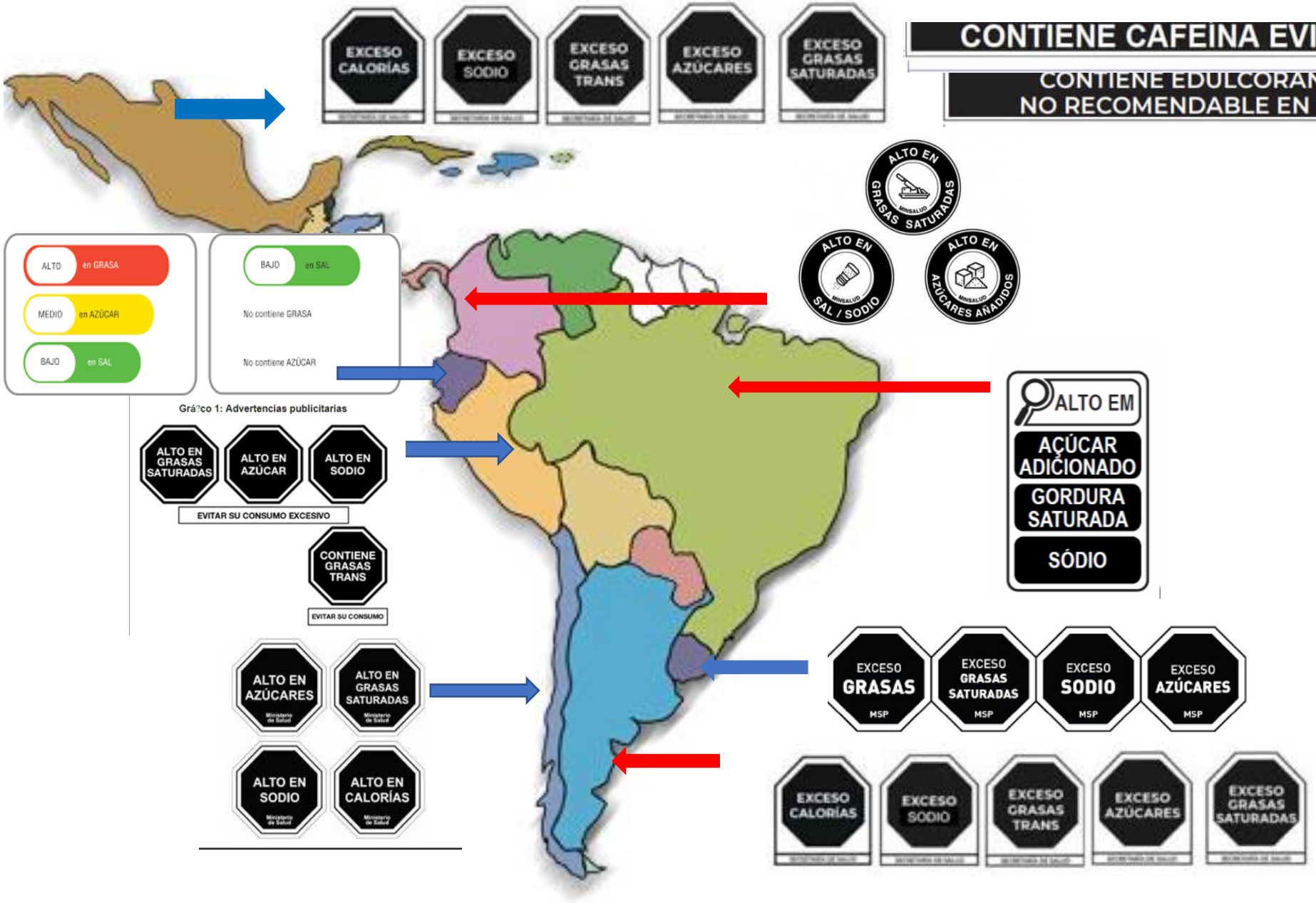
Food Processing Saves Lives

Protecting the Reputation of Processed Foods

Susana Socolovsky, PhD, CFS, FIAFoST

November 16, 2021

The Power of Food Science and Technology and Nutrition for Sustainable Planet Health


EXCESO CALORÍAS
EXCESO SODIO
EXCESO GRASAS TRANS
EXCESO AZÚCARES
EXCESO GRASAS SATURADAS
CONTIENE CAFEINA EVITAR EN NINOS
CONTIENE EDULCORANTES, NO RECOMENDABLE EN NIÑOS
ALTO EN GRASAS SATURADAS
ALTO EN SAL / SODIO
ALTO EN AZÚCARES AÑADIDOS
ALTO en GRASA
MEDIO en AZÚCAR
BAJO en SAL
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Grá?co 1: Advertencias publicitarias
ALTO EN GRASAS SATURADAS
ALTO EN AZÚCAR
ALTO EN SODIO
EVITAR SU CONSUMO EXCESIVO
CONTIENE GRASAS TRANS
EVITAR SU CONSUMO
ALTO EM
AÇÚCAR ADICIONADO
GORDURA SATURADA
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Multi Grano
Multi Grano
Bran Frut
Bran Frut
QUAKER
QUAKER
QUAKER
Stila
Stila
Stila
Stila
Fit
Stila
Fit

The Food Supply Prior to the Implementation of the Chilean Law of Food Labeling and Advertising

by Rebecca Kanter [1,2], Marcela Reyes [2], Boyd Swinburn [3], Stefanie Vandevijvere [3] and Camila Corvalán [2,*]

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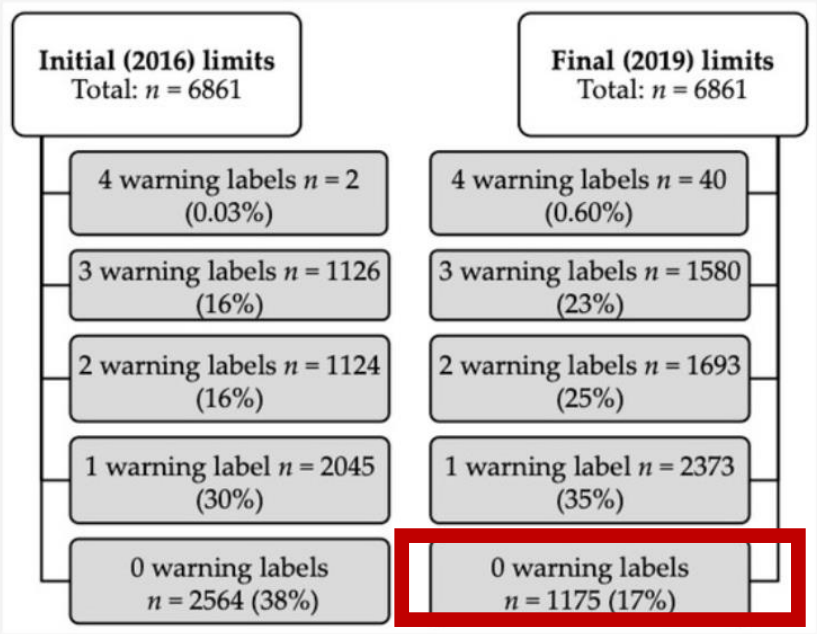


Figure 1

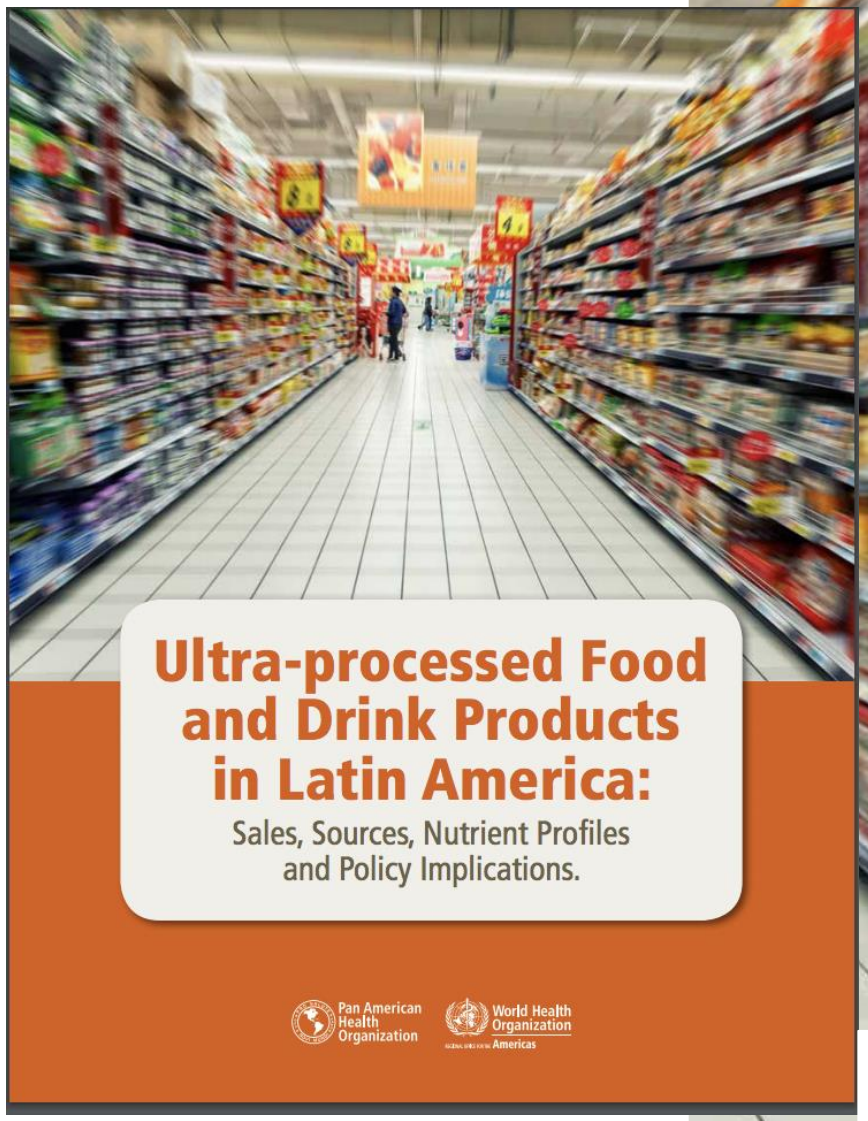
https://www.mdpi.com/2072-6643/11/1/52

83% of packaged foods have at least one warning label

Under the final phase limits, **only 17% of foods would have zero warning labels**. By 2019, 10 of the 17 food and beverage categories studied are predicted to have less than half of their products without a high in sodium
lied are
predicted to have less than half their products without a high in total sugars or a high in total calories warning label, respectively; while even fewer food and beverage categories are predicted to be without a high in saturated fat warning label. Most products will have to be reformulated to avoid at least one front-of- package warning label.

PAHO 2015

- Introduces the NOVA classification of foods
- Adopts the name **ultra-processed foods**
- Concludes that the **association** between annual sales per capita of ultra-processed foods and the increase of BMI **predicts obesity**



Key findings

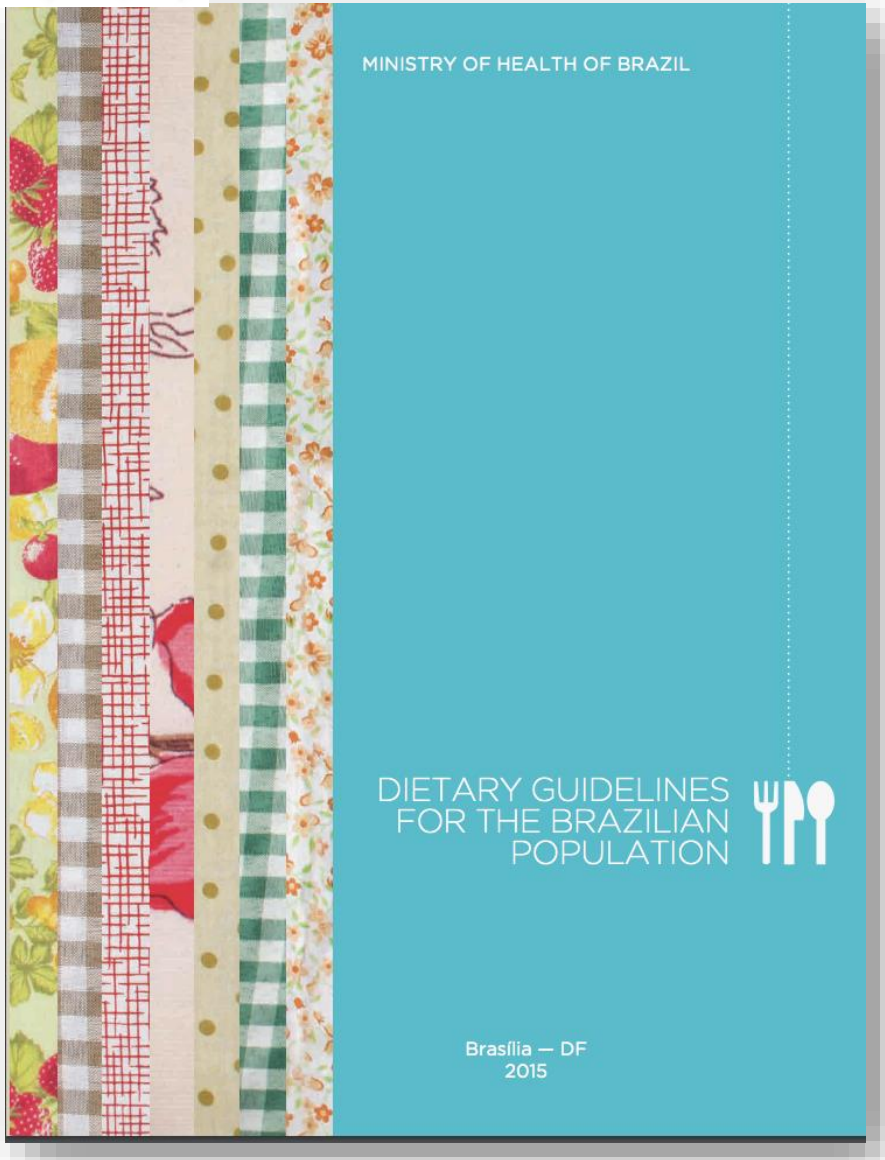
Key findings from this report on seven Latin American countries (Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela), that together make up 80% of the population of the Latin American and the Caribbean region, are consistent with and support findings and recommendations made in previous PAHO documents, as follows:

- *Ultra-processed Food and Drink Products in Latin America: Trends, Impact on Obesity, Policy Implications (1),* which finds that sales of these products increased from 2000 to 2013 in all countries and are associated with weight gain and obesity.
- *PAHO's Nutrient Profile Model (2),* which recommends protection and promotion of unprocessed and minimally processed foods, and freshly prepared dishes and meals made from these foods, and identifies the types of ultra-processed products whose sales should be restricted by regulatory measures.
- *PAHO Plan of Action for the Prevention of Obesity in Children and Adolescents (3),* which states the unanimous commitments of PAHO Member States to implement a set of effective policies, laws, regulations, and interventions to transform the current obesogenic environment and halt the rise of the rapidly growing obesity epidemic in the Americas

Pan American Health Organization. Ultra-processed food and drink products in Latin America: Sales, sources, nutrient profiles, and policy implications. Washington, D.C.: PAHO; 2019.

Food Processing Based Dietary Guidelines

Dietary Guidelines for the Brazilian Population - 2014

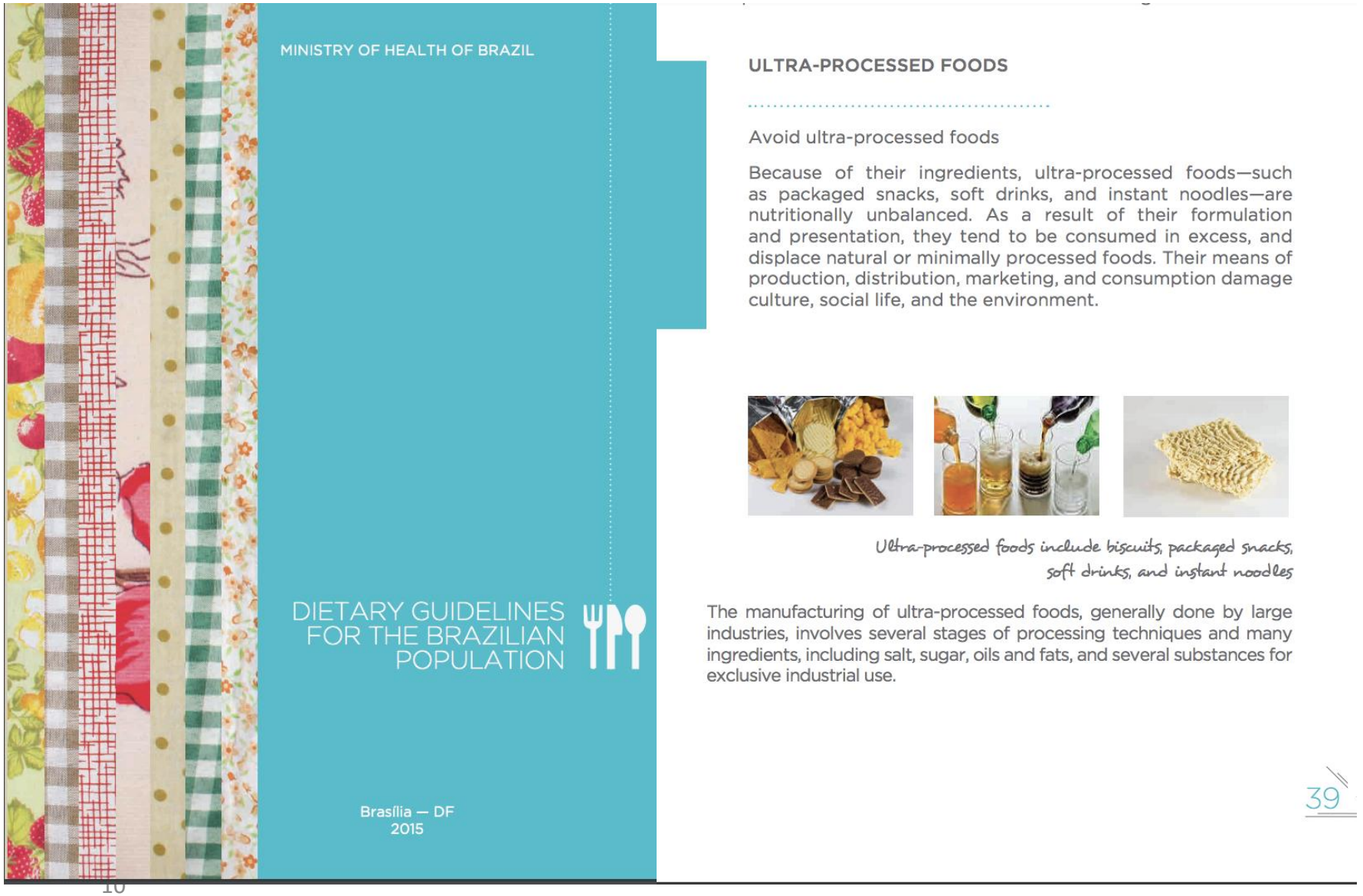


Processed foods

Limit the use of processed foods, consuming them in small amounts as ingredients in culinary preparations or as part of meals based on natural or minimally processed foods.

The ingredients and **techniques used in the manufacture of processed foods**—such as vegetables in brine, fruits in syrup, cheeses, and breads - **unfavorably alter the nutritional composition of the foods** from which they are derived.

“Avoid Ultra-Processed Foods”



“As a result of their formulation and presentation, they tend to be consumed in excess, and displace natural or minimally processed foods. Their means of production, distribution, marketing, and consumption damage culture, social life, and the environment.”

Dietary Guidelines for the Uruguayan Population

December 6, 2016

“AVOID THE CONSUMPTION OF ULTRA-PROCESSED PRODUCTS”

Recordá

Combinar alimentos de origen vegetal —como verduras, frutas, porotos, lentejas y garbanzos, fideos, arroz o polenta— con alimentos de origen animal —como huevos y leche, y cantidades moderadas de carnes— se obtiene una alimentación nutricionalmente equilibrada.

Además, contribuye a la promoción de un sistema alimentario más sustentable.

2. Basá tu alimentación en alimentos naturales y evitá el consumo de productos ultraprocesados en el día a día, con excesiva cantidad de grasas, azúcar y sal.

La alimentación de nuestros abuelos, padres y madres se basaba en los alimentos naturales, es decir, aquellos que se obtienen directamente de las plantas o de los animales, como frutas, verduras, legumbres, carnes, huevos, leche, arroz, trigo, entre otros.

En algunos casos, a estos alimentos se les aplican procesos simples como pelado, molido, desecado, **fermentado**, **pasteurizado** o congelado, sin el agregado de sal, azúcar o grasas.

La alimentación basada en comidas caseras preparadas con este tipo de alimentos con poca cantidad de sal, azúcar y grasas se asocia con un buen nivel de salud y bienestar, y una incidencia más baja de enfermedades.

Esto se debe no solo a su **calidad nutricional**, sino también a los beneficios emocionales, mentales y sociales que implica cocinar nuestros propios alimentos y compartirlos con otras personas.

Por eso nuestra recomendación es que bases tu alimentación en los alimentos naturales que hemos empleado tradicionalmente en nuestra cocina.

Fermentación: proceso que permite preservar por más tiempo los alimentos. Por ejemplo, el avinagrando inhibe el crecimiento y la fermentación de la leche para obtener el yogur y el kéfir. También les da sabor, aroma y textura transformándolos en vino, cerveza y pan .
Pasteurización: proceso térmico realizado en líquidos, por ejemplo en la leche, con el objetivo de reducir la presencia de patógenos.
Calidad nutricional: depende del contenido de nutrientes de los alimentos. Los que aportan cantidades significativas de varios nutrientes se consideran de alta calidad, mientras que los que aportan solo calorías (por ejemplo, el azúcar) se consideran de baja calidad.

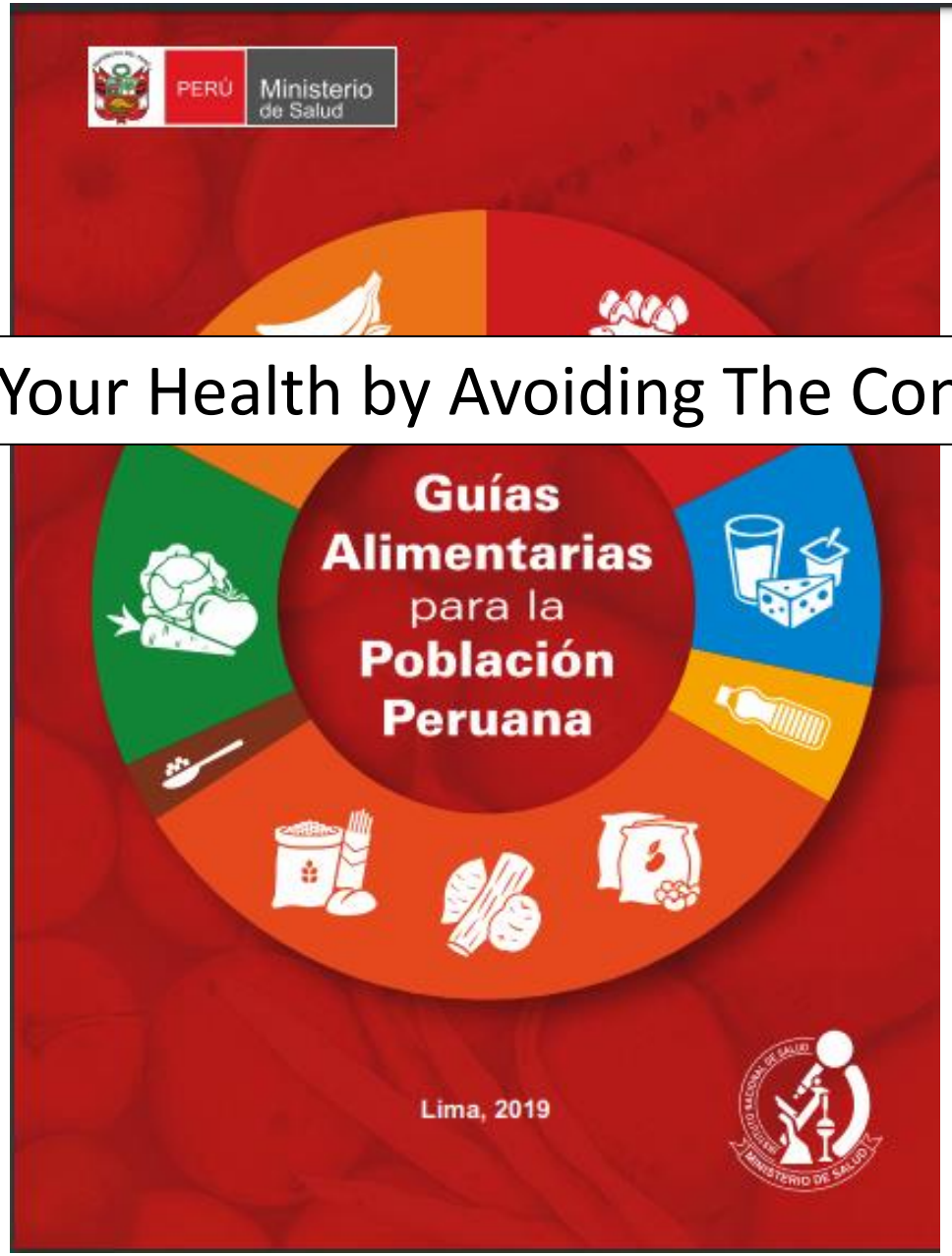
Evidence: the *number of food additives* defines “ultra-processed” foods

LECHE

NATURAL	PROCESADO	ULTRAPROCESADO
 **Ingredientes:** Leche pasteurizada	 **Ingredientes:** Leche pasteurizada Azúcar Fermentos	 **Ingredientes:** Leche entera pasteurizada Azúcar Cacao en polvo Estabilizante: carragenina Aromatizante: esencia de caramelo
	 **Ingredientes:** Leche pasteurizada Fermentos Lácteos Cuajo Sal	 **Ingredientes:** Leche pasteurizada Suero lácteo Azúcar Almidón de maíz Fermento láctico Colorante natural Aromatizante y saborizante artificial de durazno o frutilla

- https://www.gub.uy/ministerio-desarrollo-social/comunicacion/publicaciones/guia-alimentaria-para-la-poblacion-uruguaya

Protect Your Health by Avoiding The Consumption of Ultra-processed Foods



Mensaje 3

Protege tu salud evitando el consumo de alimentos ultra-procesados.

Los alimentos ultra procesados son formulaciones industriales fabricadas íntegra o mayormente con sustancias extraídas de

a partir de materias orgánicas, como derivados de petróleo y carbón (colorantes, aromatizantes, resaltadores de sabor y diversos tipos de aditivos usados para dotar a los productos de propiedades sensoriales atractivas).

Son ejemplos de este tipo de alimentos, las

preparar en microondas.

Consejos prácticos:

- Al preparar la lonchera de tus hijos, evita los productos ultra procesados como embutidos, galletas rellenas y bocaditos dulces o salados envasados.
- Es aconsejable no consumir mayonesa y otras cremas o salsas envasadas con tus alimentos, porque contienen altos contenidos de sal, grasas saturadas y grasas *trans*.
- Es recomendable disminuir el consumo de pasteles y queques ultra procesados, por su alto contenido de grasas y azúcares.
- Evita bebidas azucaradas envasadas y consume agua natural.

- https://repositorio.ins.gob.pe/xmlui/bitstream/handle/INS/1128/guias_alimentarias_poblacion_peruana.pd…

Organización de las Naciones Unidas para la Alimentación y la Agricultura

Guías Alimentarias del Ecuador

Documento técnico de las
Guías Alimentarias Basadas en Alimentos (GABA) del Ecuador

GOBIERNO DE LA REPÚBLICA DEL ECUADOR

NOVA Food Classification

1. Unprocessed or minimally processed foods
2. Processed culinary ingredients
3. Processed foods
4. **Ultra-processed food and drink products**

According to NOVA, UPFs are:

- **"Very low nutritional quality**
- **Hyper-palatable and quasi-addictive**
- Imitative of food; falsely seen as healthy
- Conducive to snacking
- Aggressively advertised and marketed
- Socially and environmentally destructive"

The UN Decade of Nutrition, the NOVA food classification and the trouble with ultra-processing.
Monteiro CA[1], Cannon G[2], Moubarac JC[2], Levy RB[2], Louzada MLC[2], Jaime PC[1].
Public Health Nutr. 2018 Jan;21(1):5-17. doi: 10.1017/S1368980017000234. Epub 2017 Mar 21.

Are UPFs of Very Low Nutritional Quality?

Nutrients **2019**, *11*(11), 2782; https://doi.org/10.3390/nu11112782

Article

The Calorie and Nutrient Density of More- Versus Less-Processed Packaged Food and Beverage Products in the Canadian Food Supply

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Received: 21 October 2019; Accepted: 13 November 2019; Published: 15 November 2019

Abstract: The association between the degree of processing and healthfulness of foods remains unclear. Most evidence of this relationship is based on dietary intake surveys rather than individual products and varies depending on the food processing classification system used. This study aimed to compare the nutritional quality of more- versus less-processed packaged foods and beverages in Canada, using a large, branded food database and two processing classification systems. Nutritional information for products (n = 17,269) was sourced from the University of Toronto FLIP 2017 database. Products were categorized using the NOVA and Poti et al. processing classification systems. Calories, sodium, saturated fat, total and free sugars, fibre and protein per 100 g (or mL) were examined by processing category using descriptive statistics and linear regression. Overall, the most-processed products under both systems were more likely to be lower in protein, and higher in total and free sugars, compared with less-processed foods ($p < 0.05$); the direction and strength of the association between other nutrients/components and level of processing were less consistent. These findings demonstrate that calorie- and nutrient-dense foods exist across different levels of processing, suggesting that food choices and dietary recommendations should be based primarily on energy or nutrient density rather than processing classification.

Keywords: food processing; NOVA; nutritional quality; food supply

"results support previous research demonstrating that virtually all packaged food is processed to some extent, and products are not simply healthy or unhealthy based solely on whether they have been processed. For several food categories, products processed to greater extents had similar or healthier calorie and/or nutrient densities than products in lower processing classifications."

These findings demonstrate that calorie- and nutrient-dense foods exist across different levels of processing, suggesting that food choices and dietary recommendations should be based primarily on energy or nutrient density rather than processing classification.

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Cell Metabolism

CellPress

Forum

Eliminate or reformulate ultra-processed foods? Biological mechanisms matter

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[2]Nutrition Department, Harvard T.H. Chan School of Public Health, Boston, MA, USA
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https://doi.org/10.1016/j.cmet.2021.10.005

Increased ultra-processed foods (UPFs) in the food supply have plausibly caused the rise in obesity prevalence and related chronic diseases. To address this public health concern, policies targeting reformulation or elimination of UPF categories will require improved understanding of the biological mechanisms whereby UPFs lead to overconsumption and poor health.

Nutrition science seeks to comprehend the influence of diet, with all its complexities, on human physiology and health. Classifying foods by their nutrient composition (e.g., sodium, fiber, saturated fat, added sugars) has been useful for understanding nutritional physiology as well as informing dietary recommendations and guidelines. But the classical nutrient-centric view was recently challenged by a new classification system called NOVA

from 61.4% to 67.0% of total kcal over the past two decades (Wang et al., 2021).

There are several reasons why UPFs now dominate the food supply in many regions. UPFs are highly profitable, and industry employs intensive marketing campaigns to consumers, particularly aimed at children. Consumers find a wide variety of UPFs to be affordable, palatable, convenient, and shelf stable. Despite potential advantages, however

tem to recommend avoiding UPFs entirely and to call for policies aimed at removing UPFs from the food supply. However, uniformly reducing all UPFs—the heterogeneous food category that now represents 67% of total kcal per day for US children—may not ultimately be an appropriate public health goal and may even have unintended harms. Drastically reducing or eliminating the availability of all categories of UPFs without simultaneous consider-

Deirdre K. Tobias, Kevin D. Hall, Eliminate or reformulate ultra-processed foods? Biological mechanisms matter, Cell Metabolism, 2021,

“**Uniformly reducing all UPFs**—the heterogeneous food category that now represents 67% of total kcal per day for US children—**may not ultimately be an appropriate public health goal and may even have unintended harms.**

“Drastically reducing or eliminating the availability of all categories of UPFs without simultaneous consideration and efforts to replace them with better, affordable, and practical alternatives should be scrutinized. Eliminating UPFs that deliver on many desirable properties (inexpensive, microbiological safety, nutrient fortification, extended shelf-life, and convenience) may only worsen the existing disparities in food insecurity.”

Deirdre K. Tobias, **Kevin D. Hall**, Eliminate or reformulate ultra-processed foods? Biological mechanisms matter, Cell Metabolism, 2021,

“The broad NOVA classification system may be too blunt to guide public health responses to pressing epidemics such as obesity.

Industrial food processing is an established and ubiquitous part of our food system, reflected by the fact that UPFs provide more than half of calories consumed in many countries. While some UPF categories (e.g., SSBs) should be targeted for reduction, policies targeting elimination of UPFs as a broad category ignore the substantial time, skill, expense, access, and effort required to safely procure enjoyable meals without UPFs—resources that are already in short supply across large swaths of the population. Alternatively, many common UPF products may be amenable to effective reformulation.”

Deirdre K. Tobias, **Kevin D. Hall**, Eliminate or reformulate ultra-processed foods? Biological mechanisms matter, Cell Metabolism, 2021,

Are UPFs Hyper-palatable?
Are UPFs the only foods contributing to excess calorie consumption?

The Journal of Nutrition
Nutritional Epidemiology

Pey Sze Teo et al. -J Nutr 2021;00:1–11.

Taste of Modern Diets: The Impact of Food Processing on Nutrient Sensing and Dietary Energy Intake

Pey Sze Teo,[1] Rachel Tso,[1] Rob M van Dam,[2] and Ciarán G Forde[1,3,4]

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ABSTRACT

Background: Both fresh and processed foods are available in the modern food environment where taste can signal presence of nutrients. However, whether these taste–nutrient relationships are maintained across different degrees of food processing is not well understood, and less is known about the relative contribution of different taste qualities to population energy intakes.

Objectives: To investigate the association between perceived intensity of 6 taste modalities and a food's nutrient content in the context of food processing and to further examine the relative contribution of different taste clusters to total energy intakes, stratified by weight status.

Methods: Diet and lifestyle data from the Singapore Multi-Ethnic Cohort Phase 2 ($N = 7011$; aged 21–75 y) were collected through interviewer-administrated questionnaires. Taste and nutrient profiles for each of the 269 Singaporean

- The findings show that taste-nutrient relationships are maintained across different degrees of food processing.

"Despite the suggestion that processed foods are hyperpalatable, currently there is no evidence to suggest that heightened palatability due to sweet or salty tastes makes a disproportionately larger contribution to daily energy intakes.

The current findings showed no association between hyperpalatability and ultra-processed foods consumption, as has been suggested and critiqued in the past, and to date, there remains no empirical evidence from clinical trials for a disproportionate contribution of specific tastes of ultraprocessed foods in promoting excessive daily energy intakes."

Informe del Comité Científico de la Agencia Española de Seguridad Alimentaria y Nutrición (AESAN) sobre el impacto del consumo de alimentos "ultra-procesados" en la salud de los consumidores

Número de referencia: AESAN-2020-003

Informe aprobado por el Comité Científico en su sesión plenaria de 4 de marzo 2020

Grupo de trabajo

Pau Talens Oliag (Coordinador), Montaña Cámara Hurtado, Álvaro Daschner, Esther López García, Sonia Marín Sillué, José Alfredo Martínez Hernández y Francisco José Morales Navas

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Resumen

Aunque en la actualidad no existe una norma legal que establezca una definición específica para el concepto de alimento ultra-procesado, el intento de mejoras en políticas de salud pública ha dado lugar a la aparición de distintos sistemas de clasificación de los alimentos en función de su grado de procesado. De todos los sistemas de clasificación propuestos, dos de ellos, el sistema NOVA (Escuela de Salud Pública de la Universidad de São Paulo, Brasil) y el sistema SIGA (Francia), utilizan el término ultra-procesado. Las definiciones propuestas han generado cierta controversia científica, ya que en algunos casos la definición hace referencia al tipo y grado de procesado que sufren los alimentos, mientras que en otros casos a su formulación y composición. En este sentido, es importante tener en cuenta que intentar relacionar el grado de procesado con un efecto en la salud, no puede hacerse independientemente de la composición del alimento y es importante no asociar el término ultra-procesado con alimentos de baja calidad nutricional, ya que ésta no depende solo de la intensidad o complejidad del procesado sino de la composición final que presenta el alimento. En

MINISTERIO DE SANIDAD Y CONSUMO

agencia española de seguridad alimentaria y nutrición

Report of the Scientific Committee of the Spanish Agency for Food Safety and Nutrition on The Impact of The Consumption of Ultra-processed Foods on Consumers´ Health.

May 2020

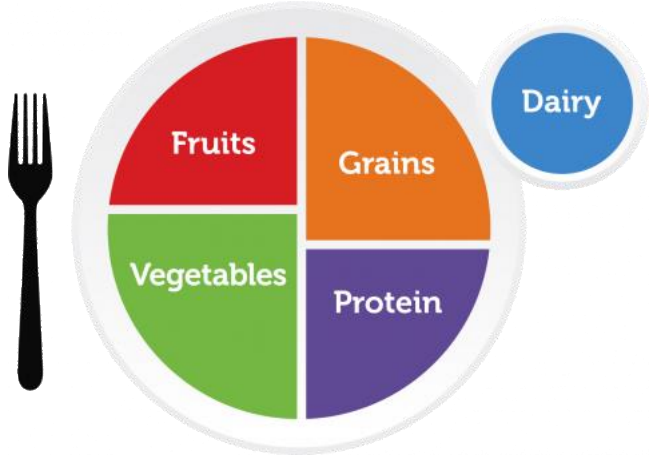
- The proposed definitions have been the source of some scientific dispute as some definitions refer to the type and degree of processing foods undergo while others refer to their formulation and composition.
- **In this regard, it is important to remember that one cannot attempt to relate the degree of processing with an effect on health independently of the composition of the food.**
- **It is also important not to associate the term ultra-processed with foods of poor nutritional quality as this does not depend solely on the intensity or complexity of processing but the final composition of the food itself.**
- **The ultra-processed characteristic is attributed to the fact that the food contains additives**; the use of additives is subject to regulation derived from a risk analysis, and therefore **its inclusion alone cannot be linked to nutritional damage.**

anses
agence nationale de sécurité sanitaire
alimentation, environnement, travail

ANSES concluded:

- Lack of clarity on the concept of Ultra-Processed Foods
- **The impact of ultra-processed foods on health seems to be more linked to their composition than to their degree of processing**
- **Ultra-processed foods should not be automatically linked to poor nutritional quality**
- Need to launch studies that compare the health consequences of consuming ultra-processed foods made up of ingredients with good nutritional qualities versus ultra-processed foods made up of ingredients with poor nutritional qualities.
- **There is no need to wait to find out whether or not the concept of UPFs is relevant to discourage the consumption of HFSS foods.**

What is Our Task as Food Scientists??



- To emphasize the importance of cultivating public understanding not to apply blanket definitions to foods based on processing.
- To communicate that it is the overall nutritional composition of a food that counts towards making healthier diet choices.
- The UPF concept should not tarnish the reputation of processed foods.

There is a revolution on the way nutrients are produced

- Avoidance of derogatory concepts about processed foods is needed.
- Education is Paramount!

BIOMILQ
Human milk for babies

Thank you!

susanasocolovsky@pentachem.com.ar