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The Oxford conference

Building healthy food systems




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Access Oxford conference September 2014 programme here
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The second conference of the World Public Health Nutrition Association took place in Oxford, UK on 8 and 9 September 2014. Its title was 'Building healthy global food systems. A new imperative for public health'. One of its aims was to build on the progress made during the 2012 WPHNA conference in Rio de Janeiro, Brazil, which produced the *Rio2012 Declaration* on the themes of Knowledge, Policy and Action:

> Knowledge and policy are necessary but not sufficient to protect and preserve public goods and public health, including prevention of disease and enhancement of well-being as influenced by food systems, dietary patterns and nutritional status. Continuously monitored and improved action is the essential outcome.

This report summarises key themes of the conference and outlines key points made in the presentations. It describes challenges currently faced, and progress made, and suggests future directions for policy and action.

Box 1

Conference organisers and speakers

Oxford conference organisers (above) Barrie Margetts, Philip James, Simon Capewell, Sarah Kehoe, Sabrina Ionata. Some presenters (middle), Boyd Swinburn, Klim McPherson, Sharon Friel, Corinna Hawkes, David Stuckler. Non-government and UN agency leaders (below) Susanne Løgstrup, Francesco Branca of WHO, Prakash Shetty formerly of FAO.

In introducing the Oxford conference, then WPHNA President Barrie Margetts, chair of the programme organising committee, said that the objectives of the conference were to:

- Characterise, discuss and agree what is meant by healthy diets and food systems
- Identify the major global drivers that shape current global food systems
- Explore how to put health and well-being first of the drivers for global food systems
- Address this major global challenge by refocusing our approach to public health
- Review initial political and policy successes, and examine options for a healthier future

The WPHNA had two main aims for the conference. These were to

- Move the agenda forward from the *Rio2012 World Nutrition* congress.
- Assert our responsibilities in global public health nutrition and play a key role in building the foundations for healthy populations.

Barrie Margetts continued:

> We believe that healthy food systems are fundamental to global health and well being. Given the complexities that shape our food supply systems, it is clear that individuals and even countries are not able to resist and control many of the harmful forces that currently support and promote unhealthy diets. It will only be by concerted, collective, global public action that we can positively shape future food systems so they are driven by what is best for the health and well-being of the planet and its people.

Changing patterns of disease

Majid Ezzati (School of Public Health, Imperial College, London, UK) opened the conference by illustrating the changing contribution of risk factors to worldwide burden of disease (1). The leading modifiable cause in 1990 was undernutrition in children; by 2010 this had been replaced by high blood pressure, followed by overnutrition manifested as high body mass index and diabetes.

This worldwide epidemiological transition involves large declines in childhood infectious diseases, but increases in nutritional risk factors generating a larger disease burden and more people dying at older ages. Mortality rates show improvement globally, but have now stagnated in Eastern Europe and sub-Saharan Africa.

Whereas in 1980 increasing adult systolic blood pressure was associated with increasing gross domestic product, this had reversed by 2008, with higher adult blood pressures in low-income countries (2). This emphasises the powerful, international link between wealth and health.

Klim McPherson (University of Oxford, UK) highlighted the increasing cost of chronic non-communicable diseases attributable to poor nutrition. The UK National Health Service spending on obesity already exceeds £4 billion a year, with indirect costs exceeding £15 billion (3). Modelling studies predict dramatic future increases in adult obesity, diabetes and associated chronic diseases.

Globalisation

Sharon Friel (Australian National University, Canberra, Australia) noted that worldwide, two billion people are overweight or obese, whilst one billion people are undernourished (4). Anna Lartey (UN Food and Agriculture Organization, Rome, Italy) made the point that by 2050, food production will need to increase by 60% globally and by 100% in lower-income countries. Africa faces particular problems of undernutrition and micronutrient deficiency, stated Namukolo Covic (North-West University, South Africa). This is compounded by the 'double burden' of a rapid dietary transition leading to overweight and chronic non-communicable diseases. The last century has seen a revolution in how food is grown and produced, marketed, packaged, distributed and consumed. Demand for food is now being met by increasingly complex global food systems.

Philip James (World Obesity Federation) described the rapidly changing world of food production. Producers range from small family growers to large-scale, highly automated farming corporations. Transnational farm feed companies are now increasingly supplying subsidised farmers. In turn, global food corporations are

supplying a small number of huge supermarket chains. The price of sugar is falling. Increasing production of meat, sugar and oils are all contributing to rising per capita global food energy consumption (5). Escalating global production of palm oil is fueling the chronic non-communicable disease epidemic (6).

Globalisation was further explored by Simon Capewell (University of Liverpool, UK) and Corinna Hawkes (World Cancer Research Fund International). Recent decades have seen the emergence of vast transnational corporations. Just ten of these are hidden behind the hundreds of food brands most commonly purchased and consumed. Food production is increasingly globalised. From the 1980s onwards, there have been huge reductions in the barriers to international trade, with increasing foreign investment and decreasing government support. In theory, consumers now have power over production through their purchasing decisions. But in reality, consumers may not be sufficiently informed to make healthy purchasing decisions and their priorities vary, with price, palatability and convenience often dominating decisions. Manufacturers and retailers control producers and can increase demand through aggressive marketing.

Industrialisation and consolidation of food production has advantages; allowing technologies to spread and yields to increase and thus increasing production by improving efficiency. Transnational corporations are however, motivated by profit, not health.They thus are major drivers of chronic non-communicable diseases epidemics, profiting from increasing consumption of ultra-processed food and drink products, alcoholic drinks – and also tobacco (7).

Tim Lobstein (World Obesity Federation) and Gerard Hastings (University of Stirling, UK) discussed the economics of food and its effects on health. Current economic structure means that food producers rely on consistent and increasing consumption to continue to increase their profits and grow. They are demand-creating industries. Corporate consumer capitalism acts to increase consumption through marketing. The industry uses sophisticated tools to manipulate purchasing decisions, so that supply can increase beyond that which is actually needed.

Prakash Shetty (formerly of FAO, Rome, Italy) stated that globally, 1.3 million tonnes of food are wasted annually (8). This increases profits to producers and retailers but is an increased burden on the environment and on consumers. Excess food production clearly facilitates large portion sizes and thus an increasing obesity.

Globalisation of food systems may impact directly on health. Marc Suhrcke (University of York, UK) described a 56-country econometric analysis using a series of new proxies for different dimensions of globalisation potentially affecting overweight in approximately 890,000 women (9). The study used 244 demographic and health surveys carried out between 1991 and 2009. After controlling for relevant individual and country level factors, globalisation itself substantially and significantly increases the tendency to be overweight.

The cross-border movement of food and finance may have dramatic consequences for health and inequality. Vincent Atkins (Caribbean Community and Common Market, Barbados) described how trade policies and trade liberalisation have caused increased production and consumption of cheap obesogenic foods in Central America, Mexico and the Pacific.

Fabio Gomes (National Cancer Institute, Brazil) presented the case study of Brazil - a diverse country able to meet its own nutritional requirements from its own resources. But for political and economic reasons, it is reducing the range of crops grown and exporting valuable food items. Traditional food systems and supplies and thus dietary patterns are being displaced by ultra-processed food and drink products, and the country is targeted and penetrated by transnational corporations.

Trade subsidies are contentious. Prakash Shetty and Philip James both cited the example of the US, where subsidies have led to increased production of processed and unhealthy food products. US farm policy contributes to obesity. Fruits and vegetables have become more expensive, while meat, sweet and fatty food products and soft drinks and sweet and fatty foods have become cheaper.

Sustainability

Industrial food production causes environmental damage. Are industrial food systems fit for purpose, or do they need radical intervention? Tim Lang (City University, London, UK) stated that nutritional quality of food is not the only issue. Its social and environmental impact, its effect on the wider economy, and the type of governance that encourages industrial production, are also central issues.

Guy Poppy (University of Southampton, UK) also emphasised the impact of food systems on the environment, and the impact of climate change on food systems. Increasing world population will reduce the amount of arable land available. Increasing consumption of food will use more energy and water and affect the world's climate. This all creates a 'perfect storm' for policy makers, who must confront the issue of food security.

The sustainability theme was continued by Sharon Friel. She said that climate change will reduce agriculture yields and contribute to rising real food prices and an increase in undernutrition. The effects of climate change can be categorised as primary (related to heat waves, floods and fires), secondary (such as increased infection and diseases related to air pollution) and tertiary (famine, war and displacement).

Carlos Monteiro (University of São Paulo, Brazil) emphasised that the industrialisation of food production means less sustainable methods of farming, processing and transport, with profound effects on wildlife and the environment.

The true cost of food should include externalities, such as the environment, animal welfare, and transportation. But any rise in food prices to include these must consider effects on hunger and food poverty, said Prakash Shetty.

The effects of climate change may limit Africa's ability to meet its own agriculture needs. Agriculture employs 65% of Africa's workforce, but many areas of high production suffer the highest levels of undernutrition. Anna Lartey described the reduced diversity in the foods that provide the majority of the world's nutrition.

Sharon Friel showed how inequalities in access to healthy and affordable food are mirrored by inequalities in wider society. Financial inequality is rising worldwide. Impoverished communities and families cannot afford healthy and sustainable diets Gerard Hastings said that as with the 'canary in the coal-mine', their distress warns of a danger that threatens everybody.

Big Food

Aseem Molhotra (Action on Sugar, UK) said that Big Sugar corporate strategies and tactics are similar to those of Big Tobacco, with comparable health consequences, hence the assertion that 'sugar is the new tobacco'. He described aggressive media campaigns, opposition from industry to reform and regulation, and the role of government insiders with links to industry.

Sales of soft drinks are increasing much more rapidly in the global South than the global North. This mirrors the trend of tobacco sales, where corporations see opportunity in countries with lax regulation. David Stuckler (University of Oxford, UK) compared the strategies of Big Food in general with those of Big Tobacco. In nutrition research, conflicts of interest are rife, with articles significantly more likely to return a conclusion favourable to industry when funded by industry (10).

These vested interests aim to create a perception of doubt and disagreement among policy-makers and the media. Some industry-funded scientists claim that physical activity is the solution to obesity, ignoring the contribution of healthy dietary patterns. Corporations employ other tactics directly to influence voters or policy makers, which include grants to and funding of health organisations, politicians, and influential scientists.

Two-thirds of UK adults are overweight or obese and UK obesity is set to double by 2050. High-calorie, low nutritional value snack foods are available almost everywhere. However, not all calories are the same. Aseem Malhotra explained how a lot of fructose consumption (in the form of high fructose corn syrup and also sucrose) promotes liver fat accumulation, metabolic syndrome and increased risk of coronary heart disease (11-13). Increasing sugar production and consumption will lead to higher diabetes prevalence.

Alejandro Calvillo (Consumer Power, Mexico) highlighted the example of Mexico, which may have the highest sugar sweetened drink consumption in the world. Diabetes deaths doubled between 2000 and 2012 and health costs increased steeply in line with increased disease prevalence.

Good news

France

Michel Chauliac (Ministry of Health, France) outlined the French national nutrition and health programme initiated in 2001. It improves nutrition and increases physical activity by education and information and also by regulations and fiscal methods that include a customs tariff on sugared and high-caffeine soft drinks. The rise in obesity has slowed. A variety of policy interventions acting at all levels is necessary to effect change.

Mexico

Alejandro Calvillo discussed the campaigns of his organisation. The issue of sugar and diabetes has been dramarised, with soft drink corporations identified as culprits. Campaigning has included demand for a tax on sugared soft drinks, the revenue to for water fountains in schools. Counter-campaigns from the sugar and soft drink industries attempted to undermine this work..But a tax on sugared sofr drinks and junk food was introduced in January 2014.

Norway, Finland

Jan Pederson (University of Oslo, Norway) compared the differing approaches and obstacles faced when introducing food policies in Norway and Finland. Both have expert consensus backed by research, with strong links to universities and vocal opposition to industry. Finland has a more population-based approach with a broad range of measures to improve diet, decrease smoking and increase physical activity but has faced strong and persevering resistance from Big Agriculture. Norway aims its interventions at those at higher risk. Both have achieved reductions in mortality from ischaemic heart disease and other improvements (14,15). But both countries suffer from health inequity, obesity, and diabetes.

Denmark

Sinne Smed (University of Copenhagen, Denmark) used the rise and fall of the Danish fat tax to illustrate the effectiveness of price initiatives in reducing targeted nutrient consumption, and the potential problems of hoarding (16). She outlined the

political challenges in introducing such a tax and stressed the need for Europe- wide co-operation.

Australia

Boyd Swinburn (University of Auckland, New Zealand) proposed an activating systems approach rather than a project approach. This has helped to create an obesity prevention 'virus' that has spread between communities in Victoria, Australia. He explained how communities were mobilised and learned from each other so that the effects spread beyond the initial twelve intervention areas.

South Africa

Edelweiss Wentzel-Viljoen (North-West University, South Africa) emphasised that interventions must be region specific. There is increasing hypertension in South Africa, with a higher proportion of salt added at table or during cooking than in European studies. Bread and margarine were also among the main contributors. Studies made the economic case for reducing salt – $US 33 million a year from non-fatal strokes alone (17) – but political will is needed. The Salt Watch group has been created and accompanied by a mass media campaign.

Peru

Enrique Jacoby (PAHO, Washington, US) described the 'Eat tasty, eat healthy, eat Peruvian' campaign, and signs that the country is moving back to indigenous and traditional cuisine with regional variations. This increase in food culture can have wider benefits in the form of increased tourism.

Problems

Gerard Hastings challenged consumer capitalism. Ever-increasing economic growth requires ever-increasing consumption. We and our children are under constant pressure to buy more and more. He described a system of 'bread and circuses' where the elite use simple tricks to exert control and how, by participating, citizens become consumers, contributing to their own destruction. It is the role of public health professionals to offer criticism, withdraw passive support, and offer alternatives. Transnational corporations have become immensely powerful but they rely on our collaboration. Power to the people!

Mike Rayner (University of Oxford, UK) explained the UK points-based approach for scoring food and drink based on its nutritional composition and how this is already in use in some other countries. Using this system, the majority of ultra-processed products are categorised as unhealthy. This is not sufficient to convey the

concept of a healthy diet to the public. Different nutrient profiling models do not always rate food equally.

Simon Capewell and Aseem Malhotra said that lessons can be learned from successes in tobacco control with focus on the 3As of affordability, acceptability, availability.

Boyd Swinburn saw a need for a four-step process of assessing evidence, communicating evidence to key players, empowering groups to apply incentives to advance progress, and monitoring effects and improving the process. He described processes by which governments and corporations can be held to account. One such is the FoodEPI project (18), where researchers rate policy implementation in New Zealand and use this to identify policy gaps in areas such as marketing to children, fiscal policy, comprehensive plans and funding.

Tim Lang stated that food that is healthy for us is good for the environment. The impacts of unhealthy food on chronic diseases are mirrored by those on the environment, including climate. This gives the opportunity to help both the planet and its people. Policy decisions should reflect both aspects. The challenge is to increase food production and sustainability simultaneously.

Francesco Branca (WHO, Geneva, Switzerland) outlined preparations for the second International Conference on Nutrition, taking place two months later. This aim to commit nations to action to end all forms of malnutrition and to keep nutrition high on the development agenda.

Klim McPherson suggested that micro-simulation could help evaluate a range of policy interventions. A 1% reduction in European mean body mass index would potentially reduce incidence of cardiovascular disease, stroke and diabetes. A 5% reduction would produce more dramatic results (19). Such interventions should be cost-effective and produce large savings to healthcare systems and wider economies.

Simon Capewell and Philip James both championed national and population policy-based approaches, which generate maximum impact and are often cost-saving. Furthermore, prevention can achieve rapid results (20). Conversely, 'downstream' prevention interventions targeting individuals have a smaller public health impact than 'upstream' policies such as regulation or taxes. Moreover, industry self-regulation is ineffective and does not improve public health (7).

Sinne Smed explained that it is most effective to combine taxes targeting unhealthy products with subsidies on beneficial foods such as fruit and vegetables. Price interventions require political will and careful design, as the relationship between taxes, subsidies and price and consumption and health are complex. It is difficult to define products to be taxed and ensure enforcement. She warned to expect political and industry opposition. There is a concurrent need for education and availability of healthy alternatives.

Vincent Atkins described the complexity of trade agreements, and possible exceptions that could be exploited. There is some scope within current agreements to create policies to promote production and trade of healthier foods.

Carlos Monteiro contrasted conventional concepts of diet as merely a carrier of nutrients, to a broader view of diet as food, meals and ways of eating. Healthy diets are based on natural and minimally processes food, made into meals with culinary ingredients. Ultra-processed food and drink products are industrial formulations containing little or no real food, and should be avoided.

The basis of healthy diets is a variety of fresh or minimally processed mainly plant foods derived from socially, culturally and environmentally sustainable food systems. To learn, value, practice and share the art of cooking and give the pleasure of eating a central place in life is also vital. This is a more attractive and positive message than simply being told what not to eat. He made some key points for food policy:

1 Give top priority to farming that produces all sorts of plant foods for human use
2 Promote family farming as part of a general policy to sustain rural livelihoods
3 Uphold food systems that respect climate and natural resources as central to civilisation
4 Tax, restrict and warn against ultra-processed food and drink products
5 Ensure that all housing and offices have adequate facilities for cooking and eating
6 Protect independent restaurants and vendors that make fresh dishes and meals
7 Base all official and informed education and guidance on foods and meals
8 Make food, nutrition and cooking part of the core curriculum in schools
9 Celebrate gastronomy as central to national and local culture and identity
10 Prohibit all advertising and promotion of any product to children under the age of 16

Anna Lartey stated that agriculture plays a key role in improving nutrition in sub-Saharan Africa, by making food more available, accessible and diverse, production more sustainable, and diets more nutritious. Policies should provide the right incentives, monitor progress, and also protect the world's impoverished and vulnerable populations. Empowering women is a key component of any strategy.

Call to action

Philip James delivered a call to action. Public health professionals should become politically active, work with multi-disciplinary groups, be prepared for setbacks and opposition from industry, but always strive for progress.

He summed up some challenges. Small family growers are being supplanted by large-scale and highly automated farming method, which damage soil quality. Transnational farm feed companies entice farmers to purchase their seeds. Other farmers are subsidised by governments to increase production of unhealthy foodstuffs. Food is now a commodity to be traded on financial markets.

Transnational manufacturing and retailing corporations work tirelessly to influence purchasing decisions. More meat, sugar and oils are being supplied. The price of sugar is falling and there is an increase in the production of oils that increase rates of chronic diseases. US farm policy is a cause of obesity, with fruits and vegetables becoming more expensive and meat, soft drinks and sweet and fatty foods becoming cheaper in real terms. Policies and programmes to eliminate undernutrition are inadequate. Industrialised food systems are causing rapid rises in obesity and diabetes and other diseases worldwide. Increasing inequity is also driving obesity.

Solutions are apparent. Citizens and professionals alike need to become advocates and activists. Rational and effective international, national and local policies and actions have minimal costs but maximum impact. What is needed, is political will.

References

1 Lim SS, Vos T, Flaxman AD, Danaei G, Shibuya K, Adair-Rohani H, *et al.* A comparative risk assessment of burden of disease and injury attributable to 67 risk factors and risk factor clusters in 21 regions, 1990-2010: a systematic analysis for the Global Burden of Disease Study 2010. *The Lancet.* 2012 ;380 (9859):2224–2260.

2 Danaei G, Singh GM, Paciorek CJ, Lin JK, Cowan MJ, Finucane MM, *et al.* The global cardiovascular risk transition: associations of four metabolic risk factors with national income, urbanization, and Western diet in 1980 and 2008. *Circulation.* 2013 9 ; **127**(14):1493–1502, 1502e1–8.

3 Butland B, Jebb S, Kopelman P, McPherson K, Thomas S, Mardell J, Parry V. Reducing obesity: future choices, Available from: https://www.gov.uk/government/ publications/ reducing-obesity-future-choices

4 2013 Global Hunger Index | International Food Policy Research Institute (IFPRI) Available from: http://www.ifpri.org/publication/2013-global-hunger-index

5 The State of Food Insecurity in the World 2003, Available from: http://www.fao. org/docrep/006/j0083e/j0083e00.htm

6 Drewnowski A. Obesity, diets, and social inequalities. *Nutrition Reviews.* 2009, 1;**67**:S36–9.

7 Moodie R, Stuckler D, Monteiro C, Sheron N, Neal B, Thamarangsi T, *et al.* Profits and pandemics: prevention of harmful effects of tobacco, alcohol, and ultra-processed food and drink industries. *The Lancet.* 2013, **381**(9867):670–679.

8 Sustainability Pathways: Food loss and waste Available from: http://www.fao .org/nr/sustainability/food-loss-and-waste/en/

9 Goryakin Y, Lobstein T, James WPT, Suhrcke M. The impact of economic, political and social globalization on overweight and obesity in 56 low and middle income countries. *Social Science & Medicine.* 2015 ;**133**: 67–76.

10 Lesser LI, Ebbeling CB, Goozner M, Wypij D, Ludwig DS. Relationship between funding source and conclusion among nutrition-related scientific articles. *PLoS Medicine.* 2007, **9**;4(1):e5.

11 Rutledge AC, Adeli K. Fructose and the metabolic syndrome: Pathophysiology and molecular mechanisms. *Nutrition Reviews.* 2007 1; **65**(suppl 1):S13–23.

12 Tappy L, Lê K-A. Does fructose consumption contribute to non-alcoholic fatty liver disease? *Clinics and Research in Hepatology and Gastroenterology.* 2012, **36**(6): 554–560.

13 Forouhi NG, Wareham NJ. The EPIC-InterAct Study: A study of the interplay between genetic and lifestyle behavioral factors on the risk of type 2 diabetes in European populations. *Curr Nutr Rep*. 2014 ;3(4):355–363.
14 Borodulin K, Vartiainen E, Peltonen M, Jousilahti P, Juolevi A, Laatikainen T, *et al.* Forty-year trends in cardiovascular risk factors in Finland. *European Journal of Public Health*. 2014;cku174.
15 Hjerte-ogkarsykdommeri Norge - Folkehelserapporten 2014 - Folkehelseinstituttet [Internet]. Available from: http://www.fhi.no/eway/default.aspx?pid =239&trg=Content_7242&Main_6157=7239:0:25,8904&MainContent_7239=7242:0:25, 8906&Content_7242=7244:110411::0:7243:2:::0:0
16 Jensen JD, Smed S. The Danish tax on saturated fat – Short run effects on consumption, substitution patterns and consumer prices of fats. *Food Policy*. 2013, **42**:18–31.
17 Benefits of salt reduction in South African food. Available from: http://www.nutrition society.co.za/index.php/11-useful-information/39-benefits-of-salt-reduction-in-south-african-food
18 The Government Healthy Food Environment Policy Index (Food-EPI) - The University of Auckland. Available from: https://www.fmhs.auckland .ac.nz/en/soph /global-health/projects/informas/government-healthy-food-environment-policy-index.html
19 Webber L, Divajeva D, Marsh T, McPherson K, Brown M, Galea G, et al. The future burden of obesity-related diseases in the 53 WHO European-Region countries and the impact of effective interventions: a modelling study. *BMJ Open*. 2014 **1**;4(7):e004787.
20 Capewell S, O'Flaherty M. Can dietary changes rapidly change cardiovascular mortality rates? *Eur Heart J*. 2011, **32**(10):1187-1189.

Status

We thank all of the conference organisers, presenters and participants, and the British Heart Foundation and the European Heart Network for their support. Readers are encouraged to view presentations and abstracts from the conference at: http://www.wphna.org/Oxford2014/presentations/

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