

Ultra-processed foods: Nutrients or ingredients

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Disclosure of Interests



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Scientific Advisory Board/ Consultant/Board of Directors	Nestle, Cereal Partners Worldwide, Kellen & Co, Mondelez
Speakers Bureau	Nil
Stock Shareholder	Nil
Employee	Retired
Other	All my work on ultra-processed food is 100% free of any industry link

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Treat all processed foods like cigarettes

By Joanna Blythman

Junk food is making us ill – it's time for governments to take decisive action to protect public health, says Good Food contributing editor Joanna Blythman.

CNN Health • Food | Fitness | Wellness | Parenting | Live Longer

Ultra-processed foods linked to increased cancer risk

By Jen Christensen, CNN
Updated 1924 GMT (0324 HKT) February 28, 2018

The Guardian International edition

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Nutrition

What is Britain eating? The ultra-processed truth about 10 of our bestselling foods

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FOOD-DRINK • Published March 31, 2016 • Last Update March 8, 2017

These 'Ultra-Processed' Foods Are Ruining Our Diet, Say Researchers

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Ultra-processed food and drink products in Latin America: Trends, impact on obesity, policy implications



 Pan American Health Organization  World Health Organization
REGIONAL OFFICE FOR THE AMERICAS

foods are chosen, it is important to consult the labels on the foods to opt for those with a lower content of salt or sugar.

ULTRA-PROCESSED FOODS

Avoid ultra-processed foods

Because of their ingredients, ultra-processed foods—such as packaged snacks, soft drinks, and instant noodles—are nutritionally unbalanced. 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.



Ultra-processed foods include biscuits, packaged snacks, soft drinks, and instant noodles

The fundamental point of the NOVA Classification of ultra processed foods (UPF)

*“The **most important factor** now, when considering food, nutrition and public health, is **not nutrients**, and is **not foods**, so much as what is done to foodstuffs and the nutrients originally contained in them, before they are purchased and consumed.*”

The fundamental point of the NOVA Classification of ultra processed foods (UPF)

*“The **most important factor** now, when considering food, nutrition and public health, is **not nutrients**, and is **not foods**, so much as what is done to foodstuffs and the nutrients originally contained in them, before they are purchased and consumed. That is to say, **the issue is food processing** – or, to be more precise, the nature, extent and purpose of processing, and what happens to food and to us as a result of processing”*

The truth about nutrients and disease

Dietary lipids, LDL/HDL ratio & CVD
Na, K & Hypertension
Carotenoids and ARMD
Folic acid & NTD
Ca, Vitamin D and Osteoporosis
EPA, DHA & cognition
Perinatal diet and adult NCD
Nitrosamines and colon cancer
Iodine and childhood IQ
Sugar & dental caries
Glutamine and carcinogenesis



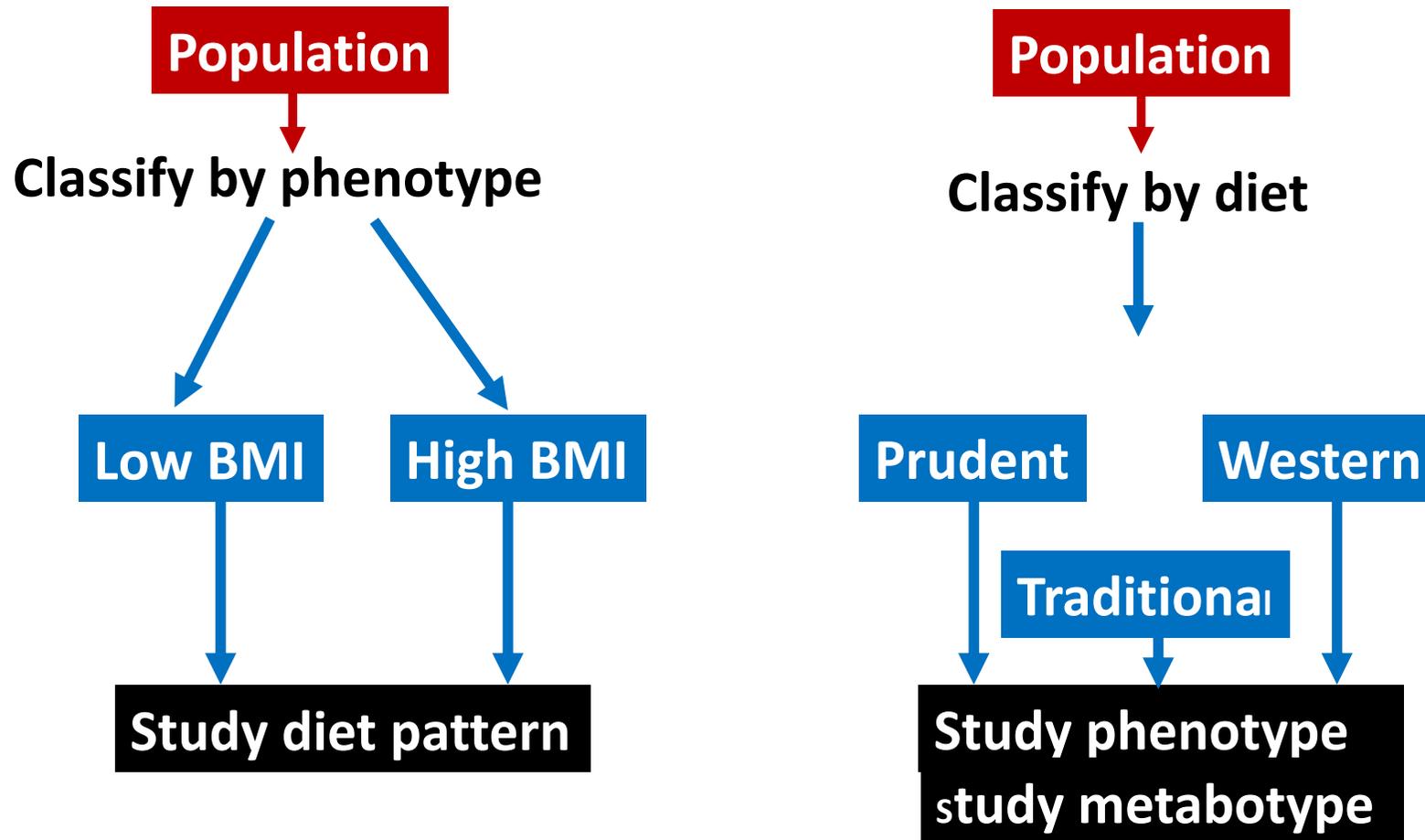
The derivation of **food based** dietary guidelines

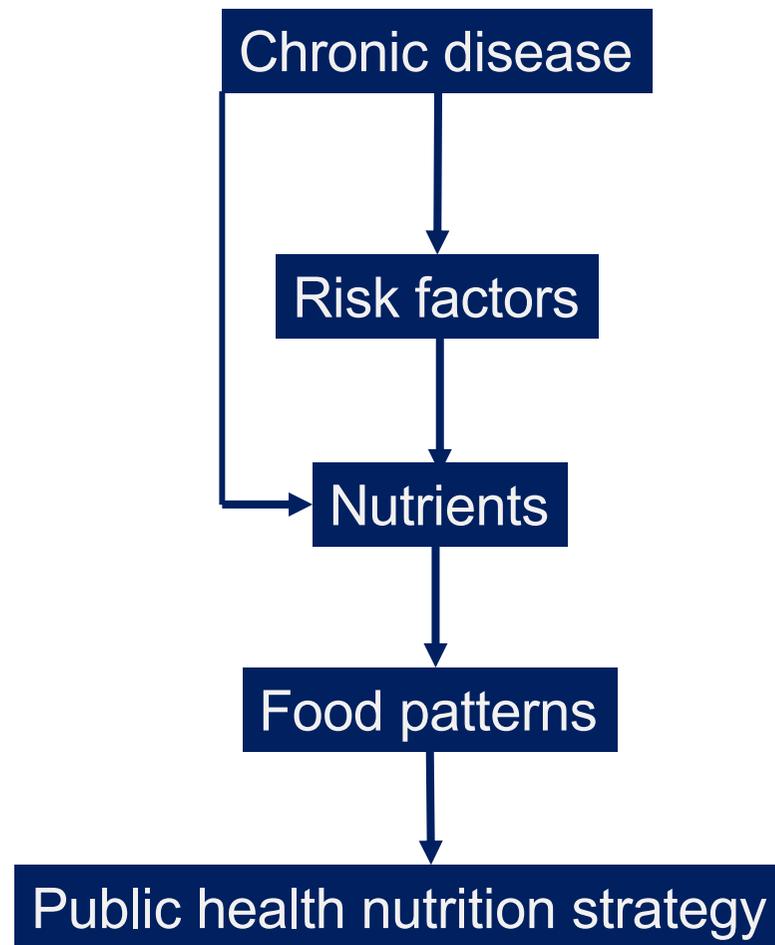
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Studying sub-group dietary patterns







Defining processed food

United States Department of Agriculture
European Prospective Investigation of Diet and Cancer
International Food Information Council

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ORIGINAL ARTICLE

Contribution of highly industrially processed foods to the nutrient intakes and patterns of middle-aged populations in the European Prospective Investigation into Cancer and Nutrition study

Results: Highly processed foods **were an important source of the nutrients considered. Only two nutrients**, b-carotene and vitamin C had a contribution from highly processed foods **below 50%** whereas for the other nutrients, the contribution varied **from 50 to 91%**

[J Nutr.](#) 2012 Nov; 142(11): 2065S–2072S.

Published online 2012 Sep 18. doi: [\[10.3945/jn.112.164442\]](https://doi.org/10.3945/jn.112.164442)

PMCID: PMC3593301

PMID: [22990468](https://pubmed.ncbi.nlm.nih.gov/22990468/)

Contributions of Processed Foods to Dietary Intake in the US from 2003–2008: A Report of the Food and Nutrition Science Solutions Joint Task Force of the Academy of Nutrition and Dietetics, American Society for Nutrition, Institute of Food Technologists, and International Food Information Council^{1,2,3,4}

[Heather A. Eicher-Miller](#),^{5,*} [Victor L. Fulgoni, III](#),⁶ and [Debra R. Keast](#)⁷

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[Heather A. Eicher-Miller](#),^{5,*} [Victor L. Fulgoni, III](#),⁶ and [Debra R. Keast](#)⁷

The processing level was a **minor determinant** of individual foods' **nutrient contribution** to the diet and, therefore, should **not be a primary factor** when selecting a **balanced** diet.



The NOVA classification of ultra-processed foods



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Group 1: Unprocessed foods: **18% of energy intake**

Group 2: Culinary ingredients: **2% of energy intake**

Group 3: Processed foods: **20% of energy intake**

Group 4: Ultra processed foods: **60% of energy intake**

Ultra-processed products



Examples of typical ultra-processed products are:

Carbonated drinks

Sweet or savoury packaged snacks

Ice-cream

Chocolate, candies (confectionery)

Mass-produced packaged breads and buns

Margarines and spreads

Cookies (biscuits), pastries, cakes, and cake

Breakfast 'cereals', 'cereal' and 'energy' bars

Energy' drinks

Milk drinks

Fruit' yoghurts and 'fruit' drinks; cocoa drinks

Meat and chicken extracts and 'instant' sauces

Infant formulas, follow-on milks, other baby products

Pre-prepared pies and pasta and pizza dishes

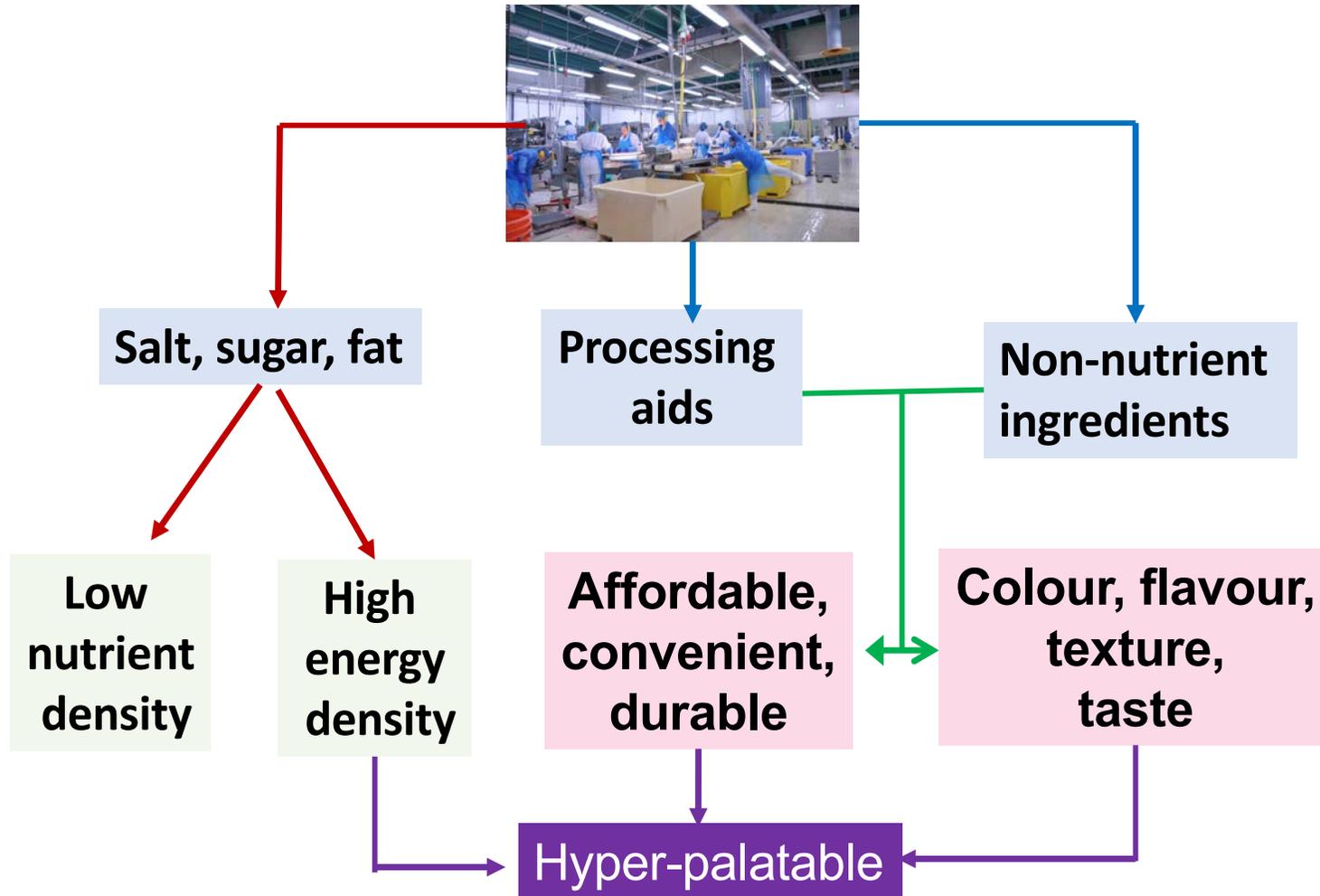
Poultry and fish 'nuggets' and 'sticks'

Sausages, burgers, hot dogs,

Instant soups, noodles and desserts.

Ultra-processed products





Probing the role of ultra-processed foods on nutrient intake

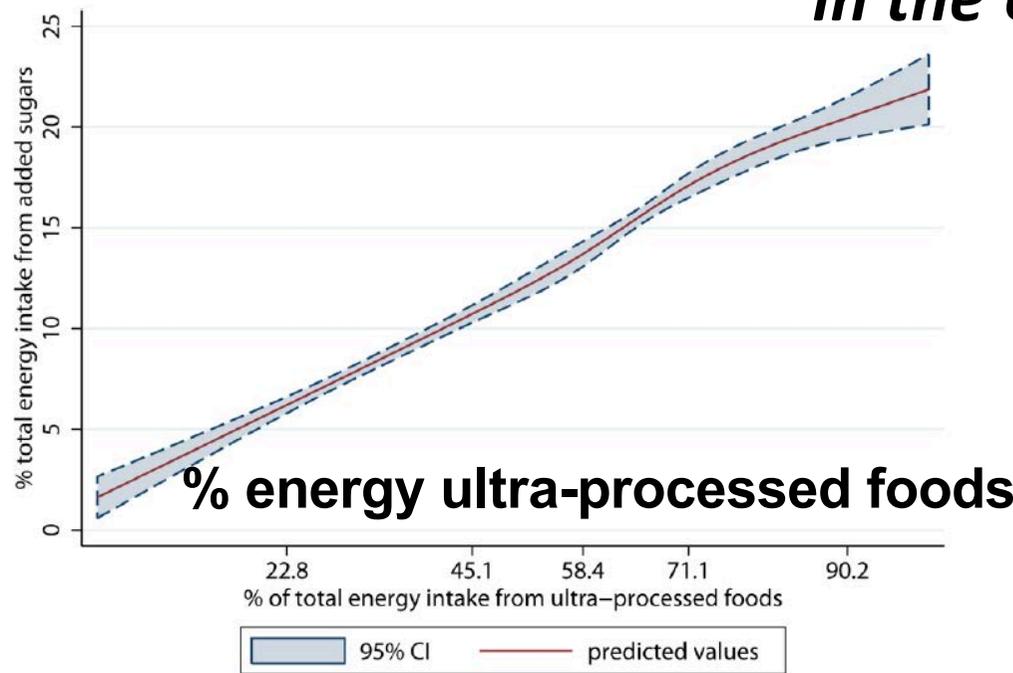
Part 1: US added sugar intake data

BMJ Open Ultra-processed foods and added sugars in the US diet: evidence from a nationally representative cross-sectional study

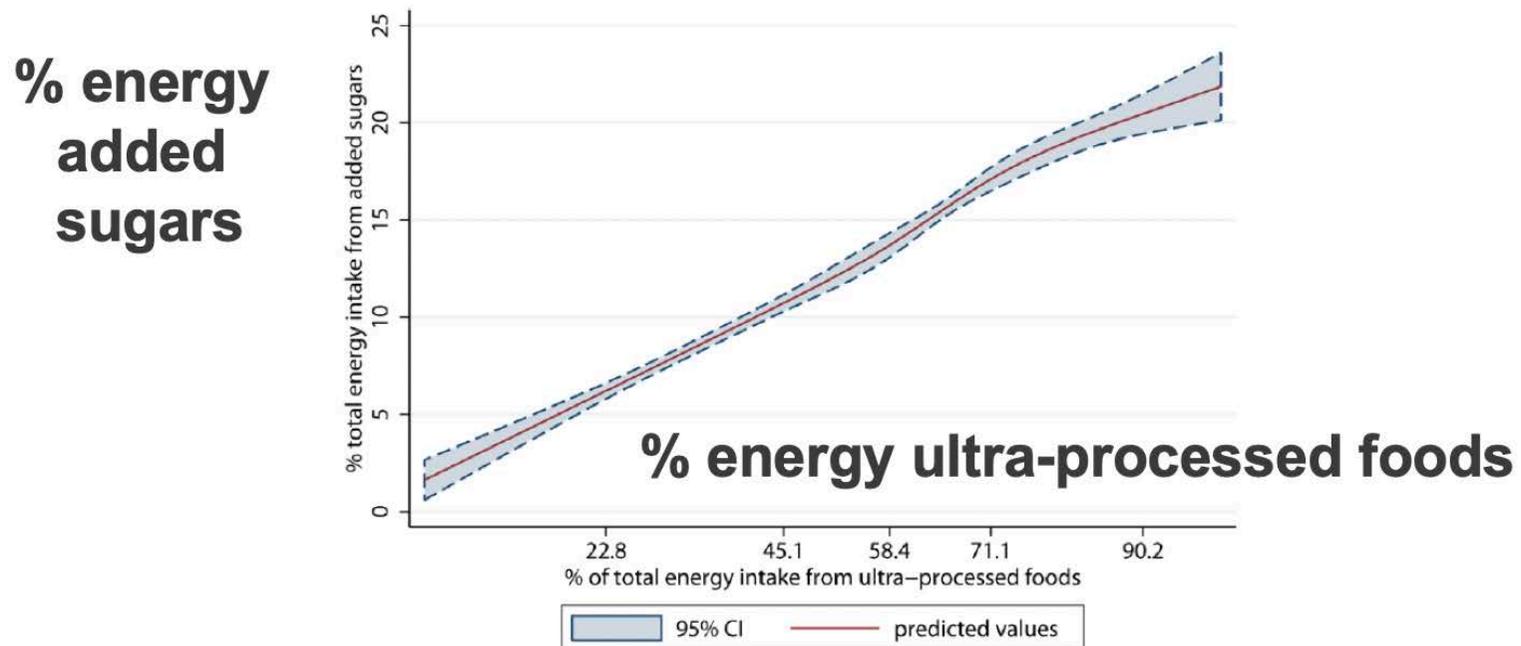
Euridice Martinez Steele,^{1,2} Larissa Galastri Baraldi,^{1,2} Maria Laura da Costa Louzada,^{1,2} Jean-Claude Moubarac,² Dariush Mozaffarian,³ Carlos Augusto Monteiro^{1,2}

“Decreasing the consumption of ultra-processed foods could be an effective way of reducing the excessive intake of added sugars in the USA”

% energy added sugars



All ultra-processed foods 90% of added sugar intake



Food	% contribution to added sugars	Food	% contribution to added sugars
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All ultra-processed foods = 90% of added sugar intake

These are the 16 food groups listed as sources of added sugars from ultra-processed foods

SSBs	17.1	Milk-based drinks	4.6
Fruit drinks	13.9	Sauces, dressings	2.8
Cakes, cookies, pies	11.2	RTE Pizza	1.4
Breads	7.6	Salty snacks	0.7
Desserts	7.3	Frozen meals	0.7
Sweet snacks	7.1	Sandwiches, buns etc.	0.6
RTE cereals	6.4	Instant & canned soups	0.1
Ice cream & ice pops	5.9	Others	1.2



nutrients



Article

Sources of Added Sugars in Young Children, Adolescents, and Adults with Low and High Intakes of Added Sugars

Regan L. Bailey ^{1,*} , Victor L. Fulgoni, III ², Alexandra E. Cowan ³ and P. Courtney Gaine ⁴

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Data on adults

Decile	Highest	Mid	Lowest
% added sugar from:	>19.6	15.0-15.6	<12.0
Contribution to added sugar intake (%)			
Sweetened beverages			
Coffee & tea			
Sweet bakery products			
Sugars			
Candy			
Other desserts			
RTE cereals			
Fats & oils			
Breads, roll & tortillas			
Quick breads & products			

Decile	Highest	Mid	Lowest
% added sugar from:	>19.6	15.0-15.6	<12.0
Contribution to added sugar intake (%)			
Sweetened beverages	51.4	23.1	20.0
Coffee & tea	10.6	6.1	*
Sweet bakery products	9.5	13.9	10.4
Sugars	6.4	9.5	5.8
Candy	4.8	6.6	5.5
Other desserts	4.5	6.1	*
RTE cereals	2.2	5.3	7.2
Fats & oils	1.2	3.4	9.7
Breads, roll & tortillas	1.1	5.8	20.0
Quick breads & products	1.1	*	*

* Not in top 10 foods

Food	% contribution to added sugars	Food	% contribution to added sugars
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RTE cereals	6.4	Instant & canned soups	0.1
Ice cream & ice pops	5.9	Others	1.2

Food	% contribution to added sugars	Food	% contribution to added sugars
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All ultra-processed foods = 90% of added sugar intake

These are the 16 food groups listed as sources of added sugars from ultra-processed foods

SSBs	Yes	Milk-based drinks	No
Fruit drinks	Yes	Sauces, dressings	No
Cakes, cookies, pies	Yes	RTE Pizza	No
Breads	Yes	Salty snacks	No
Desserts	Yes	Frozen meals	No
Sweet snacks	Yes	Sandwiches, buns etc.	No
RTE cereals	No	Instant & canned soups	No
Ice cream & ice pops	No	Others	No



Probing the role of ultra-processed foods on nutrient intake

Part 2: Fats, SFAs, added sugars, fibre and sodium

Ultra-Processed Foods: Definitions and Policy Issues

Michael J Gibney 

Institute of Food and Health, University College Dublin, Dublin, Ireland

- ❖ The definitions of ultra-processed foods varies considerably over time
- ❖ The foods included in the definition also vary over time

Ultra-Processed Foods: Definitions and Policy Issues

Michael J Gibney 

Institute of Food and Health, University College Dublin, Dublin, Ireland

- ❖ The definitions of ultra-processed foods varies considerably over time
- ❖ The foods included in the definition also vary over time
- ❖ Increasing intakes of ultra-processed foods
 - Predict intakes of sugar and fiber
 - **Do NOT** predict intakes of total fats, saturates and fibre

UK

20. Rauber F, da Costa Louzada ML, Steele EM, Millett C, Monteiro CA, Levy RB. Ultra-processed food consumption and chronic non-communicable diseases-related dietary nutrient profile in the UK (2008–2014). *Nutrients* 2018;10(5):587. [[PMC free article](#)] [[PubMed](#)]

Brazil

10. Costa Louzada ML, Martins AP, Canella DS, Baraldi LG, Levy RB, Claro RM, Moubarac JC, Cannon G, Monteiro CA. Ultra-processed foods and the nutritional dietary profile in Brazil. *Rev Saude Publica* 2015;49:38. [[PMC free article](#)] [[PubMed](#)]

US

21. Steele EM, Popkin BM, Swinburn B, Monteiro CA. The share of ultra-processed foods and the overall nutritional quality of diets in the US: evidence from a nationally representative cross-sectional study. *Popul Health Metrics* 2017;15(1):6 [[PMC free article](#)] [[PubMed](#)]

Canada

12. Moubarac JC, Batal M, Louzada ML, Martinez Steele E, Monteiro CA. Consumption of ultra-processed foods predicts diet quality in Canada. *Appetite* 2017;108:512–20. [[PubMed](#)]

Q1 Q2 Q3 Q4 Q5
Country
Quintile of intake of ultra-processed foods
Nutrient intake

UK					
Brazil					
Canada					
US					

Country	Q1	Q2	Q3	Q4	Q5
Quintile of intake of ultra-processed foods					
Total fat as % energy					
UK	31	32	32	33	33
Brazil	24	25	27	28	30
Canada	31	32	33	33	33
US	31	32	33	33	33

With the possible exception of Brazil, total fat % energy doesn't track UPF intake

Country	Q1	Q2	Q3	Q4	Q5
	Quintile of intake of ultra-processed foods				
Saturated fats as % of energy intake					
UK	12	12	12	12	12
Brazil	8	9	9	10	9
Canada	10	11	11	11	11
US	10	11	11	11	11

With the possible exception of Brazil, saturated fat % energy doesn't track UPF intake

Country **Q1** **Q2** **Q3** **Q4** **Q5**

Quintile of intake of ultra-processed foods

Fibre intake (g/1000 kcal)					
UK	8	8	8	8	7
Brazil	13	12	11	10	9
Canada	10	9	8	8	7
US	10	9	8	8	7

Country	Q1	Q2	Q3	Q4	Q5
Fibre intake (g/1000 kcal)					
UK	8	8	8	8	7
Brazil	13	12	11	10	9
Canada	10	9	8	8	7
US	10	9	8	8	7

	Official target for fibre intake	Actual fibre intake at Q1 of UPF intake
UK	30 g/d	15 g/d
Canada	32 g/d	19 g/d
US	14 g/ 1000 kcal	10 g/1000 kcal

Country	Q1	Q2	Q3	Q4	Q5
	Sodium intake (g/1000 kcal)				
UK	1.1	1.2	1.2	1.2	1.3
Brazil	1.9	1.8	1.7	1.7	1.6
Canada	1.5	1.5	1.5	1.5	1.5
US	1.7	1.7	1.7	1.7	1.6

With the possible exception of Brazil, sodium intake doesn't track UPF intake

Country	Q1	Q2	Q3	Q4	Q5
---------	----	----	----	----	----

Sodium intake (g/1000 kcal)					
UK	1.1	1.2	1.2	1.2	1.3
Brazil	1.9	1.8	1.7	1.7	1.6
Canada	1.5	1.5	1.5	1.5	1.5
US	1.7	1.7	1.7	1.7	1.6

	WHO target for sodium intake intake	Actual sodium intake at Q1 of UPF intake
--	-------------------------------------	------------------------------------------

UK		1.9 g/d
Canada	2 g/d	2.9 g/d
US		3.3 g/d

Country **Q1** **Q2** **Q3** **Q4** **Q5**

Quintile of intake of ultra-processed foods

Free (f) or added (a) sugars as % of energy intake					
UK (f)	9.9	11.3	12.2	13.4	15.4
Brazil (f)	10.9	13.1	15.0	17.6	20.2
Canada (a)	7.7	11.7	13.4	16.1	19.4
US (a)	7.7	11.0	13.4	15.7	19.2

Bear in mind that UPF accounts for over 90% of added sugar intake

Association between ultra-processed food consumption and the nutrient profile of the Colombian diet in 2005

Diana C Parra, MPH, PhD,¹ María Laura da Costa-Louzada, PhD,² Jean-Claude Moubarec, PhD,²
Renata Bertazzi-Levy, PhD,³ Neha Khandpur, ScD,⁴ Gustavo Cediel, MS, PhD,⁵ Carlos A Monteiro, PhD,⁶

Parra DC, da Costa-Louzada ML, Moubarec JC, Bertazzi-Levy R, Khandpur N, Cediel G, Monteiro CA. Association between ultra-processed food consumption and the nutrient profile of the Colombian diet in 2005. *Salud Publica Mex.* 2019;61(4):7-154. <https://doi.org/10.21149/9038>

Parra DC, da Costa-Louzada ML, Moubarec JC, Bertazzi-Levy R, Khandpur N, Cediel G, Monteiro CA. Asociación entre el consumo de alimentos ultraprocesados y el perfil nutricional de la dieta de los colombianos en 2005. *Salud Publica Mex.* 2019;61(4):7-154. <https://doi.org/10.21149/9038>

	Overall diet	From non-UPF	From UPF
Protein (%en)	13	13	9
Carbohydrates (%en)	65	64	65
Free sugars (%en)	14	12	25
Total fats (%en)	25	25	26
Saturated fats (%en)	9	9	8
Fibre (g/1000 kcal)	12	12	5



OPEN ACCESS

Consumption of ultra-processed foods and cancer risk: results from NutriNet-Santé prospective cohort

Thibault Fiolet,¹ Bernard Srour,¹ Laury Sellem,¹ Emmanuelle Kesse-Guyot,¹ Benjamin Allès,¹ Caroline Méjean,² Mélanie Deschasaux,¹ Philippine Fassier,¹ Paule Latino-Martel,¹ Marie Beslay,¹ Serge Hercberg,^{1,4} Céline Lavalette,¹ Carlos A Monteiro,³ Chantal Julia,^{1,4} Mathilde Touvier¹

¹Sorbonne Paris Cité
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Inserm U1153, Inra U1125,
Cnam, Paris 13 University,
Nutritional Epidemiology
Research Team (EREN),
Bobigny, France

²INRA UMR 1140 MOISA

ABSTRACT

OBJECTIVE

To assess the prospective associations between consumption of ultra-processed food and risk of cancer.

DESIGN

Population based cohort study.

statistically significant after adjustment for several markers of the nutritional quality of the diet (lipid, sodium, and carbohydrate intakes and/or a Western pattern derived by principal component analysis).

CONCLUSIONS

In this large prospective study, a 10% increase in the proportion of ultra-processed foods in the diet was

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RESEARCH

Table 1 | Baseline characteristics of study population according to sex specific quarters of ultra-processed food consumption (n=104 980), NutriNet-Santé cohort, France, 2009-17*. Values are numbers (percentages) unless stated otherwise

Characteristics	All participants	Quarters of ultra-processed food consumption†				P for trend‡
		1 (n=26 244)	2 (n=26 245)	3 (n=26 246)	4 (n=26 245)	
Mean (SD) age, years	42.8 (14.8)	47.9 (13.5)	45.0 (14.0)	42.0 (14.4)	36.5 (13.6)	<0.001
Female sex	82 159 (78.3)	20 539 (78.3)	20 540 (78.3)	20 541 (78.3)	20 542 (78.3)	–
Mean (SD) height, cm	166.8 (8.1)	166.3 (8.0)	166.7 (8.0)	167.0 (8.1)	167.3 (8.2)	<0.001
Mean (SD) body mass index	23.8 (4.6)	23.8 (4.3)	23.8 (4.4)	23.8 (4.5)	23.8 (5.0)	0.9
Family history of cancer§	35 668 (34.0)	10 542 (40.2)	9624 (36.7)	8625 (32.9)	6877 (26.2)	<0.001
Higher education:						
No	19 357 (18.4)	5154 (19.6)	4961 (18.9)	4637 (17.7)	4605 (17.6)	0.01
Yes, <2 years	18 076 (17.2)	3938 (15.0)	4091 (15.6)	4426 (16.9)	5621 (21.4)	
Yes, ≥2 years	67 547 (64.3)	17 152 (65.4)	17 193 (65.5)	17 183 (65.5)	16 019 (61.0)	
Smoking status:						
Current	17 763 (16.9)	4127 (15.7)	4065 (15.5)	4266 (16.3)	5305 (20.2)	<0.001
Never/former	87 217 (83.1)	22 117 (84.3)	22 180 (84.5)	21 980 (83.8)	20 940 (79.8)	
IPAQ physical activity level:¶						

RESEARCH

OPEN ACCESS

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Quartile	1	2	3	4
BMI	23.8	23.8	23.8	23.8

RESEARCH

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RESEARCH

Open Access



Characterisation of UK diets according to degree of food processing and associations with socio-demographics and obesity: cross-sectional analysis of UK National Diet and Nutrition Survey (2008–12)

Jean Adams* and Martin White

Abstract

Nova classification

Adjusted odds ratio of being overweight or obese

Unprocessed or minimally processed foods

1.0

Processed ingredients

0.97

Unprocessed or minimally processed foods AND processed ingredients

0.99

Ultra-processed food products

1.01



Probing the role of a specific ultra-processed foods on nutrient intake

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Examples of typical ultra-processed products are:

Carbonated drinks

Sweet or savoury packaged snacks

Ice-cream

Chocolate, candies (confectionery)

Mass-produced packaged breads and buns

Margarines and spreads

Cookies (biscuits), pastries, cakes, and cake mixes

Breakfast 'cereals', 'cereal' and 'energy' bars

Energy' drinks

Milk drinks

Fruit' yoghurts and 'fruit' drinks; cocoa drinks

Meat and chicken extracts and 'instant' sauces

Infant formulas, follow-on milks, other baby products

Pre-prepared pies and pasta and pizza dishes

Poultry and fish 'nuggets' and 'sticks'

Sausages, burgers, hot dogs,

Instant soups, noodles and desserts.

Ultra-processed products



Food Consumption Patterns and Micronutrient Density of Complementary Foods Consumed by Infants Fed Commercially Prepared Baby Foods

Kathleen C. Reidy, DrPH
Regan Lucas Bailey, PhD
Denise M. Deming, PhD
Lynda O'Neill, PhD
B. Thomas Carr, MS
Ruta Lesniasukas, MS
Wendy Johnson, PhD

Feeding Infants and Toddlers Study 2008

Downloaded from <https://journals.iww.com/nutritiontoday/online> by BNDMSGPHKAVZCEA

% of infants in FITS study consuming commercial baby food: fruits, vegetables, dinners

Age in months	%
6	78
7	81
8	80
9	71
10	82
11	53

Reidy et al:Nutr Today. 2018 Mar; 53(2):68-78

Daily intakes vitamins among infants consuming or not consuming commercial non-cereal baby foods

Vitamin	Consumers of commercial baby food	Non-consumers of commercial baby food
Vitamin E (mg/d)	5.5	4.6
Vitamin C (mg/d)	131.0	95.8
Retinol eq (ug/d)	1172	696
Riboflavin (mg/d)	1.4	1.4
Thiamin (mg/d)	1.1	1.2
Niacin (mg/d)	15.9	16.7
Vitamin B ₆ (mg/d)	1.5	1.5
Folate (mg/d)	328	418
Vitamin B ₁₂ (ug/d)	2.5	3.0
Vitamin D (ug/d)	1.0	1.7

Daily intakes minerals among infants consuming or not consuming commercial non-cereal baby foods

Mineral	Consumers of commercial baby food	Non-consumers of commercial baby food
Calcium (mg/d)	672	637
Magnesium (mg/d)	202	177
Iron (mg/d)	33.2	27.7
Potassium (mg/d)	2025	1607
Zinc (mg/d)	7.9	8.3
Sodium (mg/d)	572	1192

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Ultra-processed products



Glycemic, Insulinemic, and Appetite Responses of Patients With Type 2 Diabetes to Commonly Consumed Breads

Cathy Breen, BSc

Miriam Ryan, PhD

Michael. J. Gibney, PhD

Michelle Corrigan, PhD

Donal O'Shea, MD

Purpose

The purpose of this study was to identify the breads most commonly consumed by adults with type 2 diabetes (T2DM) and then examine the postprandial glycemic, insulinemic, and appetite responses that these breads elicit.



Calcium carbonate, iron, niacin, E472e emulsifier, flour treatment agent



Raising agents, sodium Hydrogen carbonate, diphosphates



Nothing



Calcium carbonate, iron, niacin, E472e emulsifier, flour treatment agent

Blood glucose

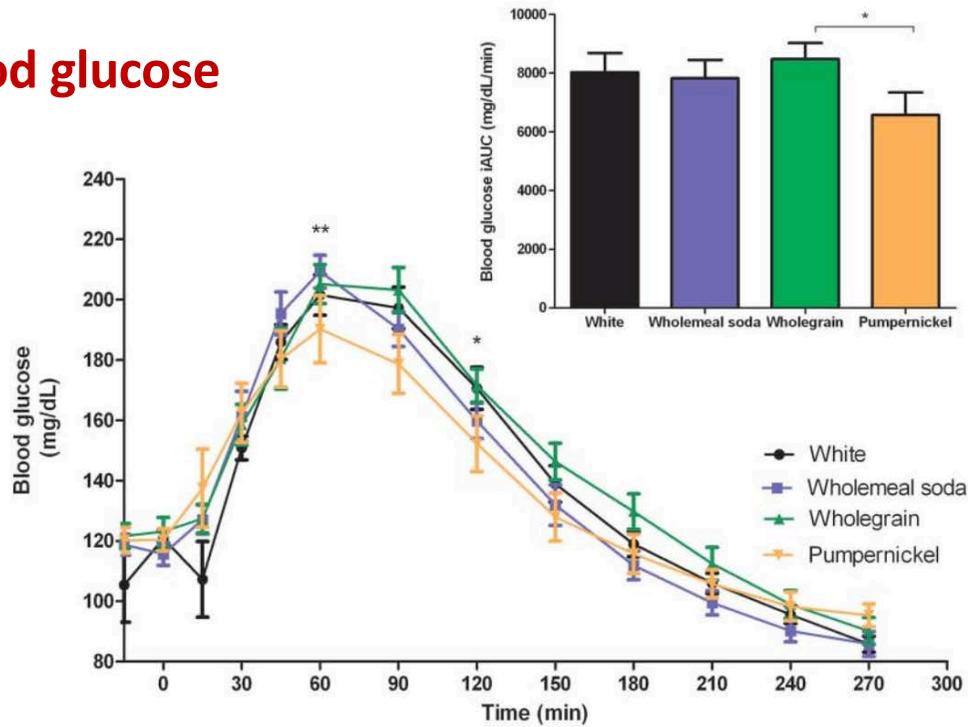


Figure 2. Glucose response curve and incremental area under the curve following consumption of test breads in part 2.
* $P < .05$. ** $P < .01$.

Blood insulin

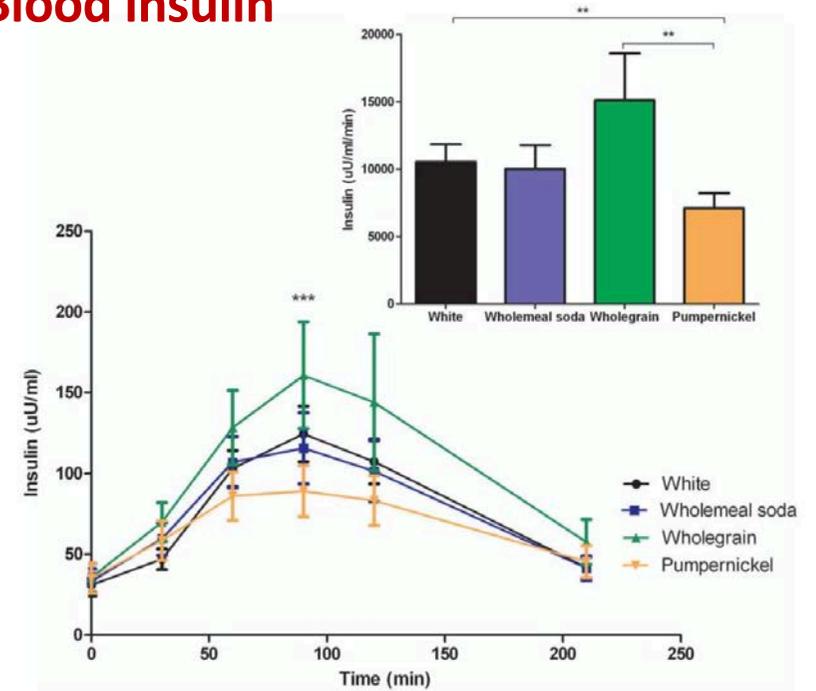


Figure 3. Insulin response curve and incremental area under the curve following consumption of test breads in part 2.
** $P < .01$. *** $P < .001$.

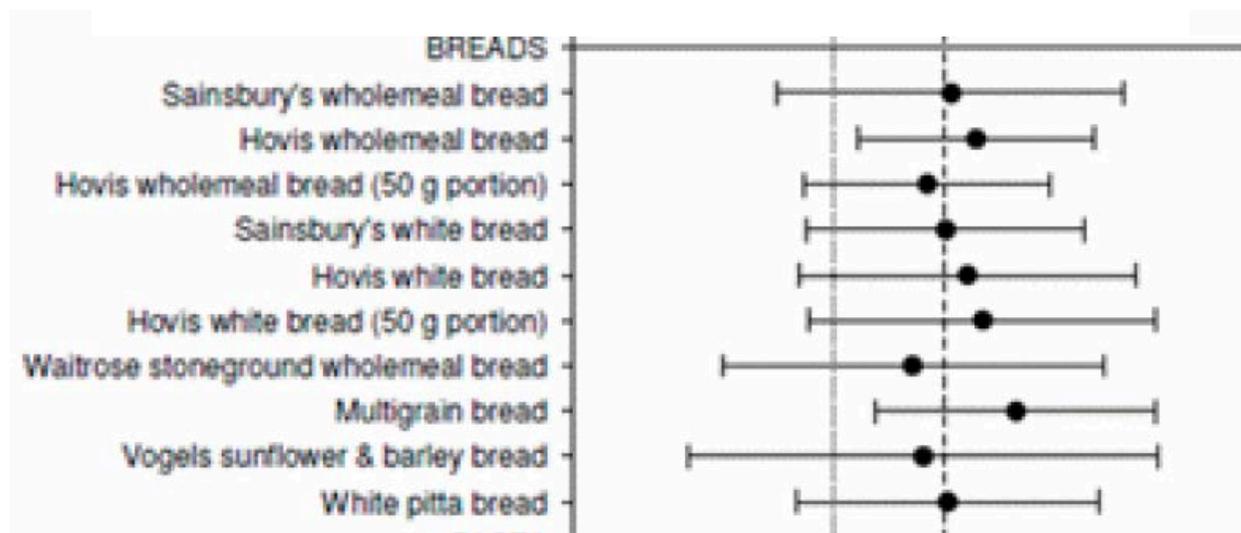
No significant overall effect of bread type

Published in final edited form as:

Eur J Clin Nutr. 2008 February ; 62(2): 279–285. doi:10.1038/sj.ejcn.1602723.

Determination of the glycaemic index of various staple carbohydrate-rich foods in the UK diet

Louise M. Aston, Joanna M. Gambell, David M. Lee, Susan P. Bryant, and Susan A. Jebb
MRC Human Nutrition Research Elsie Widdowson Laboratory 120 Fulbourn Road Cambridge
CB1 9NL



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Ultra-processed products



1970

2004

Intake of saturated fats in Ireland

18%
energy

13% of
energy



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Almost all the extensive literature on ultra-processed foods is focused on foods and nutrients

This is at odds with the basic tenet of UPF, that is, processing matters, not foods or nutrients

However, there is not a shred of evidence that there is a link between food additives and chronic disease

RESEARCH

Open Access

The share of ultra-processed foods and the overall nutritional quality of diets in the US: evidence from a nationally representative cross-sectional study



Euridice Martínez Steele^{1,2}, Barry M. Popkin³, Boyd Swinburn⁴ and Carlos A. Monteiro^{1,2*}

PDF search for key words

	Abstract	Introduction	Methods	Results & discussion
Added sugars	2	1	3	11
Sodium	1	1	2	11
Fiber	3	2	4	10
Saturates	2	2	5	11
Total fat	0	2	1	3

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Total fat	0	2	1	3

However, food processing *per se*, whether in factories or kitchens can give rise to putative carcinogens

- **Nitrosamines in traditionally processed meat**
- **Acrylamide in heating carbohydrate rich foods**
- **3-MCPD (3-monochloropropane-1,2-diol) in protein hydrolysis**

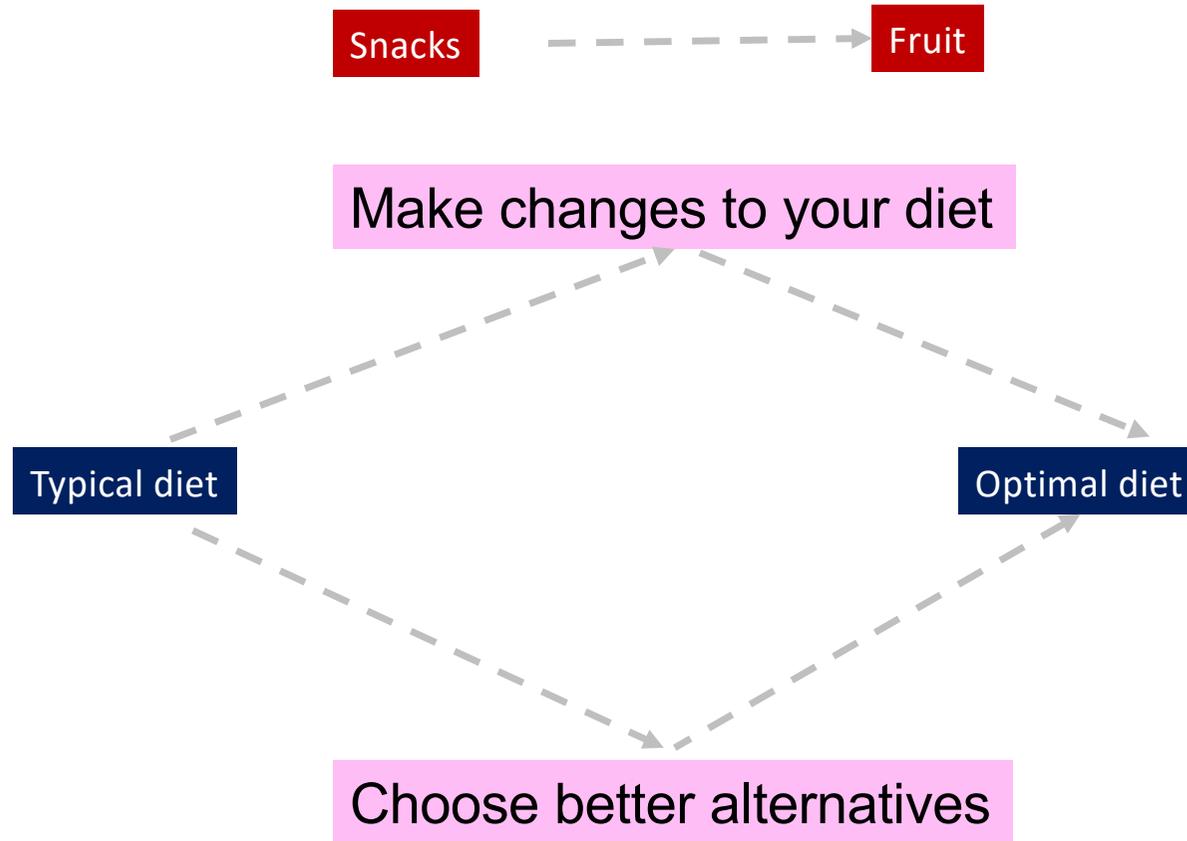
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- Nitrosamines in traditionally processed meat
- Acrylamide in heating carbohydrate rich foods
- 3-MCPD (3-monochloropropane-1,2-diol) in protein Hydrolysis

All compounds permitted to be added to foods **CANNOT be in any way, be likely to contribute to cancer. That is the **LAW****

Typical diet

Optimal diet



Reformulation

Choose better alternatives

High SFA spread



MUFA rich spread

Commentary. The Food System. Ultra-processed products
Product reformulation will not improve public health

World Nutrition. Journal of the World Public Health Nutrition Association. Volume 3, Number 9, September

“Reformulation is not of healthy foods. *It is of inherently unhealthy products.* These are usually identified in dietary guidelines as products to be *consumed only occasionally.* They are made only some what less unhealthy by manipulation of their constituents.”

Reformulation

Choose better alternatives

High SFA spread



MUFA rich spread

Group 1: Unprocessed foods: **20% of energy intake**

Group 2: Culinary ingredients: **2% of energy intake**

Group 3: Processed foods: **18% of energy intake**

Group 4: Ultra processed foods: **60% of energy intake**

Group 1: Unprocessed foods: 20% of energy intake

Group 2: Culinary ingredients: 2% of energy intake

Group 3: Processed foods: 18% of energy intake

Group 4: Ultra processed foods: 60% of energy intake

Characterization of the Degree of Food Processing in Relation With Its Health Potential and Effects

Anthony Fardet¹

Université Clermont Auvergne, INRA, UNH, Unité de Nutrition Humaine, CRNH Auvergne, Clermont-Ferrand, France

¹Corresponding author: e-mail address: anthony.fardet@clermont.inra.fr

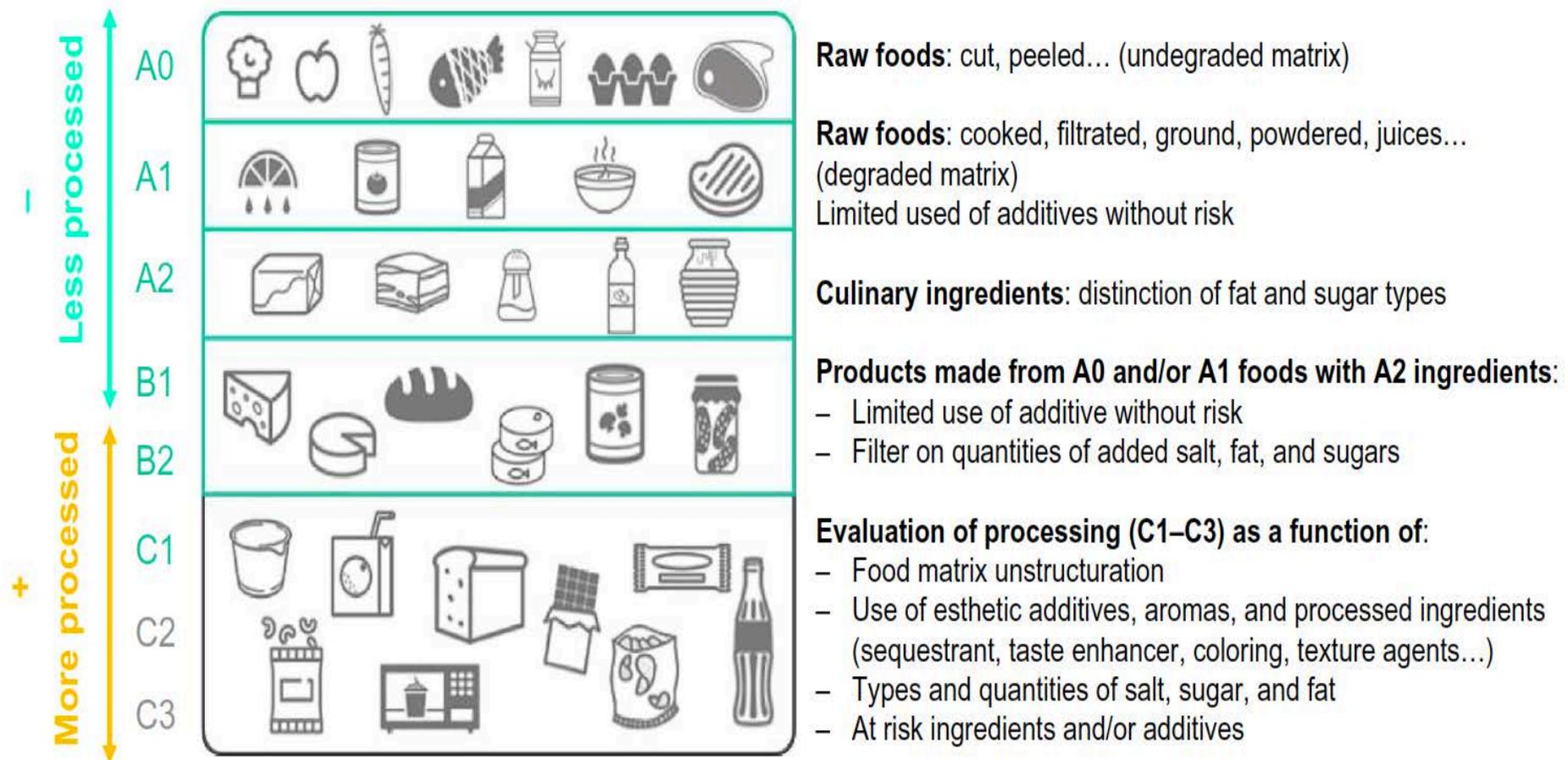
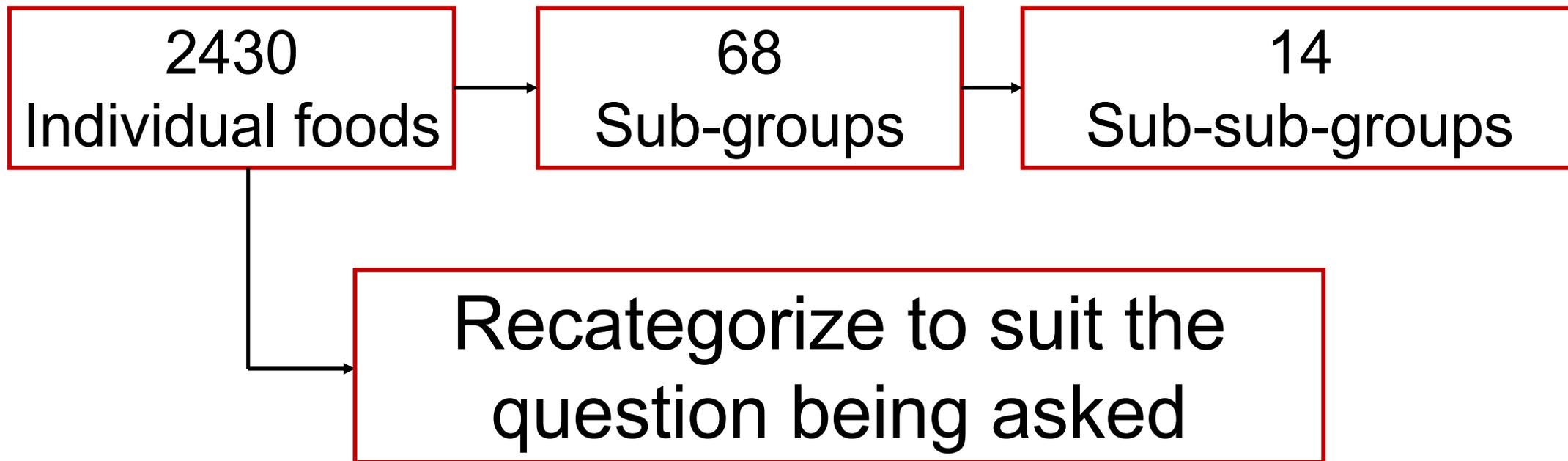


Fig. 7 The SIGA classification according to the degree of food processing.

National adult nutrition survey, Ireland



[Estimation of exposure to food packaging materials. 1: Development of a food-packaging database.](#)

Duffy E, Hearty AP, Gilsenan MB, Gibney MJ.

Food Addit Contam. 2006 Jun;23(6):623-33.

[A generic coding approach for the examination of meal patterns.](#)

Woolhead C, Gibney MJ, Walsh MC, Brennan L, Gibney ER.

Am J Clin Nutr. 2015 Aug;102(2):316-23. doi: 10.3945/ajcn.114.106112. Epub 2015 Jun 17.

[Pattern of intake of food additives associated with hyperactivity in Irish children and teenagers.](#)

Connolly A, Hearty A, Nugent A, McKeivitt A, Boylan E, Flynn A, Gibney MJ.

Food Addit Contam Part A Chem Anal Control Expo Risk Assess. 2010 Apr;27(4):447-56. doi:

[Metabolomic-based identification of clusters that reflect dietary patterns.](#)

Gibbons H, Carr E, McNulty BA, Nugent AP, Walton J, Flynn A, Gibney MJ, Brennan L.

Mol Nutr Food Res. 2017 Oct;61(10). doi: 10.1002/mnfr.201601050. Epub 2017 Jul 20.

[Whole grain intakes in Irish adults: findings from the National Adults Nutrition Survey \(NANS\).](#)

O'Donovan CB, Devlin NF, Buffini M, Walton J, Flynn A, Gibney MJ, Nugent AP, McNulty BA.

Eur J Nutr. 2019 Mar;58(2):541-550. doi: 10.1007/s00394-018-1615-3. Epub 2018 Jan 20.



Porridge and yogurt



Whole meal bread and low fat spread



Tea with low fat milk





Cantucci



Vino Santo



Non-churn ice cream



Cantucci



Vino Santo



Non-churn ice cream

**Vanilla is used as a
flavouring enhancer.
Thus they are
ultra-processed according
to the NOVA classification!!!!**





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Singapore's vision of the future of food: Sea based vertical farming of vegetables, fish, legumes





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Bacon

shouldn't have to come from a pig.



Raw Jicama Bacon
thehappyzawkitchen.blogspot.com



Shiitake Mushroom Bacon
dianabroad.com



Eggplant Bacon
cookinggood.com



Zucchini Bacon
veganepicurean.blogspot.com



Tempeh Bacon
tofurky.com



Coconut Bacon
cookbookaficionado.com



Seitan Bacon
uptonaturals.com



Carrot Bacon
meetheshannons.com



Tofu Bacon
bitesizedthoughts.com

VeganStreet.com

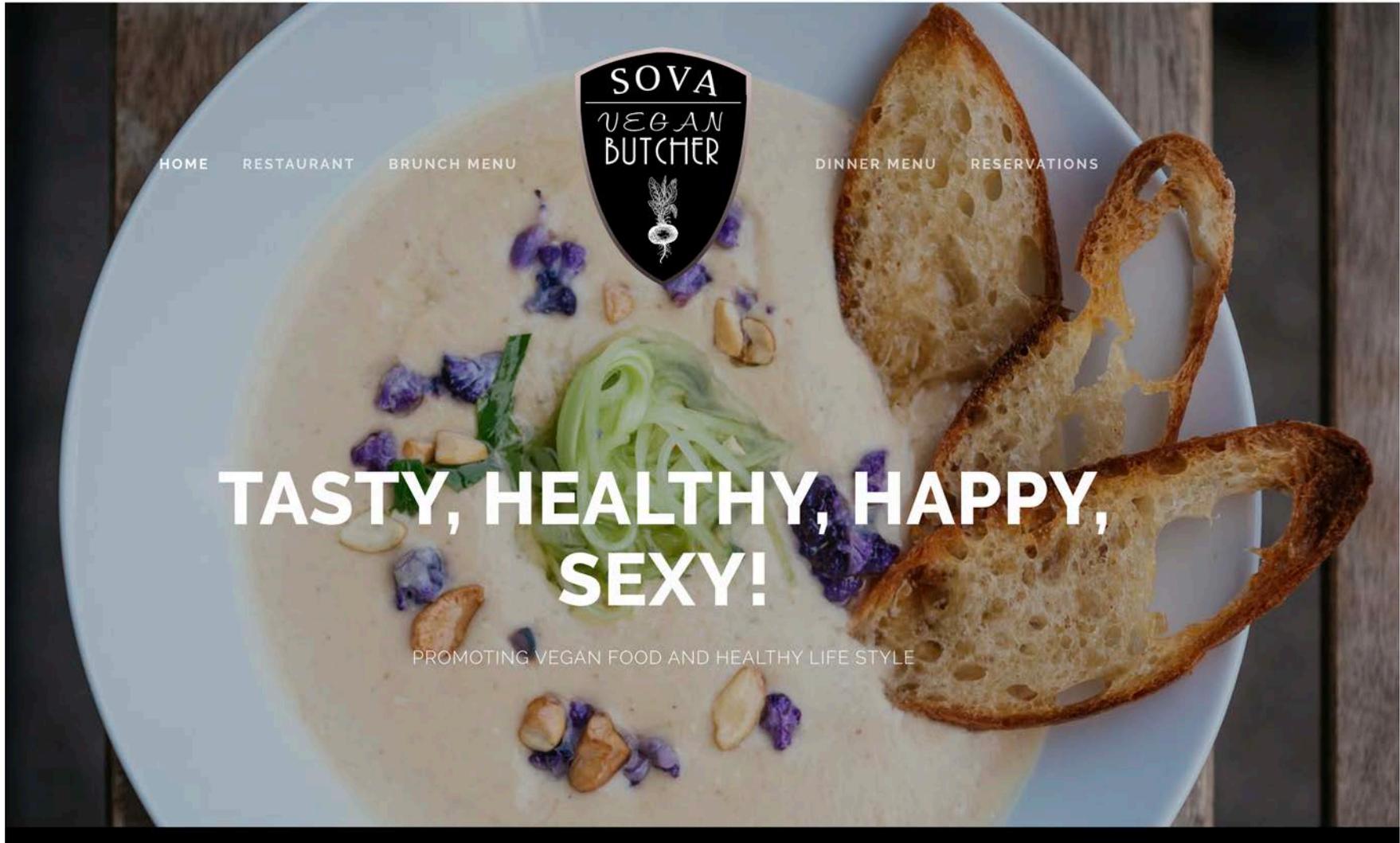


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Home based 3-D printing of food



Ultra-processed foods as defined by NOVA.....

Are directly linked to sugar and fat intake as would be expected based on their definition

Are NOT linked to intakes of total and saturated fats and to sodium

Include foods clearly shown to yield better quality diet

The attendant literature is dominated by nutrients and not by additives or processing

- **We may wish to code different foods according to whatever attribute we wish.**
- **Energy density, palatability, convenience, availability, etc.**
- **But, lets do it on the basis of hard scientific links with diet and health**
- **And let's do it for every food and not have four rigid categories of foods to help us unravel the complex data of national dietary surveys.**



NUTRITION 2019

