

# Taxar as bebidas açucaradas?

**Daniel Magnoni**

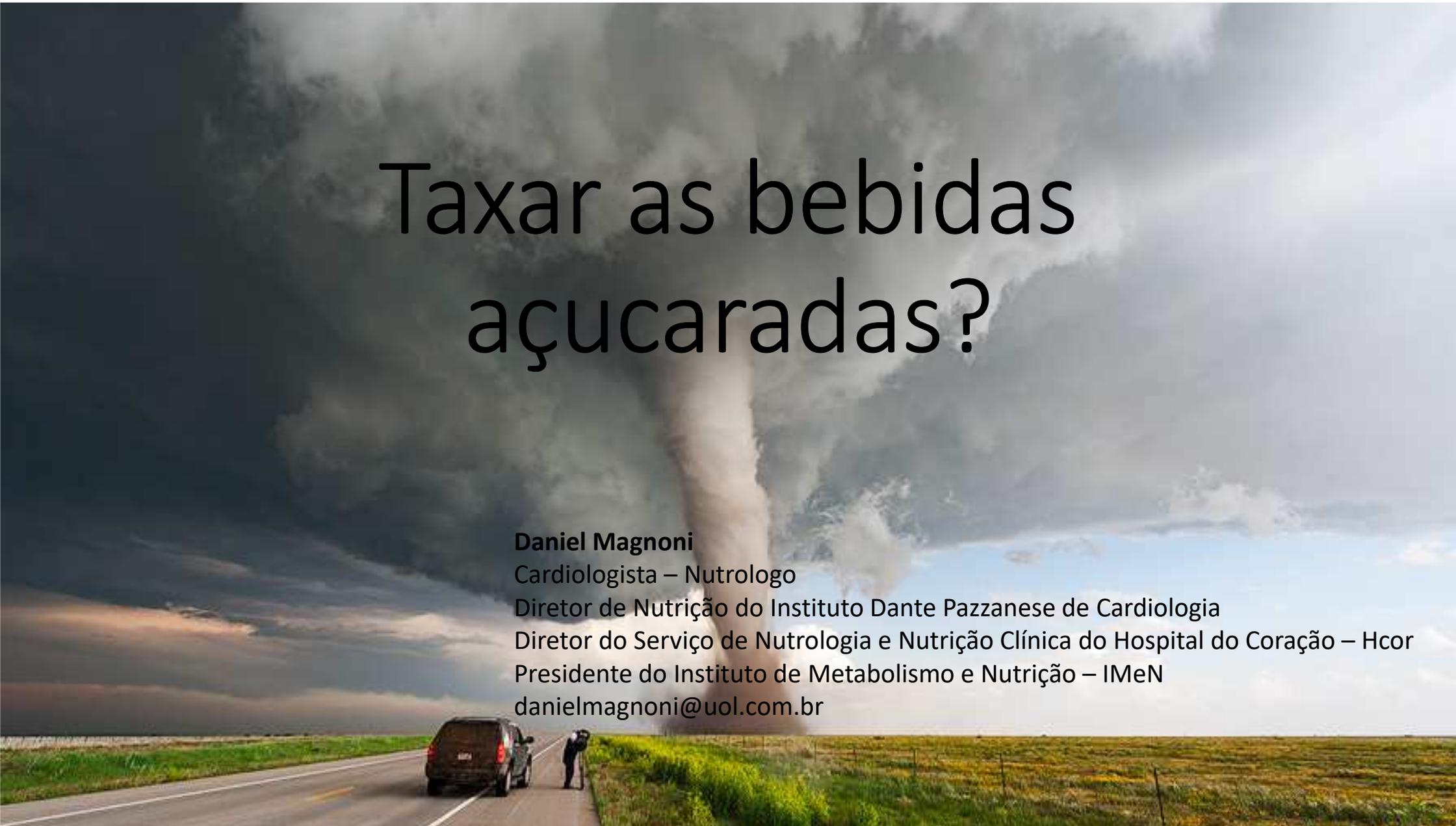
Cardiologista – Nutrologo

Diretor de Nutrição do Instituto Dante Pazzanese de Cardiologia

Diretor do Serviço de Nutrologia e Nutrição Clínica do Hospital do Coração – Hcor

Presidente do Instituto de Metabolismo e Nutrição – IMeN

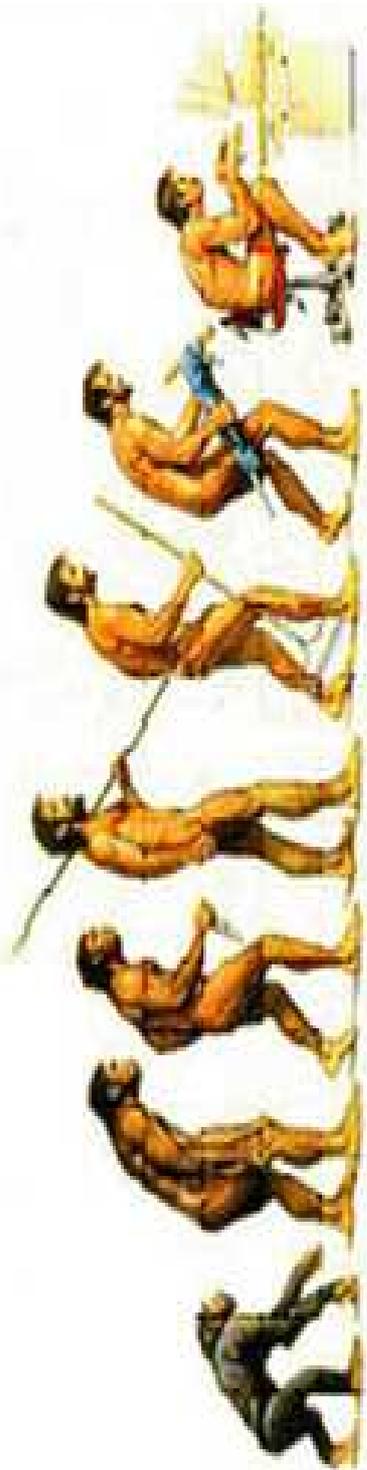
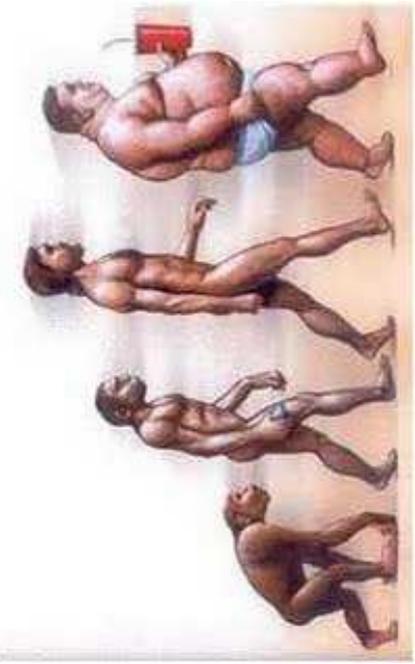
[danielmagnoni@uol.com.br](mailto:danielmagnoni@uol.com.br)





## **Matryoshka,**

do russo *матрёшка* transl. *matrëška*, também conhecida como boneca russa, é um brinquedo tradicional da Rússia. Constitui-se de uma série de bonecas, feitas geralmente de madeira, colocadas umas dentro das outras, da maior até a menor.



McKinsey Global Institute



November 2014

# Overcoming obesity: An initial economic analysis





## Overcoming obesity: An initial economic analysis

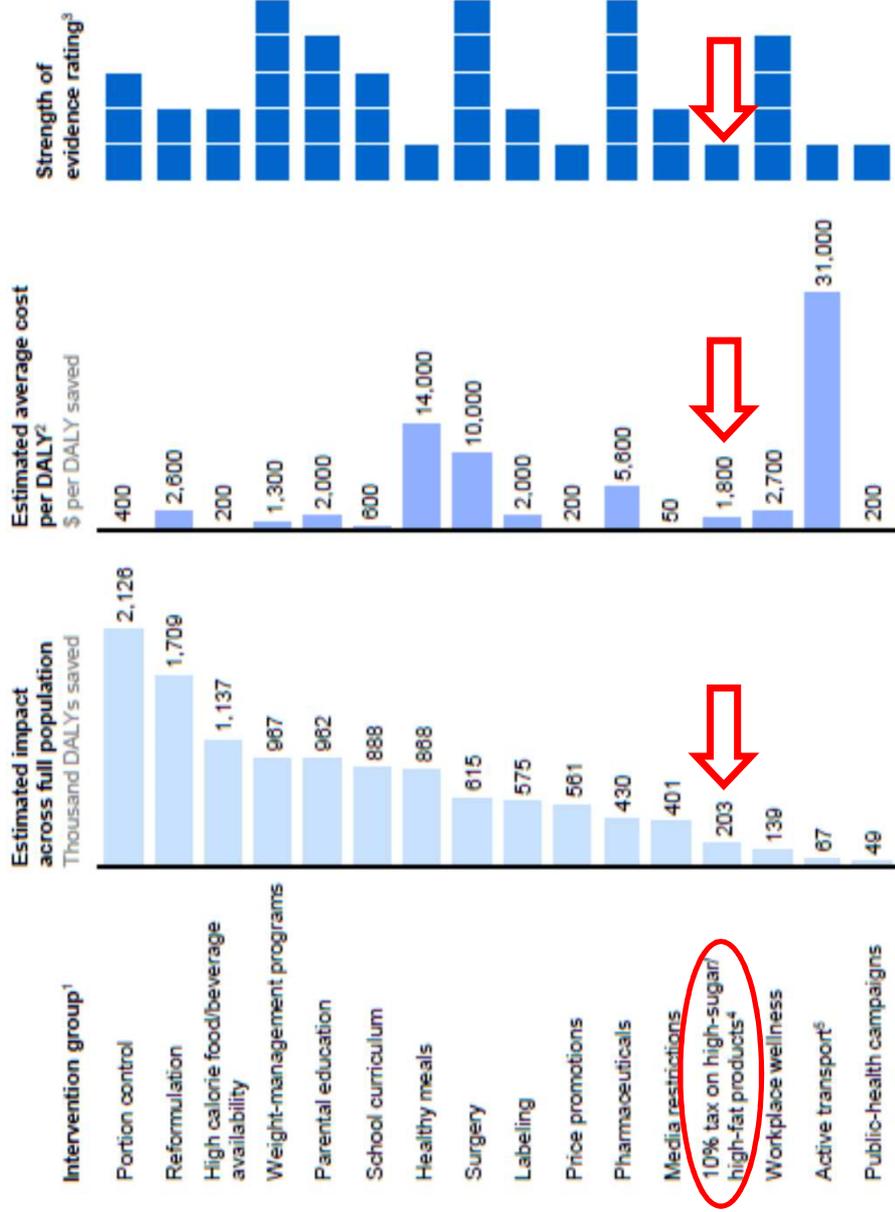


Discussion paper

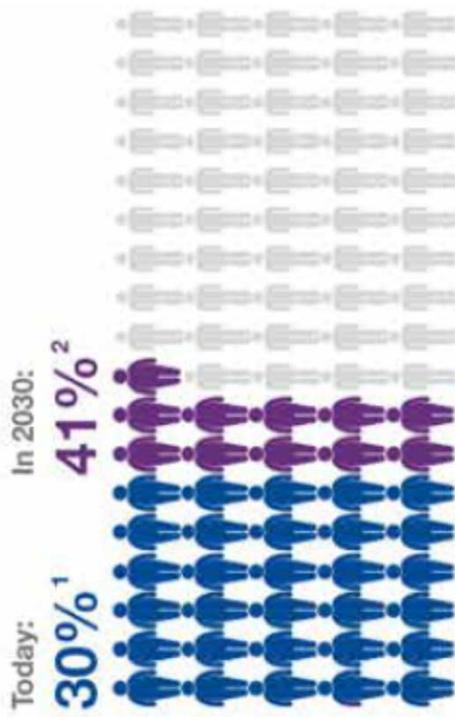
# There is considerable scope to have high impact on obesity in a cost-effective way

Cost-effectiveness and impact of obesity levers, United Kingdom

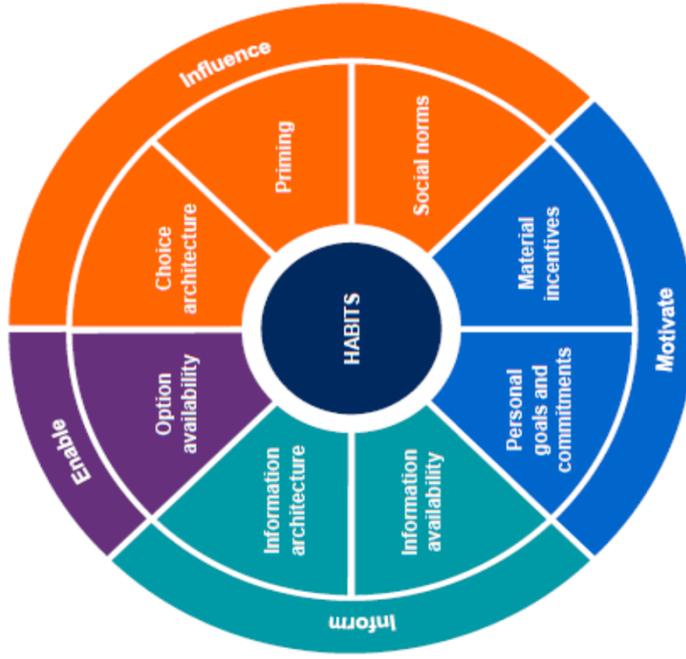
- Sufficient evidence for weight change
- Limited evidence for weight change
- Sufficient evidence for behavior change
- Limited evidence for behavior change
- Logic based on parallel evidence



## Addressing rising glucose (5% of all deaths)



MGI has developed a framework to disaggregate mechanisms for population behavioral change



SOURCE: Expert interviews; McKinsey Global Institute analysis

Intervention groups and descriptions

<p><b>1. Active transport</b> Facilitating and encouraging walking, cycling, and public transport, which engender more physical activity</p>	<p><b>10. Price promotions</b> Facilitating promotional activity in high-calorie impulse foods to decrease consumption</p>
<p><b>2. Health-care payors</b> Providing incentives or support to encourage healthy behavior. These can include financial incentives, vouchers, and other forms of support. Payors can also deliver other interventions such as parental and weight-management programs</p>	<p><b>11. Public-health campaigns</b> Delivering a public-health message through multiple media outlets to promote healthy eating and physical activity habits</p>
<p><b>3. Healthy meals</b> Improving the health quality of meals in controlled settings such as schools and workplaces</p>	<p><b>12. Reformulation</b> Incrementally reducing calories in food products to drive a nutritional reduction in consumption</p>
<p><b>4. High-calorie food and drink availability</b> Reducing the ready availability of high-calorie foods to help control weight gain. This can include removing vending machines from schools and workplaces, high-calorie foods from supermarket checkouts, and fast-food retailers from locations outside schools</p>	<p><b>13. School curriculum</b> Introducing additional hours of physical education and healthy nutrition in school curricula to encourage healthier habits</p>
<p><b>5. Labeling</b> Providing calorie and other nutritional labeling so that consumers can understand the content of their food. Labels can be plain text or "engaging"—an easy-to-interpret assessment of the health of the product (e.g., traffic lights)</p>	<p><b>14. Taxation, taxes, and prices</b> Changing agricultural policy or regulatory policy to adjust consumer prices and the supply of select food and/or beverage categories</p>
<p><b>6. Media restrictions</b> Preventing high-calorie food advertising to reduce exposure to marketing that is proven to promote consumption</p>	<p><b>15. Surgery</b> Scaling up delivery of bariatric surgery to reduce stomach capacity and deliver immediate change in food consumption</p>
<p><b>7. Parental education</b> Empowering and educating parents to promote a healthier lifestyle for their children through regular parental guidance activities</p>	<p><b>16. Urban environment</b> Making changes to physical activity and food access to facilitate and encourage healthy habits, such as increasing the availability of cities and green space, and improving access to grocery stores</p>
<p><b>8. Pharmacuticals</b> Intervening with drugs to reverse obesity-related issues where it is causing immediate health risks</p>	<p><b>17. Weight-management programs</b> Educating and empowering individuals to change key weight-related behaviors through counseling, physical activity programs, and education</p>
<p><b>9. Portion control</b> Encouraging appropriate consumption through incremental (i.e., 1 to 5 percent) reductions in portion sizes and designing packaging to better delineate portion size to help consumers moderate their consumption</p>	<p><b>18. Workplace wellness</b> Offering programs and engaging employees to encourage healthy behavior, for example through financial and non-financial incentives, team competitions, and the provision of resources and self-management tools such as personal tracking devices</p>

SOURCE: McKinsey Global Institute analysis

# BUT THERE ARE STILL A LOT OF GOVERNMENTAL HEALTH INITIATIVES WHICH CAN AFFECT THE MARKET



World Health Organization

## IMPLEMENT COMPREHENSIVE PROGRAMMES THAT PROMOTE THE INTAKE OF HEALTHY FOODS AND REDUCE THE INTAKE OF UNHEALTHY FOODS AND SUGAR-SWEETENED BEVERAGES BY CHILDREN AND ADOLESCENTS.

- 1.1** Ensure that appropriate and context-specific nutrition information and guidelines for both adults and children are developed and disseminated in a simple, understandable and accessible manner to all groups in society.
- 1.2** Implement an effective tax on sugar-sweetened beverages.
- 1.3** Implement the Set of Recommendations on the Marketing of Foods and Non-alcoholic Beverages to Children to reduce the exposure of children and adolescents to, and the power of, the marketing of unhealthy foods.
- 1.4** Develop nutrient-profiles to identify unhealthy foods and beverages.
- 1.5** Establish cooperation between Member States to reduce the impact of cross-border marketing of unhealthy foods and beverages.
- 1.6** Implement a standardised global nutrient labelling system.
- 1.7** Implement informative front-of-pack labelling. By 2025, a majority of both adults and children for nutrition literacy.
- 1.8** Require settings such as schools, child-care settings, children's sports facilities and events to create healthy food environments.
- 1.9** Increase access to healthy foods in disadvantaged communities.

## 2016 Global Recommendations

1. Implement an effective tax on sugar sweetened beverages – a particular call out category with high levels of calories for zero nutritional gain
2. Implement a standardised global nutrient labelling system
3. Implement easy to understand front of pack labelling so people know what is in the product

	Advertising Regulations	Food Labeling	Tax on Junk Food	Educational Programs	Incentives for Healthy
Argentina		X		X	X
Brazil	X	X		X	X
Chile	X	X	X	X	X
Colombia	X	X		X	X
Costa Rica	X	X		X	X
Ecuador		X		X	X
El Salvador		X		X	X
Guatemala		X		X	X
Honduras		X		X	X
Mexico	X	X	X	X	X
Peru	X	X		X	X
Uruguay	X	X		X	X
Venezuela		X		X	X

# Beverage purchases from stores in Mexico under the excise tax on sugar sweetened beverages: observational study

BMJ 2016; 352 doi: <https://doi.org/10.1136/bmj.h6704> (Published 06 January 2016) Cite this as: BMJ 2016;352:h6704

## Abstract

**Study question** What has been the effect on purchases of beverages from stores in Mexico one year after implementation of the excise tax on sugar sweetened beverages?

**Methods** In this observational study the authors used data on purchases of beverages from stores in Mexico from January 2012 to December 2014 from an unbalanced panel of observations in 53 cities with more than 50 000 inhabitants. The post-tax period was significantly different from the pretax trend, the authors used a difference-in-differences model, which adjusts for both macroeconomic variables that changed over time and pre-existing trends. The variables used in the analysis included household composition (age and sex of household members) and socio-economic status. The authors compared the predicted volumes (mL/capita/day) of purchases of sugar sweetened beverages in the observed post-tax period—with the estimated volume that would have been implemented (counterfactual) based on pretax trends.

**Study answer and limitations** Relative to the counterfactual, purchases of sugar sweetened beverages decreased by an average of 6% (–12 mL/capita/day), and decreased by 17% (–36 mL/capita/day) by December 2014. All three socioeconomic groups reduced purchases, but the reduction was higher among the households of low socioeconomic status. The authors note that the study was limited to a 17% decrease by December 2014 compared with pretax trends, and that purchases of sugar sweetened beverages were 36 mL/capita/day higher than the counterfactual, mainly due to purchases of water.

**What this study adds** The tax on sugar sweetened beverages reduced purchases of taxed beverages and increases in purchases of untaxed beverages. The authors note that to understand purchases longer term, potential substitutions, and other factors need to be considered.

**Funding, competing interests, data sharing** This work was supported by the Bill and Melinda Gates Foundation, the Robert Wood Johnson Foundation and by the Instituto Nacional de Salud Pública and the Carolina Population Center. The authors have no competing interests. No additional data are available.

## What is already known on this topic

- Mexico has one of the highest prevalence rates for diabetes, overweight, and obesity in the world
- Reducing the consumption of sugar sweetened beverages has been an important target for obesity and diabetes prevention efforts
- Mexico implemented an excise tax of 1 peso/L on sugar sweetened beverages from 1 January 2014

## What this study adds

- During the first year of the tax, the average volume of taxed beverages purchased monthly was 6% lower in 2014 than would have been expected without the tax
- The reduction was greatest among the households of the lowest socioeconomic status

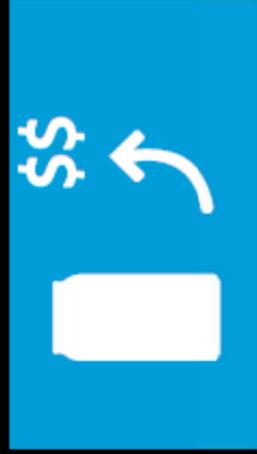
# LET'S EXPLORE THE SUGAR TAX

11

SUGAR TAX IMPLEMENTATION



Tax on products with high sugar content puts a financial burden on manufacturers



1. Pass on price increase to consumers – reduce consumption



2. Reformulate to "healthier product" falling under tax thresholds



3. Diversify product portfolio to healthier non tax products

# HOT DEBATE: WILL A SUGAR TAX ACTUALLY CURB OBESITY?



**Symbolic move –**  
won't curb by itself



## **Erratic implementation**

- Types of products e.g. CSD not sweets
- Calculations of tax



**No guarantee**  
manufacturers will pass on  
the tax cost to consumers



Carbonated  
soft drink  
consumption is  
**naturally falling**



**Minimal impact**  
in markets where  
introduced e.g. Mexico



**Subsidising healthier foods may be a better example**  
of rewarding healthier choices

# WHAT CAN WE LEARN FROM MEXICO?

n



One of the largest consumers of soda in the world



Obesity is a major health concern



Sugar tax passed in 2014; in average, prices increased by 10%

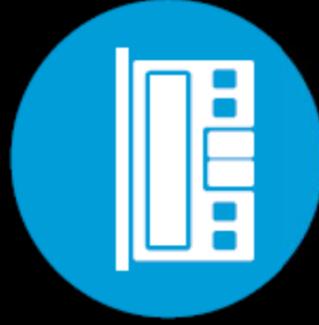


TV ads limited to specific times & avoiding kids programs

## IMPACT



Sales of taxed categories down **-2.6%**



Traditional trade hit hardest; modern trade more resilient



Shoppers adjust budget/seek alternatives



Shopkeepers reduce assortment/prioritise categories

# LONG TERM EFFECT – SUSTAINABILITY?



Demand is stabilising and sales are recovering

Traditional trade fought back

Consumers accepted new prices and returned to past behaviour

Source: Nielsen Retail & ScanTrack / Total Mexico / Total Channels / % Variation Volume and Value Sales Full Year

IEPS Categories: Bottled Water, Flavoured Water, Infant Nutrition, Juice Drinks, Energy Drinks, Bar Food, Juice+Nectar+RB, Salty Snacks, Coffee, Cereals, Chocolate, Cookies, Chewing Gum, Hard Candy, Isotonic Water, Biscuits, Carbonated Soft Drinks, Tea RTD, Pet Food, Culinaries, Bakery Chocolate, Powdered Beverages, MW Popcorn

*Critical Issues and Trends: Health Policy/Weight Control*

## “Sin-Food” Taxes and Sugar-Sweetened Beverages—The Right Policy for the Wrong Reasons?

*Claudia Chouhan, MD, PhD; Gee Hee Hong; Patrick Fox, PhD*

### INTRODUCTION

As obesity rates continue to rise, taxing calorie-dense foods of little nutritional value—“sin foods” such as sugar-sweetened beverages (SSBs)—as a strategy to confront an impending epidemic is gaining popularity among researchers, the popular media, and policy makers. Leading academic proponents of a tax on SSBs (henceforth, soda tax) argue that it would reduce consumption and even encourage a consumption switch to healthier alternatives,<sup>1</sup> thus leading to reduced calorie intake and less weight gain.<sup>2</sup> Influential newspapers suggest that a soda tax “should help young people limit their intake of soda,”<sup>3</sup> and in so doing, help fight the obesity epidemic<sup>4</sup>; policy makers have seized on the idea on similar grounds.<sup>5</sup>

In this article, we question the claim that taxing SSBs will reduce obesity rates. It does not follow that we endorse SSBs, however. Quite the contrary, we wholeheartedly agree that they offer no nutritional value and may lead to serious health problems, including obesity. Yet for a soda tax to achieve the public health goal of reducing obesity and obesity disparities, it must be the case that reduced consumption of SSBs lead to a switch to healthier consumption patterns (rather than to a mere replacement by equally unhealthy ones) enough so as to have a significant public health impact on obesity rates and their distribution. As we argue below, we find this assumption problematic.

*Claudia Chouhan, MD, PhD, and Patrick Fox, PhD, are with the Institute for Health and Aging, University of California San Francisco. Gee Hee Hong is with the Institute for Health and Aging, University of California San Francisco, and the Department of Economics, University of California Berkeley.*

Send reprint requests to Claudia Chouhan, MD, PhD, Institute for Health and Aging, University of California San Francisco, 3355 California Street, Suite 540, San Francisco, CA 94118. [chouhan@icf.ucsf.edu](mailto:chouhan@icf.ucsf.edu).

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We will believe that there is merit to taxation policies. However, if the generated revenue is to accomplish public health goals, they must be earmarked for such goals—in the case of obesity prevention, for interventions in improving the quality of food and built environments of low-income and minority communities to reduce the impact of the societal factors that drive obesity and obesity disparities in the first place.

### Problematic Assumptions, Debatable Conclusions

Price manipulations such as taxation influence consumer choices by providing incentives or disincentives to alter behaviors. Taxation is especially attractive to governments because it generates revenue while discouraging undesired behaviors. For instance, a steep increase in taxes on alcohol spirits in Sweden was followed by a marked decline in consumption and in the alcohol-related incidence of abusive drinking by youth.<sup>6</sup> Similarly, in the United States, cigarette taxes have successfully reduced rates of smoking and generated important revenues that are used to curb the deleterious health effects of tobacco.<sup>6</sup> Therefore, if the public health problems of drinking or smoking are comparable to that of excessive consumption patterns that lead to obesity, such that commodity price increases of particular “sin foods” can be expected to shift consumption patterns in healthier directions and reduce obesity rates, why not tax sodas on those grounds?

See also p. 91

The problem is that the analogy between sodas on the one hand and tobacco or hard liquor on the other, and between health conditions or hazardous behaviors associated with consumption of these substances, is very limited, when not altogether invalid. We shall call this the “analogy problem.” Why is it a problem?

It is because curbing smoking or drinking as public health problems primarily requires curbing or addressing one and the same behavior in all individuals affected by the problem, with a view to eliminating the consumption of one and the same substance, cigarettes or alcohol, in all individuals. In contrast, reducing obesity rates in populations—opposed to taxing obesity in one individual—requires changes in a range of behaviors and “substances” rather than in consumption of a single food item—behavior change or change in consumption patterns that may work for one individual

Critical Issues and Trends: Health Policy/Weight Control

## “Sin-Food”? The Problematic Assumptions, Debatable Conclusions

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**INTRODUCTION**  
As obesity rates continue to rise, a flood of bills, including H.R. 1000, a companion to an impending omnibus bill, are being introduced in Congress. Leading academic programs in nutrition and dietetics are being established and new research in health-related areas is being funded. The issue of obesity is becoming a major public health problem, and many are calling for a “sin tax” on soda. We should be aware that “sin taxes” have been used in the past to reduce alcohol consumption and to reduce smoking rates. It does not follow, however, that a “sin tax” on soda will reduce obesity rates. There are other reasons why a “sin tax” on soda is not a good idea. We will discuss these reasons, including obesity. We will also discuss the analogy problem, which is the problem that arises when one tries to apply the analogy between smoking or drinking and obesity. We will also discuss the analogy problem, which is the problem that arises when one tries to apply the analogy between smoking or drinking and obesity.

Charles O. Chaffer, MD, PhD, and Peter D. Jacobson, MD, PhD, are Associate Professors of Health and Aging, the University of California San Francisco, School of Public Health, and the Center for Health Equity Promotion, University of California San Francisco, School of Public Health. They are also authors of *Health Promotion: A Practical Approach* (Springer, 2005).

# Estratégias

- **Projetos Educacionais**

- Esquecer projetos textuais
- Desenvolver ações de comunicação interativas
- Integrar o prescritor / educador
- Avaliar impacto de mídias inusuais – customizar por realidade regional, social, cultural, econômica...

# Estratégias

- **Comunicação aos stakeholders**
  - Ações motivacionais
  - Interação nos projetos
  - “Participação nos resultados”

Category	Factor	Potential mechanisms	Effects on energy balance
 Genetic <sup>2,4,5</sup>	<b>Variations in BMI</b> Changes in genes responsible for weight and / or metabolism (epigenetics, deletions, single nucleotide polymorphisms)	Variable	↑ Energy intake and variable energy expenditure
 Behavioral <sup>2,6-8</sup>	<b>Diet, inactivity, emotional factors</b>	Multiple behavioral mechanisms	↑ Energy intake and variable energy expenditure
	<b>Lack of sleep</b>	Multiple hormonal mechanisms: mostly leptin- and ghrelin- induced changes in appetite	↑ Energy intake and variable energy expenditure
	<b>Smoking cessation</b>	Behavioral effect	↑ Energy intake and ↓ Energy expenditure
 Environmental <sup>2,4,6,7,9</sup>	<b>Access to/affordability of food, socioeconomic status, stress, physical environment, endocrine disruptors, gut microbiome</b>	Multiple behavioral mechanisms	↑ Energy intake and variable energy expenditure
 Medical <sup>1,2,10-13</sup>	<b>Pharmaceuticals</b> such as corticosteroids and certain psychiatric drugs	Variable	↑ Energy intake and ↓ Energy expenditure
	Diseases and conditions such as <b>Polycystic Ovarian Syndrome (PCOS), Cushing's syndrome, hypothyroidism</b> , pregnancy-related weight gain, menopause, low testosterone	Variable	↑ Energy intake and variable energy expenditure
 CNS pathways <sup>3,13</sup>	<b>Homeostatic and reward system pathways</b>	Energy regulation in hypothalamus, dopamine reward system	↑ Energy intake and variable energy expenditure
 Peripheral signals <sup>2,3</sup>	Hormones and gastrointestinal peptides [ <b>insulin</b> , leptin, ghrelin, <b>glucagon-like peptide 1 (GLP-1)</b> , <b>cholecystokinin (CCK)</b> , <b>amylin</b> , <b>peptide YY (PYY)</b> ]	Mostly <b>leptin - and ghrelin</b> - induced changes in appetite	Variable

BMI=Body mass Index; CCK=Cholecystokinin; CNS=Central nervous system; GLP-1=Glucagon-like peptide 1; PCOS=Polycystic ovarian syndrome; PYY=Peptide YY

- Jensen MD. Goldman's Cecil Medicine. 24th ed. Philadelphia, PA: Saunders Elsevier; 2012:1409-1417.
- Cizza G et al J Endocrinol Invest. 2012;35:1-14.
- Volkow ND et al. Obes Rev. 2013;14(1):2-18.
- Nguyen DM et al. Gastroenterol Clin North Am. 2010;39:1-7.
- Hjelmberg J et al. Obesity 2008;16:847-852.
- Ahima RS. J Clin Invest. 2011;121:2076-2079.
- Puhl RM et al. Am J Public Health. 2010;100:1019-1028.
- Mackay DF et al. BMC Public Health. 2013;13:348.
- Kushner RF et al. Psychiatr Clin North Am. 2011;34:797-812.
- [Robertson A et al. http://ec.europa.eu/health/ph\\_determinants/life\\_style/nutrition/documents/ev20081028\\_rep\\_en.pdf](http://ec.europa.eu/health/ph_determinants/life_style/nutrition/documents/ev20081028_rep_en.pdf). Accessed 15 August 2016.
- Gunderson EP. Obstet Gynecol Clin North Am. 2009;36:317- ix.
- Wang C et al. Diabetes Care. 2011;34:1669-1675.
- Schwartz MW et al. Nature. 2000;404:661-671.

# Estratégias

- **Logística e capilaridade**

- Logísticas governamentais

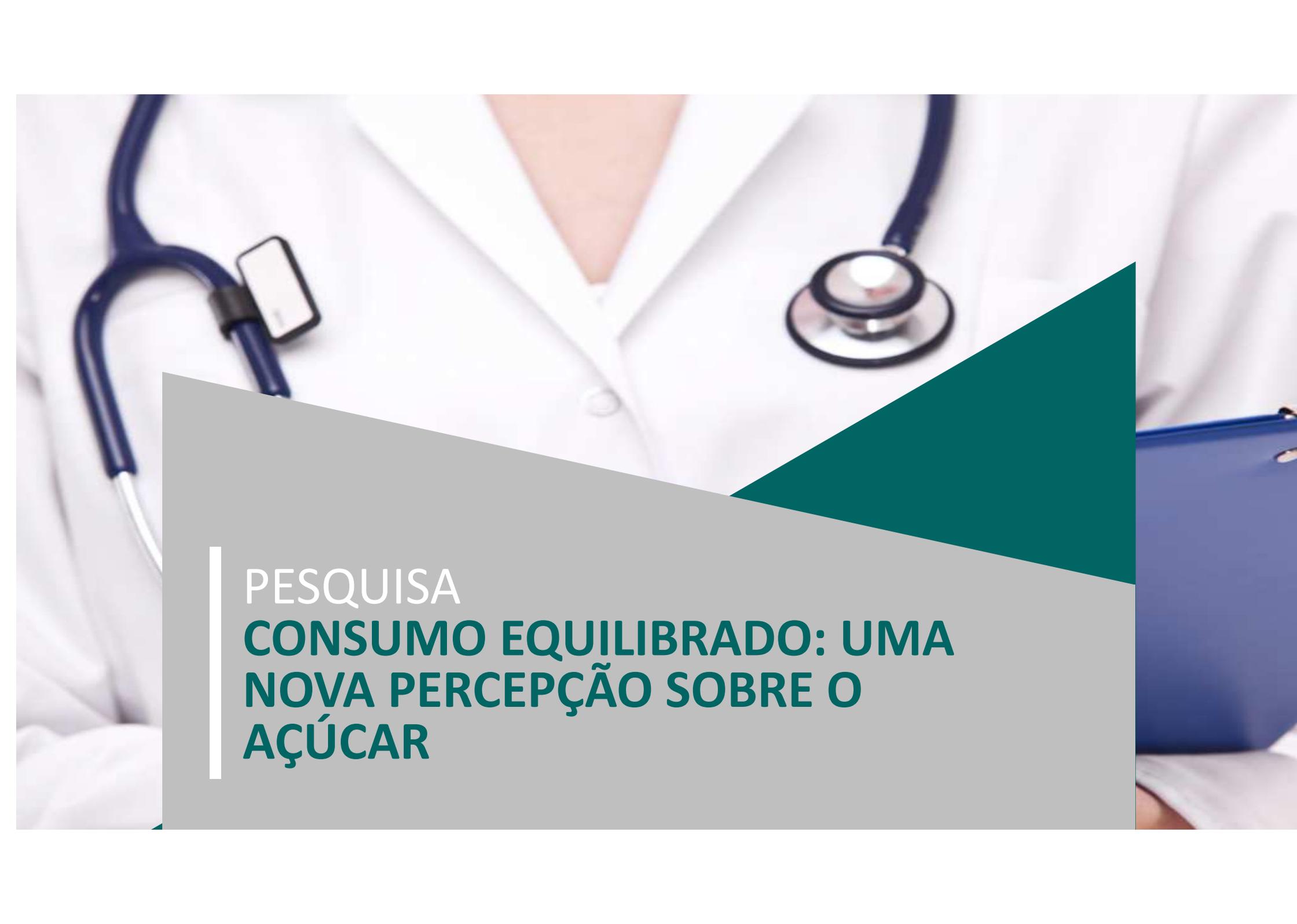
- Logística das sociedades profissionais (60.000 médicos)

**Cardiologia**

**Pediatria**

**Ginecologia**

**Ações relacionadas ao incremento da atividade física**



PESQUISA  
**CONSUMO EQUILIBRADO: UMA  
NOVA PERCEPÇÃO SOBRE O  
AÇÚCAR**

# ATIVIDADES FÍSICAS

A maioria dos consumidores de açúcar está com peso adequado.  
**Apenas 25% são obesos.**

A maioria dos praticantes de atividade física consomem açúcar

## Praticantes de atividade física que consomem ou não açúcar

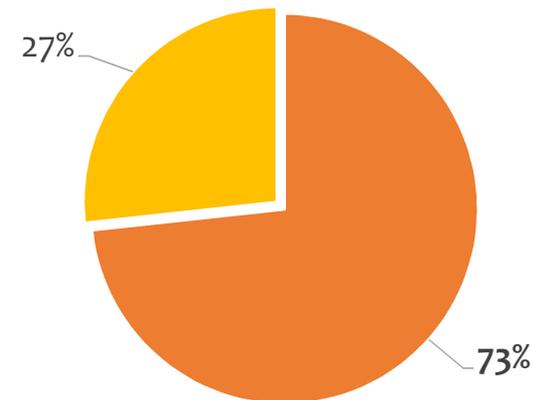


**Somente 30% dos entrevistados praticam atividade física.**



73% do total dos praticantes consomem açúcar

## Perfil de pacientes eutróficos (sem sobrepeso) praticantes de atividade física



- Praticantes de AF sem sobrepeso que consomem açúcar
- Praticantes de AF sem sobrepeso não que consomem açúcar

# CONCLUSÕES DO ESTUDO

## **Percepção sobre o açúcar:**

Há um certo grau de dificuldade para diferenciar o açúcar adicionado com o presente nos alimentos

## **Alimentação saudável:**

O açúcar, quando ingerido em quantidades moderadas e dentro de uma dieta balanceada, pode fazer parte de uma alimentação e hábitos de vida saudáveis

Menos da metade dos entrevistados tem o costume de olhar os rótulos para buscar informações de ingredientes

Apenas 36% dos entrevistados sabem exatamente o que estão consumindo, pois leem o rótulo

A maioria dos entrevistados que consome açúcar e pratica atividade física não tem sobrepeso nem obesidade. Estudos mostram que dietas restritivas não são eficazes na perda de peso.

O açúcar quando usado de forma moderada, parte integrante de uma dieta variada e balanceada, não é causa direta de doenças cardiovasculares, diabetes e obesidade

# Obrigado

**Daniel Magnoni**

Cardiologista – Nutrólogo

Diretor de Nutrição do Instituto Dante Pazzanese de Cardiologia

Diretor do Serviço de Nutrologia e Nutrição Clínica do Hospital do Coração – Hcor

Presidente do Instituto de Metabolismo e Nutrição – IMeN

[danielmagnoni@uol.com.br](mailto:danielmagnoni@uol.com.br)