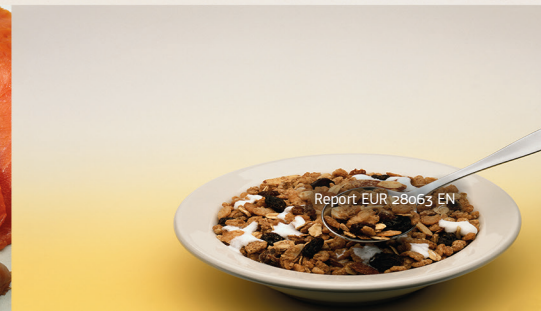


J R C S C I E N C E F O R P O L I C Y R E P O R T

Comparison of the **nutrient  
profiling schemes** of the *EU Pledge*  
and the World Health Organization  
Regional Office for Europe

Storcksdieck genannt Bonsmann S

2015



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#### Abstract

Reducing the marketing of foods high in energy, certain fats, sugar, or salt to children is a key area for action in the EU Action Plan on Childhood Obesity 2014-2020. Nutrient profiling can be used as a tool to define food and drink products eligible for marketing to children. This report compares the nutrient profile model recently developed by WHO Europe with the voluntary industry-devised *EU Pledge*, both intended to restrict food and drink advertising to children. Applying the WHO Europe model instead of the *EU Pledge* would likely result in fewer products being eligible for advertising to children.



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# EXECUTIVE SUMMARY

## Background

Reducing the marketing pressure on children regarding foods high in fat, sugars and salt is one of the aims of health policies in the EU. In this context, nutrient profiling can be used as a tool to decide which products are eligible for marketing to children. Other applications are possible in line with the definition by the World Health Organization (WHO) of nutrient profiling as the ‘science of classifying or ranking foods according to their nutritional composition for reasons related to preventing disease and promoting health’.

EU-wide nutrition criteria to restrict food advertising to children under 12 have been agreed voluntarily by industry as part of a set of commitments termed ‘*EU Pledge*’. Signatories to the pledge have to abide by these criteria since 31 December 2014. More recently, WHO Europe has come forth with its own nutrient profile model, which differs both in scope and strictness and has thus sparked some debate among stakeholders.

## Scope

This report is a comparison of the *EU Pledge* Nutrition Criteria with the WHO Europe nutrient profile model. It highlights the key differences between the two models, and what the consequences would be for food product eligibility if the WHO model replaced the *EU Pledge*. The overall aim is to inform discussions on using nutrient profiling to restrict food marketing to children under the age of 12.

## Key findings

The two models are similar in that they both define a number of food categories (with clear overlaps, but also some differences) and set upper limits for saturated fat, sodium/salt and total sugars as nutrients of public health concern. Fresh and

frozen fruits and vegetables as well as meat, fish, poultry and eggs can be advertised to children under 12 in both models without restriction. Similarly, soft drinks and chocolate are not eligible in either model.

The two models differ in that the *EU Pledge* model always specifies values for the selected nutrients and additionally includes category-specific components or nutrients to encourage. Examples for the latter are fibre in cereal-based products, protein and/or calcium in dairy products, and poly-unsaturated fat in vegetable fats and oils. In contrast, the WHO model almost exclusively states upper limits for those nutrients most relevant for a given food category. The WHO model often sets substantially stricter limits for sodium/salt and sugars, and less so for saturated fat. Furthermore, the WHO model considers food marketing in general, not just advertising via TV, radio and company websites.

Comparability of the two models is hampered by differences in food groups and in threshold nutrients. For example, the WHO uses ‘added sugars’ limits in several categories, whereas the *EU Pledge* model only employs limits for ‘total sugars’. Likewise, the WHO model uses ‘total fat’ thresholds, whereas the *EU Pledge* model only considers saturated fat and energy as the nearest related values.

### Concluding remarks

Overall, the WHO model can be considered stricter than the *EU Pledge* system in that it would permit fewer products to be advertised to children under 12 than is the case under the *EU Pledge*. *EU Pledge* signatories are free to define their own (additional) nutrient criteria as long as these are ‘demonstrably more stringent’ than the common *EU Pledge* criteria.



# 1. Background

Nutrient profiling has been broadly defined as the ‘science of classifying or ranking foods according to their nutritional composition for reasons related to preventing disease and promoting health’ [1]. As a concrete example, Directive 2010/13/EU [2] stipulates that codes of conduct be developed with the aim to limit children’s exposure to advertising of nutritionally unbalanced products.<sup>1</sup> In this context, nutrient profiling may be used to classify which products are eligible for marketing to children. Likewise, Regulation (EC) 1924/2006 [3] calls for the development of a nutrient profiling system to assess which products can bear nutrition and health claims. For an overview of applications of nutrient profiling, see Sacks *et al.* [4].

Recent European-level strategy documents confirm that the need to systematically define healthier food options remains high on the public health agenda. Creating healthy food and drink environments is a primary objective of the European Food and Nutrition Action Plan 2015-2020 [5]. Among others, this includes reducing the marketing of foods high in energy, saturated fat (SFA), *trans* fats (TFA), sugar, or salt to children—also a key area for action in the EU Action Plan on Childhood Obesity 2014-2020 [6].

Several nutrient profile systems have been devised to date, and these commonly differ along the following five dimensions [4]:

- Number of product categories: does the scheme apply across the board or just to a selection of foods/drinks or categories thereof?
- Nutrients and other food components included: largely guided by those nutrients/food components considered of largest concern.<sup>2</sup>

1. Directive 2010/13/EU Art. 9(2): Member States and the Commission shall encourage media service providers to develop codes of conduct regarding inappropriate audiovisual commercial communications, accompanying or included in children’s programmes, of foods and beverages containing nutrients and substances with a nutritional or physiological effect, in particular those such as fat, trans-fatty acids, salt/sodium and sugars, excessive intakes of which in the overall diet are not recommended.

2. Notably, Directive 2010/13/EU and EU Regulation 1924/2006 both make explicit reference to fat, trans-fatty acids, sugars and salt/sodium, and the latter also mentions saturated fatty acids.

- Base used: typical reference points are per 100 g or ml, per 100 kJ or kcal, or per portion.
- Method for categorising/ranking products: these are typically either based on thresholds or scoring algorithms.
- Cut-off numbers: which cut-off values have been chosen, and why?

Decisions about above dimensions mainly depend on the purpose of the nutrient profile system as well as the context in which it is to be employed.

With regard to food advertising, European food and drink manufacturers representing about 80% of EU marketing spend have pledged to self-regulate their marketing to children according to common nutrition criteria first published in November 2012 and in force since 31 December 2014 [7]. WHO Europe has recently published an additional nutrient profile model [8] within the context of its European Action Network on reducing marketing pressure on children.<sup>3</sup> The WHO model is intended to help countries in the Region use or adapt it as a common tool to restrict food marketing to children. *Table A1* in the *Annex* gives examples of European countries with national nutrient profile models employed to restrict food advertising to children.

3. <https://helsedirektoratet.no/english/who-european-action-network-on-reducing-marketing-pressure-on-children> [accessed 20 August 2015].

## 2. Aim and scope

This report is a comparison of the *EU Pledge* Nutrition Criteria with the WHO Europe nutrient profile model. The aim is to inform discussions on using nutrient profiling to restrict food marketing to children under the age of 12.

What follows is a brief descriptive introduction of the two systems, complemented by an assessment of the similarities and differences between the nutrient profiles of the *EU Pledge* and WHO Europe.



# 3 . Introducing the Nutrient Profiling Models

## EU Pledge Nutrition Criteria White Paper

The *EU Pledge* is a voluntary code of conduct developed by leading companies to self-regulate food and beverage advertising to children under the age of 12<sup>4</sup> on TV, print and internet in the European Union. Currently, the *EU Pledge* counts 21 food and beverage companies<sup>5</sup> as its members, who together ‘account for over 80% of food and beverage advertising expenditure in the EU’.

For their nutrient profile model [7], the *EU Pledge* Nutrition Working Group<sup>6</sup> opted for a category- and threshold-based approach, and they established a set of nutrition criteria for nine product categories and 16 sub-categories (see *Table 1* for details about the product categories). According to the Working Group, those categories emerged as being amenable to setting reasonably strict and uniform criteria. No nutrition criteria were developed for sugar and sugar-based products (e.g., chocolate or chocolate products, jam or marmalade, non-chocolate confectionery or other sugar products, sugar, honey or syrup) and soft drinks that are not advertised to children under 12 by *EU Pledge* members.

The criteria concern upper limits for energy, sodium, SFA and total sugars, and lower limits for a range of ‘components to encourage’ (including both nutrients and food groups). Depending on the food or beverage category, such components for example may be fibre, poly-unsaturated fatty acids (PUFA), a minimum quan-

4. For the purpose of this initiative, ‘advertising to children under 12 years’ means advertising to media audiences with a minimum of 35% of children under 12 years.

5. Amica Chips, Burger King, Coca-Cola, Danone, Ferrero, General Mills, ICA Foods, Intersnack, Kellogg, KiMs, Lorenz Snack-World, Mars, McDonald’s, Mondelez, Nestlé, PepsiCo, Quick Group, Royal FrieslandCampina, Unichips, Unilever, Zweifel Pomy-Chips (<http://www.eu-pledge.eu/content/our-members> [accessed 10 August 2015]).

6. ‘The Working Group, established in late 2011, drew on member companies’ internal expertise, by gathering a senior nutritionist from each member company. The Working Group established terms of reference aimed at developing a consensual approach to common nutrition criteria’ [7].

tity of fruit and/or vegetable, calcium, or energy from protein. Unless specified otherwise, energy limits apply per portion and nutrient limits apply per 100 g or ml. The energy reference value of 1700 kcal/day is in line with figures published by the European Food Safety Authority [9], bearing in mind that requirements may differ widely by age, activity level and gender.

In deriving nutrient thresholds, the Working Group stated to have considered i) international dietary guidelines; ii) the contribution of different foods to children's overall diet; iii) the overall importance of specific nutrients in food products by category; and iv) technological feasibility and consumer acceptance.

Of note, products must meet all category-specific criteria, *i.e.* both for upper and lower limits, to be eligible for advertising. Threshold values apply for food products as sold, except for products which cannot be consumed without reconstitution (such as soup powder, dehydrated mashed potatoes, milk drinks).

The Working Group points out that the *EU Pledge* criteria 'are designed for the exclusive purpose of defining better-for-you options in the context of food and beverage advertising to children under 12 and specifically for the product categories covered' [7].

### **WHO Europe nutrient profile model**

The WHO Europe nutrient profile model [8] was developed with a mandate from the European Food and Nutrition Action Plan 2015-2020 [5] and for the specific purpose of restricting the marketing of foods to children. It is meant as a 'common tool for use or adaptation by Member States across Europe (on a voluntary basis and taking into account individual national circumstances)' [8].

The WHO Europe nutrient profile model is essentially based on two existing models developed by (Norway) or endorsed by (Denmark) government and used for voluntary restrictions in the respective country. Similar to the *EU Pledge* model, the WHO model applies food categories and nutrient thresholds. It defines 17 food categories (and four subcategories), which are a combination of eight Norwegian, seven Danish, and two newly added categories (see *Table 1*).

The WHO model covers the nutrients total fat, SFA, total sugars, added sugars, and salt, all in g/100 g. Energy is included for category 9 (ready meals, convenience foods and composite dishes), while non-sugar sweeteners have also been included for category 4, more specifically subcategories 4b ‘Milk drinks’ and 4d ‘Other beverages’. Thresholds were largely taken from corresponding categories in the Norwegian and Danish models, choosing the stricter or more comprehensive values where applicable. Salt thresholds in categories 6, 8, 11, 12 and 14, since absent from the source categories in the Danish and Norwegian models, were taken from the Finnish Ministry of Trade and Industry Decree on food packing markings 1084/2004, section 25 [10]. The model contains five categories for which marketing is never permitted, and two categories for which marketing is always permitted:

- Marketing never permitted for: 1) chocolate and sugar confectionery, energy bars, and sweet toppings and desserts; 2) cakes, sweet biscuits and pastries; other sweet bakery wares, and dry mixes for making such; 3) juices; 4) energy drinks; 5) edible ices.
- Marketing always permitted for: 1) fresh and frozen meat, poultry, fish, and similar; 2) fresh and frozen fruit, vegetables and legumes.

For all these seven instances, no setting of nutrient criteria is required. Additionally, marketing is prohibited if a product contains  $>1$  g per 100 g total fat in the form of industrially produced TFA, or  $\geq 0.5\%$  of total energy in the form of alcohol.

‘Food products should, where possible, be assessed as sold or as reconstituted (if necessary) according to the manufacturer’s instructions. If the marketing is for a restaurant meal, including a quick-service or take-away meal of two or more items, all items must individually meet the relevant nutrient criteria’ [8]. Marketing permissions may be considered in the national context for foods that have a protected designation of origin, a protected geographical indication or are a guaranteed traditional speciality.

**Table 1.** Food categories defined in the two nutrient profiling schemes and aligned by similarity.

Eu Pledge		Corresponding Who model category	
Cat. No.	Food category	Cat. No.	Food category/ies
1A	Vegetable & animal based oils, fats & fat containing spreads: all animal and vegetable based fats & oils used as spreads on bread and/or food preparation.	10	Butter and other fats and oils.
1B	Emulsion-based sauces: sauces that constitute only a minor component of the meal to which an emulsifying agent is added OR have a fat content > 10% w/w.	17	Sauces, dips and dressings.
2A	Products of fruits and vegetables except oils & potatoes (>50 g fruit and/or veg per 100 g of finished product) that constitute a substantial component of the meal.	16	Processed fruit, vegetables and legumes.
2B	Potato & potato products, except dehydrated potato products: all potato based dishes (>50 g potato per 100 g of finished products) that constitute a substantial component of the meal.	16	Processed fruit, vegetables and legumes.
2E	Fruit/Vegetable based meal sauces: all fruit/vegetable based sauces (>50 g fruit and/or vegetable per 100 g of finished products) that constitute a substantial component of the meal.	16	Processed fruit, vegetables and legumes.
2F	Fruit/Vegetable based condiments: all fruit/vegetable based condiments (>50 g fruit and/or vegetable per 100 g of finished products) that constitute only a minor component of the meal.	17	Sauces, dips and dressings.
2C	Potato chips and & potato based snacks, incl. dough-based products.	3	Savoury snacks.
2D	Seeds and nuts.	3	Savoury snacks.
3	Meat based products: all kinds of processed meat/poultry, and meat products, consisting of minimally 50 g of meat per 100 g finished product.	14	Processed meat, poultry, fish and similar.
4	Fishery products: all kinds of processed fish, crustaceans and shellfish, consisting of min. 50 g of fish, crustaceans, and/or molluscs per 100 g of finished product.	14	Processed meat, poultry, fish and similar.
5A	Dairy Products other than cheeses: Must contain minimum 50% dairy (Codex Alimentarius standard).	4b 7	Milk drinks. Yogurts, sour milk, cream and other similar foods.
5B	Cheese and savoury dairy based products: Must contain minimum 50% dairy (Codex Alimentarius standard).	8	Cheese.
6A	Sweet biscuits, fine bakery wares and other cereal based products: cereal must be listed as the main ingredient on the ingredient declaration.	2	Cakes, sweet biscuits and pastries; other sweet bakery wares, and dry mixes for making such.



**Table 1.** (cont.)

<i>Eu Pledge</i>		Corresponding Who model category	
Cat. No.	Food category	Cat. No.	Food category/ies
6B	Savoury biscuits, fine bakery wares and other cereal based products, including dough-based products: cereal must be listed as the main ingredient on the ingredient declaration.	3	Savoury snacks.
6C	Breakfast Cereals including porridge.	6	Breakfast cereals.
6D	Cereal and cereal products except breakfast cereals, biscuits and fine bakery wares: cereal must be listed as the main ingredient.	11 12	Bread, bread products and crisp breads. Fresh or dried pasta, rice and grains.
7A	Soups: all kinds of soups and broths containing min 1 of the following: 30 g fruit, vegetables, cereals, meat, fish, milk or any combination of those (calculated as fresh equivalent) per portion. (Thresholds apply to food as reconstituted, ready for consumption, following manufacturer's instructions).	9	Ready-made and convenience foods and composite dishes.
7B	Composite dishes, main dishes, and filled sandwiches: all kinds of dishes & sandwiches containing min. 2 of the following: 30 g fruit, veg, cereals, meat, fish, milk or any combination of those (calculated as fresh equivalent) per portion. (Thresholds apply to food as reconstituted, ready for consumption, following manufacturer's instructions).	9	Ready-made and convenience foods and composite dishes.
8	Meals: The combination of items served as a meal (main dish, side item(s) and a beverage) for breakfast, lunch or dinner.	9	Ready-made and convenience foods and composite dishes.
9	Edible ices: all kinds of edible ices (water ices and ice cream).	5	Edible ices.

*NB:* Yellow-highlighted cells = category foods not eligible for marketing to children under 12 in WHO nutrient profile model; WHO categories 1, 4a/c/d, 13, 15 are not listed in this table as there are no equivalent *EU Pledge* categories with nutrient criteria to match them against.



# 4 . Comparing the Nutrient Profiling Models

## Similarities

### *Generic*

- Both the *EU Pledge* and the WHO model define food categories and apply a threshold approach for key nutrients of public health concern to limit.

### *By food category*

- WHO model category 1 (Chocolate and sugar confectionery, energy bars, and sweet toppings and desserts) is listed as not permitted for marketing to children under 12. No nutrient profiles are specified by the *EU Pledge* since products in this category by default are not eligible.
- WHO model category 4c (Energy drinks) is listed as not permitted. The *EU Pledge* applies the same rule.
- WHO model category 13 (Fresh and frozen meat, poultry, fish and similar) is listed as permitted unrestricted. The *EU Pledge* applies the same rule.
- WHO model category 15 (Fresh and frozen fruit, vegetables and legumes) is listed as permitted unrestricted. No nutrient profiles are specified by *EU Pledge* since products from this category are generically eligible for marketing to children under 12.

## Differences

### *Generic*

- The **choice of nutrients** in the models by the *EU Pledge* and the WHO is different: the *EU Pledge* model uses both ‘nutrients to limit’ and ‘components to encourage’ (with the stated intention to promote reformulation and foster innovation). For a food to be allowed for advertising to children, it must comply with both criteria at the same time. In contrast, the WHO model applies only

a ‘nutrient limit approach’, except for the two categories 1) breakfast cereals and 2) bread, bread products and crisp breads, for which countries may apply a minimum level of dietary fibre ( $\geq 6$  g/100 g is given as an exemplary value).

- The **nutrients to limit** in the *EU Pledge* model are only sodium, SFA and total sugars (virtually always per 100 g or ml). Together with a limit for energy per portion, they are specified for all categories. In contrast, the WHO model sets upper limits for total fat, SFA, total sugars, added sugars, non-sugar sweeteners, salt and energy, but only specifies thresholds for the nutrients considered most critical for the respective food category. For example, the energy limit (in kcal per 100 g) is only used for ‘Ready-made and convenience foods and composite dishes’ (category 9), and a non-sugar sweetener limit is only given for ‘milk drinks’ (category 4b) and ‘other beverages’ (category 4d).
- The *EU Pledge* model sets restrictions for advertising only (TV, radio, company websites), whereas the WHO model considers marketing in general (including packaging design, in-store promotions, and pricing).

#### *By food category*

- The *EU Pledge* allows advertising of **100% fruit and vegetable juices** to children as follows: ‘100% fruit and vegetables and their products, including 100% fruit and vegetable juices, as well as 100% nuts and seeds and mixes thereof (with no added salt, sugar or fat). These products, presented fresh, frozen, dried, or under any other form may be advertised to children without restrictions’ [7]. In contrast, juices (including 100% fruit or vegetable juices; juices reconstituted from concentrate, and smoothies) are categorically not permitted in the WHO model (albeit with a disclaimer ‘that countries, according to national context and national food-based dietary guidelines, may take the decision to permit the marketing of 100% fruit juices in small portions’ [8]).
- The *EU Pledge* generically considers **soft drinks** as not eligible for marketing to children under 12. In the WHO model, corresponding products (falling into category 4d, Other beverages) are permitted if they contain 0 g added sugars and 0 g non-sugar sweeteners.
- *EU Pledge* category 1A (**Vegetable and animal based oils, fats & fat containing spreads**) products need to contain  $\geq 25\%$  of total fat as PUFA, and up to 33% of total fat may be SFA. In contrast, WHO sets a maximum of 20 g SFA per 100 g

(category 10). Whereas butters as defined in Council regulation (EC) 1234/2007 Annex XV [11] are excluded from the *EU Pledge* category as they will not be advertised to children, the WHO model allows butters complying with a maximum SFA content of 20 g/100 g. (and a maximum salt content of 1.3 g/100 g). The *EU Pledge* energy limit per portion is 85 kcal, or 5% of the daily reference intake of 1700 kcal.

- *EU Pledge* subcategory 1B (**Emulsion-based sauces**) sets a sodium limit of 750 mg/100 g, whereas the WHO model (category 17) allows a maximum of 400 mg. The *EU Pledge* energy limit per portion is 85 kcal, or 5% of the daily reference intake of 1700 kcal.
- For *EU Pledge* subcategory 2A (**Products of fruits, vegetables except oils & potatoes**), up to 15 g of total sugars per 100 g are permitted, whereas the comparable WHO category 16 specifies a total sugars limit of 10 g/100 g while not allowing any added sugars. The sodium limit is slightly stricter in the *EU Pledge* scheme than in the WHO model (300 mg vs 400 mg per 100 g). The *EU Pledge* energy limit per portion is 170 kcal, or 10% of the daily reference intake of 1700 kcal.
- *EU Pledge* subcategory 2C (**Potato chips & potato based snacks, incl. dough based products**) sets a sodium limit of 670 mg/100 g for potato chips/crisps and 900 mg/100 g for extruded snacks, pelleted snacks and stackable chips. Subcategory 2D (seeds and nuts) also applies the 670 mg threshold. In contrast, the WHO model (category 3) allows a maximum of 0.1 g salt equivalent (or 40 mg sodium) per 100 g. Whereas total sugars in the *EU Pledge* model may not exceed 10 g/100 g for category 2C and 15 g for category 2D (owing to the inclusion of dried fruit in fruit/nut mixes), the WHO only specifies a 0 g limit for added sugars.
- *EU Pledge* subcategories 2E (**Fruit/vegetable based meal sauces**) and 2F (**Fruit/vegetable based condiments**) may be seen as comparable to WHO categories 16 (processed fruit, vegetables and legumes) and 17 (sauces, dips and dressings), respectively. If this premise is accepted, then the most striking difference is in the sodium limit between the *EU Pledge* subcategory 2F (750 mg/100 g) and WHO category 17 (400 mg/100 g). Furthermore, the *EU Pledge* allows up to 25 g total sugars per 100 g in this subcategory, whereas the WHO model does not specify any total sugars limit while not permitting any added sugars.
- *EU Pledge* category 3 (**Meat based products**) limits for SFA ( $\leq 6$  g/100 g) and so-

dium ( $\leq 800$  mg/100 g) compare to WHO category 14 limits for total fat (20 g/100 g) and salt (1.7 g/100 g; equates to 680 mg sodium). The *EU Pledge* portion for this category may not exceed 170 kcal.

- *EU Pledge* category 4 (**Fishery products**) has a stricter sodium limit ( $\leq 450$  mg/100 g) than the corresponding WHO category 14 (680 mg/100 g). The 170 kcal per portion limit in the *EU Pledge* criteria may be exceeded if  $\geq 25\%$  of total fat is PUFA (to encourage fatty fish consumption rich in PUFA).
- *EU Pledge* subcategory 5A (**Dairy products other than cheeses**) sets the following limits: sodium  $\leq 300$  mg/100 g; SFA  $\leq 2.6$  g/100 g; total sugars  $\leq 13.5$  g/100 g. The comparable WHO category 7 (Yoghurts, sour milk, cream and other similar foods) is somewhat stricter with a sodium limit of 40 mg/100 g, a SFA limit of 2.0 g/100 g and a total sugars limit of 10 g/100 g.
- *EU Pledge* subcategory 5B (**Cheese and savoury dairy based products**) is subdivided further into hard/semi-hard cheeses on the one hand, and other cheeses, curd & quark and savoury dairy-based products on the other. The sodium limit of 800-900 mg/100 g is contrasted by a WHO limit for the corresponding category 8 (Cheeses) of 520 mg/100 g. Whereas the *EU Pledge* sets thresholds for SFA of 10 and 15 g per 100 g, respectively, the WHO model only caps total fat at 20 g/100 g. *EU Pledge* portion limits of 85 and 170 kcal correspond to 5 and 10% of the total daily reference intake.
- *EU Pledge* subcategory 6A (**Sweet biscuits, fine bakery wares and other cereal based products**) specifies a total sugars limit of  $\leq 35$  g/100 g, and limits SFA to  $\leq 10$  g/100 g and sodium to  $\leq 450$  mg/100 g. The energy limit is 200 kcal per portion, roughly 12% of the daily reference intake of 1700 kcal. At the same time, fibre must be  $\geq 3$  g/100 g and/or wholegrain 15% of total ingredients, and/or 20% energy must come from unsaturated fatty acids (UFA) and UFA must constitute at least 70% of total fat. Products from the corresponding category 2 (Cakes, sweet biscuits and pastries; other sweet bakery wares, and dry mixes for making such) in the WHO model are generically not permitted for advertising.
- *EU Pledge* subcategory 6B (**Savoury biscuits, fine bakery wares and other cereal based products, including dough-based products**) sets a sodium limit of  $\leq 900$  mg/100 g and a total sugars limit of 10 g/100 g. The matching WHO model category 3 (Savoury snacks) limits sodium to  $\leq 40$  mg/100 g and allows no added sugars while not specifying any limit for total sugars. The *EU Pledge*

energy limit per portion of  $\leq 170$  kcal corresponds to 10% of the daily reference intake of 1700 kcal. Furthermore, the *EU Pledge* stipulates that products in this category contain  $\geq 3$  g fibre/100 g and/or  $\geq 70\%$  UFA/total fat.

- *EU Pledge* subcategory 6C (**Breakfast cereals including porridge**) limits total sugars to  $\leq 30$  g/100 g and sodium to  $\leq 450$  mg/100 g. In contrast, the corresponding WHO model category 6 (Breakfast cereals) sets a total sugars limit of 15 g/100 g and allows up to 640 mg sodium per 100 g. The *EU Pledge* components to encourage criteria require a fibre content of  $\geq 3$  g/100 g and/or 15% wholegrain per total ingredients. The portion energy limit is set at  $\leq 210$  kcal.
- *EU Pledge* subcategory 6D (**Cereal and cereal based products except breakfast cereals, biscuits and fine bakery wares**) is comparable to WHO model categories 11 (Bread, bread products and crisp breads) and 12 (Fresh or dried pasta, rice and grains). Whereas the *EU Pledge* total sugars limit is  $\leq 5$  g/100 g, the WHO model allows up to 10 g/100 g. The sodium limits are almost identical at 500 and 480 mg/100 g. The total fat limit of  $\leq 10$  g/100 g in the WHO model criteria seems compatible with the SFA limit of  $\leq 5$  g/100 g in the *EU Pledge* model. The latter allows a portion of up to 340 kcal, equal to 20% of the daily reference intake. Additionally, fibre content must be  $\geq 3$  g/100 g and/or wholegrain 15% of total ingredients.
- *EU Pledge* subcategory 7A (**Soups**) limits SFA to  $\leq 1.5$  g/100 g and total sugars to  $\leq 7.5$  g/100 g. In comparison, the corresponding WHO category 9 (Ready-made and convenience foods and composite dishes) allows up to 4 g SFA and 10 g total sugars per 100 g. The sodium limits are very similar at 350 mg (*EU Pledge*) and 400 mg (WHO) per 100 g. The *EU Pledge* sets an energy limit of 170 kcal per portion of 200 ml, whereas the WHO allows up to 225 kcal per 100 g.
- *EU Pledge* subcategory 7B (**Composite dishes, main dishes, and filled sandwiches**) specifies a total sugars limit of  $\leq 7.5$  g/100 g. The corresponding WHO category 9 (Ready-made and convenience foods and composite dishes) allows up to 10 g total sugars per 100 g. The other thresholds are very similar (SFA, energy) or the same (sodium).
- *EU Pledge* category 9 (**Edible ices**) limits sodium to  $\leq 120$  mg/100 g, SFA to  $\leq 5$  g/100 g, and total sugars to  $\leq 20$  g/100 g. It is the only category where no components to encourage are defined, and a portion may not exceed 110 kcal. The WHO model does not permit edible ices (category 5) to be advertised to children under 12.





# 5. Interpretation and concluding remarks

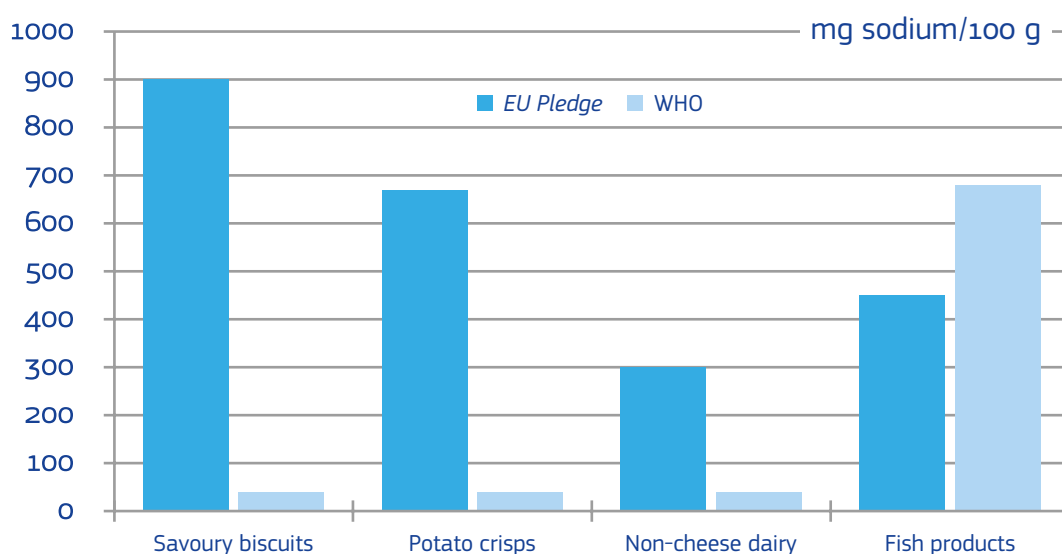
The comparison of the nutrient profile models of the *EU Pledge* and the WHO shows that there is some common ground. For example, both models agree not to restrict advertising of fresh and frozen fruit and vegetables and of fresh and frozen meat, poultry, and fish. Similarly, both models consider chocolate confectionery and energy drinks as non-eligible for marketing to children under the age 12.

Moreover, the fact that both WHO and the *EU Pledge* Nutrition Working Group have chosen the category and threshold approach may indicate a common interest in providing a flexible nutrient profile tool that stimulates product reformulation and innovation.

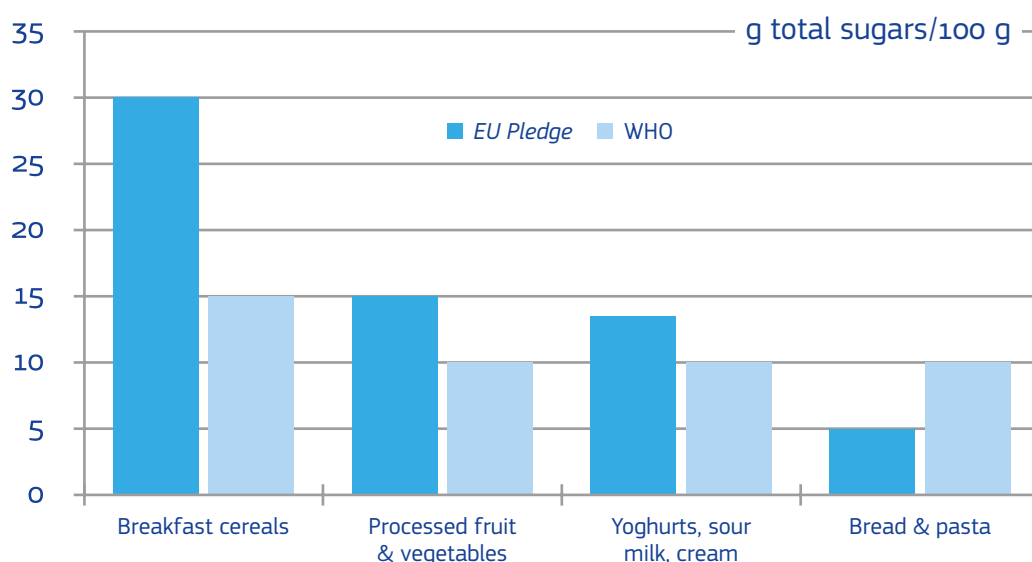
Despite certain commonalities, some striking differences between the two systems become apparent too. Whereas the *EU Pledge* defines nutrient criteria for sweet biscuits (subcategory 6A) and edible ices (category 9), neither of the two categories is eligible for advertising in the WHO model. Likewise, the *EU Pledge* allows unrestricted advertising of 100% fruit and vegetable juices whereas the WHO model by default does not permit any juices to be advertised.

In addition to these categorical differences, several more or less prominent threshold differences can be observed. The following graphs visualise the magnitude of the most obvious differences in sodium limits (*Fig. 1*), total sugars limits (*Fig. 2*), and SFA limits (*Fig. 3*) for exemplary comparable food categories.

Differences in nutrient limits can partly be explained by how broadly (or finely) product groups are defined, which in turn determines how specific those limits are. For example, WHO model category 9 (Ready-made and convenience foods and composite dishes) corresponds to *EU Pledge* categories 7A, 7B and 8. Similarly, WHO model category 16 (Processed fruit, vegetables and legumes) compares to *EU Pledge* categories 2A, 2B and 2E.

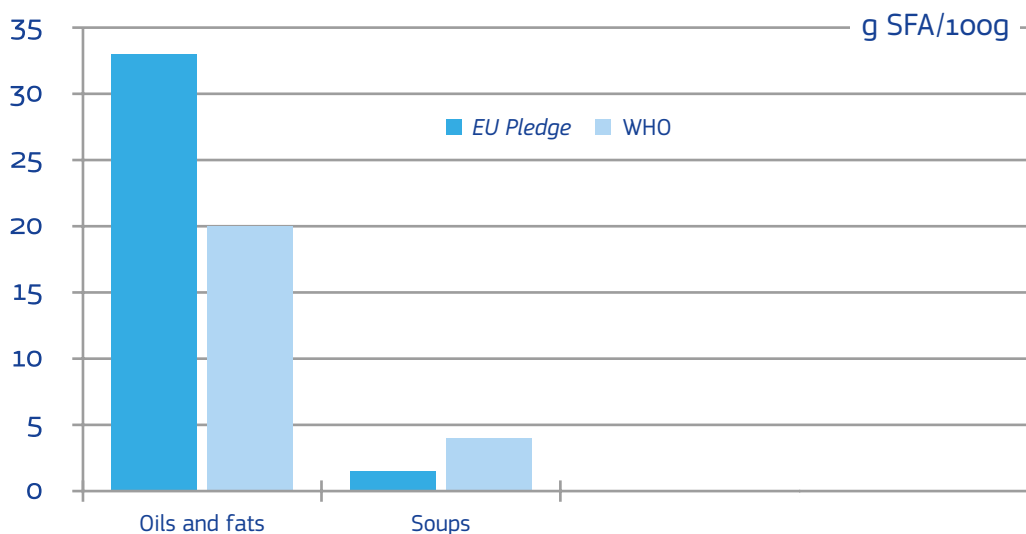


**Figure 1.** Sodium limits in selected comparable food categories (or exemplary foods within a food category) in the EU Pledge and the WHO nutrient profile model.



**Figure 2.** Total sugars limits in selected comparable food categories (or exemplary foods within a food category) in the EU Pledge and the WHO nutrient profile model.

However, in certain cases such as sodium in savoury snacks and sugars in breakfast cereals, the difference is more likely related to where the emphasis is being put between public health, food formulation considerations, and consumer acceptance.



**Figure 3.** Saturated fat (SFA) limits in selected comparable food categories (or exemplary foods within a food category) in the EU Pledge and the WHO nutrient profile model.

Practical consequences on food advertising to children under 12 of applying the WHO nutrient profile model instead of the *EU Pledge* nutrition criteria are:

- Advertising of 100% fruit/vegetable juices would no longer be permitted unless countries decide to specify national exemptions.
- Advertising of sweet biscuits, fine bakery wares and other cereal based products (*EU Pledge* category 6A) would no longer be permitted.
- Advertising of edible ices (*EU Pledge* category 9) would no longer be permitted.
- Butter would become eligible for advertising within the limits specified, *i.e.* maximum 20 g SFA and 1,3 g salt (ca. 500 mg sodium) per 100 g.
- Owing to the sodium limit, savoury snacks advertising would essentially be restricted to unsalted preparations such as plain or roasted nuts/seeds, plain popcorn, or rice waffles. Likewise, the range of non-cheese dairy products eligible for advertising would be reduced. On the other hand, the broad WHO model definition of processed meat, poultry, fish and similar would allow higher sodium levels than currently permitted in some products in the *EU Pledge* model. Lower sodium thresholds would have been feasible in the WHO model, *e.g.* for fish products, but it was deemed important not to discourage fish consumption and hence not to compromise unduly the advertising of such products.

- Owing to the total sugar limit, breakfast cereals advertising would largely be restricted to base muesli with no added sugar, porridge, oat bran or similar.
- Owing to the broad WHO model definition of ready-made and convenience foods and composite dishes, the energy, SFA, sodium and total sugar thresholds would become less strict for products in *EU Pledge* subcategory 7A. For subcategory 7B, the same applies for the energy and sugar thresholds whereas the SFA threshold would become a little stricter.

In addition to the above consequences, there may also be some less obvious implications. These would derive for example from total fat limits (per 100 g) in the WHO model for which there is only the indirect equivalent of the energy limits per portion in the *EU Pledge*. Comparability is hampered further by the fact that portion sizes are not always clearly specified in the *EU Pledge* nutrition criteria.

Modest but consistent research evidence causally links food marketing to children with actual food purchases and diet-related health [12, 13]. On these grounds, it would be interesting to analyse European children's intake of critical nutrients from those food groups for which the differences in the nutrient profiling criteria are most striking. For example, recent UK data show that in children aged 1.5 to 10 years, cereals, cakes and biscuits account for a quarter to nearly a third of daily added sugar intake (daily added sugar intake was estimated at 36-61 g and constituted 12-15% of total energy in this age group<sup>7</sup>) [14]. The difference between the *EU Pledge* and the WHO nutrient profile model in the sugar threshold in these categories might therefore have a significant impact on children's sugar intake.

Overall, the WHO model can be considered stricter than the *EU Pledge* system in that it would permit fewer products to be advertised to children under 12 than is the case under the *EU Pledge*. It should be noted though the *EU Pledge* signatories are free to define their own (additional) nutrient criteria as long as these are 'demonstrably more stringent' than the common *EU Pledge* criteria [7].

7. The UK Dietary Reference Value for added sugars (non-milk extrinsic sugars, NMES) is 11% of total daily energy for all age groups.

## Further reading

The following is a non-exhaustive list of recent publications that provide analyses of how different nutrient profiling schemes perform in restricting food and drinks advertising to children:

- Brinsden H, Lobstein T. Comparison of nutrient profiling schemes for restricting the marketing of food and drink to children. *Pediatr Obes.* 2013 Aug;8(4):325-37. doi:10.1111/j.2047-6310.2013.00167.x.<sup>8</sup>
- Jensen JD, Ronit K. The EU pledge for responsible marketing of food and beverages to children: implementation in food companies. *Eur J Clin Nutr.* 2015 Aug;69(8):896-901. doi:10.1038/ejcn.2015.52.<sup>9</sup>
- Rayner M, Mizdrak A, Logstrup S, Kestens M. *Reducing children's exposure to marketing of foods and drinks that are high in fat, salt or sugar: what would be the best nutrient profile model.* European Heart Network report. 28 March 2013.<sup>10</sup>
- Rayner M, Scarborough P, Kaur A. Nutrient profiling and the regulation of marketing to children. Possibilities and pitfalls. *Appetite.* 2013 Mar;62:232-5. doi:10.1016/j.appet.2012.06.021.<sup>11</sup>
- Scarborough P, Payne C, Agu CG, Kaur A, Mizdrak A, Rayner M, Halford JCG, E Boyland. How important is the choice of the nutrient profile model used to regulate broadcast advertising of foods to children? A comparison using a targeted data set. *Eur J Clin Nutr.* 2013 Aug;67(8):815-20. doi:10.1038/ejcn.2013.112.<sup>12</sup>

*NB 1:* In August 2015, the German consumer organisation foodwatch e.V. also published (in German) a performance comparison of the *EU Pledge* and the WHO nutrient profile models [15]. With the caveat that many products not eligible for marketing to children under 12 within the *EU Pledge* were included in the analysis, it shows how certain products would fare if companies had to apply the WHO nutrient profile criteria.

8. <http://dx.doi.org/10.1111/j.2047-6310.2013.00167.x>.

9. <http://dx.doi.org/10.1038/ejcn.2015.52>.

10. Available from <http://www.ehnheart.org/publications/publications/publication/705-ehn-research-on-nutrient-profile-model.html>.

11. <http://dx.doi.org/10.1016/j.appet.2012.06.021>.

12. <http://dx.doi.org/10.1038/ejcn.2013.112>.

*NB 2:* On the issue of sugar in breakfast cereals, see trends for some cereals highlighted in the Breakfast Cereals Survey 2015 carried out by Action on Sugar and available from <http://www.actiononsalt.org.uk/actiononsugar/Press%20Release%20/146900.pdf>.

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- [3] Regulation (EC) No 1924/2006 of the European Parliament and of the Council of 20 December 2006 on nutrition and health claims made on foods. *OJL* 404, 2006, **49**:9-25.
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- [5] *European Food and Nutrition Action Plan 2015-2020*. WHO Regional Office for Europe: Copenhagen, 2015, p. 24.
- [6] *EU Action Plan on Childhood Obesity 2014-2020*. European Commission: Brussels, 2014, p. 68.
- [7] EU Pledge Nutrition Working Group. *EU Pledge Nutrition Criteria White Paper*. EU Pledge, 2012, p. 50.
- [8] *WHO Regional Office for Europe nutrient profile model*. WHO Regional Office for Europe: Copenhagen, 2015, p. 10.
- [9] EFSA Panel on Dietetic Products, Nutrition and Allergies. Scientific Opinion on Dietary Reference Values for energy. *EFSA Journal*, 2013, **11**(1):1-112.
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- [11] Council Regulation (EC) No. 1234/2007 of 22 October 2007 establishing a common organisation of agricultural markets and on specific provisions for certain agricultural products (Single CMO Regulation). *OJL* 299, 2007, **50**:1-149.

13. Available from: <http://www.finlex.fi/fi/laki/alkup/2004/20041084>.

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- [13] Cairns G, Angus K, Hastings G, Caraher M. Systematic reviews of the evidence on the nature, extent and effects of food marketing to children. A retrospective summary. *Appetite*, 2013, **62**:209-15.
- [14] *National Diet and Nutrition Survey. Results from Years 1, 2, 3 and 4 (combined) of the Rolling Programme (2008/2009-2011/2012)*. Public Health England: London, 2014, p. 158.
- [15] foodwatch e.V. *foodwatch-Studie Kindermarketing für Lebensmittel*. foodwatch e.V.: Berlin, 2015, p. 54.



## Annex

**Table A1.** *Examples of European countries with nutrient profile systems in place to restrict food and drink advertising to children.*

Country	Food marketing code or regulation applying a nutrient profile system	URL
Denmark	The Code of Responsible Food Marketing Communication was issued by the Forum of Responsible Food Marketing Communication, a cooperation between Danish industry organisations of the food and beverage, retail and media sectors. The Code is a voluntary, self-regulatory initiative effective since January 2008, applicable to food and beverage marketing to children aged 13 and under via media outlets (TV, radio, internet, SMS, newspapers, comic books). The Code sets guideline limits for salt, sugar and fat content in ten food categories. It is recommended that food products exceeding these limits should not be marketed to children. Food manufacturers themselves determine if their products are suitable for marketing to children. Compliance is checked by the secretariat of the Forum. The Danish government follows the results of the Code, and annual status meetings are held between the Danish Veterinary and Food Administration and the Forum.	<a href="http://kodeksforfoedevarereklamer.di.dk/SiteCollectionDocuments/Foreningssites/kodeksforfoedevarereklamer.di.dk/Downloadboks/Kodeks%20eng%20sep%202008%20samlet.pdf">http://kodeksforfoedevarereklamer.di.dk/SiteCollectionDocuments/Foreningssites/kodeksforfoedevarereklamer.di.dk/Downloadboks/Kodeks%20eng%20sep%202008%20samlet.pdf</a>
Ireland	Advertising, sponsorship, teleshopping and product placement of foods high in fats, sugars and salt, as defined by a nutrient profiling model, are prohibited during children's TV and radio programmes where over 50% of the audience are under 18 years old (Children's Commercial Communications Code, 2013 revision). In addition, there is an overall limit on advertising of foods high in fats, sugars and salt adverts at any time of day to no more than 25% of sold advertising time and to only one in four advertisements. Remaining advertising targeted at children under the age of 13 must not include nutrient or health claims or include licensed characters. The 2009 Children's Commercial Communications Code (as amended 2010) states that food advertising to children under the age of 18 must not feature celebrities, and to children under age 15, not include characters and personalities from children's programming.	<a href="http://www.bai.ie/en/download/130364/">http://www.bai.ie/en/download/130364/</a>
Netherlands	The Dutch Advertising Code for Foods, in force since 2005 and last updated in 2015, in principle does not allow food advertising to children in programmes with more than 25% of the audience being children up to 12 years. Exempt from this ban are: i) advertising for foods created in cooperation with the government and/or another recognised authority in the fields of nutrition, health and/or physical activity and aimed at children up to 12 years; ii) packaging and point-of-sale material; and iii) advertising of foods aimed at children aged 7 to 12 that meets the nutritional criteria set out in the table with the corresponding portion size list that can be accessed through the digital version of this code <a href="http://www.reclamecode.nl/nrc">www.reclamecode.nl/nrc</a> .	<a href="https://www.reclamecode.nl/nrc/pagina.asp?paginaID=277%20&amp;deel=2">https://www.reclamecode.nl/nrc/pagina.asp?paginaID=277%20&amp;deel=2</a> <a href="https://www.reclamecode.nl/bijlagen/Voedingskundige%20criteria%20Reclame%20gericht%20op%20kinderen%207%20tot%20en%20met%2012%202015.pdf">https://www.reclamecode.nl/bijlagen/Voedingskundige%20criteria%20Reclame%20gericht%20op%20kinderen%207%20tot%20en%20met%2012%202015.pdf</a> <a href="https://www.reclamecode.nl/bijlagen/FNLI-lijst-portiegroottes.pdf">https://www.reclamecode.nl/bijlagen/FNLI-lijst-portiegroottes.pdf</a>

**Table A1.** (cont.)

Country	Food marketing code or regulation applying a nutrient profile system	URL
Norway	Norway has notified a draft regulation (DTR 2013/9005/N) which concerns the introduction of a prohibition on the marketing of unhealthy foods and beverages to children. 'Children' are defined in Section 3(a) as persons up to and including the age of 15 years. 'Unhealthy foods and beverages' are defined in Appendix 1 to the draft regulation. According to Section 3(c), 'marketing' is understood as any action taken for commercial purposes in order to promote sales to consumers, with the exceptions listed in this Section. The foods listed in Appendix 1 to the draft regulation are either prohibited by default or have to comply with the specified nutrient thresholds to be eligible for marketing to children.	<a href="http://www.eftasurv.int/media/notification-of-dtr/Appendix-to-Regulations.-Unhealthy-foods---9005.pdf">http://www.eftasurv.int/media/notification-of-dtr/Appendix-to-Regulations.-Unhealthy-foods---9005.pdf</a>
United Kingdom	Advertising and product placement of foods high in fats, sugars and salt, as defined by a nutrient profiling model, is prohibited during TV and radio programmes that have 20% or more viewers under 16 years old relative to the general viewing population (includes sponsorship of TV programmes). The restrictions came into force in February 2007, with a phased implementation by advertisers by end of 2008.	<a href="https://www.cap.org.uk/Advertising-Codes/~media/Files/CAP/Codes%20BCAP%20pdf/The%20BCAP%20Code.ashx">https://www.cap.org.uk/Advertising-Codes/~media/Files/CAP/Codes%20BCAP%20pdf/The%20BCAP%20Code.ashx</a> <a href="http://stakeholders.ofcom.org.uk/binaries/broadcast/code-july-15/Ofcom_Broadcast_Code_July_2015.pdf">http://stakeholders.ofcom.org.uk/binaries/broadcast/code-july-15/Ofcom_Broadcast_Code_July_2015.pdf</a> <a href="http://food.gov.uk/healthier-eating/advertising-to-children/nut-lab/nutprofmod">http://food.gov.uk/healthier-eating/advertising-to-children/nut-lab/nutprofmod</a>

*NB:* Information compiled from the World Cancer Research Fund Nourishing Framework (<http://www.wcrf.org/int/policy/nourishing-framework/restrict-food-marketing>) and from the websites specified in the column 'URL' [all pages last accessed 22 September 2015].

## List of abbreviations

<b>NMES</b>	Non-milk extrinsic sugars
<b>PUFA</b>	Poly-unsaturated fatty acids
<b>SFA</b>	Saturated fatty acids
<b>TFA</b>	<i>Trans</i> fatty acids
<b>URL</b>	Uniform Resource Locator
<b>WHO</b>	World Health Organization

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