Faculdade de Saúde Pública
Universidade de São Paulo
Cátedra Josué de Castro
Curso de Verão 2022: Sistemas alimentares saudáveis e sustentáveis

Mudanças no sistema alimentar e a pandemia de obesidade (e de doenças crônicas relacionadas)

Carlos A. Monteiro

carlosam@usp.br

Núcleo de Pesquisas Epidemiológicas em Nutrição e Saúde
Universidade de São Paulo

NUPENS USP

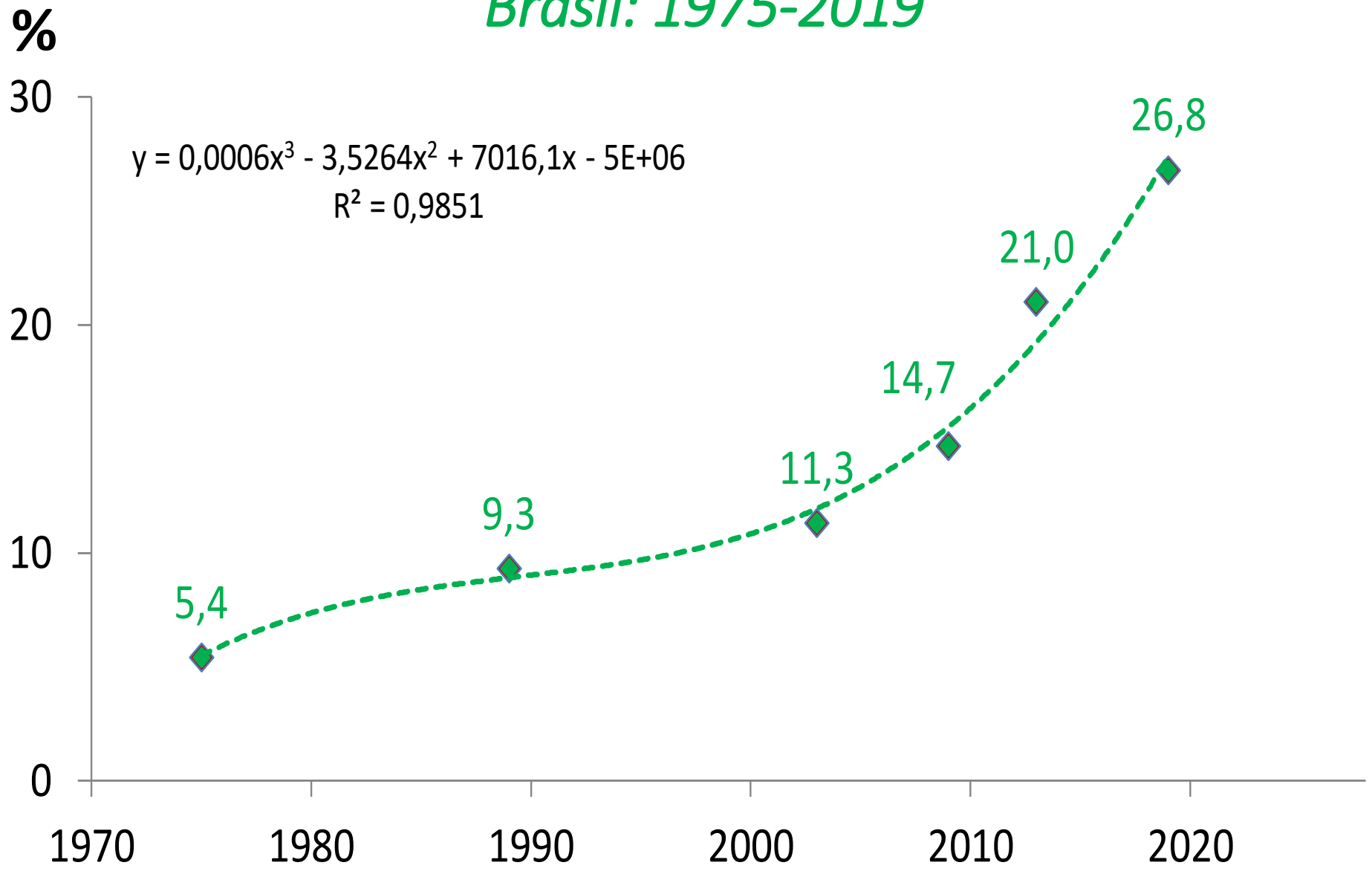
Mudanças no sistema alimentar e a pandemia de obesidade

- A epidemia de obesidade: alguns números
- Mudanças no processamento de alimentos e suas consequências sobre os padrões de alimentação e o risco de doenças
- Implicações políticas

NUPENS USP

Prevalência (%) de obesidade em adultos

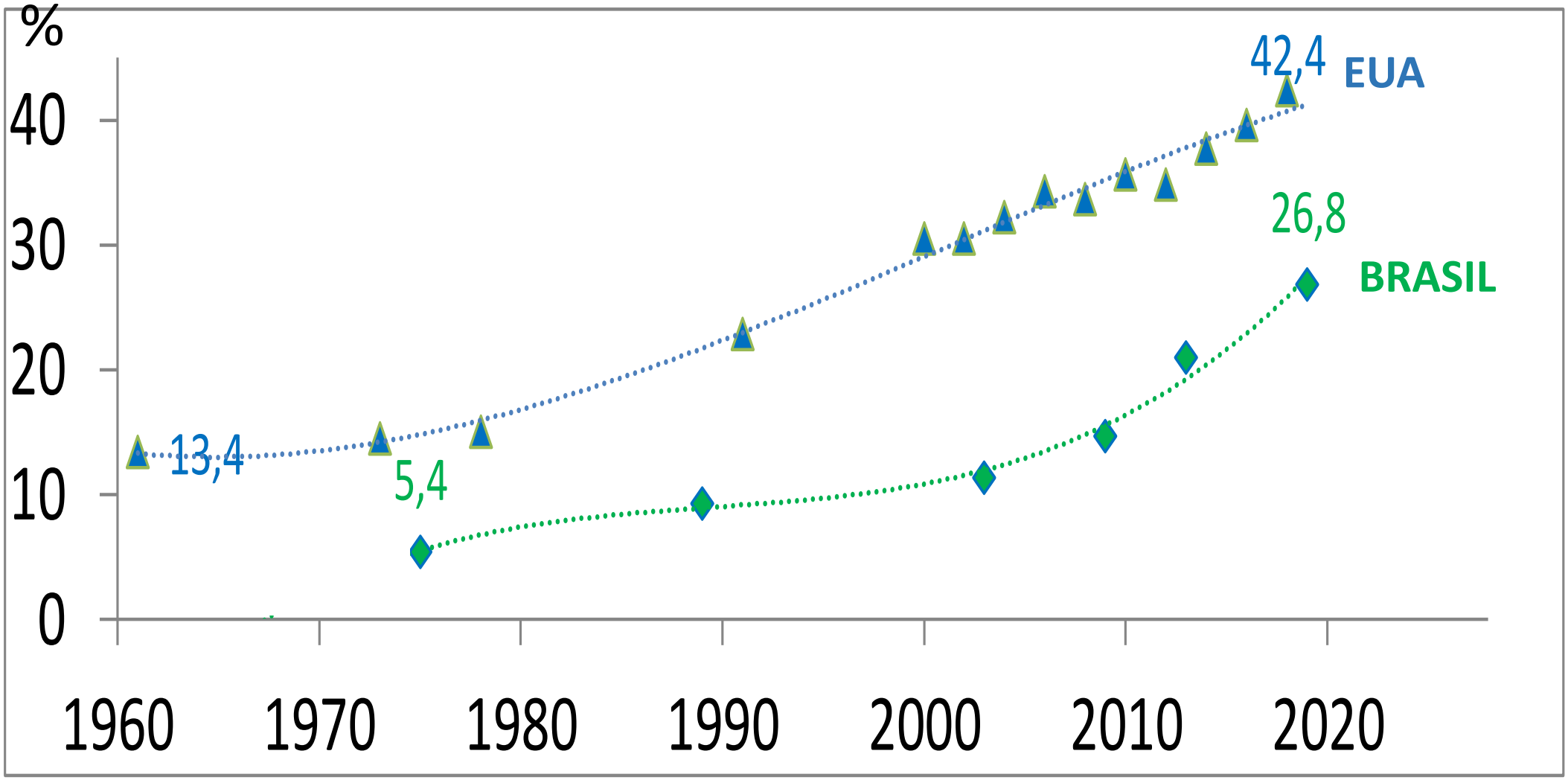
Brasil: 1975-2019



Fontes: inquéritos antropométricos nacionais do IBGE

Prevalência (%) de obesidade em adultos

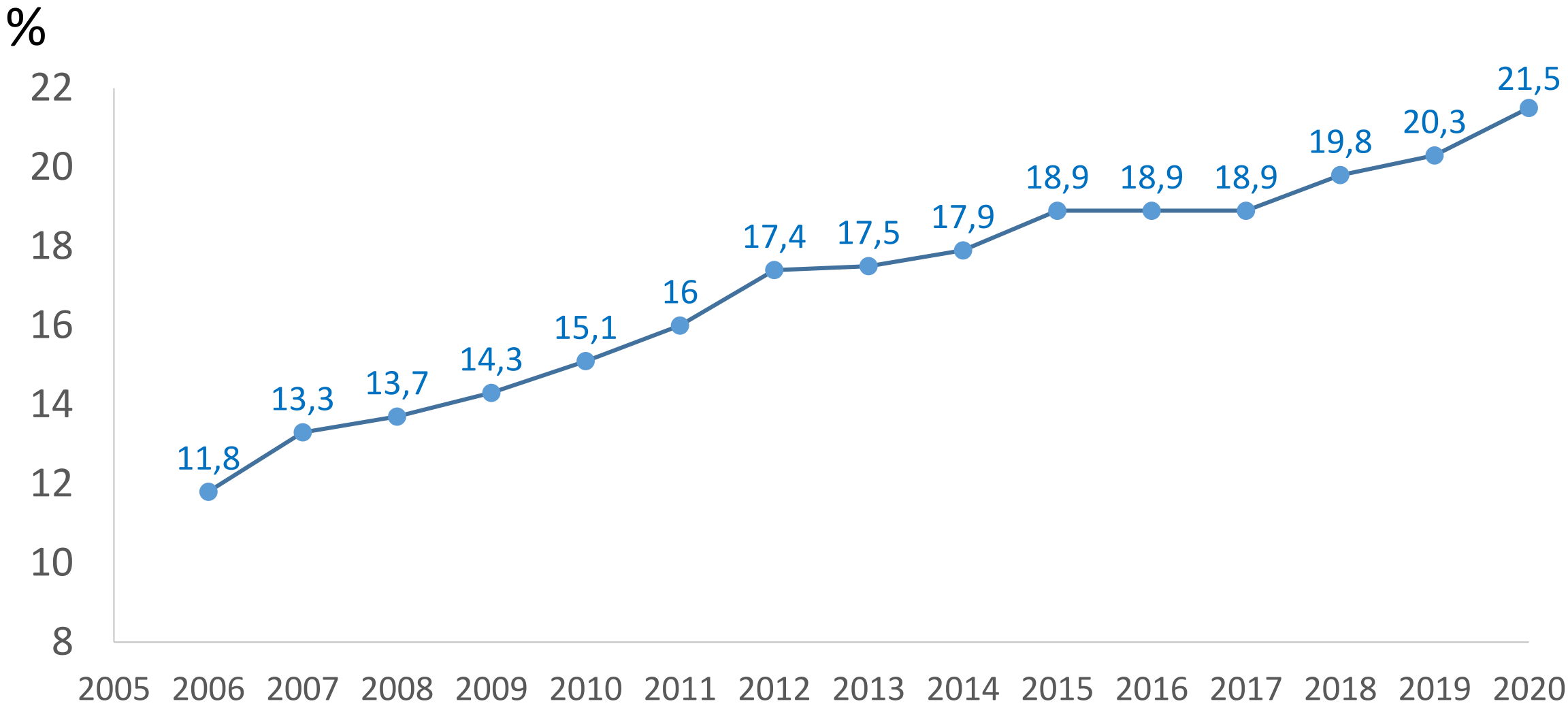
Brasil: 1975-2019 e EUA: 1961-2018



Sources: National anthropometric surveys

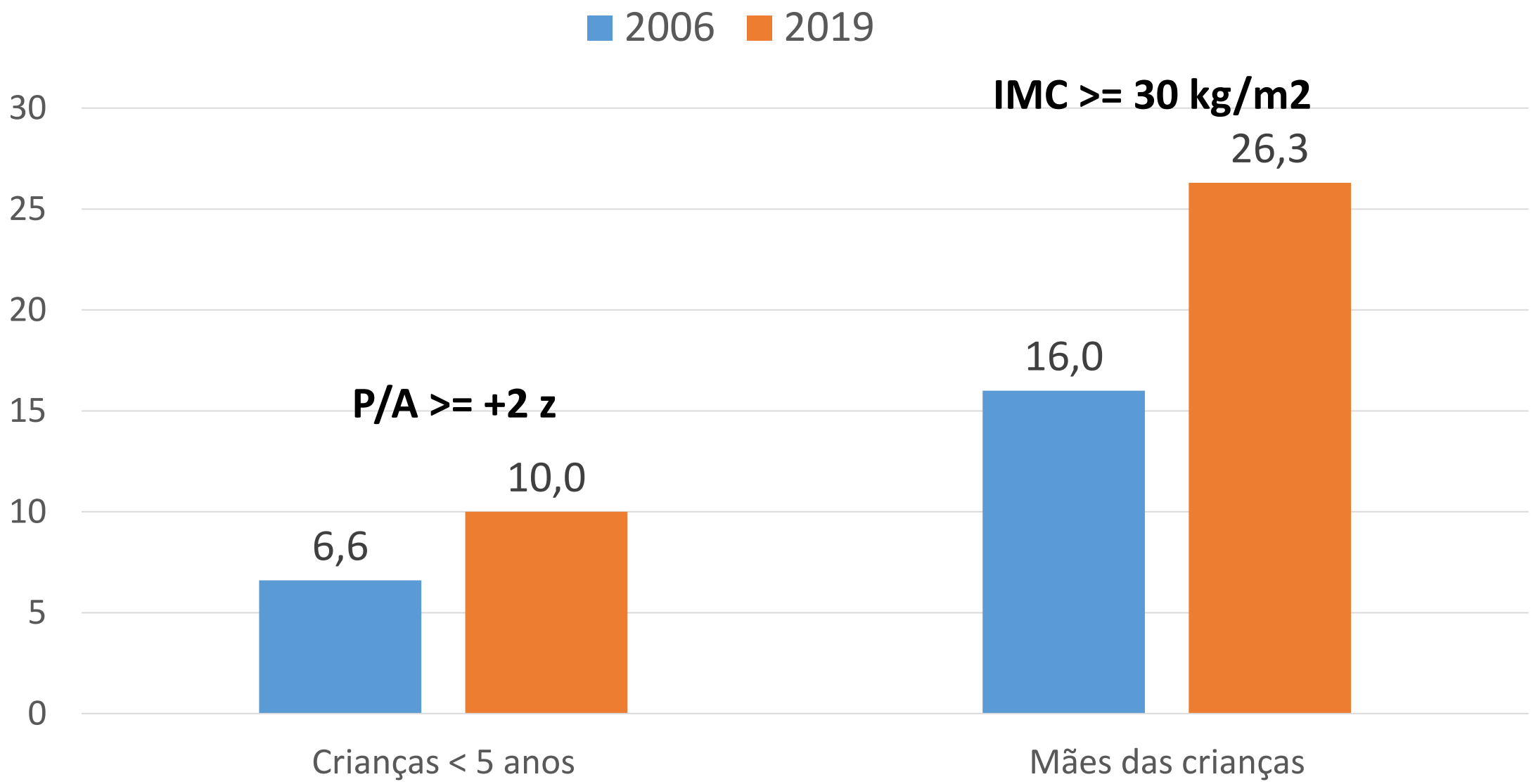
Prevalência (%) de obesidade em adultos

Capitais dos 26 estados brasileiros e DF: 2006-2020



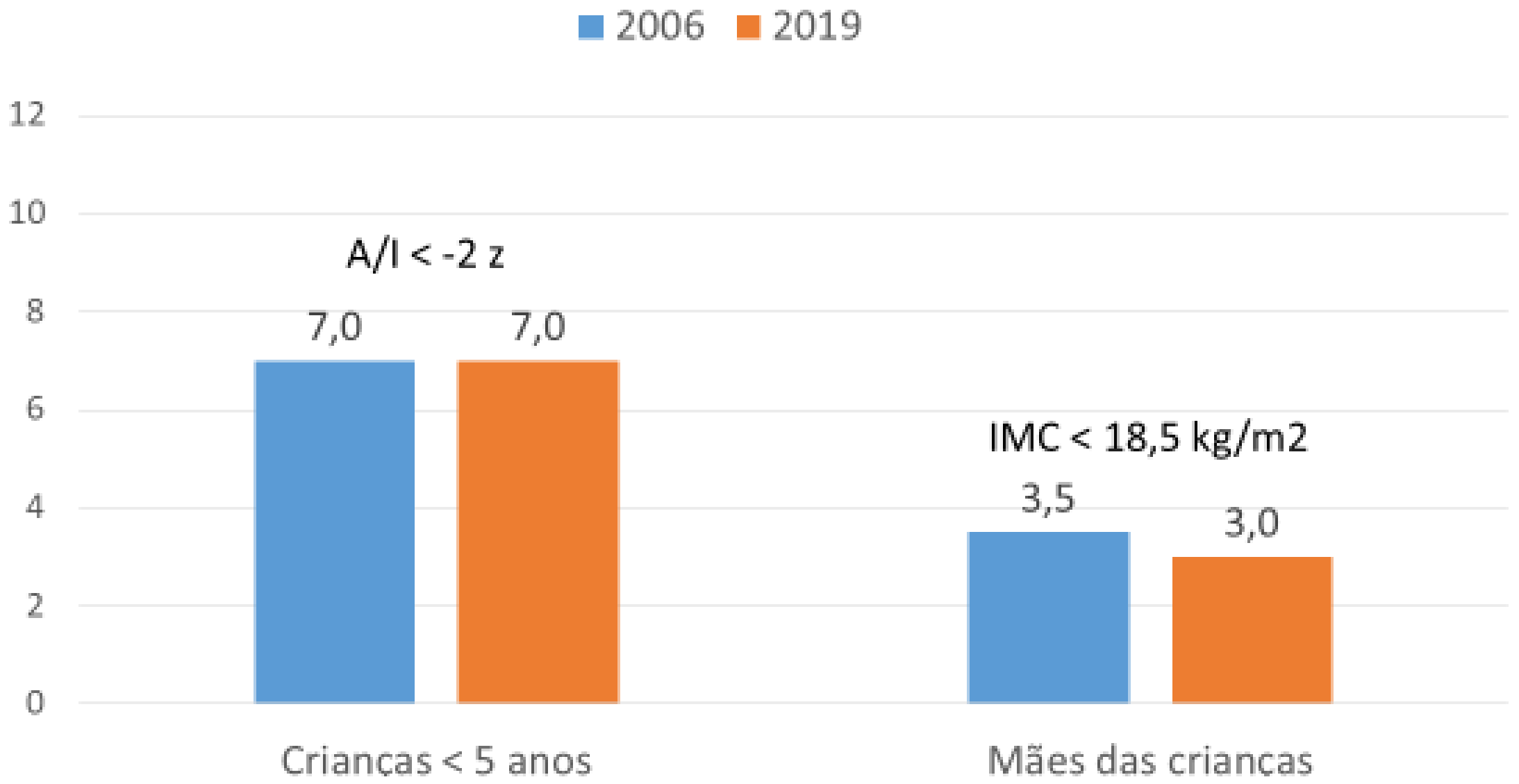
Fonte: Ministério da Saúde. Vigitel

Evolução da obesidade entre crianças < 5 anos e suas mães no Brasil



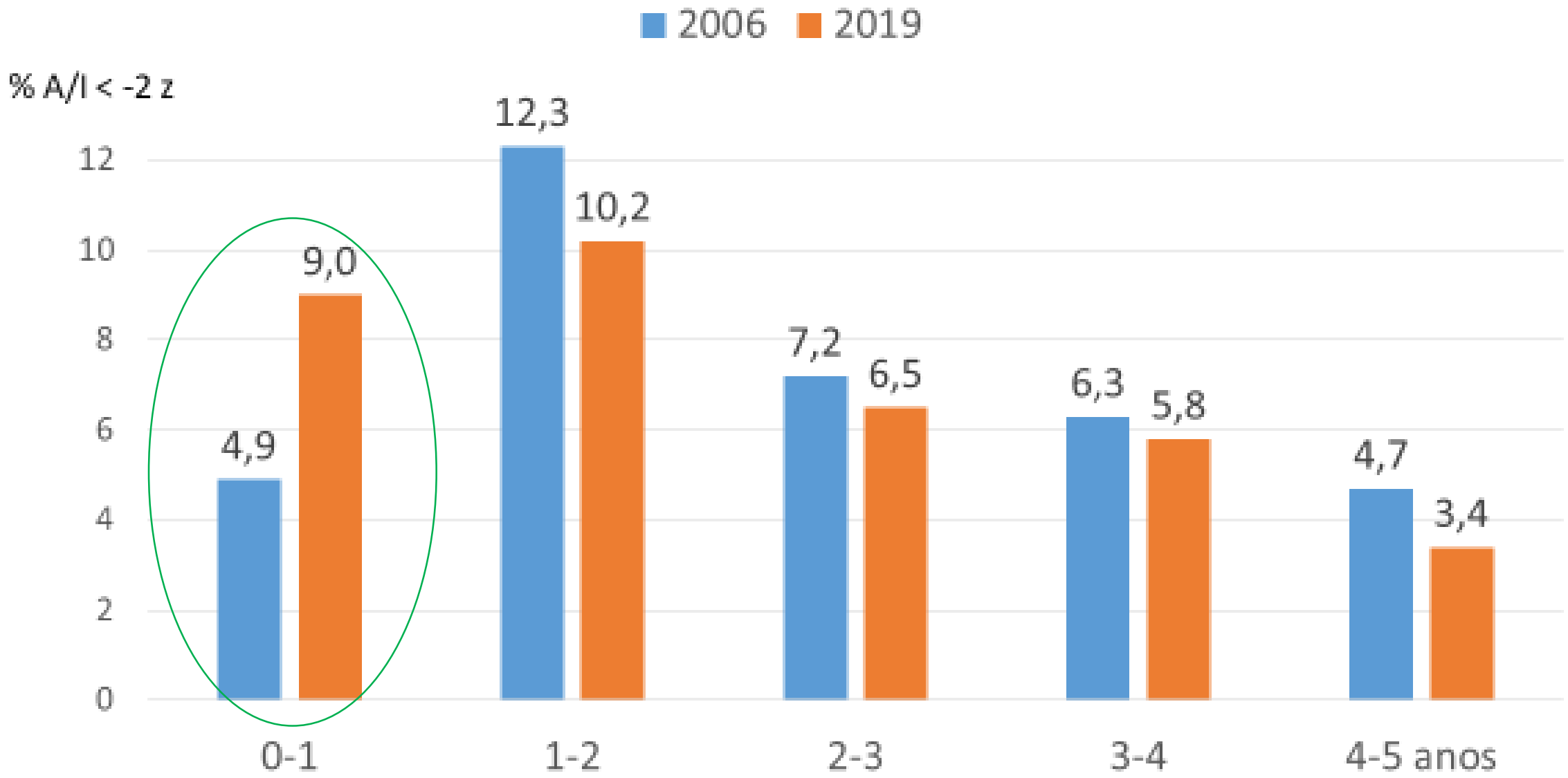
Fontes: UFRJ. Estado Nutricional Antropométrico da Criança e da Mãe. ENANI 2019. https://enani.nutricao.ufrj.br/index.php/relatorios/ e MS/CEBRAP. Pesquisa Nacional de Demografia e Saúde da Mulher e da Criança PNDS 2006. Relatório Final. Brasília 2008

Evolução da desnutrição entre crianças < 5 anos e suas mães no Brasil



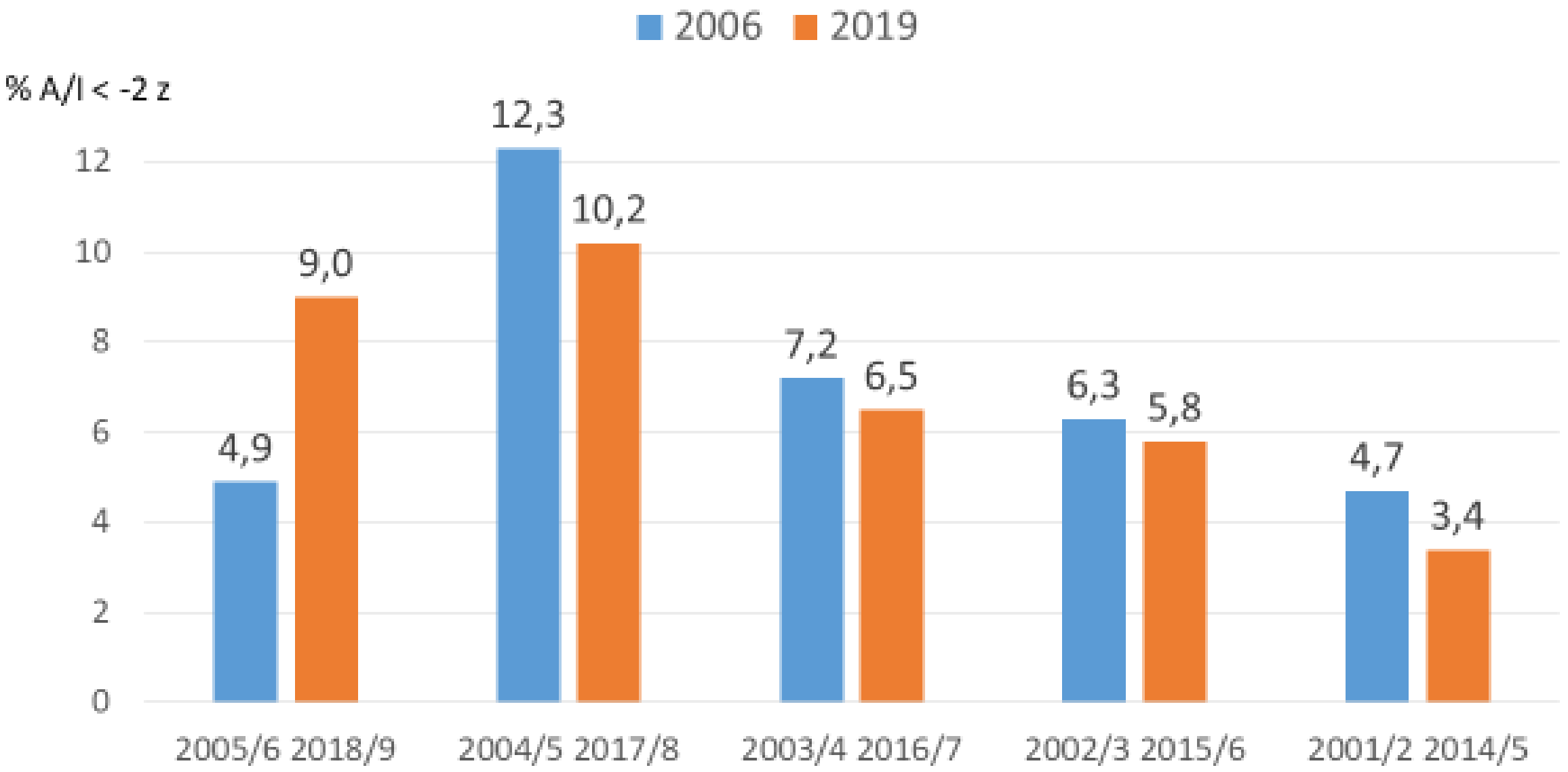
Fontes: UFRJ. Estado Nutricional Antropométrico da Criança e da Mãe. ENANI 2019. https://enani.nutricao.ufrj.br/index.php/relatorios/ e MS/CEBRAP. Pesquisa Nacional de Demografia e Saúde da Mulher e da Criança PNDS 2006. Relatório Final. Brasília 2008

Evolução da desnutrição entre crianças < 5 anos segundo idade no Brasil



Fontes: UFRJ. Estado Nutricional Antropométrico da Criança e da Mãe. ENANI 2019. https://enani.nutricao.ufrj.br/index.php/relatorios/ e MS/CEBRAP. Pesquisa Nacional de Demografia e Saúde da Mulher e da Criança PNDS 2006. Relatório Final. Brasília 2008

Evolução da desnutrição entre crianças < 5 anos segundo idade no Brasil



Fontes: UFRJ. Estado Nutricional Antropométrico da Criança e da Mãe. ENANI 2019. https://enani.nutricao.ufrj.br/index.php/relatorios/ e MS/CEBRAP. Pesquisa Nacional de Demografia e Saúde da Mulher e da Criança PNDS 2006. Relatório Final. Brasília 2008

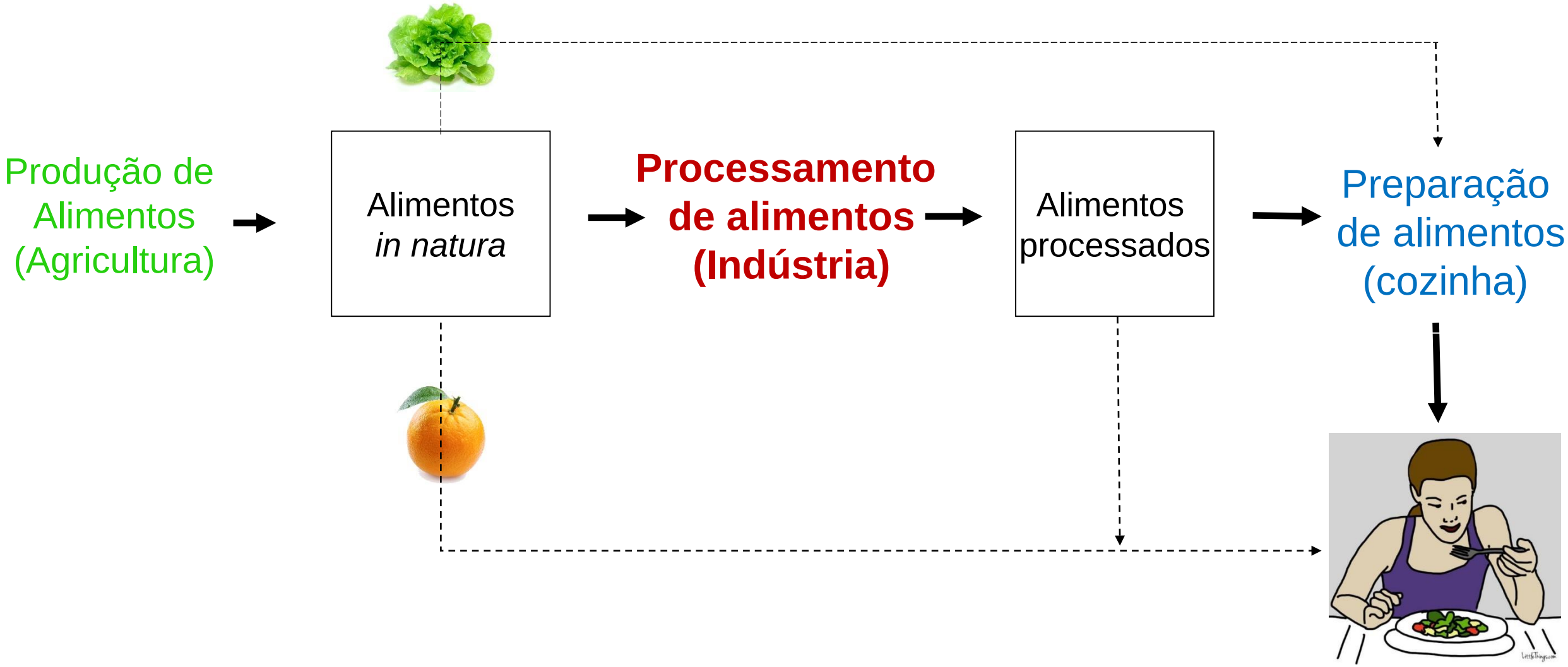
Mudanças no sistema alimentar e a pandemia de obesidade

- A epidemia de obesidade: alguns números
- Mudanças no processamento de alimentos e suas consequências sobre os padrões de alimentação e o risco de doenças
- Implicações políticas

NUPENS USP

Por que os alimentos precisam ser processados?

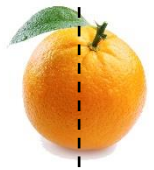
Poucos alimentos podem ser consumidos sem processamento



Com o processamento de alimentos é possível aumentar sua duração, facilitar/ diversificar sua preparação e modificar/maximizar suas propiedades sensoriais

Produção de Alimentos (Agricultura)

Alimentos *in natura*



Processamento de alimentos (Indústria)

Preparação de alimentos e comidas (cozinha)

Processos usados para aumentar a duração dos alimentos, para facilitar/diversificar sua preparação ou para modificar/maximizar suas propiedades sensoriais

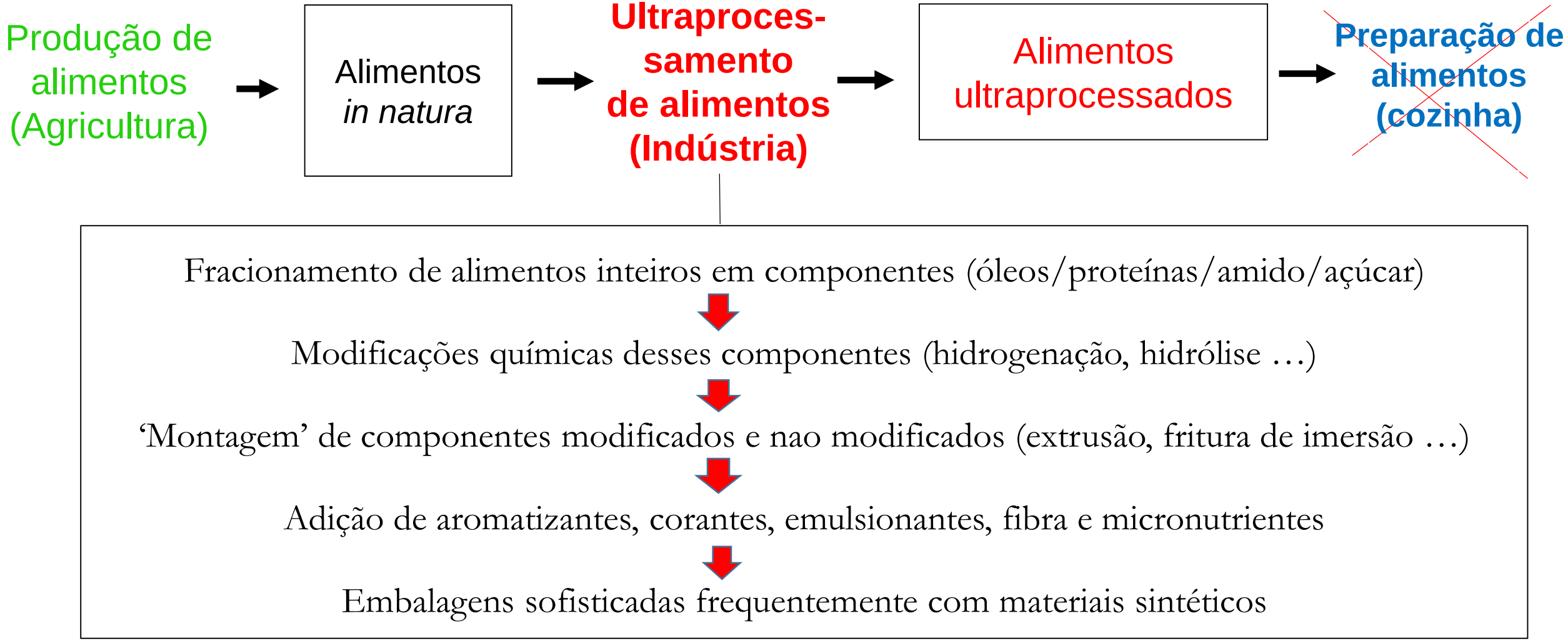
Produção de Alimentos (Agricultura) → Alimentos *in natura* → Processamento de alimentos (Indústria) → **Preparação de alimentos e comidas (cozinha)**

Remoção de partes não comestíveis, secagem, resfriamento, congelamento, pasteurização, fermentação, fervura, cozimento, moagem, prensagem, centrifugação, adição de sal ou açúcar ...

A indústria pode processar alimentos visando obter produtos de baixo custo, prontos para consumo, hiperpalatáveis e com potencial para substituir todos os outros alimentos

Produção de Alimentos (Agricultura) → Alimentos *in natura* → **Ultraproces-samento de alimentos (Indústria)** → Alimentos ultraprocessados → ~~**Preparação de alimentos (cozinha)**~~

Em que consiste o ultraprocessamento de alimentos?



Grupos NOVA	Exemplos
1) Alimentos não ou minimamente processados Partes comestíveis de plantas e animais sem processar ou submetidas a processos mínimos (sem adição de substâncias) visando aumentar sua duração	
2) Ingredientes culinarios processados Substâncias extraídas de alimentos ou da natureza que servem para preparar, cozinhar e temperar alimentos do Grupo 1	
3) Alimentos processados Alimentos do Grupo 1 adicionados de substâncias do Grupo 2 visando aumentar sua duração e/ou modificar suas qualidades sensoriais	
4) Alimentos ultraprocessados Formulações resultantes do fracionamento de alimentos e da recombinação de suas partes com o uso de aditivos cosméticos visando obter produtos híper-palatáveis, de baixo custo, de alta duração, prontos para consumo e com o potencial para substituir alimentos dos outros três grupos e preparações culinárias	

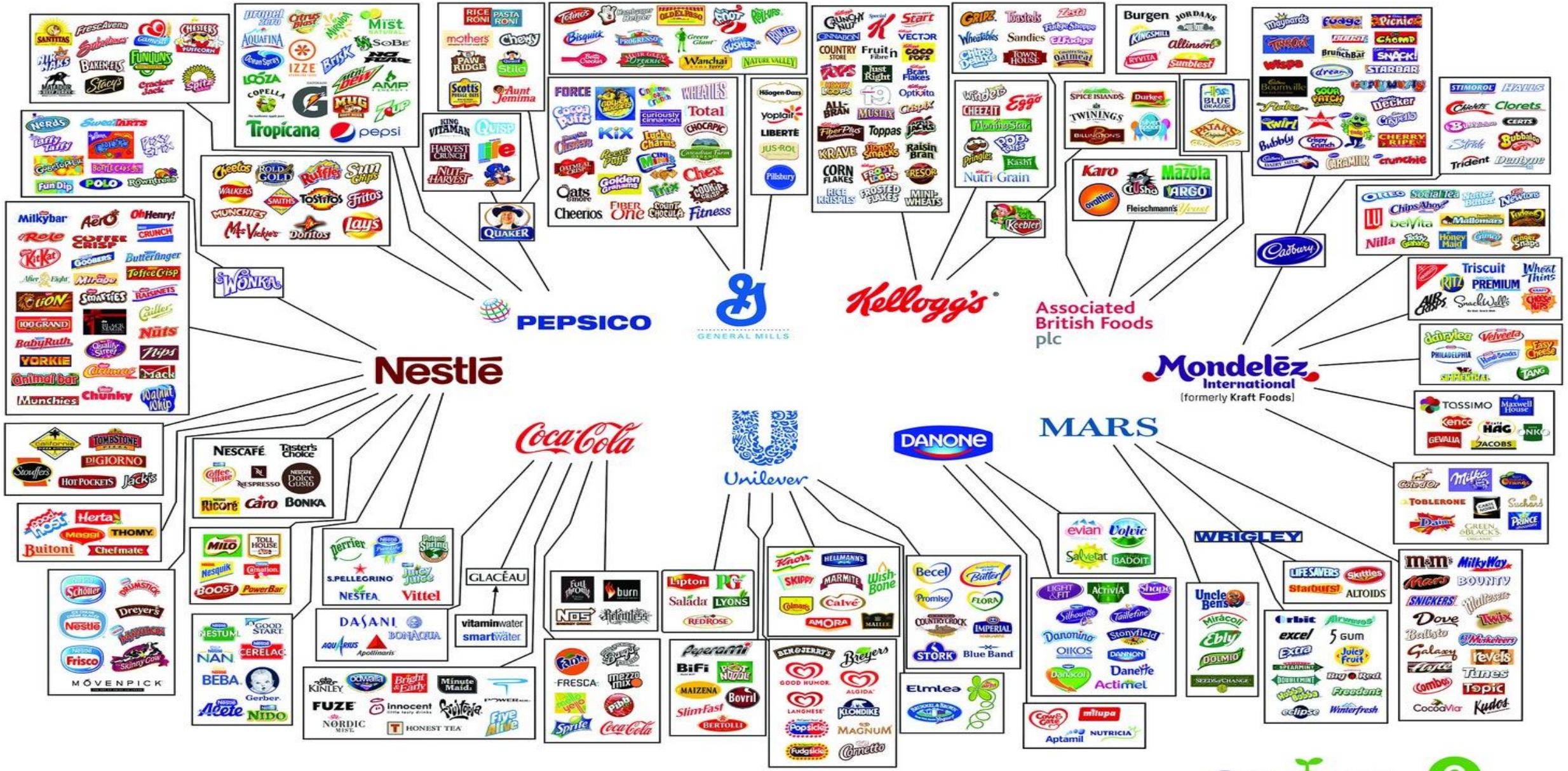
Fonte: Monteiro et al *Public Health Nutrition* 2017

Alimentos ultraprocessados sao formulações de substâncias derivadas de alimentos e aditivos criadas para substituir todos os outros alimentos e todo tipo de preparação culinária









Vendas no mundo: US $ 1,1 bi / día (2013)

Top 10 manufacturers of packaged foods

Brazil		China		India		Mexico		Russia		South Africa		USA	
Company	**%**	**Company**	**%**	**Company**	**%**	**Company**	**%**	**Company**	**%**	**Company**	**%**	**Company**	**%**
Nestlé SA	8.4	China Mengniu Dairy Co Ltd	4.9	Gujarat Co-operative Milk Marketing Federation Ltd	7.9	Grupo Bimbo SAB de CV	9.1	Wimm-Bill-Dann Produkty Pitania OAO	4.7	Tiger Brands Ltd	19.5	Kraft Foods Inc	6.8
Brf Brasil Foods SA	5.0	Inner Mongolia Yili Industrial Group Co Ltd	4.7	Britannia Industries Ltd	5.0	PepsiCo Inc	5.3	Danone, Groupe	4.3	Pioneer Food Group Ltd	6.3	PepsiCo Inc	5.2
Kraft Foods Inc	3.9	Kuok Oils & Grains Pte Ltd (KOG)	3.5	Nestlé SA	4.9	Nestlé SA	3.8	Nestlé SA	2.8	Nestlé SA	4.7	Nestlé SA	4.2
Unilever Group	3.3	Ting Hsin International Group	3.1	National Dairy Development Board	4.8	Industrial Lala SA de CV, Grupo	3.6	Obiedinenye Konditery UK OOO	2.3	Clover Ltd	4.7	Mars Inc	3.2
Groupe Danone	2.8	Shineway Group	2.9	Parle Products Pvt Ltd	4.8	Kraft Foods Inc	2.8	Mars Inc	2.1	Parmalat Group	4.6	Kellogg Co	2.7
PepsiCo Inc	2.5	Hangzhou Wahaha Group	2.2	Kraft Foods Inc	3.1	Ganaderos Productores de Leche Pura SA	2.1	Kraft Foods Inc	1.7	Unilever Group	4.4	General Mills Inc	2.7
Bunge Ltd	2.0	Want Want Group	2.0	Karnataka Cooperative Milk Producers Federation Ltd	2.8	Sigma Alimentos SA de CV	1.8	Unilever Group	1.2	Dairybelle (Pty) Ltd	4.0	Hershey Co, The	2.3
M Dias Branco SA Indústria e Comércio de Alimentos	1.7	Bright Food (Group) Co Ltd	1.6	GlaxoSmithKline Plc	2.7	Kellogg Co	1.7	Valio Oy	1.1	Kraft Foods Inc	3.4	ConAgra Foods Inc	2.1
Private Label	1.6	China National Cereals, Oils & Foodstuffs Imp & Exp Corp (COFCO)	1.4	ITC Group	2.4	Unilever Group	1.7	Cherkizovsky APK	0.9	AVI Ltd	3.3	Unilever Group	2.0
Itambé SA	1.5	Mars Inc	1.3	PepsiCo Inc	2.3	Conservas La Costeña SA	1.1	Yug Rusi APG	0.9	PepsiCo Inc	2.4	Campbell Soup Co	1.6

Stuckler D, McKee M, Ebrahim S, Basu S (2012) Manufacturing Epidemics: The Role of Global Producers in Increased Consumption of Unhealthy Commodities Including Processed Foods, Alcohol, and Tobacco. PLOS Medicine 9(6): e1001235.

Mudanças no sistema alimentar e a pandemia de obesidade

- A epidemia de obesidade: alguns números
- Mudanças no processamento de alimentos e suas consequências para os padrões de alimentação
- Implicações políticas

NUPENS USP

Public Health Nutrition: 14(1), 5–13 doi:10.1017/S1368980010003241

Increasing consumption of ultra-processed foods and likely impact on human health: evidence from Brazil

Carlos Augusto Monteiro[1,2,*], Renata Bertazzi Levy[1,3], Rafael Moreira Claro[1], Inês Rugani Ribeiro de Castro[1,4] and Geoffrey Cannon[5]

[1]Núcleo de Pesquisas Epidemiológicas em Nutrição e Saúde, Universidade de São Paulo, São Paulo, Brasil: [2]Departamento de Nutrição, Faculdade de Saúde Pública, Universidade de São Paulo, Av. Dr. Arnaldo 715, 01246-904 São Paulo, SP, Brasil: [3]Departamento de Medicina Preventiva, Faculdade de Medicina, Universidade de São Paulo. São Paulo, Brasil: [4]Instituto de Nutrição, Universidade Estadual do Rio de Janeiro, Rio de Janeiro, Brasil: [5]World Public Health Nutrition Association, Rio de Janeiro, Brazil

Submitted 2 June 2010: Accepted 25 October 2010

Abstract

Objective: To assess time trends in the contribution of processed foods to food purchases made by Brazilian households and to explore the potential impact on the overall quality of the diet.

Design: Application of a new classification of foodstuffs based on extent and purpose of food processing to data collected by comparable probabilistic household budget

Rev Saúde Pública 2013;47(4):1-10 Original Articles DOI: 10.1590/S0034-8910.2013047004968

Ana Paula Bortoletto Martins[I]

Renata Bertazzi Levy[I,II]

Rafael Moreira Claro[I,III]

Jean Claude Moubarac[I]

Carlos Augusto Monteiro[I]

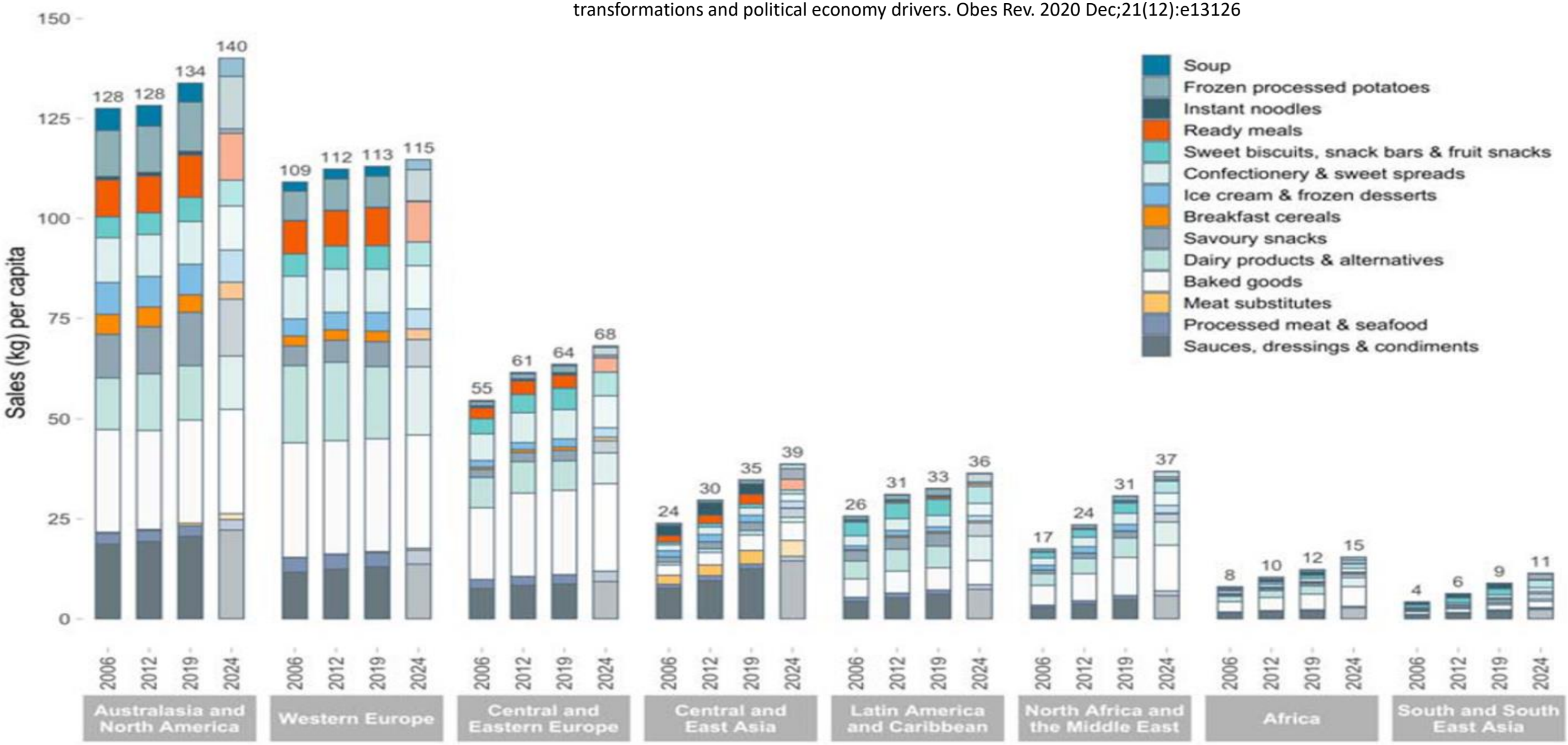
Increased contribution of ultra-processed food products in the Brazilian diet (1987-2009)

ABSTRACT

OBJECTIVE: To establish temporal trends in household food and drink consumption in Brazil, taking into account the extent and purpose of its industrial processing.

METHODS: Data was obtained from Household Budget Surveys conducted in Brazil in 1987-1988, 1995-1996, 2002-2003 and 2008-2009. In all surveys, probabilistic samples of households in the metropolitan areas were studied and, for the last two surveys, the scope was national. The units of analysis were food purchases records of clusters of households. The purchased food items were divided according to the extent and purpose of their industrial processing into: 'in natura' or minimally processed foods, processed culinary ingredients and ready-to-consume, processed and ultra-processed food and drink products.

Baker et al. Ultra-processed foods and the nutrition transition: Global, regional and national trends, food systems transformations and political economy drivers. Obes Rev. 2020 Dec;21(12):e13126



E 1 Ultra-processed foods sales (kg) per capita by region, 2006–2019 with projections to 2024

Received: 6 November 2018 | Revised: 25 February 2019 | Accepted: 14 March 2019

DOI: 10.1111/obr.12860

SUPPLEMENT ARTICLE

WILEY obesityreviews

Global trends in ultraprocessed food and drink product sales and their association with adult body mass index trajectories

Stefanie Vandevijvere[1,2] | Lindsay M. Jaacks[3] | Carlos A. Monteiro[4] | Jean-Claude Moubarac[5] | Martin Girling-Butcher[1] | Arier C. Lee[1] | An Pan[6] | James Bentham[7] | Boyd Swinburn[1]

[1] School of Population Health, Faculty of Medical and Health Sciences, The University of Auckland, Auckland, New Zealand

[2] Sciensano (Scientific Institute of Public Health, Department of Epidemiology and Public Health, Brussels, Belgium)

[3] Harvard T.H. Chan School of Public Health, Department of Global Health and Population,

Summary

This study evaluated global trends in ultraprocessed food and drink (UPFD) volume sales/capita and associations with adult body mass index (BMI) trajectories. Total food/drink volume sales/capita from *Euromonitor* for 80 countries (2002-2016) were matched to mean adult BMI from the NCD Risk Factor Collaboration (2002-2014).

Mudanças no sistema alimentar e a pandemia de obesidade

- A epidemia de obesidade: alguns números
- Mudanças no processamento de alimentos e suas consequências sobre o risco de doenças
- Implicações políticas

NUPENS USP

OPEN ACCESS Freely available online

PLOS | ONE

Ultra-Processed Food Products and Obesity in Brazilian Households (2008–2009)

Daniela Silva Canella[1,2]*, Renata Bertazzi Levy[2,3], Ana Paula Bortoletto Martins[1,2], Rafael Moreira Claro[2,4], Jean-Claude Moubarac[2], Larissa Galastri Baraldi[1,2], Geoffrey Cannon[2], Carlos Augusto Monteiro[1,2]

1 Departamento de Nutrição, Faculdade de Saúde Pública, Universidade de São Paulo, São Paulo, Brazil, **2** Núcleo de Pesquisas Epidemiológicas em Nutrição e Saúde, Faculdade de Saúde Pública, Universidade de São Paulo, São Paulo, Brazil, **3** Departamento de Medicina Preventiva, Faculdade de Medicina, Universidade de São Paulo, São Paulo, Brazil, **4** Departamento de Nutrição, Escola de Enfermagem, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil

Abstract

Background: Production and consumption of industrially processed food and drink products have risen in parallel with the global increase in overweight and obesity and related chronic non-communicable diseases. The objective of this study was to analyze the relationship between household availability of processed and ultra-processed products and the prevalence of excess weight (overweight plus obesity) and obesity in Brazil.

Methods: The study was based on data from the 2008–2009 Household Budget Survey involving a probabilistic sample of 55,970 Brazilian households. The units of study were household aggregates (strata), geographically and socioeconomically homogeneous. Multiple linear regression models were used to assess the relationship between the availability of processed and ultra-processed products and the average of Body Mass Index (BMI) and the percentage of individuals with excess weight and obesity in the strata, controlling for potential confounders (socio-demographic characteristics, percentage of expenditure on eating out of home, and dietary energy other than that provided by processed and ultra-processed products). Predictive values for prevalence of excess weight and obesity were estimated according to quartiles of the household availability of dietary energy from processed and ultra-processed products.

Results: The mean contribution of processed and ultra-processed products to total dietary energy availability ranged from 15.4% (lower quartile) to 39.4% (upper quartile). Adjusted linear regression coefficients indicated that household availability of ultra-processed products was positively associated with both the average BMI and the prevalence of excess weight and

Preventive Medicine 81 (2015) 9–15

Contents lists available at ScienceDirect

Preventive Medicine

journal homepage: www.elsevier.com/locate/ypmed

Consumption of ultra-processed foods and obesity in Brazilian adolescents and adults

Maria Laura da Costa Louzada [a,b,1,*], Larissa Galastri Baraldi [a,b], Euridice Martinez Steele [a,b], Ana Paula Bortoletto Martins [b], Daniela Silva Canella [b], Jean-Claude Moubarac [b,2], Renata Bertazzi Levy [b,c], Geoffrey Cannon [b], Ashkan Afshin [d], Fumiaki Imamura [e,3], Dariush Mozaffarian [d,4], Carlos Augusto Monteiro [a,b]

[a] *Departamento de Nutrição, Faculdade de Saúde Pública, Universidade de São Paulo, Av. Dr. Arnaldo, 715, 2° floor, São Paulo 01246-907, Brazil*
[b] *Núcleo de Pesquisas Epidemiológicas em Nutrição e Saúde, Universidade de São Paulo, Av. Dr. Arnaldo, 715, S27, São Paulo 01246-907, Brazil*
[c] *Departamento de Medicina Preventiva, Faculdade de Medicina, Universidade de São Paulo, Av. Dr. Arnaldo, 455, S27, São Paulo 01246-903, Brazil*
[d] *Friedman School of Nutrition Science and Policy, Tufts University, 150 Harrison Ave, Boston, MA 02111, United States*
[e] *Medical Research Council Epidemiology Unit, Institute of Metabolic Science, University of Cambridge School of Clinical Medicine, Cambridge Biomedical Campus, Hills Road, Cambridge CB2 0SP, UK*

ARTICLE INFO

Available online 29 July 2015

Keywords:
Food

ABSTRACT

Objectives. The aim of this study was to evaluate the relationship between the consumption of ultra-processed foods and obesity indicators among Brazilian adults and adolescents.

Methods. We used cross-sectional data on 30,243 individuals aged ≥10 years from the 2008–2009 Brazilian

11 cohort studies show association between UPF and obesity/adiposity/weight gain

Spanish adults

Ultraprocessed food consumption and risk of overweight and obesity: the University of Navarra Follow-Up (SUN) cohort study[1,2]

Raquel de Deus Mendonça,[3,4,6] Adriano Marçal Pimenta,[3,5] Alfredo Gea,[3,7,8] Carmen de la Fuente-Arrillaga,[3,7,8] Miguel Angel Martínez-Gonzalez,[3,7,8] Aline Cristine Souza Lopes,[4] and Maira Bes-Rastrollo[3,7,8]

[3]University of Navarra, Department of Preventive Medicine and Public Health, Pamplona, Spain; Departments of [4]Nutrition and [5]Maternal-Child Nursing and Public Health, School of Nursing, Federal University of Minas Gerais, Belo Horizonte, Brazil; [6]CAPES Coordination for the Improvement of Higher Education Personnel Foundation, Ministry of Education of Brazil, Brasília, Brazil; [7]Navarra Health Research Institute, Pamplona, Spain; [8]Biomedical Research Center Network in Physiopathology of Obesity and Nutrition, Carlos III Health Institute, Madrid, Spain; and [9]Department of Nutrition, Harvard T.H. Chan School of Public Health, Boston, MA

ABSTRACT

Background: Ultraprocessed food consumption has increased in the past decade. Evidence suggests a positive association between ultraprocessed food consumption and the incidence of overweight and obesity. However, few prospective studies to our knowledge have investigated this potential relation in adults.

Objective: We evaluated the association between ultraprocessed food consumption and the risk of overweight and obesity in a prospective Spanish cohort, the SUN (University of Navarra Follow-Up) study.

Design: We included 8451 middle-aged Spanish university graduates who were initially not overweight or obese and followed up for

were obese, and in the Eastern Mediterranean ~25% of women and 15% of men were obese (1).

Changes in the food system continuously promote obesity. There is now a greater availability of ready-to-eat or -heat foods known as ultraprocessed foods, which are products that have little, if any, whole foods and are manufactured with substances extracted from foods or synthesized in laboratories (dyes, flavorings, and other additives) (2). They have high amounts of fat, sugar, and salt and a high energy density and low fiber content; they are extremely palatable foods that are aggressively adver-

French adults

PLOS MEDICINE

RESEARCH ARTICLE

Ultra-processed food intake in association with BMI change and risk of overweight and obesity: A prospective analysis of the French NutriNet-Santé cohort

Marie Beslay[1‡], Bernard Srour[1‡*], Caroline Méjean[2], Benjamin Allès[1], Thibault Fiolet[1], Charlotte Debras[1], Eloi Chazelas[1], Mélanie Deschasaux[1], Méyomo Gaelle Wendeu-Foyet[1], Serge Hercberg[1,3], Pilar Galan[1], Carlos A. Monteiro[4], Valérie Deschamps[5], Giovanna Calixto Andrade[1,6], Emmanuelle Kesse-Guyot[1], Chantal Julia[1,3], Mathilde Touvier[1]

1 Sorbonne Paris Nord University, Inserm, INRAE, Cnam, Nutritional Epidemiology Research Team (EREN), Epidemiology and Statistics Research Center–University of Paris (CRESS), Bobigny, France, **2** MOISA, Univ Montpellier, CIRAD, CIHEAM-IAMM, INRAE, Montpellier SupAgro, Montpellier, France, **3** Public Health Department, Avicenne Hospital, AP-HP, Bobigny, France, **4** Department of Nutrition, School of Public Health, University of São Paulo, São Paulo, Brazil, **5** Santé Publique France (The French Public Health Agency), Nutritional Epidemiology Surveillance Team (ESEN), **6** Department of Preventive Medicine, Medical School, University of São Paulo, São Paulo, Brazil

UK adults

European Journal of Nutrition
https://doi.org/10.1007/s00394-020-02367-1

ORIGINAL CONTRIBUTION

Ultra-processed food consumption and risk of obesity: a prospective cohort study of UK Biobank

Fernanda Rauber[1,2,3] · Kiara Chang[3] · Eszter P. Vamos[3] · Maria Laura da Costa Louzada[1,2] · Carlos Augusto Monteiro[1,2] · Christopher Millett[1,3] · Renata Bertazzi Levy[1,4]

http://orcid.org/0000-0001-9693-7954

Received: 28 February 2020 / Accepted: 3 August 2020

Abstract

Objective The objective of this study was to examine the associations between ultra-processed food consumption and risk of obesity among UK adults.

Methods Participants aged 40–69 years at recruitment in the UK Biobank (2006–2019) with dietary intakes collected using 24-h recall and repeated measures of adiposity—body mass index (BMI), waist circumference (WC) and percentage of body fat (% BF)—were included ($N = 22,659$; median follow-up: 5 years). Ultra-processed foods were identified using the NOVA classification and their consumption was expressed as a percentage of total energy intake. Multivariable Cox proportional

Brazilian adults

Public Health Nutrition: 23(6), 1076–1086 doi:10.1017/S1368980019002854

Ultra-processed foods, incident overweight and obesity, and longitudinal changes in weight and waist circumference: the Brazilian Longitudinal Study of Adult Health (ELSA-Brasil)

Scheine Leite Canhada[1,2], Vivian Cristine Luft[1,3,4,*], Luana Giatti[5], Bruce Bartholow Duncan[1,2], Dora Chor[6], Maria de Jesus M da Fonseca[6], Sheila Maria Alvim Matos[7], Maria del Carmen Bisi Molina[8], Sandhi Maria Barreto[5], Renata Bertazzi Levy[9] and Maria Inês Schmidt[1,2]

[1]Postgraduate Program in Epidemiology, Universidade Federal do Rio Grande do Sul, Faculdade de Medicina – Campus Saúde, R. Ramiro Barcelos 2400, Porto Alegre, RS 90035-003, Brazil: [2]National Health Technology Assessment Institute, CNPq, Porto Alegre, RS, Brazil: [3]Postgraduate Program in Food, Nutrition and Health, Universidade Federal do Rio Grande do Sul, Porto Alegre, RS, Brazil: [4]Food and Nutrition Research Centre (CESAN) – Hospital de Clínicas de Porto Alegre, Universidade Federal do Rio Grande do Sul, Porto Alegre, RS, Brazil: [5]Postgraduate Program in Public Health and School of Medicine & Clinical Hospital, Universidade Federal de Minas Gerais, Belo Horizonte, MG, Brazil: [6]National School of Public Health, Fundação Oswaldo Cruz, Rio de Janeiro, RJ, Brazil: [7]Postgraduate Program in Collective Health, Instituto de Saúde Coletiva, Universidade Federal da Bahia, Salvador, BA, Brazil: [8]Postgraduate Program in Nutrition and Health, Universidade Federal do Espírito Santo, Vitória, ES, Brazil: [9]Department of Preventive Medicine, School of Medicine, Universidade de São Paulo, São Paulo, SP, Brazil

Submitted 20 December 2018: Final revision received 13 May 2019: Accepted 24 June 2019: First published online 17 October 2019

Chinese adults

nutrients MDPI

Article

Ultra-Processed Food Consumption Associated with Overweight/Obesity among Chinese Adults—Results from China Health and Nutrition Survey 1997–2011

Ming Li [1] and Zumin Shi [2,*]

[1] Centre for Population Health Research, Division of Health Sciences, University of South Australia, City East Campus, Adelaide, SA 5001, Australia; Ming.Li@unisa.edu.au
[2] Human Nutrition Department, College of Health Sciences, QU Health, Qatar University, Doha 2713, Qatar
* Correspondence: zumin@qu.edu.qa; Tel.: +97-4-4403-6037

Abstract: The association between the consumption of ultra-processed food (UPF) with overweight/obesity in Chinese adults has not been investigated. This study included a cohort of 12,451 adults aged >20 years who participated at least twice in the China Nutrition and Health Survey (CNHS) during 1997–2011. Food intake at each survey was assessed using a 3-day 24-h dietary recall. Body weight (kg), height (m), and waist circumference (WC) were measured during the survey. UPF was defined by the NOVA classification. Mixed effect logistic regression analyses were used. The mean UPF consumption of the study population (baseline mean age 43.7 years)

European adults

Clinical Nutrition 40 (2021) 5079–5088

Contents lists available at ScienceDirect

Clinical Nutrition

journal homepage: http://www.elsevier.com/locate/clnu

Original article

Consumption of ultra-processed foods associated with weight gain and obesity in adults: A multi-national cohort study

Reynalda Cordova [a, b], Nathalie Kliemann [a], Inge Huybrechts [a], Fernanda Rauber [c, d], Eszter P. Vamos [e], Renata Bertazzi Levy [c, d], Karl-Heinz Wagner [b], Vivian Viallon [a], Corinne Casagrande [a], Geneviève Nicolas [a], Christina C. Dahm [f], Jie Zhang [f], Jytte Halkjær [g], Anne Tjønneland [g, h], Marie-Christine Boutron-Ruault [i, j], Francesca Romana Mancini [i, j], Nasser Laouali [i, j], Verena Katzke [k], Bernard Srour [k], Franziska Jannasch [l, m, n], Matthias B. Schulze [l, o], Giovanna Masala [p], Sara Grioni [q], Salvatore Panico [r], Yvonne T. van der Schouw [s], Jeroen W.G. Derksen [s], Charlotta Rylander [t], Guri Skeie [t], Paula Jakszyn [u, v], Miguel Rodriguez-Barranco [w, x, y], José María Huerta [z, aa], Aurelio Barricarte [y, ab, ac], Lousie Brunkwall [ad], Stina Ramne [ad], Stina Bodén [ae],

Brazilian children

IEA International Epidemiological Association

International Journal of Epidemiology, 2021, 256–265
doi: 10.1093/ije/dyaa141
Advance Access Publication Date: 5 September 2020
Original article

Effects of Diet

Role of ultra-processed food in fat mass index between 6 and 11 years of age: a cohort study

Caroline dos Santos Costa,[1,2]* Maria Cecília Formoso Assunção,[3] Christian Loret de Mola,[4] Juliane de Souza Cardoso,[5] Alicia Matijasevich [6], Aluísio JD Barros [3] and Iná S Santos[3]

[1]Department of Nutrition, School of Public Health, University of São Paulo, São Paulo, Brazil, [2]Center for Epidemiological Research in Nutrition and Health, Department of Nutrition, School of Public Health, University of São Paulo, São Paulo, Brazil, [3]Post-Graduate Program in Epidemiology, Federal University of Pelotas, Pelotas, Rio Grande do Sul, Brazil, [4]Post-Graduate Program in Public Health, Federal University of Rio Grande, Rio Grande, Rio Grande do Sul, Brazil, [5]Post-Graduate Program in Biochemistry and Bioprospecting, Federal University of Pelotas, Pelotas, Rio Grande do Sul, Brazil and [6]Department of Preventive Medicine, Faculty of Medicine FMUSP, University of São Paulo, São Paulo, Brazil

UK children and young adults

Research

JAMA Pediatrics | Original Investigation

Association Between Childhood Consumption of Ultraprocessed Food and Adiposity Trajectories in the Avon Longitudinal Study of Parents and Children Birth Cohort

Kiara Chang, PhD; Neha Khandpur, PhD; Daniela Neri, PhD; Mathilde Touvier, PhD; Inge Huybrechts, PhD; Christopher Millett, PhD; Eszter P. Vamos, PhD

IMPORTANCE Reports of associations between higher consumption of ultraprocessed foods (UPF) and elevated risks of obesity, noncommunicable diseases, and mortality in adults are increasing. However, associations of UPF consumption with long-term adiposity trajectories have never been investigated in children.

OBJECTIVE To assess longitudinal associations between UPF consumption and adiposity trajectories from childhood to early adulthood.

DESIGN, SETTING, AND PARTICIPANTS This prospective birth cohort study included children who participated in the Avon Longitudinal Study of Parents and Children (ALSPAC) in Avon County, southwest England. Children were followed up from 7 to 24 years of age during the study period from September 1, 1998, to October 31, 2017. Data were analyzed from March 1, 2020, to January 31, 2021.

Supplemental content

US pregnant women and neonates

PeerJ

Relationships between consumption of ultra-processed foods, gestational weight gain and neonatal outcomes in a sample of US pregnant women

Karthik W. Rohatgi[1], Rachel A. Tinius[2], W. Todd Cade[1], Euridice Martínez Steele[3], Alison G. Cahill[4] and Diana C. Parra[1]

[1] Program in Physical Therapy, Washington University School of Medicine, St. Louis, MO, United States of America
[2] School of Kinesiology, Recreation, and Sport, Western Kentucky University, Bowling Green, KY, United States of America
[3] Department of Nutrition, University of São Paulo, São Paulo, Brazil
[4] Department of Obstetrics and Gynecology, Washington University School of Medicine, St. Louis, MO, United States of America

ABSTRACT

Background. An increasingly large share of diet comes from ultra-processed foods (UPFs), which are assemblages of food substances designed to create durable, convenient and palatable ready-to-eat products. There is increasing evidence that high UPF consumption is indicative of poor diet and is associated with obesity and metabolic disorders. This study sought to examine the relationship between percent of energy intake from ultra-processed foods (PEI-UPF) during pregnancy and maternal

Spanish older adults

nutrients MDPI

Article

Ultra-Processed Food Consumption Is Associated with Abdominal Obesity: A Prospective Cohort Study in Older Adults

Helena Sandoval-Insausti [1,2], Manuel Jiménez-Onsurbe [1], Carolina Donat-Vargas [1,3,4], Jimena Rey-García [1,5], José R. Banegas [1], Fernando Rodríguez-Artalejo [1,3] and Pilar Guallar-Castillón [1,3,*]

1 Department of Preventive Medicine and Public Health, School of Medicine, Universidad Autónoma de Madrid-IdiPaz, CIBERESP (CIBER of Epidemiology and Public Health), 28029 Madrid, Spain; helenagabar@gmail.com (H.S.-I.); manuj.onsurbe@gmail.com (M.J.-O.); cdonatvargas@gmail.com (C.D.-V.); jimena.reygarcia@gmail.com (J.R.-G.); joseramon.banegas@uam.es (J.R.B.); fernando.artalejo@uam.es (F.R.-A.)
2 Department of Nutrition, Harvard T.H. Chan School of Public Health, Boston, MA 02115, USA
3 IMDEA-Food Institute, CEI UAM + CSIC, 28049 Madrid, Spain

Spanish adults

Contents lists available at ScienceDirect

Clinical Nutrition

journal homepage: http://www.elsevier.com/locate/clnu

ELSEVIER

Original article

Contribution of ultra-processed foods in visceral fat deposition and other adiposity indicators: Prospective analysis nested in the PREDIMED-Plus trial

Jadwiga Konieczna [a, b, *], Marga Morey [a, b], Itziar Abete [b, c], Maira Bes-Rastrollo [b, d], Miguel Ruiz-Canela [b, d], Jesus Vioque [e, f], Sandra Gonzalez-Palacios [e, f], Lidia Daimiel [g], Jordi Salas-Salvadó [b, h, i], Miguel Fiol [a, b], Vicente Martín [e, j], Ramón Estruch [b, k], Josep Vidal [l, m], Miguel A. Martínez-González [b, d, n], Silvia Canudas [b, h, i], Antoni J. Jover [o], Tania Fernández-Villa [l], Rosa Casas [b, k], Romina Olbeyra [m], Pilar Buil-Cosiales [b, d, p], Nancy Babio [b, h, i], Helmut Schröder [e, q], J. Alfredo Martínez [b, c, r], Dora Romaguera [a, b], on behalf PREDIMED-Plus investigators[1]

[a] Research Group on Nutritional Epidemiology & Cardiovascular Physiopathology (NUTRECOR), Health Research Institute of the Balearic Islands (IdISBa), University Hospital Son Espases (HUSE), Palma de Mallorca, Spain
[b] Consorcio CIBER, M.P. Fisiopatología de la Obesidad y Nutrición (CIBERObn), Instituto de Salud Carlos III (ISCIII), Madrid, Spain
[c] Department of Nutrition, Food Sciences, and Physiology, Center for Nutrition Research, Pamplona, University of Navarra, Navarra Institute for Health Research (IdiSNA), Pamplona, Spain
[d] Department of Preventive Medicine and Public Health, University of Navarra, Navarra Institute for Health Research (IdiSNA), Pamplona, Spain
[e] CIBER Epidemiología y Salud Pública (CIBERESP), Instituto de Salud Carlos III (ISCIII), Madrid, Spain
[f] Instituto de Investigación Sanitaria y Biomédica de Alicante, ISABIAL-UMH, Alicante, Spain

Four cohort studies show association between UPF and type 2 diabetes

French adults

Research

JAMA Internal Medicine | Original Investigation

Ultraprocessed Food Consumption and Risk of Type 2 Diabetes Among Participants of the NutriNet-Santé Prospective Cohort

Bernard Srour, PharmD, MPH, PhD; Léopold K. Fezeu, MD, PhD; Emmanuelle Kesse-Guyot, MSc, PhD; Benjamin Allès, PhD; Charlotte Debras, MSc; Nathalie Druesne-Pecollo, PhD; Eloi Chazelas, MSc; Mélanie Deschasaux, MSc, PhD; Serge Hercberg, MD, PhD; Pilar Galan, MD, PhD; Carlos A. Monteiro, MD, PhD; Chantal Julia, MD, MPH, PhD; Mathilde Touvier, PhD, MSc, MPH

IMPORTANCE Ultraprocessed foods (UPF) are widespread in Western diets. Their consumption has been associated in recent prospective studies with increased risks of all-cause mortality and chronic diseases such as cancer, cardiovascular diseases, hypertension, and dyslipidemia; however, data regarding diabetes are lacking.

OBJECTIVE To assess the associations between consumption of UPF and risk of type 2 diabetes (T2D).

Suppler

Brazilian adults

ARTICLE IN PRESS

Clinical Nutrition xxx (xxxx) xxx

Contents lists available at ScienceDirect

Clinical Nutrition

journal homepage: http://www.elsevier.com/locate/clnu

Original article

Ultra-processed food consumption and type 2 diabetes incidence: A prospective cohort study

Renata B. Levy [a, b, d, *], Fernanda Rauber [a, b, c], Kiara Chang [d], Maria Laura da C. Louzada [b, c], Carlos A. Monteiro [b, c], Christopher Millett [a, b, d], Eszter P. Vamos [d]

[a] Department of Preventive Medicine, School of Medicine, University of São Paulo, São Paulo, 01246-903, Brazil
[b] Center for Epidemiological Research in Nutrition and Health, University of São Paulo, São Paulo, 01246-904, Brazil
[c] Department of Nutrition, School of Public Health, University of São Paulo, São Paulo, 01246-904, Brazil
[d] Public Health Policy Evaluation Unit, School of Public Health, Imperial College London, London, W6 8RP, United Kingdom

Spanish adults

Clinical Nutrition 40 (2021) 2817–2824

Contents lists available at ScienceDirect

Clinical Nutrition

journal homepage: http://www.elsevier.com/locate/clnu

Original article

Ultra-processed foods and type-2 diabetes risk in the SUN project: A prospective cohort study

María Llavero-Valero [a, b], Javier Escalada-San Martín [b, c, d], Miguel A. Martínez-González [a, c, d, e], Francisco Javier Basterra-Gortari [a, d, f], Carmen de la Fuente-Arrillaga [a, c, d], Maira Bes-Rastrollo [a, c, d, *]

[a] University of Navarra, Department of Preventive Medicine and Public Health, Pamplona, Spain
[b] University of Navarra, Department of Endocrinology and Nutrition, Pamplona, Spain
[c] Biomedical Research Networking Center for Physiopathology of Obesity and Nutrition (CIBEROBN), Institute of Health Carlos III, Madrid, Spain
[d] IDISNA, Healthcare Research Institute of Navarra, Pamplona, Spain
[e] Department of Nutrition, Harvard T.H. Chan School of Public Health, Boston, USA
[f] Department of Endocrinology and Nutrition, Complejo Hospitalario de Navarra, Pamplona, Spain

ARTICLE INFO

SUMMARY

Dutch adults

Duan et al. BMC Medicine (2022) 20:7
https://doi.org/10.1186/s12916-021-02200-4

BMC Medicine

RESEARCH ARTICLE Open Access

Ultra-processed food and incident type 2 diabetes: studying the underlying consumption patterns to unravel the health effects of this heterogeneous food category in the prospective Lifelines cohort

Ming-Jie Duan[1*†], Petra C. Vinke[2†], Gerjan Navis[1], Eva Corpeleijn[2] and Louise H. Dekker[1,3]

Abstract

Background: The overall consumption of ultra-processed food (UPF) has previously been associated with type 2 diabetes. However, due to the substantial heterogeneity of this food category, in terms of their nutritional

Three meta-analyses of high-quality cohort studies show significant pooled risk ratios for overweight and obesity, type 2 diabetes, depression, cardiovascular and cerebrovascular disease and death, and all-cause mortality

British Journal of Nutrition, page 1 of 11 doi:10.1017/S0007114520002688

Consumption of ultra-processed foods and health status: a systematic review and meta-analysis

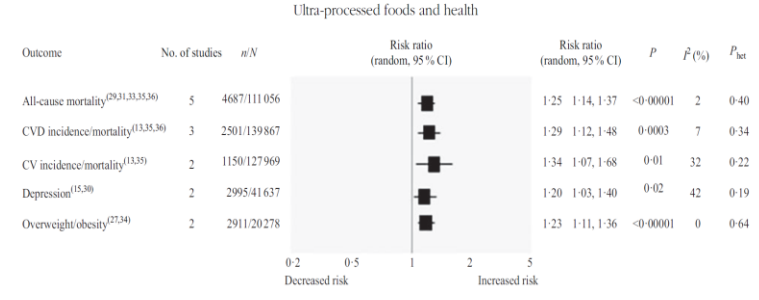
G. Pagliai[1,2], M. Dinu[1,2]*, M. P. Madarena[1], M. Bonaccio[3], L. Iacoviello[3,4] and F. Sofi[1,2]

[1]*Department of Experimental and Clinical Medicine, University of Florence, 50134 Florence, Italy*
[2]*Unit of Clinical Nutrition, Careggi University Hospital, 50134 Florence, Italy*
[3]*Department of Epidemiology and Prevention, IRCCS Neuromed, Pozzilli, 86077 Isernia, Italy*
[4]*Department of Medicine and Surgery, Research Center in Epidemiology and Preventive Medicine (EPIMED), University of Insubria, 21100 Varese, Italy*

(Submitted 27 March 2020 – Final revision received 30 June 2020 – Accepted 9 July 2020)

Abstract

Increasing evidence suggests that high consumption of ultra-processed foods (UPF) is associated with an increase in non-communicable diseases, overweight and obesity. The present study systematically reviewed all observational studies that investigated the association between UPF



g. 3. Forest plot of prospective cohort studies investigating the association between ultra-processed foods consumption and different health outcomes. *P* value is for st of no overall association between exposure and outcome; P_{het} is for test of no differences in association measure among studies; I^2 estimates from heterogenei ther than sampling error. CV, cerebrovascular.

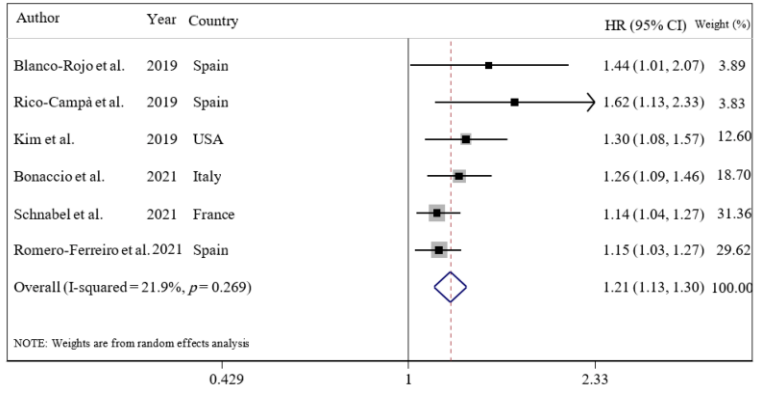
nutrients MDPI

Review

Ultra-Processed Food Consumption and Adult Mortality Risk: A Systematic Review and Dose–Response Meta-Analysis of 207,291 Participants

Wanich Suksatan [1], Sajjad Moradi [2,3,*], Fatemeh Naeini [4], Reza Bagheri [5], Hamed Mohammadi [4], Sepide Talebi [4], Sanaz Mehrabani [6], Mohammad ali Hojjati Kermani [7] and Katsuhiko Suzuki [8,*]

1 Faculty of Nursing, HRH Princess Chulabhorn College of Medical Science, Chulabhorn Royal Academy, Bangkok 10210, Thailand; wanich.suk@pccms.ac.th
2 Halal Research Center of IRI, FDA, Tehran 314715311, Iran
3 Nutritional Sciences Department, School of Nutritional Sciences and Food Technology, Kermanshah University of Medical Sciences, Kermanshah 6718773654, Iran
4 Department of Clinical Nutrition, School of Nutritional Science, Tehran University of Medical Science, Tehran 1449614535, Iran; Naeini_F34@yahoo.com (F.N.); mohamadihd@gmail.com (H.M.); talebisepide7@gmail.com (S.T.)
5 Department of Exercise Physiology, University of Isfahan, Isfahan 8174673441, Iran; will.fivb@yahoo.com
6 Department of Clinical Nutrition, School of Nutrition and Food Science, Isfahan University of Medical Sciences, Isfahan 8174673461, Iran; sanaz_mehr6500@yahoo.com
7 Clinical Tuberculosis and Epidemiology Research Center, National Research Institute of Tuberculosis and



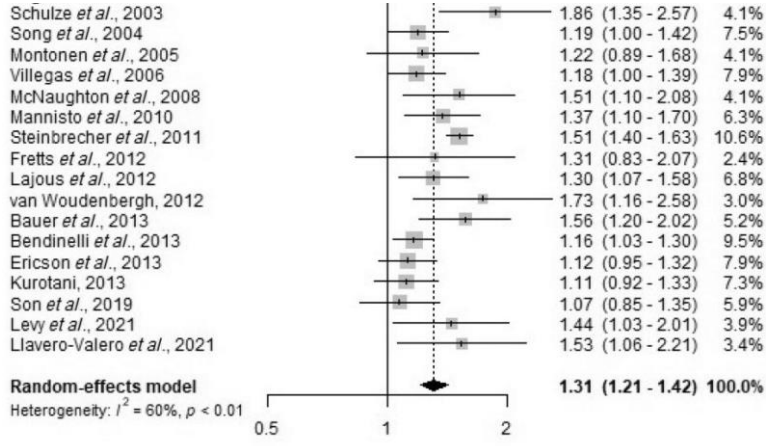
IEA International Epidemiological Association

International Journal of Epidemiology, 2021, 1–22
https://doi.org/10.1093/ije/dyab247
Original Article

Original Article

Ultra-processed food and risk of type 2 diabetes: a systematic review and meta-analysis of longitudinal studies

Felipe Mendes Delpino [1,2]* Lílian Munhoz Figueiredo,[3] Renata Moraes Bielemann,[4] Bruna Gonçalves Cordeiro da Silva,[5] Francine Silva dos Santos,[6,7] Gicele Costa Mintem,[4] Thaynã Ramos Flores,[5] Ricardo Alexandre Arcêncio,[2] Bruno Pereira Nunes[1,3]

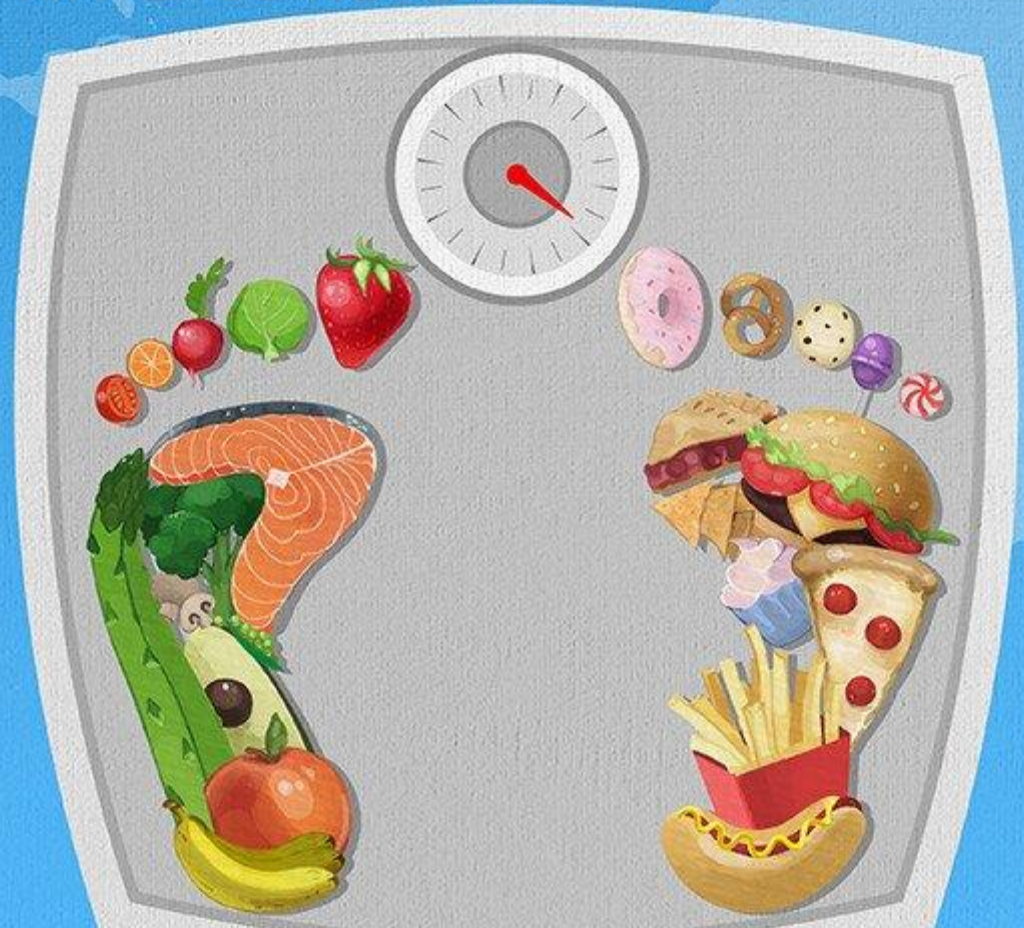


Volume 30
Number 1

July 2, 2019

www.cell.com

Cell Metabolism



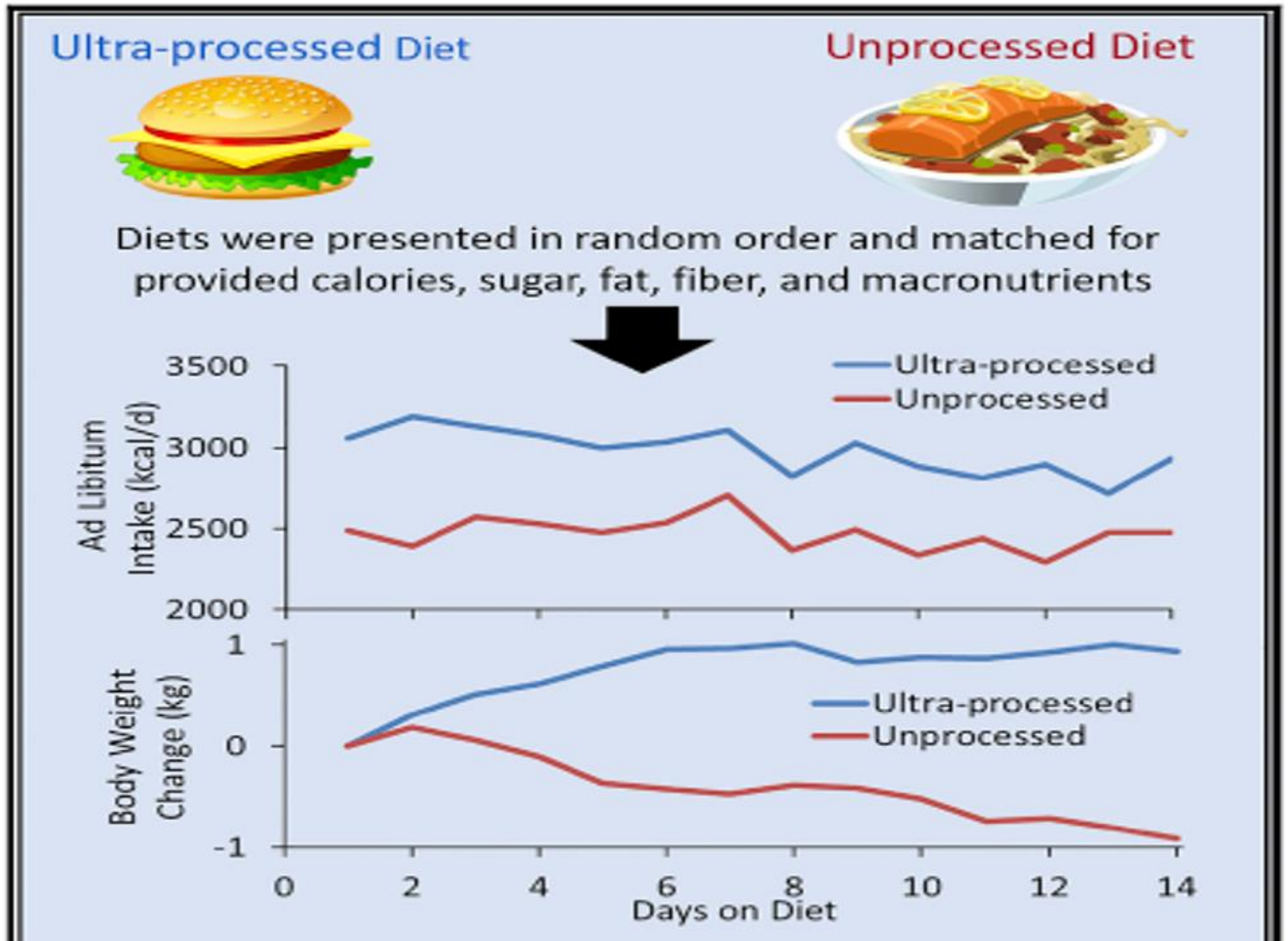
Ultra-Processed Foods and Obesity

Clinical and Translational Report

Cell Metabolism

Ultra-Processed Diets Cause Excess Calorie Intake and Weight Gain: An Inpatient Randomized Controlled Trial of *Ad Libitum* Food Intake

Graphical Abstract



Authors

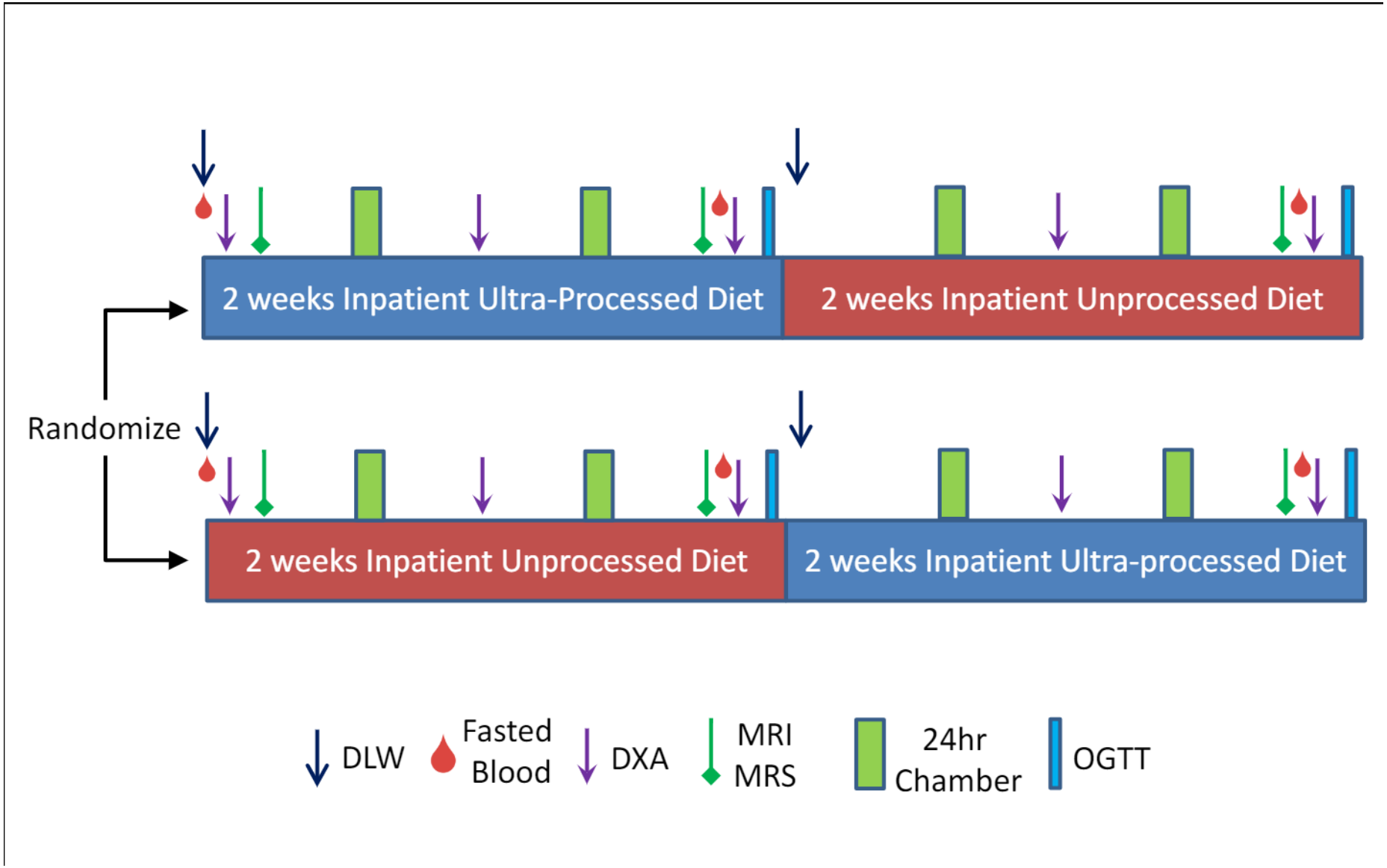
Kevin D. Hall, Alexis Ayuketah, Robert Brychta, ..., Peter J. Walter, Shanna Yang, Megan Zhou

Correspondence

kevinh@nih.gov

In Brief

Hall et al. investigated 20 inpatient adults who were exposed to ultra-processed versus unprocessed diets for 14 days each, in random order. The ultra-processed diet caused increased *ad libitum* energy intake and weight gain despite being matched to the unprocessed diet for presented calories, sugar, fat, sodium, fiber, and macronutrients.



Overview of the study design. Twenty adults were confined to metabolic wards where they were randomized to consumed either an ultra-processed or unprocessed diet for 2 consecutive weeks followed immediately by the alternate diet.

Ultra-processed Menu
Day 2
Breakfast
Croissant (Chef Pierre)
Margarine (Glenview Farms)
Turkey sausage (Ember Farms)
Blueberry yogurt (Yoplait) with NutriSource fiber

Non ultra-processed Menu
Day 2
Breakfast
Scrambled egg (made from fresh eggs)
Hash brown potatoes (potato, garlic, paprika (Simply Organic), ground turmeric (McCormick), cream (Stoneyfield) and onions)
Salt and Pepper (Monarch)

Ultra-processed Menu
Day 4
Lunch
Hot dog (Patunxent Farms) on bun (Hilltop Hearth) with ketchup (Heinz) and yellow mustard (Monarch)
Baked potato chips (Lay's)
Cranberry juice (Sun Cup) with NutriSource fiber
Blueberry yogurt (Yoplait) with NutriSource fiber

Non ultra-processed Menu
Day 4
Lunch
Baked cod filet (Harbor Banks) with fresh squeezed lemon juice
Baked russet potato with olive oil
Steamed broccoli with olive oil and garlic
Side salad (green leaf lettuce, tomatoes, cucumber and carrots)
Vinaigrette (balsamic vinegar (Nature's Promise) and olive oil)
Salt and Pepper (Monarch)

Ultra-processed Menu
Day 7
Dinner
Peanut butter (Monarch) and jelly (Monarch) sandwich on white bread (Ottenberg)
2% milk (Cloverland) with NutriSource fiber
Baked Cheetos (Frito-Lay)
Graham crackers (Nabisco)
Chocolate pudding (Snack Pack) with NutriSource fiber

Non ultra-processed Menu
Day 7
Dinner
Penne pasta (Barilla) primavera (olive oil, garlic, pinto beans (cooked from dried), spinach, basil, tomatoes)
Side salad (green leaf lettuce, baby carrots, broccoli)
Vinaigrette (red wine vinegar (Giant) and olive oil)
Salt and Pepper (Monarch)
Grapes

Ultra-processed Menu

Daily Snacks

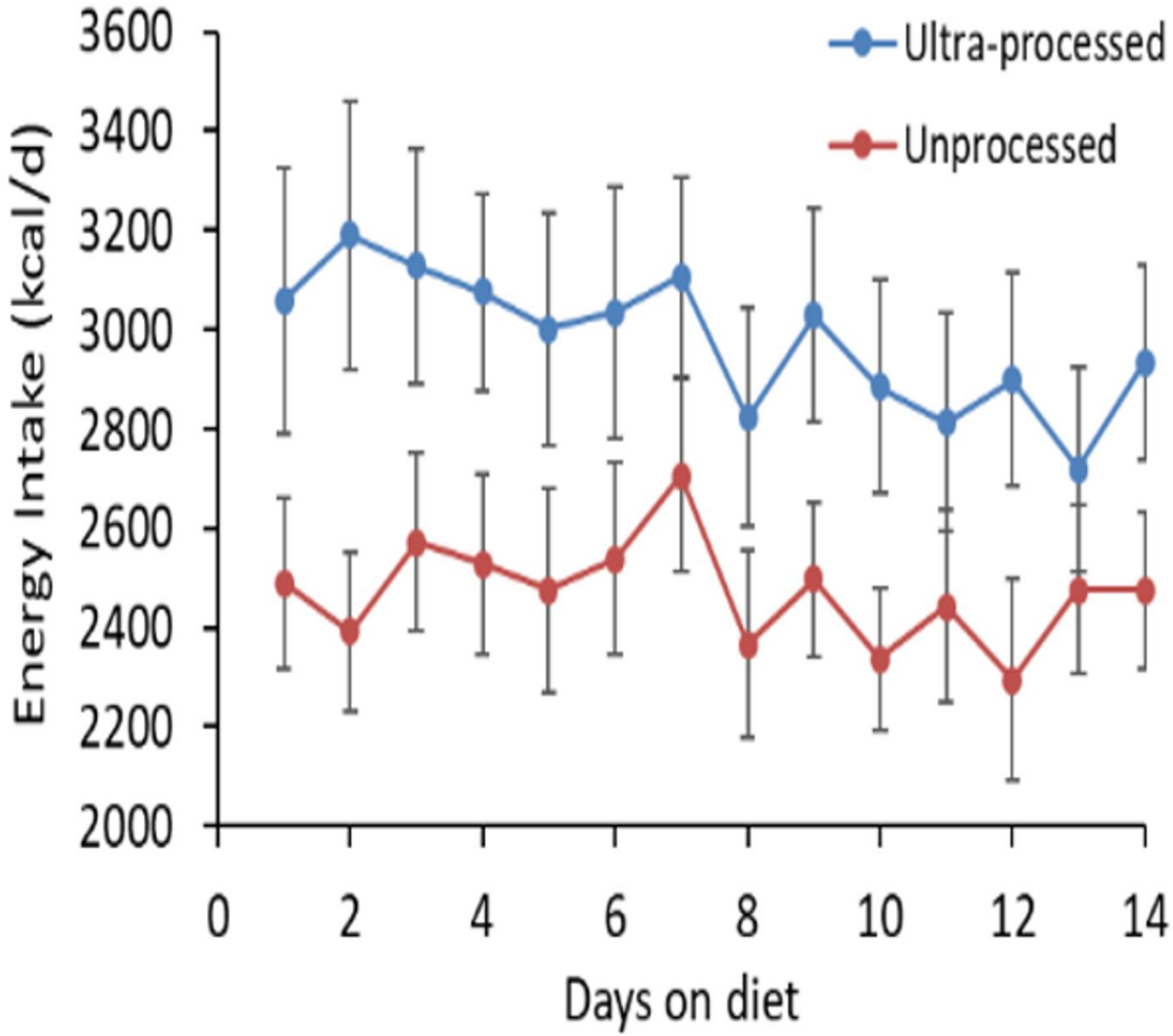
Baked Potato Chips (Lay's), Dry Roasted Peanuts (Planters), Cheese & Peanut Butter Sandwich Crackers (Keebler), Goldfish Crackers (Pepperidge Farm), Applesauce (Lucky Leaf).

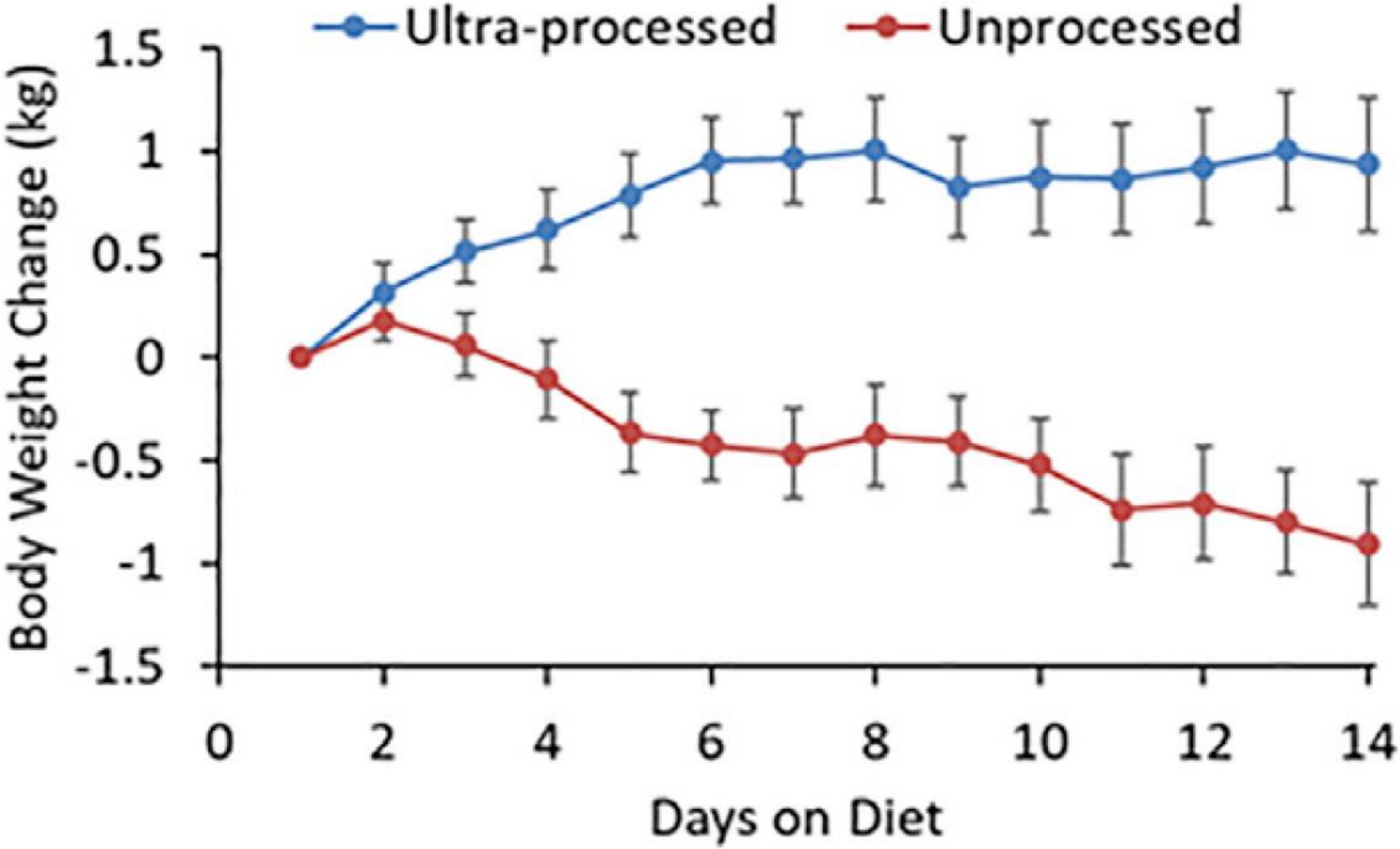
Non ultra-processed Menu

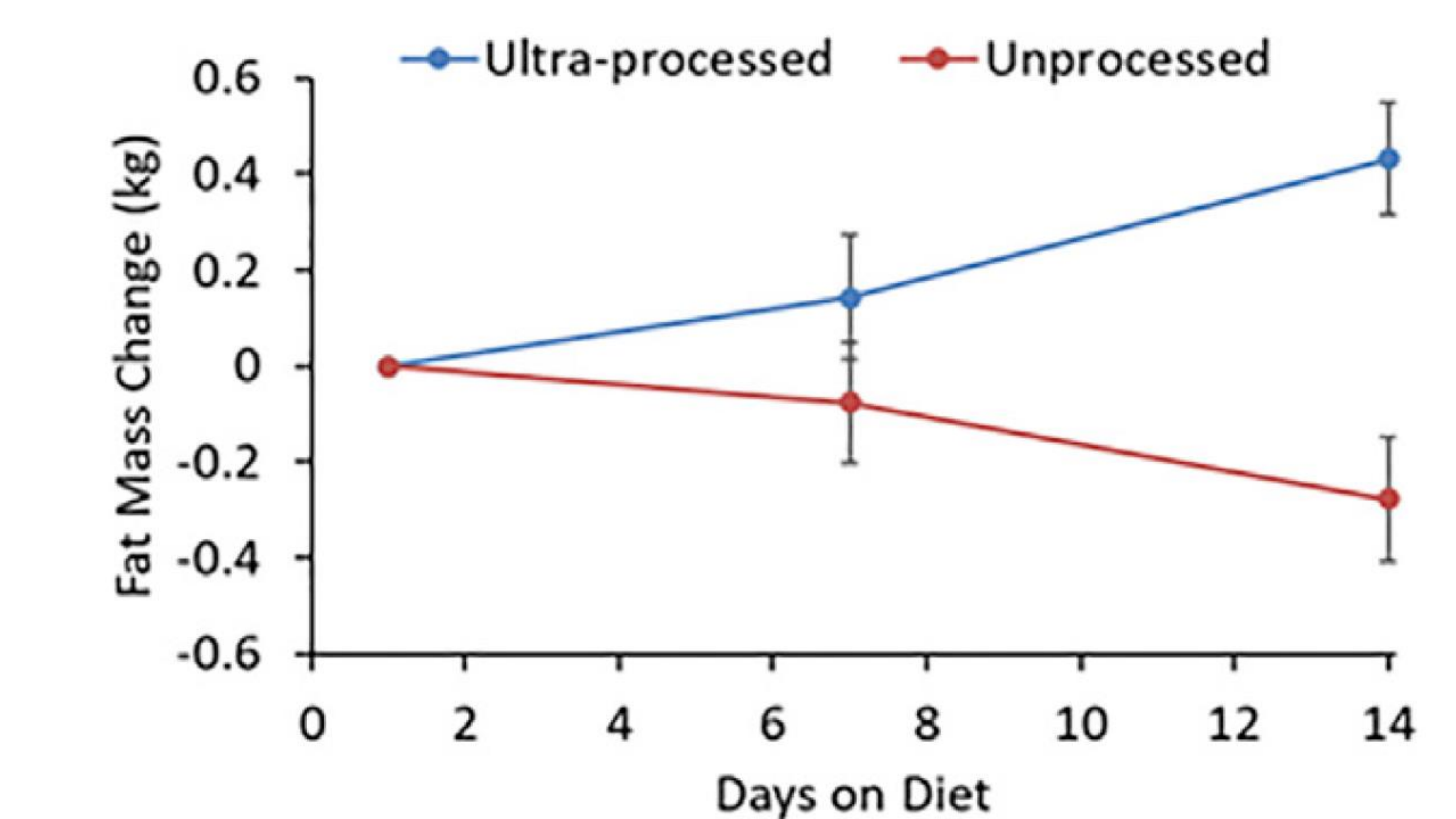
Daily Snacks

Fresh oranges and apples, raisins (Monarch), raw almonds (Giant), chopped walnuts (Diamond)

Energy intake was consistently higher during the ultra-processed diet




Ultra-processed
Unprocessed
Body Weight Change (kg)
1.5
1
0.5
0
-0.5
-1
-1.5
0
2
4
6
8
10
12
14
Days on Diet


Ultra-processed
Unprocessed
Fat Mass Change (kg)
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
0
2
4
6
8
10
12
14
Days on Diet

Consumo de ultraprocessados e risco de doenças: mecanismos

a) Deterioração do perfil nutricional da dieta

Rev Saúde Pública 2015;49:38

Maria Laura da Costa Louzada[I,II]
Ana Paula Bortoletto Martins[II]
Daniela Silva Canella[II,III]
Larissa Galastri Baraldi[I,II]
Renata Bertazzi Levy[II,IV]
Rafael Moreira Claro[II,V]
Jean-Claude Moubarac[II]
Geoffrey Cannon[II]
Carlos Augusto Monteiro[II,VI]

Original Articles DOI:10.1590/S0034-8910.2015049006132

Ultra-processed foods and the nutritional dietary profile in Brazil

Alimentos ultraprocessados e perfil nutricional da dieta no Brasil

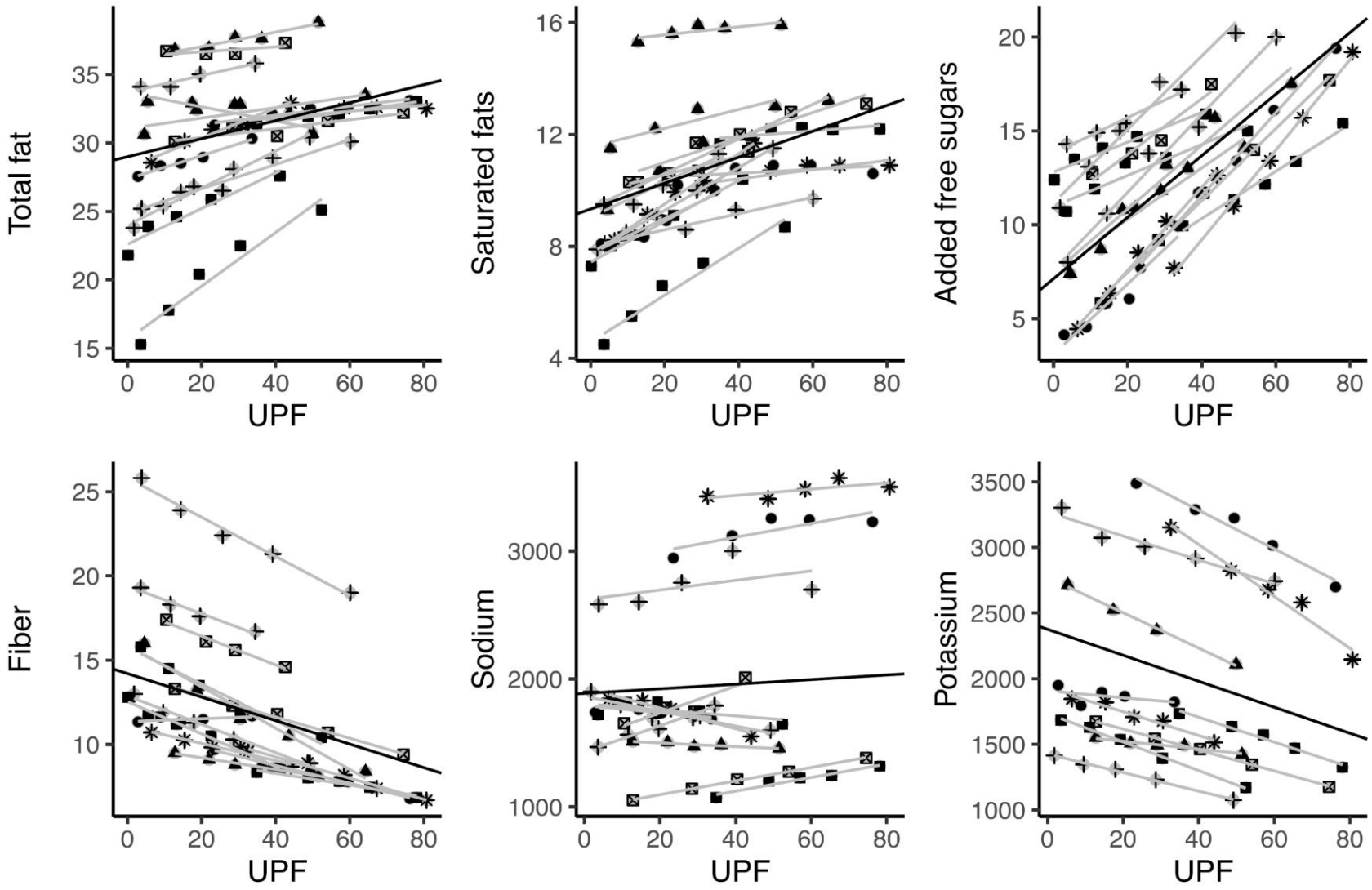
ABSTRACT

OBJECTIVE: To assess the impact of consuming ultra-processed foods on the nutritional dietary profile in Brazil.

METHODS: Cross-sectional study conducted with data from the module on individual food consumption from the 2008-2009 *Pesquisa de Orçamentos*

Higher dietary share of UPF strongly associated with increased energy density, increased content of free sugars and saturated and trans fats, and reduced content of protein, fiber and micronutrients

MORE UPF IN THE DIET MEANS DIETS WITH MORE TOTAL FAT, SATURATED FAT, AND FREE SUGARS AND LESS PROTEIN, FIBER, VIT A, C, E, B12, NIACIN, PHOSPHORUS, ZINC, AND MAGNESIUM



Martini, D et al 2021.; Ultra-Processed Foods and Nutritional Dietary Profile: A Meta-Analysis of Nationally Representative Samples. Nutrients 13, 3390

Consumo de ultraprocessados e risco de doenças:mecanismos

b) não relacionados ao perfil nutricional dos ultraprocessados

Higher dietary share of UPF is also linked to other health-relevant diet attributes:

- Reduced presence of bioactive non-nutrient compounds (Martinez-Steele & Monteiro 2018)
- Increased presence of packaging materials (Martinez-Steele et al. 2020)
- Increased presence of potentially harmful additives (Cox et al. 2020; He et al. 2021)
- Increased glycemic response (Fardet 2016)
- Increased palatability/quasi-addictive properties (Ifland 2018; Small & DiFeliceantonio 2019; Gearhardt 2021)
- Increased energy intake rate (Forde et al 2020)
- Reduced satiety (Fardet 2016, Dioneda et al 2020)
- Reduced thermic effect (Dioneda et al 2020)
- Reduced total water intake (Baraldi et al 2021)
- Increased pro-inflammatory microbiome (Zinocker & Lindseth 2018)

Please cite this article in press as: Tobias and Hall, Eliminate or reformulate ultra-processed foods? Biological mechanisms matter, Cell Metabolism (2021), https://doi.org/10.1016/j.cmet.2021.10.005

Cell Metabolism

CellPress

Forum

Eliminate or reformulate ultra-processed foods? Biological mechanisms matter

Deirdre K. Tobias[1,2] and Kevin D. Hall[3,*]

[1]Division of Preventive Medicine, Department of Medicine, Brigham and Women's Hospital and Harvard Medical School, Boston, MA, USA

[2]Nutrition Department, Harvard T.H. Chan School of Public Health, Boston, MA, USA

[3]Laboratory of Biological Modeling, National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD, USA

*Correspondence: kevinh@niddk.nih.gov

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 complex-

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

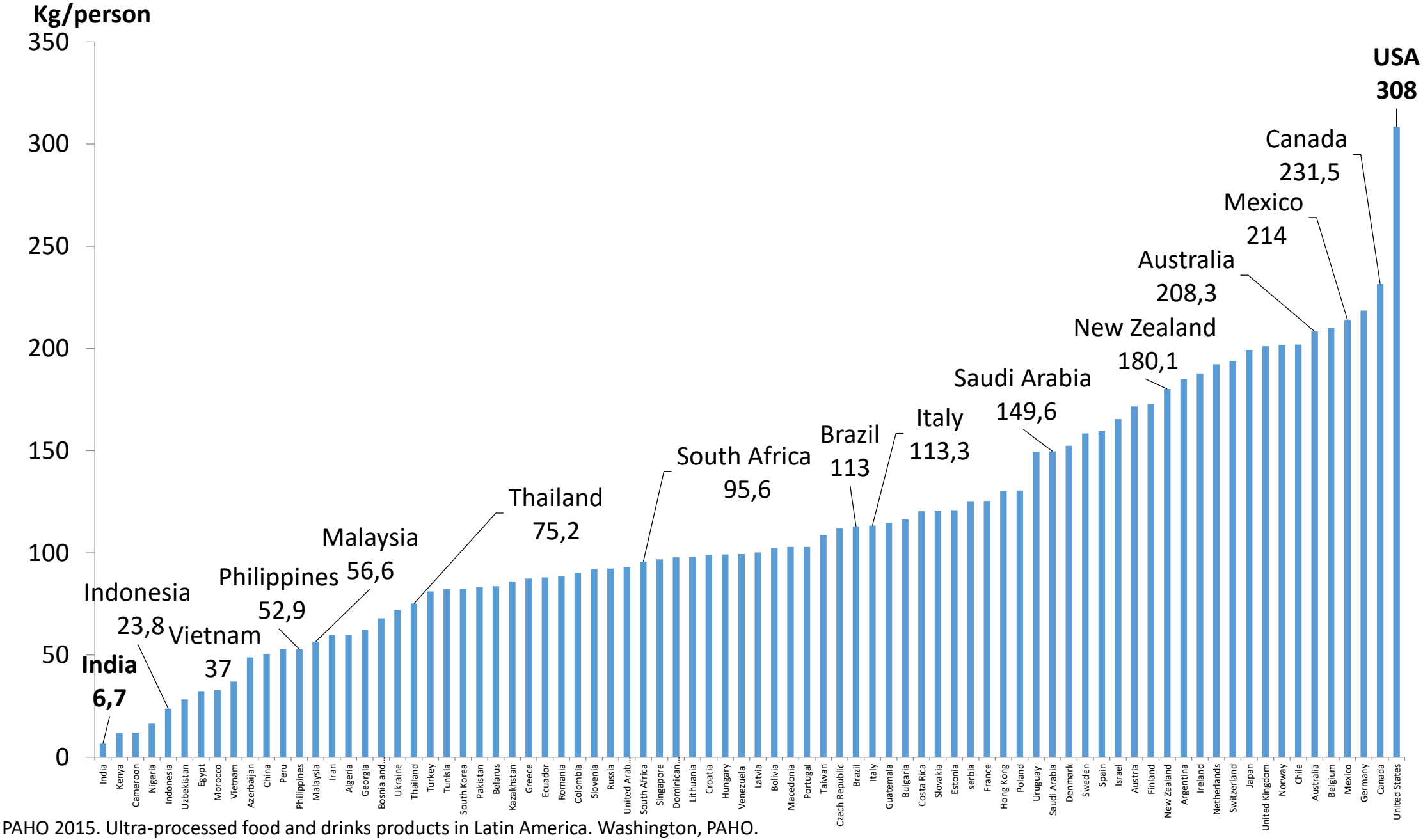
tem to recommend avoiding UPFs entirely and to call for policies aimed at removing

Mudanças no sistema alimentar e a pandemia de obesidade

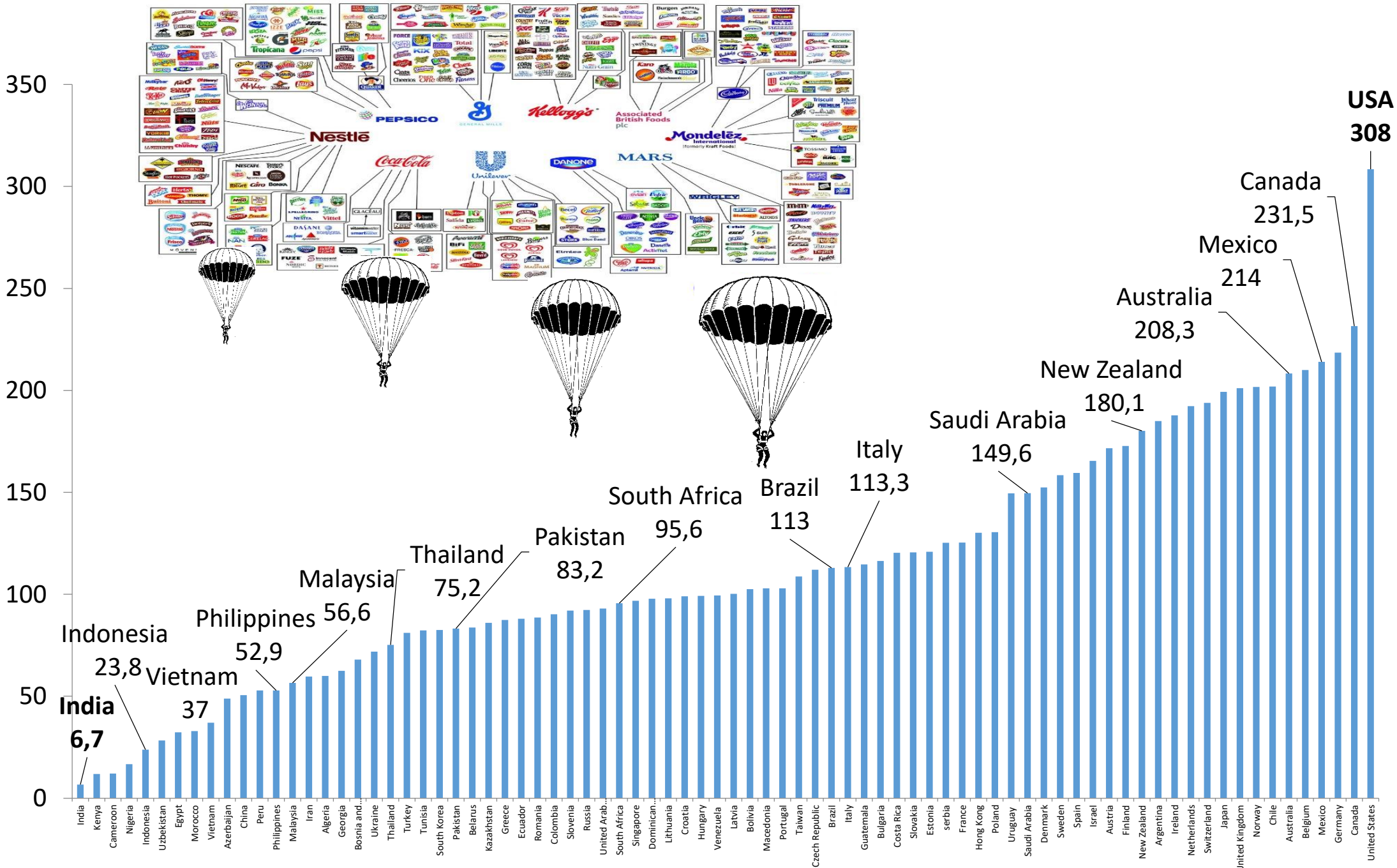
- A epidemia de obesidade: alguns números
- Mudanças no processamento de alimentos e suas consequências sobre os padrões de alimentação e o risco de doenças
- Implicações políticas

NUPENS USP

Annual retail sales of ultra-processed food and drink products in 80 countries (2013)

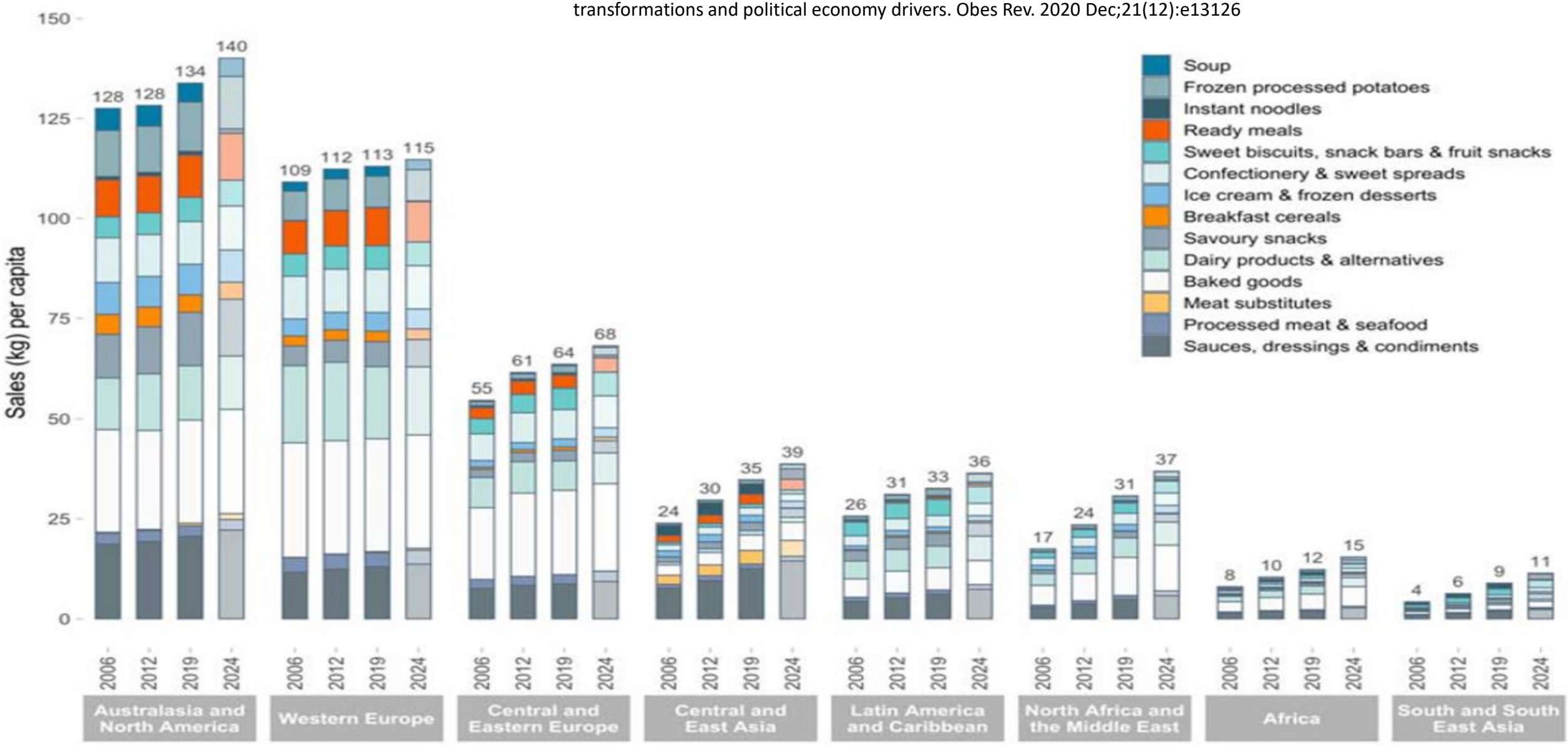


Source : PAHO 2015. Ultra-processed food and drinks products in Latin America. Washington, PAHO.



Source : PAHO 2015. Ultra-processed food and drinks products in Latin America. Washington, PAHO.

Baker et al. Ultra-processed foods and the nutrition transition: Global, regional and national trends, food systems transformations and political economy drivers. Obes Rev. 2020 Dec;21(12):e13126



E 1 Ultra-processed foods sales (kg) per capita by region, 2006–2019 with projections to 2024

http://ijhpm.com
Int J Health Policy Manag 2021, 10(12), 968–982

doi 10.34172/ijhpm.2021.45

IJHPM
International Journal of Health Policy and Management

Original Article

Ultra-Processed Profits: The Political Economy of Countering the Global Spread of Ultra-Processed Foods – A Synthesis Review on the Market and Political Practices of Transnational Food Corporations and Strategic Public Health Responses

Rob Moodie[1*], Elizabeth Bennett[2], Edwin Jit Leung Kwong[1], Thiago M. Santos[3], Liza Pratiwi[4], Joanna Williams[1], Phillip Baker[5]

Estratégias usadas pelas transnacionais de ultraprocessados para promover seus produtos

Práticas de mercado	Práticas políticas
1- Expansão global contínua	1- Captura dos políticos
2- Produtos para todas as classes	2- Captura da ciência
3- Marketing agressivo (digital)	3- Captura da sociedade civil

"All the News That's Fit to Print"

The New York Times

Late Edition
Today, patchy morning fog, variably cloudy, humid, high 80. Tonight, partly cloudy, humid, low 66. Tomorrow, variably cloudy, humid, high 75. Details in SportsSunday, Page 8.

VOL. CLXVI . . . No. 57,723 © 2017 The New York Times Company NEW YORK, SUNDAY, SEPTEMBER 17, 2017 $6.00

NEWS ANALYSIS

World's Eyes On President As U.N. Meets

Challenge for Trump: Sell 'America First'

By PETER BAKER

WASHINGTON — Every year, the president heads to New York to welcome world leaders to the United Nations General Assembly. He gives a speech and meets with an endless string of foreign potentates to discuss a dizzying array of complicated, often intractable issues.

The days are "kind of like speed dating from hell," as one analyst put it, and the evenings are "the world's most tedious cocktail party." In other words, not exactly President Trump's favored format.

But when Mr. Trump attends the first United Nations session of his presidency this coming week, all eyes will be on him as counterparts from around the globe crane their necks and slide through the crowd to snatch a handshake — and, in the process, try to figure out this most unusual of American leaders.

"The world is still trying to take the measure of this president," said Jon B. Alterman, a senior vice president at the Center for Strategic and International Studies in Washington and author of the speed-dating analogy. "For a number of leaders, this is going to be their first chance to see him, to judge him, to try to get on his good side."

In some places, there has been an instinct to dismiss Mr. Trump as a bombastic, Twitter-obsessed

WILLIAM DANIELS FOR THE NEW YORK TIMES

Celene da Silva, left, and her daughter Sabrina delivering Nestlé products like Kit-Kats and pudding in Fortaleza, Brazil.

How Big Business Got Brazil Hooked on Junk Food

By ANDREW JACOBS and MATT RICHTEL

FORTALEZA, Brazil — Children's squeals rang through the muggy morning air as a woman pushed a gleaming white cart along pitted, trash-strewn streets. She was making deliveries to some of the poorest households in this seaside city,

As she dropped off variety packs of Chandelle pudding, Kit-Kats and Mucilon infant cereal, there was something striking about her customers: Many were visi-

PLANET FAT
Nestlé Goes Door to Door

she had high blood pressure, a condition she acknowledges is probably tied to her weakness for fried chicken and the Coca-Cola she drinks with every meal, breakfast included.

Nestlé's direct-sales army in Brazil is part of a broader transformation of the food system that is delivering Western-

U.S. DIGGING IN FOR LONG HAUL IN AFGHANISTAN

A REMAKING OF KABUL

Green Zone Expansion Underscores Threat to Western Allies

By ROD NORDLAND

KABUL, Afghanistan — Soon, American Embassy employees in Kabul will no longer need to take a Chinook helicopter ride to cross the street to a military base less than 100 yards outside the present Green Zone security district.

Instead, the boundaries of the Green Zone will be redrawn to include that base, known as the Kabul City Compound, formerly the headquarters for American Special Operations forces in the capital. The zone is separated from the rest of the city by a network of police, military and private security checkpoints.

The expansion is part of a huge public works project that over the next two years will reshape the center of this city of five million to bring nearly all Western embassies, major government ministries, and NATO and American military headquarters within the protected area.

After 16 years of American presence in Kabul, it is a stark acknowledgment that even the city's central districts have become too difficult to defend from Taliban bombings.

But the capital project is also clearly taking place to protect another long-term American investment: Along with an increase in troops to a reported 15,000, from

Venda 'porta a porta' em Fortaleza

Mercados volantes na Amazonia

Ações e políticas que nao funcionam:

Guias alimentares que ignoram o processamento de alimentos
Rotulagem nutricional equivocada
Reformulação cosmética de produtos
Auto-regulacao do marketing

O que precisamos:

Guias alimentares que promovam comida de verdade

Compras públicas de alimentos que estimulem a produção de comida de verdade

Políticas fiscais que tornem a comida de verdade mais acessivel do que UP

Rotulagem nutricional de advertência e proibição da propaganda de UP