugar-sweetened beverages (around 25% of daily sugar) were also higher in total energy. The message remains: the source of calories is less important than overall energy balance and macronutrient manipulations do not provide a magic solution. Portion size is probably more important.

Table 1 – Effect of free sugars modification on body weight.

Dietary modification	Mean effect (95% confidence interval)
Increased free sugars	0.75 kg (0.30 to 1.19)
Reduced free sugars	−0.80 kg (−1.21 to −0.39)
Iso-caloric exchange of dietary sugars for other macronutrients, particularly other carbohydrates	0.04 kg (−0.04 to 0.13)

Source: Te Morenga et al. (2013)¹³

Professor Sumantra Ray (UK) addressed the essential role of appropriate nutrition education, based on the interaction of tradition with evolving concepts of healthy eating and food habits, to move towards clear nutrition guidelines. This is a dynamic process that is constantly in flux and requires the right skill set and the highest quality research programmes. Using examples from his work in the NNEd Pro (Need for nutrition education/innovation programme), Prof. Ray explained that it is essential to lay a foundation of nutrition knowledge relevant to clinical and public health practice and to use discoveries generated from nutrition science. These are then translated into evidence-based nutrition guidelines.

CVD remains the leading cause of morbidity and mortality, with increasing evidence highlighting the complex relationships between diet and CVD. However, there remain key gaps in knowledge for the application of emerging evidence to healthcare practice. Consequently, the NNEdPro theme seeks to mitigate these knowledge gaps while focussing on the development and synthesis of translatable evidence. These include strengthening methodologies, defining the role of nutrition in CVD prevention and management, and understanding how fruit, vegetables and phytonutrients modulate CVD risk. By using state of the art facilities, dedicated to nutrition studies, the NNEdPro theme has enabled an integrated approach to conduct individual and population-level studies to inform the policy and practice interface, by synthesis and translation of evidence, leading to knowledge exchange and transfer.

Current evidence in nutrition science is limited by several factors: heterogeneity in the design of studies; lack of controls; short intervention periods; low statistical power; and lack of follow-up. What is needed is a combination of large, well-powered, long-term human dietary intervention trials as well as observational cohorts, alongside smaller mechanistic studies, to further explore unanswered questions from larger population studies. Together these will set the stage for a more evidence-based and fully comprehensive dietary guideline approach.

Globally, the concept of dietary guidelines is challenged by the practical realities of local conditions. **Professor Christine Venter** (South Africa) introduced the topic of food-based dietary guidelines (FBDGs) for countries with 'double burden' diet-related diseases; i.e., the coexistence of undernutrition and overnutrition in the same individual, community or population.

One example is the coexistence of obesity with micro-nutrient deficiency seen often in low- and middle-income

Download English Version:

<https://daneshyari.com/en/article/5122827>

Download Persian Version:

<https://daneshyari.com/article/5122827>

[Daneshyari.com](https://daneshyari.com)