

The Adapted WHO Europe Nutrient Profile Model for Commercially Produced Complementary Foods: key elements of the model and adaptations applied in the COMMIT* assessments

* COMMIT is the Southeast Asia Consortium for Improving Complementary Foods

To protect and promote optimal feeding practices and healthy diets for young children, the WHO developed guidance on ending the inappropriate promotion of foods for infants and young children.¹ The World Health Assembly (WHA) resolution 69.9 called for the implementation of the guidance's recommendations, including company adherence to those recommendations.²

Inappropriate promotion of foods for older infants and young children can interfere with breastfeeding, lead to the introduction and consumption of foods at an unsuitable age, and contribute to unhealthy diets with long-term health consequences, including obesity and non-communicable diseases. Therefore, recommendation 3 of the WHO guidance encourages that "Nutrient profile models should be developed and utilized to guide decisions on which foods are inappropriate for promotion".

What is nutrient profiling?

Nutrient profiling is the science of classifying or ranking foods according to their nutritional composition for reasons related to preventing disease and promoting health. For example, nutrient profile models (NPMs) can be used to identify foods that include an excess of sugar, salt, or total fat. This information can then be used by the government and policymakers to guide restrictions on the promotion of unhealthy or inappropriate products for children and other consumers. Increasingly, NPMs also include a component to specifically assess food labels to identify products with inappropriate promotion. Companies are also encouraged to use these models in guiding the reformulation and appropriate marketing of their products.

In 2019, WHO's regional office for Europe published the draft WHO NPM for commercially produced complementary foods (CPCF)³. While the 2019 WHO Europe document refers to CPCFs as commercially available complementary foods (CACF), these two terms describe the same types of products.

This model was developed in response to calls from the WHA resolution 69.9, and its associated guidance for the development of nutrient profiling tools, to guide decisions on which foods can and cannot be promoted for older infants and young children (older IYC).⁴ This was the first NPM for CPCF

¹ World Health Organization (WHO). (2016). *Guidance on ending the inappropriate promotion of foods for infants and young children* [Online]. Available at: https://apps.who.int/gb/ebwha/pdf_files/WHA69/A69_7Add1-en.pdf?ua=1

² WHO. (2016). *WHA 69.9: Ending inappropriate promotion of foods for infants and young children* [Online]. Available at: https://apps.who.int/gb/ebwha/pdf_files/WHA69/A69_R9-en.pdf

³ WHO. (2019). *Ending inappropriate promotion of commercially available complementary foods for infants and young children between 6 and 36 months in Europe: A discussion paper outlining the first steps in developing a nutrient profile model to drive changes to product composition and labeling and promotion practices in the WHO European Region* [Online]. Available at: <https://apps.who.int/iris/handle/10665/346583>

⁴ World Health Organization (WHO). (2016). *Guidance on ending the inappropriate promotion of foods for infants and young children* [Online]. Available at: https://apps.who.int/gb/ebwha/pdf_files/WHA69/A69_7Add1-en.pdf?ua=1

marketed for older IYC between six months and three years of age. The official and updated model – nutrient and promotion profiling model - was later launched in 2022⁵.

The draft 2019 WHO Europe NPM had been applied not only in countries in the European region, but it has also been tested in Southeast Asia by ATNI in the Philippines, and in Cambodia and Indonesia by Helen Keller International's Assessment and Research on Child Feeding (ARCH) project.⁶ Following these studies, the 2019 WHO Europe NPM was adapted in 2020 by the COMMIT Initiative for use in the Southeast Asian context. The adaption included incorporating updates to the nutrient composition and labeling requirements made by Leeds University and WHO Europe. This adapted version of the NPM was renamed the adapted WHO Europe NPM for CPCF. In addition, the COMMIT Initiative further adapted this NPM to capture micronutrient information and gather more detailed data on the types of claims made on CPCF labels (e.g., non-permitted compositional claims, nutrient content claims, nutrient function claims, disease risk reduction claims, 'other' claims). Throughout the reports, 'adapted WHO Europe NPM for CPCF' is used to refer to the model modified by COMMIT for the Southeast Asian context.

In this document, the key elements of the adapted WHO Europe NPM for CPCF are summarized, including the adaptations applied by the COMMIT Initiative⁷ (more information can be found on the [COMMIT website](#)).

What is a CPCF product?

CPCFs are defined as commercially produced food and beverage products that are specifically marketed as suitable for older IYC up to 3 years of age. The CPCF purchased in each of the seven Southeast Asian countries (Cambodia, Indonesia, Laos, Malaysia, the Philippines, Thailand, and Vietnam) were considered to be 'marketed as suitable' for this age group if they met at least one of the following criteria:

1. Were recommended for introduction to children at an age of less than 3 years;
2. Were labeled with the words 'baby', 'toddler', 'young child', or synonym;
3. Had a label with an image of a child who appeared to be younger than 3 years of age or was feeding with a bottle; or
4. Were in any other way presented as being suitable for children up to the age of 3 years*

(* This definition is consistent with WHA resolution 69.9 and the associated guidance on the inappropriate promotion of foods for older IYC.)

However, the following products do not fall under the definition of CPCF:

- Products not specifically marketed for children younger than three years of age.
- Vitamin and mineral food supplements, whether consumed as tablets/drops or added to foods at home (e.g., home fortification products such as micronutrient powders, lipid nutrient powders).

⁵ World Health Organization (WHO). (2022). *Nutrient and promotion profile model: supporting appropriate promotion of food products for infants and young children 6-36 months in the WHO European Region*. [Online]. Available at: <https://www.who.int/europe/publications/i/item/WHO-EURO-2022-6681-46447-67287>

⁶ Bassetti, E., Zehner, E., Mayhew, S.H., Nasser, N., Mulder, A., Badham, J., Sweet, L., Crossley, R. and Pries, A.M. (2022). 'Nutrient profiles of commercially produced complementary foods available in Cambodia, Indonesia and the Philippines.' *Public Health Nutrition*, pp.1-11. doi:10.1017/S1368980022001483

⁷ COMMIT partners include ATNI; Alive & Thrive; Helen Keller International; JB Consultancy; School of Food Science, University of Leeds; UNICEF East Asia and the Pacific Regional Office; and World Food Programme Asia Pacific Regional Office.

- Products that function as breast-milk substitutes; these should not be promoted at all. These include any milks (or products that could be used to replace milk, such as fortified soya milk alternatives), in either liquid or powdered form, that are specifically marketed for feeding older IYC up to the age of three years. These include infant formula (marketed for infants younger than six months of age); follow-up formula (marketed for older infants between six months up to one year of age); and growing-up milks or toddler milks (marketed for young children between one to three years of age). Any milk product that is marketed or represented as a suitable partial or total replacement of the breast-milk part of the young child's diet is a breast-milk substitute, and therefore falls under the scope of the International Code of Marketing of Breast-milk Substitutes.
- Products whose labels state they are only intended for pregnant women, mothers, or children older than three years.

How CPCFs are assessed against the adapted WHO Europe NPM for CPCF

The model categorized CPCFs into five food categories and 16 food subcategories (outlined in Annex 1).

For each of the 16 CPCF subcategories, the model proposed nutrient composition and labeling practices. These must be met for CPCF products to be considered suitable to be promoted for older IYC between six months and three years of age.

CPCFs not assessed against the nutrient composition requirements and labeling practices

According to the adapted WHO Europe NPM for CPCF, CPCF belonging to **categories 4.1** 'confectionery, sweet spreads and fruit chews', **5.1** 'fruit/vegetable juices and other drinks', and **5.2** 'cow's milk and milk alternatives with added sugar/sweeteners', should not be promoted as suitable for older IYC under three years of age. Therefore, these products automatically 'failed' the model and were not assessed against the nutrient composition and labeling requirements.

CPCF belonging to category **6.1** 'other' (see [Annex 1](#)) were excluded from the assessments on nutrient composition and labeling, as there are no existing relevant thresholds applicable to these product types.

All products belonging to categories 4.1, 5.1, 5.2, and 6.1 were, however, included in the final count of unique CPCF found in each country.

The **nutrition composition component** of the adapted WHO Europe NPM for CPCF includes specific thresholds for fruit content, energy density, the addition of sugar/sweetening agents, and total sodium, fat, and protein content for each subcategory.

An additional component of the model, which is not part of the nutrition composition requirements, but still relevant for assessing nutritional quality, is for products to provide a front-of-pack 'high sugar' warning if the percentage of energy from total sugar exceeds category-specific thresholds. The assessment is performed on all CPCF product categories (if this information is available on the labels), except for category 4.3 'snacks/finger foods', to which a total sugar threshold is set as a nutrition composition requirement.

Table 2, below, outlines the nutrition composition requirements and which CPCF categories they are applied to. COMMIT adaptations to the adapted WHO Europe NPM for CPCF are denoted by (*).

Micronutrients in CPCF

The adapted WHO Europe NPM for CPCF omits the inclusion of data on the micronutrient content of CPCF products. In the Southeast Asia context, it is critical to incorporate recommendations of essential micronutrients and specific minimum thresholds for inclusion into CPCF similar to those specified through CODEX and in EU regulation Number 609/2013. The inclusion of essential micronutrients with minimum thresholds in the model is necessary to fully implement recommendation 3 of WHA 69.9 and to ensure that, compositionally, CPCF provide essential micronutrients without added sugars, salt, and unhealthy fats. For these reasons, the COMMIT Initiative further expanded the adapted WHO Europe NPM for CPCF to capture micronutrient information.

Table 2. Nutrient composition thresholds as applicable to each CPCF category

Applicable to all categories	No added sugars/sweeteners requirement
	The following were considered added sugar/sweetener: sugar, juice (except lemon/lime), sucrose, dextrose, fructose, glucose, maltose, galactose, trehalose, syrup, nectar, honey, malted barley, malt extract, molasses.
Applicable to all categories	Sodium requirements
	<50mg/100kcal and <50mg/100g Applicable to categories 1.1, 2.1, 2.2, 2.3, 2.4, 4.2 and 4.3
	< 100 mg/100 kcal and 100mg/100g Applicable to category 2.5
	< 50 mg/100 kcal and <50mg/100g (or < 100 mg/100 kcal and <100mg/100g if cheese is listed in front-of-pack name) Applicable to categories 2.6, 2.7, 2.8, 3.1 and 3.2
Applicable to all categories	Total fat requirements
	≤ 3.3 g total fat/ 100kcal Applicable to category 1.1 (for products without milk in ingredient list)*
	≤ 4.5 g/ 100 kcal total fats Applicable to categories 1.1 (for products with milk in ingredient list), 2.1, 2.2, 2.3, 2.4, 2.7, 3.2, 4.2, and 4.3
	≤ 6 g/ 100 kcal total fats Applicable to categories 2.5, 2.6, 2.8 and 3.1
Applicable to all categories except 2.2, 4.2 and 4.3	Percentage fruit content requirements
	0% (none allowed) Applicable to categories 2.3 and 2.4
	≤ 5% Applicable to categories 2.1, 2.5, 2.6, 2.7, 2.8, 3.1 and 3.2
	≤ 10% Applicable to category 1.1
Applicable to all categories except 1.1, 2.8, 3.1, 3.2, 4.2 and 4.3	Energy density requirements
	≥ 60 kcal/100 g Applicable to categories 2.1, 2.2, 2.4, 2.5, 2.6 and 2.7
	Added water <25% by weight Applicable to category 2.3
Applicable to all categories except 2.1*, 2.2, 2.3, 2.4, 4.2 and 4.3	Protein requirements
	Total protein < 5.5 g/100 kcal Applicable to category 1.1 (for products with milk in ingredient list*)
	Total protein ≥ 3g/100 kcal Applicable to categories 2.5, 2.7 (additional requirement for protein(s) in product name to be ≥ 8% weight), and 3.2
	Total protein ≥ 4g/100 kcal Applicable to categories 2.6 (additional requirement for protein named first in product name to be ≥ 10% weight) and 3.1 (additional requirement for protein(s) in product name to be ≥ 10% weight).
	Total protein ≥ 7g/100 kcal Applicable to category 2.8
Only applicable to category 4.3	Total sugar requirements
	Any '4.3' product that exceeds this threshold should not be promoted to infants and young children under 3 years of age
	Total sugar < 3.75g/100kcal (<15% of total energy)
Applicable to all categories except 4.3 (this is an additional requirement – it does not determine whether a product 'passes' or 'fails' the CPCF NPM)	The CACF nutrient profiling model proposes that a front-of-pack warning for 'high sugar' content is placed on CACF if they exceed the category-specific total sugar thresholds
	40% total energy from total sugar or 10g/100kcal Applicable to category 1.1
	30% total energy from total sugar or ≥ 7.5g/100kcal Applicable to categories 2.1, 2.2, and 2.3
	20% total energy from total sugar or ≥ 5g/100kcal Applicable to category 2.4
	15% total energy from total sugar or ≥ 3.75g/100kcal Applicable to categories 2.5, 2.6, 2.7, 2.8, 3.1 and 3.2

Categories 4.1, 5.1, 5.2 and 6.1 are not assessed against these thresholds

The **labeling practices component** includes general and food category-specific labeling requirements on the protection and promotion of breastfeeding, use of claims, product name and ingredient list clarity, messages on products with a spout, and age restrictions on puréed products. **Table 3**, outlines the labeling requirements and which CPCF categories they are applied to. COMMIT adaptations to the adapted WHO Europe NPM for CPCF are denoted by (*).

Table 3. Labeling requirements as applicable to each CPCF category

	Requirement
Applicable to all categories	No image/text that suggests suitability for infants <6 months
Applicable to all categories	Message on importance of continued breastfeeding for up to 2 years or beyond
Applicable to all categories	Does not suggest equivalence or superiority to breastmilk
Applicable to all categories	Does not recommend or promote bottle feeding
Applicable to all categories	The CACF NPLM only permits some compositional claims to be made on CACF. For this assessment, the types and definition of claims were expanded and further detailed to allow for greater understanding and clarity on the types of claims made for CACF (see Table 4 below). Requirement: no claims should be made under any of the five claim categories: <ul style="list-style-type: none"> ▪ No non-permitted compositional claims ▪ No nutrient content claims ▪ No nutrient function claims ▪ No disease risk reduction claims ▪ No other claims
Applicable to all categories	Product name reflects ingredients in descending order as per ingredient list
Applicable to all categories except 2.3 and 4.2	If product contains fruit ingredient list includes fruit (fresh or powdered/processed) by percentage weight
Applicable to all categories except 1.1, 4.2 and 4.3	If product contains added water ingredient list includes water by percentage weight requirement
Applicable only to categories 2.6, 2.7, 2.8 and 3.1	If product is a main meal ingredient list includes protein by percentage weight requirement
Applicable to all categories	Appropriate age restrictions ≥ 6 months Applicable to all categories* ≥ 6 months and < 12 months Applicable to all 8 subcategories of category 2 CACF
Applicable to all products with a spout	1) Statement informing infants and young children must not be allowed to suck from the container 2) Statement that warns against choking hazard

Categories 4.1, 5.1, 5.2 and 6.1 are not assessed against these thresholds

Table 4. Types and definitions of claims assessed as part of the adapted WHO Europe NPM for CPCF assessment

Type of claim	Definition	Examples
Non-permitted compositional claims	Text stating/ implying that the composition of the product is different/ special, that that an ingredient has not been added to a food or that compares the nutrient levels and/ or energy value of the product to other products and/or brands.	"Natural ingredients", "No added preservatives"
Nutrient content claims	A nutrition claim that describes the level of a nutrient contained in a food.	"Source of calcium", "9 Vitamins and Minerals"
Nutrient function claims	A nutrition claim that describes the physiological role of the nutrient in growth, development, and normal functions of the body.	"Nutrient A (naming a physiological role of nutrient A in the body in the maintenance of health and promotion of normal growth and development). Food X is a source of/ high in nutrient A."
Reduction of disease risk claims¹	<p>Claims relating the consumption of a food or food constituent, in the context of the total diet, to the reduced risk of developing a disease or health-related condition.</p> <p>Risk reduction means significantly altering a major risk factor(s) for a disease or health-related condition. Diseases have multiple risk factors and altering one of these risk factors may or may not have a beneficial effect. The presentation of risk reduction claims must ensure, for example, by use of appropriate language and reference to other risk factors, that consumers do not interpret them as prevention claims.</p>	<p>"A healthful diet low in nutrient or substance A may reduce the risk of disease D.</p> <p>Food X is low in nutrient or substance A."</p>
Other claims	Includes all other claims made that are not related to compositional, nutrient content, nutrient function, or disease risk reduction. Includes marketing claims related to taste, quality and texture of the food, as well as convenience/lifestyle amongst others.	"Easy to swallow texture.", "Great for a busy and active lifestyle."

Categories 4.1, 5.1, 5.2 and 6.1 are not assessed against these thresholds

Annexes

Annex I. Proposed food categories for all foods marketed as suitable for older IYC six to 36 months of age

Annex I. Proposed food categories for all foods marketed as suitable for older infants and young children 6-36 months of age

Food (Sub) Category	Definition and examples
1. Dry, powdered, and instant cereal/starchy food	
1.1 Dry or instant cereals/starch	Dry rice, cereal, pulverized rusks, or starchy root (at least 25% cereal and/or starch root content) with or without naturally sweet foods (such as dry fruit and powdered fruit juice), milk powder or whey powder, Products to be made up with liquid. Includes dry instant-type porridges and dry breakfast cereals (such as puffed rice or cereal hoops), if marketed as suitable for infants and young children. Excludes wet ready-to-eat cereals
2. Soft-wet spoonable, ready-to-eat foods, typically smooth or semi-pureed packaged in jars or pouches and can be spoon-fed	
2.1 Dairy-based desserts and cereal products	Foods with dairy as the largest main ingredient by weight (i.e., greater than the sum of total fruit or total grain ingredients). This may include yogurt, fromage frais, custards, porridge, or rice pudding, made with or without other naturally sweet foods such as fresh fruit, fruit juice or dried fruit. Does not contain meat or fish.
2.2 Fruit purée with or without addition of vegetables, cereals, or milk	Largest ingredient single or mixed fruit. May contain vegetables, cereals and dairy Includes any spoonable fruit or fruit-and-vegetable purée, high-fruit breakfast foods (such as fruit-based breakfast rice/ porridge) and desserts (such as apple crumble or fruit-based baby rice). May include some products labelled as "smoothies", without the addition of juice or water
2.3 Vegetable only purée	≥ 95% single or mixed vegetables or legumes and water combined. Excludes products containing any fruit, or >5% cereals or other ingredients. May include some products labelled as "smoothies", without the addition of fruit or vegetable juice.
2.4 Puréed vegetables and cereals	Puréed vegetables/legumes, where largest ingredient by weight is vegetables, legumes, cereals, or pseudo cereals, with > 5% cooked weight in cereal (e.g., pasta, rice, barley), or a pseudo cereal (such as quinoa, chia, buckwheat). Includes savory-type meals with cereals (such as pasta with tomato and courgette) or pseudo cereal (such as butternut squash, carrot, and quinoa). Does not contain meat or fish. Includes vegetable-based foods containing cheese, where cheese is not mentioned in the product name
2.5 Puréed meal with cheese (but not meat or fish) mentioned in the name	A puréed meal containing cheese, vegetables, starchy carbohydrates, where cheese is mentioned in the name (such as 'Cheesy pasta with tomato and vegetables' or 'Cauliflower cheese' or 'Macaroni cheese'). Does not contain meat or fish.
2.6 Puréed meal with meat or fish mentioned as first food in product name	A puréed meal containing meat or fish in addition to vegetables, and other starchy carbohydrates. May contain other ingredients Meat or fish is mentioned as first food in product name (such as 'Tasty fish pie' or 'Salmon and pea risotto' or 'Hearty beef hotpot' or 'Chicken and potato pie')
2.7 Puréed meals with meat or fish (but not named as the first food in product name)	A puréed meal containing meat or fish, vegetables, and starchy carbohydrates, where the fish/meat protein source is not listed as first food in product name (such as 'Hearty shepherd's pie', 'Cottage pie' or 'Carrot, potato and lamb hotpot'). May contain other ingredients.
2.8 Purées with only meat, fish, or cheese in name of product	Puréed meat, fish, or cheese where they are the only food listed in product name and constitutes the single largest ingredient (except water). These are not intended to be complete meals and should be served with vegetables and starchy carbohydrates.

3. Meals with chunky pieces, often sold in trays or pots for older infants and young children	
3.1 Meat, fish, or cheese-based meal with chunky pieces	A non-puréed soft meal containing chunky pieces of meat or fish in addition to vegetables, and starchy carbohydrates. May contain other ingredients such as cheese. Fish or meat is mentioned as first food in product name (such as 'Tasty fish pie' or 'Salmon and pea risotto' or 'Hearty beef hot-pot' or 'Chicken and potato pie')
3.2 Vegetable-based meal with chunky pieces	A non-puréed soft meal containing chunky pieces of vegetables, and other starchy carbohydrates. May contain other ingredients such as beans and pulses as sources of protein and iron. May contain meat or fish or cheese not mentioned in the product name
4. Dry finger foods and snacks	
4.1 Confectionery, sweet spreads and fruit chews	Confectionery includes chocolate and other products containing cocoa; white chocolate; jelly sweets and boiled sweets; chewing gum and bubble gum; caramels; liquorice sweets; marzipan; sweetened or 'yogurt'-coated fruit etc. Sweet spreads: spreadable chocolate and any other sweet sandwich/toast topping such as jam, marmalade or honey and sweet nut spreads etc. Fruit chews include any dried and processed fruit products such as fruit gums, bars, or fruit strips/leathers/roll-ups (i.e., a dense chewy food made from fruit juice or pulped and dehydrated/dried fruit), including fruit pieces coated in sugar or oils/fats (such as banana chips, sweetened cranberries, or yogurt raisins)
4.2 Fruit (fresh or dry whole fruit or pieces)	Includes fresh whole or peeled fruit (such as apple) and dried fruit (such as dry slices of plain apple, freeze-dried strawberries, raisins, dry apricots, prunes). Excludes fruit pieces coated in sugar or oils/fats (such as banana chips, sweetened cranberries, or yogurt raisins) and dried and further processed fruit products (see category 4.1.)
4.3 Other snacks and finger foods	Includes foods such as savory biscuits and pretzels, baked chips/crisps (such as potato, grain, or other starchy food etc.), rice cakes coated in powdered fruit or vegetables, cereal bars. Also includes any rusks/teething biscuits, sweet baked, fried, dried or dehydrated food intended to be eaten between meals, sweet pastries; croissants; cookies/biscuits; sponge cakes; wafers; fruit pies; sweet buns; chocolate-covered biscuits; cake mixes and batters; cereal or energy bars (i.e., cereal/ granola or muesli bars); and crisps/puff products made from fruit, vegetables, or starchy foods (which may be coated in fat/oil)
5. Juices and other drinks	
5.1 Single or mixed fruit juices, vegetable juices, or other non-formula drinks	Any drinkable product containing crushed, blended, pulped, or puréed fruit or vegetable, fruit, or vegetable juice and/or water, with or without added sugar or sweetening agents, including 100% juices, reconstituted juice from concentrate, smoothies with added juice or water. Also includes drinks ready made from cordials, energy drinks, ices, cola, lemonade, orangeade, other soft drinks, and mineral and/or flavored waters (including aerated) with added sugars or sweetener. Excludes smoothies/purées without the addition of juice or water (see category 2.1). Excludes all products that function as breast-milk substitutes (see exclusions to the model). Excludes unsweetened cow's milk and unsweetened milk alternatives (such as soya, oat, almond) marketed for consumption by general population
5.2 Cow's milk and milk alternatives with added sugar or sweetening agent	Whole cow's milk and milk alternatives including soya, oat or almond milk with added sugar or sweetening agent. Excludes other products that function as breast-milk substitutes (see exclusions to the model)
6. Other	
6.1 Other CPCF	Foods and beverages marketed for infants and young children under 3 years of age which do not fall under any of the defined CACF NPM categories and subcategories. This is an additional category created for the COMMIT assessments. Examples of CACF that were classified as 'other' include: oils (coconut, sesame, palm, avocado, walnut, salmon), sauces (soya, stir fry, fish sauce), seaweed sprinkles, multivitamin honey, ground fish floss, food powders (chicken liver, seaweed, vegetable seasoning), carrageenan jelly juices and other CACF types.