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Recent developments and publications

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Nutrition and Physical Activity

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Ex-post evaluation of the 2nd Health Programme 2008-2013

- Set out to achieve objectives under three main headings: 1) to improve citizens' health security, 2) to promote health and reduce health inequalities, and 3) to generate and disseminate health information and knowledge
- Programme delivered valuable outputs with a clear link to EU health policy priorities and national priorities
- It provided EU-added value, particularly linked with the exchange of best practice and information between EU countries, in areas such as rare diseases, cardiovascular diseases and safety of organs for donation
- Need for improvement: dissemination of action outputs & transforming outputs into results and tangible impacts

http://ec.europa.eu/health/programme/policy/2008-2013/evaluation_en.htm

Two resolutions on nutrition at WHA 69

- **"United Nations Decade of Action on Nutrition (2016–2025)"**
-> urging countries to make concrete policy and financial commitments to improve people's diets, and report back regularly on those policies and investments
- **"Guidance on ending the inappropriate promotion of foods for infants and young children"**
-> urging countries, health professionals, the food industry, and the media to implement the guidance
- Assembly also welcomed recommendations of 'ending childhood obesity' report, asked WHO to develop an implementation plan and recommended MS to develop national measures

http://apps.who.int/gb/e/e_wha69.html

<http://www.who.int/mediacentre/news/releases/2016/wha69-27-may-2016/en/>

<http://www.who.int/mediacentre/news/releases/2016/wha69-28-may-2016/en/>

"Ambitious, SMART commitments to address NCDs, overweight and obesity"

- A joint NCD Alliance and World Cancer Research Fund International policy brief *'to support governments as they develop national food and nutrition plans and targets'*
- Illustrating how the ICN2 Framework for Action can be translated into policy commitments, which are S.M.A.R.T (Specific, Measurable, Achievable, Relevant and Time-bound)
- Targeting overweight & obesity and nutrition-related NCDs
- Providing examples, case studies, references e.g., rules to define which products qualify for subsidy schemes or rules for marketing to children

- Launched at 69th World Health Assembly side event, available at:
 - https://ncdalliance.org/sites/default/files/resource_files/SMART%20Policy%20Brief_WCRFI_NCDA_EN.pdf
 - <http://www.wcrf.org/sites/default/files/SMART-Advocacy-Brief-WCRFI-NCDA-EN.pdf>
- Extended version:
 - <http://www.wcrf.org/sites/default/files/SMART-Advocacy-Brief-WCRFI-NCDA-extended.pdf>
- See also related Global Nutrition Report guidance note
 - <http://globalnutritionreport.org/files/2016/03/GNR-SMART-Guidance.pdf>

WHO-UNICEF-IBFAN report on 'Marketing of breast-milk substitutes: National implementation of the international code - Status Report 2016'

- 'Laws to protect breastfeeding inadequate in most countries' (press release)
- Context:
Global nutrition target to increase the rate of exclusive breastfeeding in the first 6 months up to at least 50% by 2025

Report messages:

- Although more countries (135 out of 194) than in 2011 have enacted Code legislation only 39 have legislation incorporating all or most Code provisions
- Overall, richer countries lag behind poorer ones in implementing comprehensive legislation in line with the Code
- Monitoring and enforcement of the Code is weak

http://www.who.int/nutrition/publications/infantfeeding/code_report2016/en/

Fairness for children - inequalities in child well-being in 41 EU & OECD countries

UNICEF Innocenti Report Card 13

- Main question: 'how far behind are children being allowed to fall?'
- Analysis of the gap between children at the bottom and those in the middle of the societies looking at income, education, health and life satisfaction.
- Country rankings for a range of indicators including on inequality in health
- Change (2002-2014) in inequality in (un)healthy eating for the 41 EU and OECD countries.

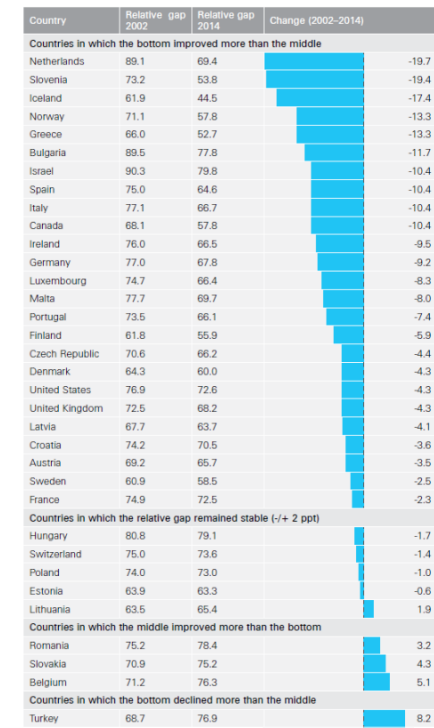
<https://www.unicef-irc.org/publications/830/>

Figure 16 Change in inequality in healthy eating



Source: HBSC 2002-2014.
Note: Israel and the United States, 2002-2010; Bulgaria, Iceland, Luxembourg, Romania and Slovakia, 2006-2014; Turkey, 2006-2010.

Figure 17 Change in inequality in unhealthy eating



Source: HBSC 2002-2014.
Note: Israel and the United States, 2002-2010; Bulgaria, Iceland, Luxembourg, Romania and Slovakia, 2006-2014; Turkey, 2006-2010.

New rules for US nutrition facts label approved by US Food and Drug Administration

- Designed to better facilitate consumer's access to key information
- Reflecting updated information about nutrition science
- 'Added sugars' (g, % DV) -> evidence: difficult to meet nutrient needs while staying within calorie limits if intake > 10%^{en}
- No more % DV for 'total fat' -> evidence: type of fat is more important than the amount
- Updating serving sizes & labelling requirements for certain package sizes, e.g., 'dual column' information on amount of calories and nutrients on both a "per serving" and "per package"/"per unit"

<http://www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/LabellingNutrition/ucm385663.htm>

Two JRC toolkits for the promotion of i) fruit and vegetable and ii) water intake in schools -> launched 1 June 2016 on CHILDREN'S DAY



How to promote fruit and vegetable consumption in schools:

a toolkit



How to promote water intake in schools:

a toolkit

<https://ec.europa.eu/jrc/en/news/promoting-healthy-food-and-drink-choices-school-age-children>

Articles in scientific (peer-reviewed) journals

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Focus on food reformulation, in particular added sugars reduction

Half of cancer cases and half of cancer mortality in the US white population could be prevented by adopting healthy lifestyles

- For women 41% of cancer cases and 59% of cancer deaths were potentially preventable.
- Among men an estimated 63% of cancer cases and 67% of cancer deaths were preventable.
- Approximately 80-90% of lung cancer & 60% of colon cancer could be avoided
- "...the reduction in cancer mortality was largely due to a reduction in incidence"

JAMA Oncol. 2016 [E-pub ahead of print]; <http://dx.doi.org/10.1001/jamaoncol.2016.0843>

Effects of the Danish saturated fat tax on food/nutrient intakes and health outcome

- Based on household scanner data, both saturated and total fat intake were reduced by an average of 4% (1.6-4.9% across all age groups)
- Also vegetable and fibre intake increased by 7.9 and 3.7%, respectively
- However, salt consumption increased in most and fruit consumption decreased in some population groups
- Modelling suggests an estimated reduction of 0.4% of all deaths from NCDs
- Saturated fat tax had a positive but minor contribution to public health in DK

Eur J Clin Nutr 2016 [E-pub ahead of print]; <http://dx.doi.org/10.1038/ejcn.2016.6>

Levels of leptin and insulin in mother's milk are associated with their infant's intestinal microbiome

- Increased maternal BMI is a risk factor for paediatric obesity
- Maternal obesity adversely affects infant intestinal microbiome
- Breastfeeding may attenuate the transfer of obesity from mother to offspring

- Infants born to obese mothers were exposed to 2-fold higher leptin and insulin levels in human milk as compared to those born to normal weight mothers
- Human milk leptin and insulin were independently associated with beneficial microbial pathways that increase intestinal barrier function and reduce intestinal inflammation

Am J Clin Nutr 2016; 103: 1291-1300; <http://dx.doi.org/10.3945/ajcn.115.126375>

Interventions for Childhood Obesity in the First 1,000 Days A Systematic Review.

- 'Effective interventions focused on individual- or family-level behavior changes through home visits, individual counseling or group sessions in clinical settings, a combination of home and group visits in a community setting, and using hydrolyzed protein formula.'
- 'Protein-enriched formula increased childhood obesity risk.'
- The majority of interventions target individual- or family-level changes
- In contrast, few target early-life systems and policies that may impact childhood obesity
- 'Interventions that operate at systems levels and are grounded in salient conceptual frameworks hold promise for improving future models of early-life obesity prevention'
- *Review Quality Rating (Health evidence™): 7 out of 10 (moderate)*

Am J Prev Med 2016;50(6):780–789; <http://dx.doi.org/10.1016/j.amepre.2015.11.010>

Commercial complementary food (CF) consumption is prospectively associated with added sugar intake in childhood.

- Study included 288 children of the Dortmund Nutritional and Anthropometric Longitudinally Designed (DONALD) Study
- 3-d weighed dietary records were performed at 0.5 and 0.75 (infancy), 3 and 4 (pre-school age) and 6 and 7 years of age (primary-school age)
- A higher percentage of commercial CF consumption was associated with high added sugar intake
- A higher percentage of commercial CF consumption in infancy was prospectively associated with higher added sugar intake in pre- and primary school age children
- 'Offering home-made CF or carefully chosen commercial CF without added sugar might be one strategy to reduce sugar intake in infancy and later on'

Br J Nutr. 2016 ;115: 2067-74; <http://dx.doi.org/10.1017/S0007114516001367>

Scientific views on sugar, fructose and sugar replacers

- Snapshot of a (stormy) debate on health effects of sugar/fructose:
 - Obesity (Silver Spring) 2016 [E-pub ahead of print]; <http://dx.doi.org/10.1002/oby.21431>
 - Can J Diabet 2016 [E-pub ahead of print]; <http://dx.doi.org/10.1016/j.jcjd.2016.01.004>
- More recent (re)views on health effects of sugar at different levels of intake, of high sugar foods and beverages, and of diets high in sugars and fat
 - Int J Obes (Lond) 2016; 40 Suppl 1:S22-7; <http://dx.doi.org/10.1038/ijo.2016.10>
 - Curr Opin Clin Nutr Metab Care 2016 [E-pub ahead of print]; <http://dx.doi.org/10.1097/MCO.0000000000000289>
 - J Nutr 2016;146:778–84; <http://dx.doi.org/10.3945/jn.115.224659>
- Routine/long-term consumption of foods and beverages with non-nutritive sweeteners instead of sugars in 'real life' may not improve health outcomes
Curr Opin Behav Sci 2016; 9:106–110; <http://dx.doi.org/10.1016/j.cobeha.2016.03.003>

Association Between Artificially Sweetened Beverage Consumption During Pregnancy and Infant Body Mass Index

- Study included 3033 mother-infant dyads from the Canadian Healthy Infant Longitudinal Development (CHILD) Study
- Dietary assessment (FFQ) of women during pregnancy & measured weight and height of their infants at 1 year of age
- Compared with no consumption, daily consumption of artificially sweetened beverages was associated with a > 2-fold higher risk of infant overweight
- Effects were not explained by maternal BMI, diet quality, total energy intake, or other obesity risk factors
- No comparable effects of sugar-sweetened beverage consumption observed
- 'Given the current epidemic of childhood obesity and widespread use of artificial sweeteners, further research is warranted to confirm our findings and investigate the underlying biological mechanisms, with the ultimate goal of informing evidence-based dietary recommendations for pregnant women'

JAMA Pediatr 2016 [E-pub ahead of print]; <http://dx.doi.org/10.1001/jamapediatrics.2016.0301>

Recent trends in sugar replacement

- High intensity sweeteners (HIS) and polyols have been used for a long time
- There are controversies related to HIS use 'despite no clear evidence of harm'
- One trend is to switch from artificial towards natural HIS, such as Monk fruit and stevia extracts (focus on rebaudioside A)
- In solid foods HIS need to be used in combination with low calorie bulking agents, such as fibres; challenges linked to product changes and costs
- Another trend today is to look for alternatives such as sweet enhancers or alternative sugars such as allulose or tagatose, which provide similar physical properties but less calories to foods; however, limited use due to insufficient knowledge on health effects and need to declare as (total/added) sugars
- To replace the physical (bulking) properties of sugars, new trends are to substitute widely used maltodextrins by dietary fibres to confer added health benefits.
- Successful reformulation is multidimensional and need to consider: health effects, food science and technology, regulatory environment, and consumer acceptance

Curr Opin Clin Nutr Metab Care. 2016 [Epub ahead of print];
<http://dx.doi.org/10.1097/MCO.0000000000000288>

Markers for dietary total & added sugars intake

- Controversy around health effects of added sugars may be in part due to limitations in dietary intake assessment
- Challenges linked to underreporting of intake socially undesirable food, such as those high in sugars
- Possible solution: objective marker of sugar intake
- The $\delta^{13}\text{C}$ sugar biomarker measured in a variety of sample types can provide information of acute to chronic intakes of added sugar from corn and cane sources; however, added sugar from beet cannot be detected and marker validation studies are needed
- Urinary sugar (sucrose and fructose) excretion in 24h or spot urine samples can provide information on recent total sugar intake; however, only short-time intake covered, no information on added sugar intake and marker validation studies are needed

Curr Opin Clin Nutr Metab Care 2016 [E-pub ahead of print];

<http://dx.doi.org/10.1097/MCO.0000000000000287>

Cochrane review: Diet, physical activity, and behavioural interventions for the treatment of overweight or obesity in preschool children up to the age of 6 years

- 'Multi-component interventions appear to be an effective treatment option for overweight or obese preschool children up to the age of 6 years'.
- Limited evidence available and high risk of bias in most trials.
- Most trials did not measure adverse events.

- Equivocal evidence on dietary interventions
- One trial suggests that dairy interventions may be effective in the longer term, but not energy-restricted diets, however, a high risk of bias is identified

- 'All results should be interpreted cautiously due to their low quality and heterogeneous interventions and comparators.'

- *Review Quality Rating (Health evidenceTM): 10 out of 10 (strong)*

Cochrane Database of Systematic Reviews 2016, Issue 3. Art. No.: CD012105;
<http://dx.doi.org/10.1002/14651858.CD012105>

Public Health Policy Support: Nutrition



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