



Sugar Reduction: Policies, Pressure and Public Perception

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Trends in Added Sugars Consumption

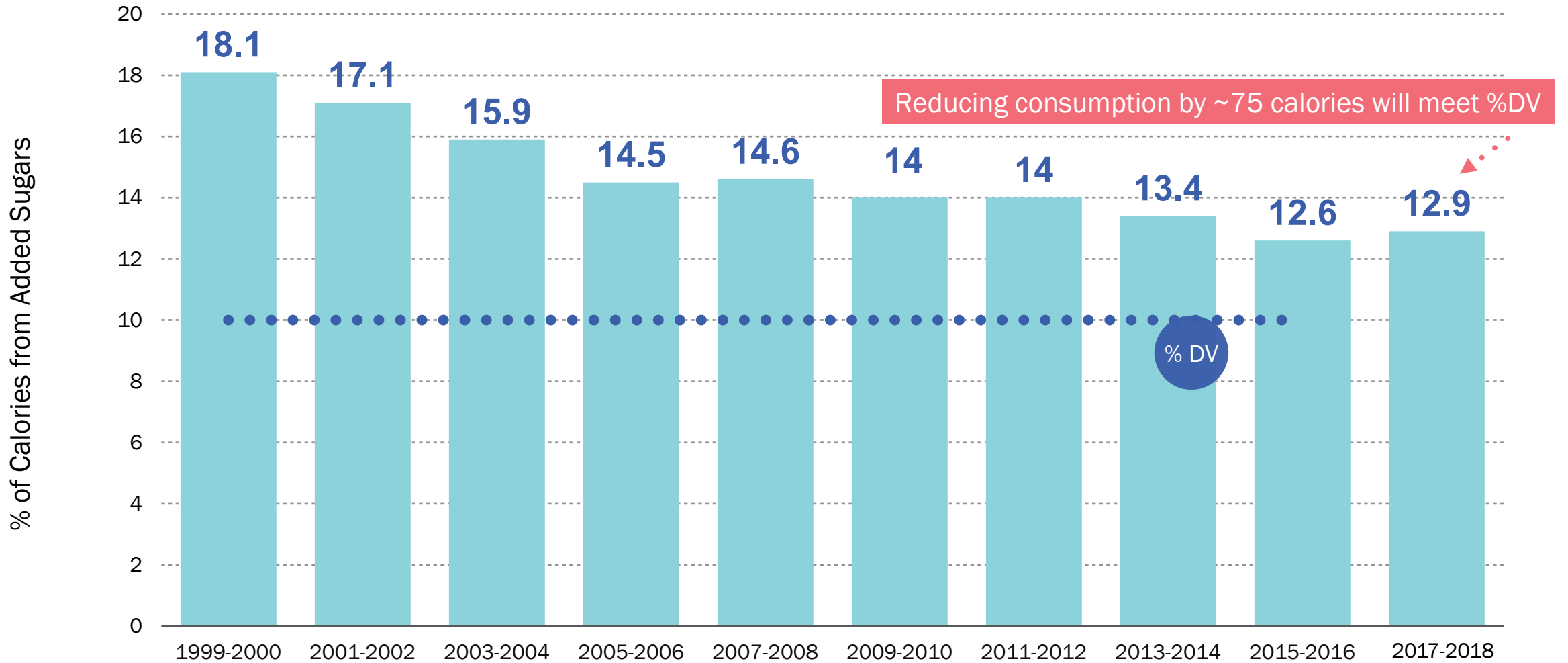
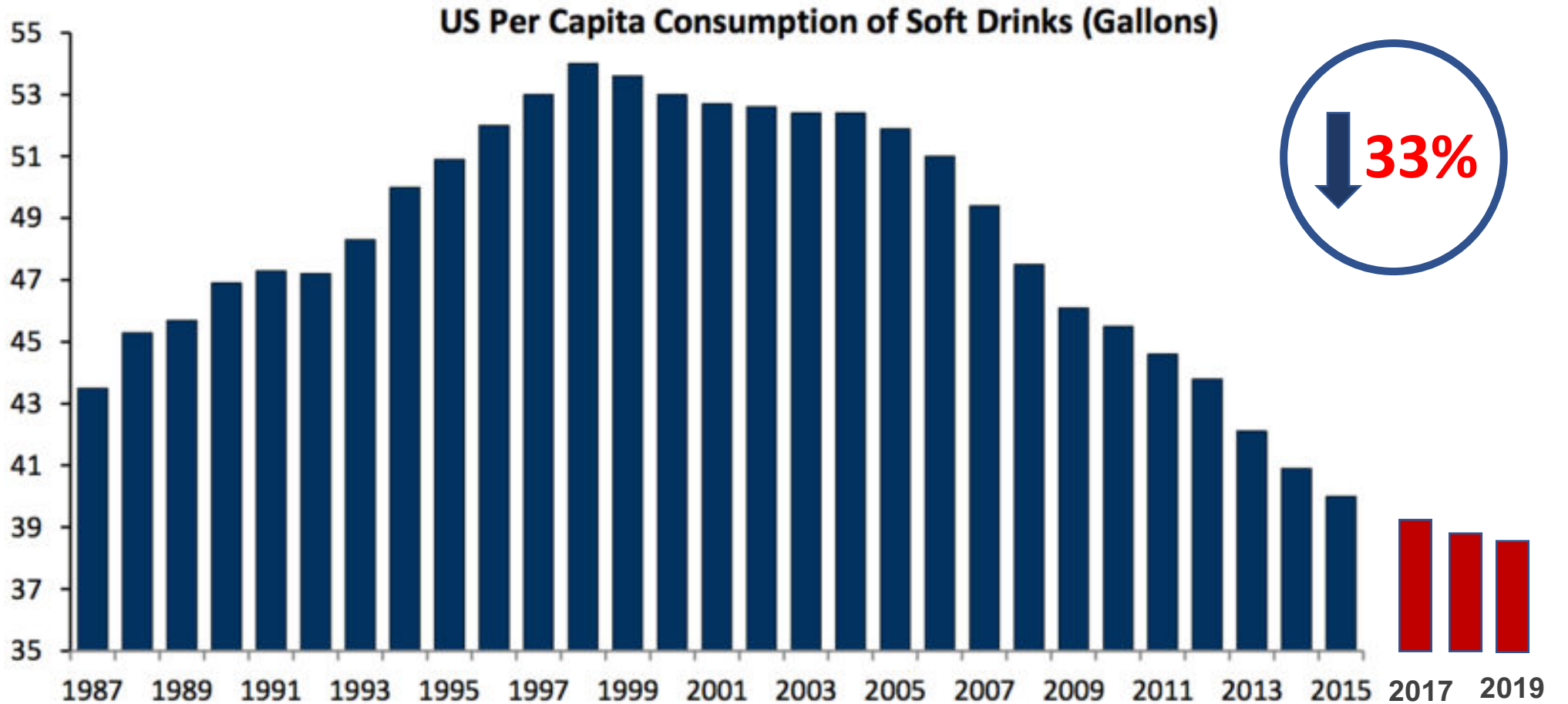
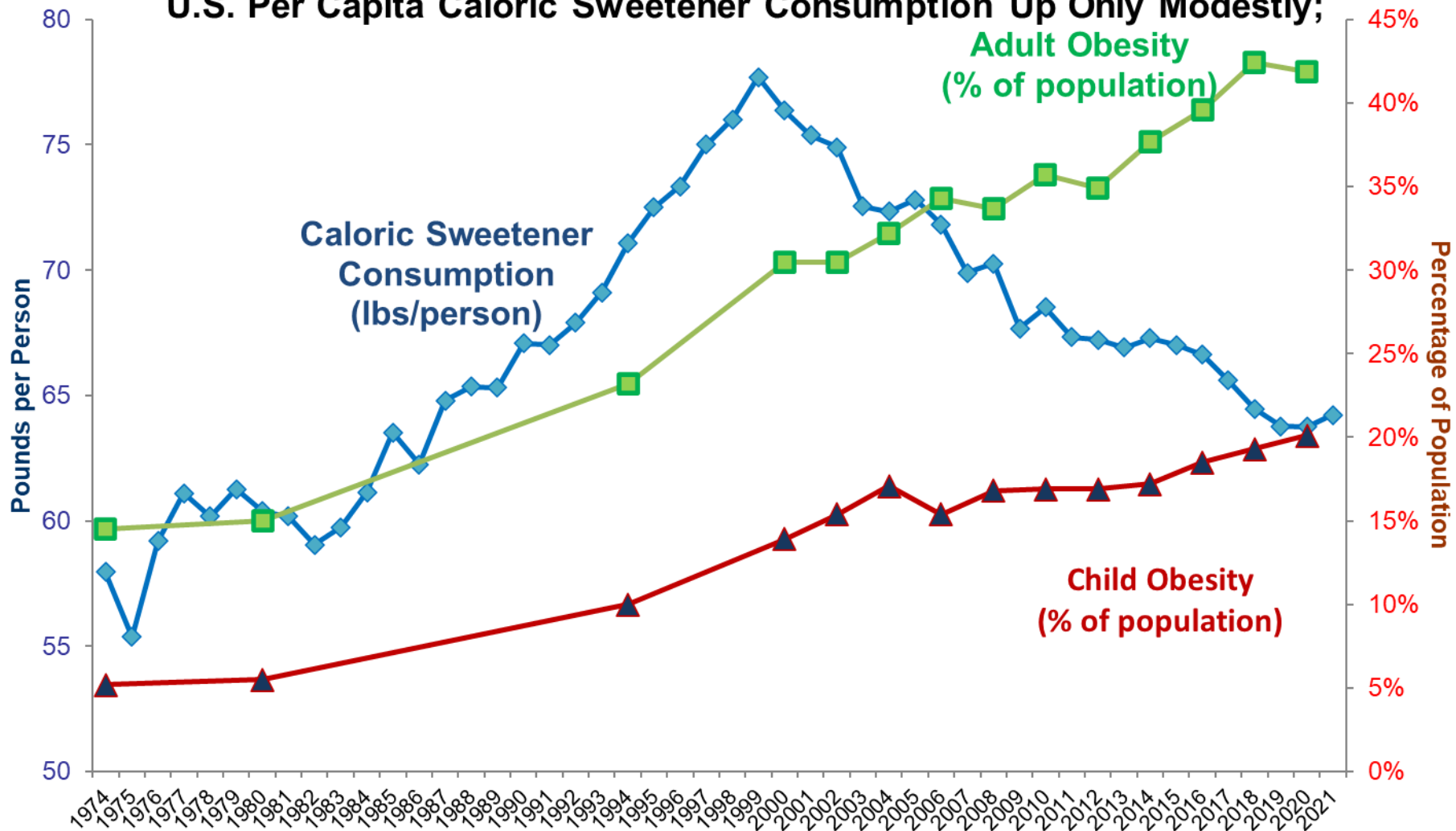


Exhibit 12: US Per Capita Consumption of Soft Drinks (Gallons)



Sources: NPD Group, Beverage Digest Fact Book

**Since 1974: U.S. Adult Obesity Has Tripled, Child Obesity Nearly Quadrupled;
U.S. Per Capita Caloric Sweetener Consumption Up Only Modestly;**



2000 – 2020:

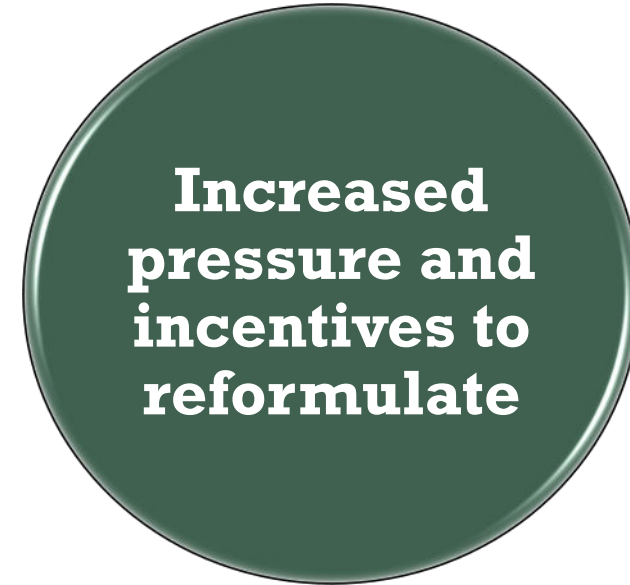
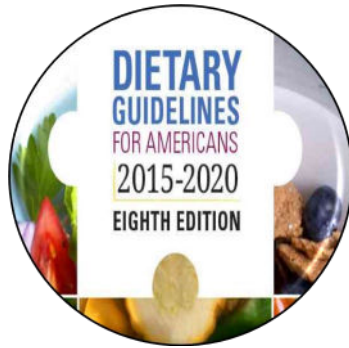
- Childhood obesity up 45%; adult obesity up 37%
- Caloric sweeteners down 16%

Source: Caloric Sweetener (Sugar + High Fructose Corn Syrup) data -- Economic Research Service/ USDA, Tables 51 & 52.
Obesity Data -- Centers for Disease Control and Prevention/HHS.
Note: Official obesity data available only for years shown.

Dietary Guidelines: History of Sugars Recommendations

- 1980** Avoid too much sugar
- 1985** Avoid too much sugar
- 1990** Use sugars only in moderation
- 1995** Choose a diet moderate in sugars
- 2000** Choose beverages and foods to moderate your intake of sugars
- 2005** No specific sugars guideline
- 2010** Reduce intake of calories from added sugars

Then it all changed....



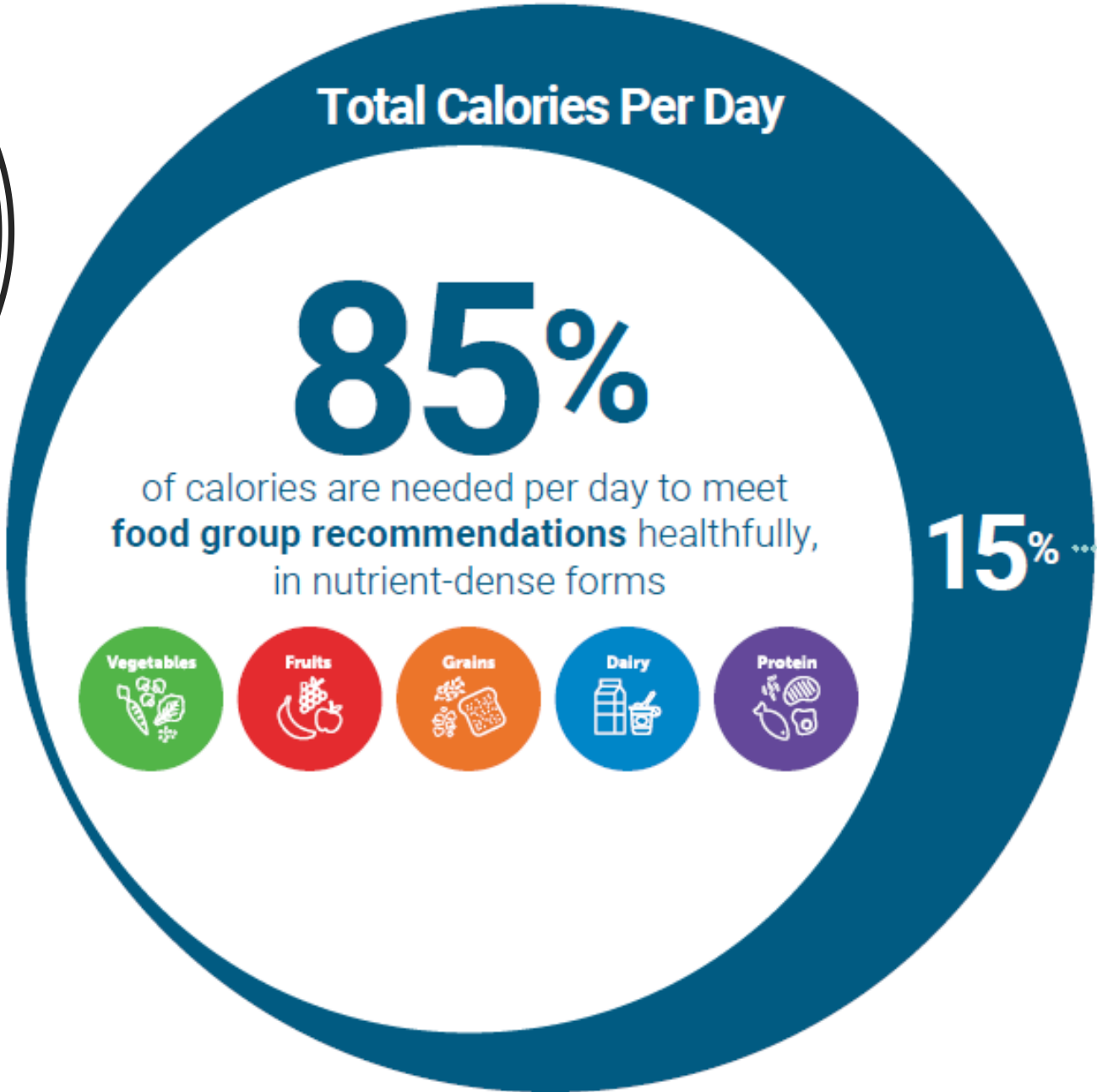
2015
World Health Org
recommends less
than 10% of
calories from
added sugars

2016
Dietary Guidelines
recommend less
than 10% of
calories from
added sugars

2016
FDA establishes
%Daily value for
added sugars of 50
g/day (aka, less
than 10% of
calories)



**Rationale
for 10%**



Current World Health Organization recommendation to reduce free sugar intake from all sources to below 10% of daily energy intake for supporting overall health is not well-supported by available evidence

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Rina Ruolin Yan, BSc, Chi Bun Chan, PhD, Jimmy Chun Yu Louie, PhD APD ✉

The American Journal of Clinical Nutrition, nqac084,

<https://doi.org/10.1093/ajcn/nqac084>

Published: 05 April 2022

“When sugar is removed from a food product, the bulk and texture of the product is usually affected, and bulking agents such as modified starch are commonly utilized to solve the issue. However, these agents generally provide energy because they are carbohydrate-based. As a result, eventually the caloric content could even increase compared to the original formulation.”

“The current public health recommendations to encourage the reduction of both solid and liquid forms of free sugars intake (e.g., sugar reformulation programs) should be revised due to the over-extrapolation of results from SSBs studies.”



What is Sugar Reformulation? (according to proponents)

- Product reformulations are efforts to lower the unhealthy components of foods at the time of production, without reducing healthy nutrients.
- Reformulation is one of a number of strategies that could contribute to reducing sugar consumption at a country-wide level.
- Reformulation of foods to reduce sugar consumption has a number of potential advantages.
 - It **does not rely on substantial behavior change among consumers** and when done in a whole country setting, it can reach everyone.
 - Reformulation can also be **mandated** by governments to promote success and **provide a level competitive playing** field for the industries involved.
 - Reformulation can also be **achieved through the introduction of front-of-packet health labels** that encourage industry to reformulate to meet the required standard for positive labels.



Factors Incentivizing Manufacturers to Reformulate

- Consumer demand
- Dietary Guidelines
- Labeling
 - Nutrition
 - Front of Package
 - Menu
- Product Category Limits/Targets
- Taxes
- Restrictions



The U.S. Food & Drug Administration's New Food Label

Original Label

Nutrition Facts

Serving Size 2/3 cup (55g)
Servings Per Container About 8

Amount Per Serving

Calories 230 Calories from Fat 72

% Daily Value*

Total Fat 8g **12%**

Saturated Fat 1g **5%**

Trans Fat 0g

Cholesterol 0mg **0%**

Sodium 160mg **7%**

Total Carbohydrate 37g **12%**

Dietary Fiber 4g **16%**

Sugars 1g

Protein 3g

Vitamin A 10%

Vitamin C 8%

Calcium 20%

Iron 45%

* Percent Daily Values are based on a 2,000 calorie diet.
Your daily value may be higher or lower depending on
your calorie needs.

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

New Label

Nutrition Facts

8 servings per container
Serving size **2/3 cup (55g)**

Amount per serving
Calories **230**

% Daily Value*

Total Fat 8g **10%**

Saturated Fat 1g **5%**

Trans Fat 0g

Cholesterol 0mg **0%**

Sodium 160mg **7%**

Total Carbohydrate 37g **13%**

Dietary Fiber 4g **14%**

Total Sugars 12g

Includes 10g Added Sugars **20%**

Protein 3g

Vitamin D 2mcg 10%

Calcium 260mg 20%

Iron 8mg 45%

Potassium 235mg 6%

* The % Daily Value (DV) tells you how much a nutrient in
a serving of food contributes to a daily diet. 2,000 calories
a day is used for general nutrition advice.

- Released May 20, 2016
- Implementation date:
January 2020
- Based on the 2015
Dietary Guidelines

- Daily Value of 10%
based on 50g (adults)
and 25g (children
<4yrs)
- <5% = "LOW"
- >20% = "HIGH"

- Serving size for sugar
was also increased from
1 tsp (4 grams) to 2 tsp
(8 grams)

“THE” RATIONALE in 2015

for FDA’s added sugars declaration

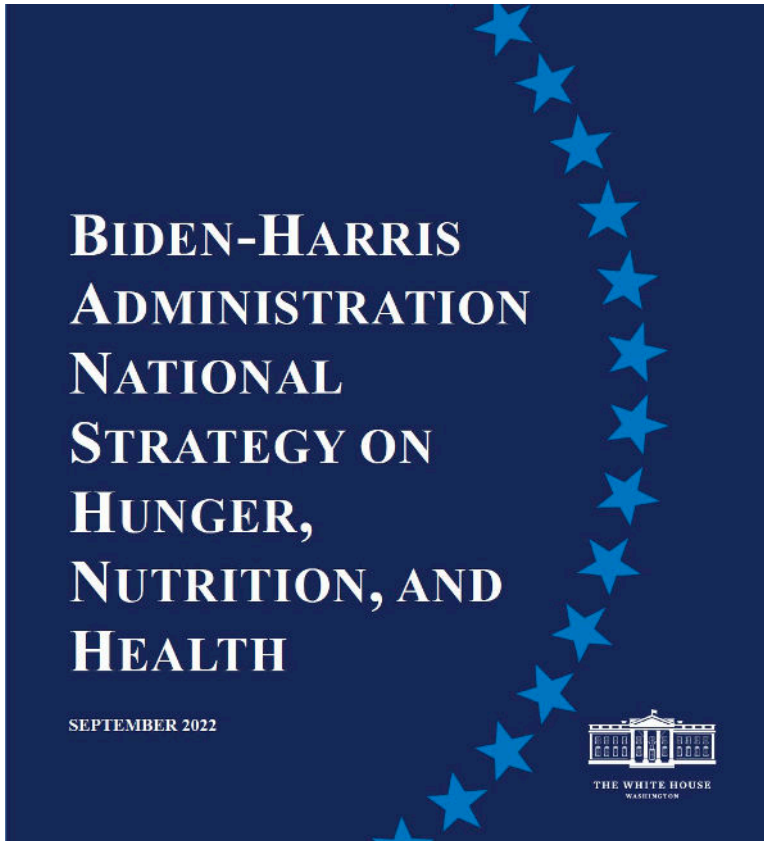
We (FDA) are proposing mandatory declaration of added sugars on all foods because of:

- the variability in ingredients used,
- the need for consumers to have a consistent basis on which to compare products,
- the need for consumers to identify the presence or absence of added sugars, and
- when added sugars are present, the need for consumers to identify the amount of added sugars added to the food.
- ***The mandatory declaration of added sugars may also prompt product reformulation of foods high in added sugars like what was seen when trans fat labeling was mandated.***



White House National Strategy: Focus on Sugar

September 2022



- **Redefine “Healthy”**
- **Explore Front of Package Labeling**
- **Explore further ways to reduce added sugars--
Potential added sugars targets**
- **I.D. potential new added sugars and sodium limits in
USDA Food Procurement**



Food and Drug Admin's Proposed "Healthy" Definition

FDA released its proposed update to the definition of "healthy" on September 28th. The proposal:

1. Would require that foods labeled "healthy" contain a minimum amount of at least one of the food groups or subgroups encouraged by the DGAs (fruit, vegetables, whole grains, dairy, protein foods).
2. Sets new qualification criteria for nutrients that must be limited.
 1. **Added sugars: 5% DV baseline:** ($\leq 2.5g$) per RACC, though some categories must contain less than this.
 2. **Saturated fat: 5% DV baseline:** ($\leq 1 g$) per RACC for most foods, consistent with the low saturated fat criteria.
 3. **Sodium: 10% DV baseline:** ($\leq 230 mg$) per RACC, though some categories must contain less.



NO CRITERIA FOR:

- Calories
- Non-Nutritive Sweeteners



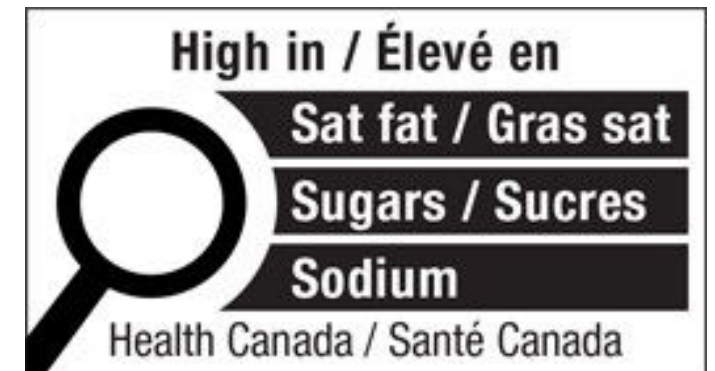
Front-of-Package Initiatives

- Chile was one of the first countries to implement FOP warning labels (introduced in 2016) to highlight foods high in fat, sugar, and calories.
- Since then, more than 40 countries have implemented or introduced some type of nutrition labeling scheme that involve FOP labels. Countries moving towards mandatory labels (versus voluntary).
- FDA is moving forward on a U.S. system.

Mexico



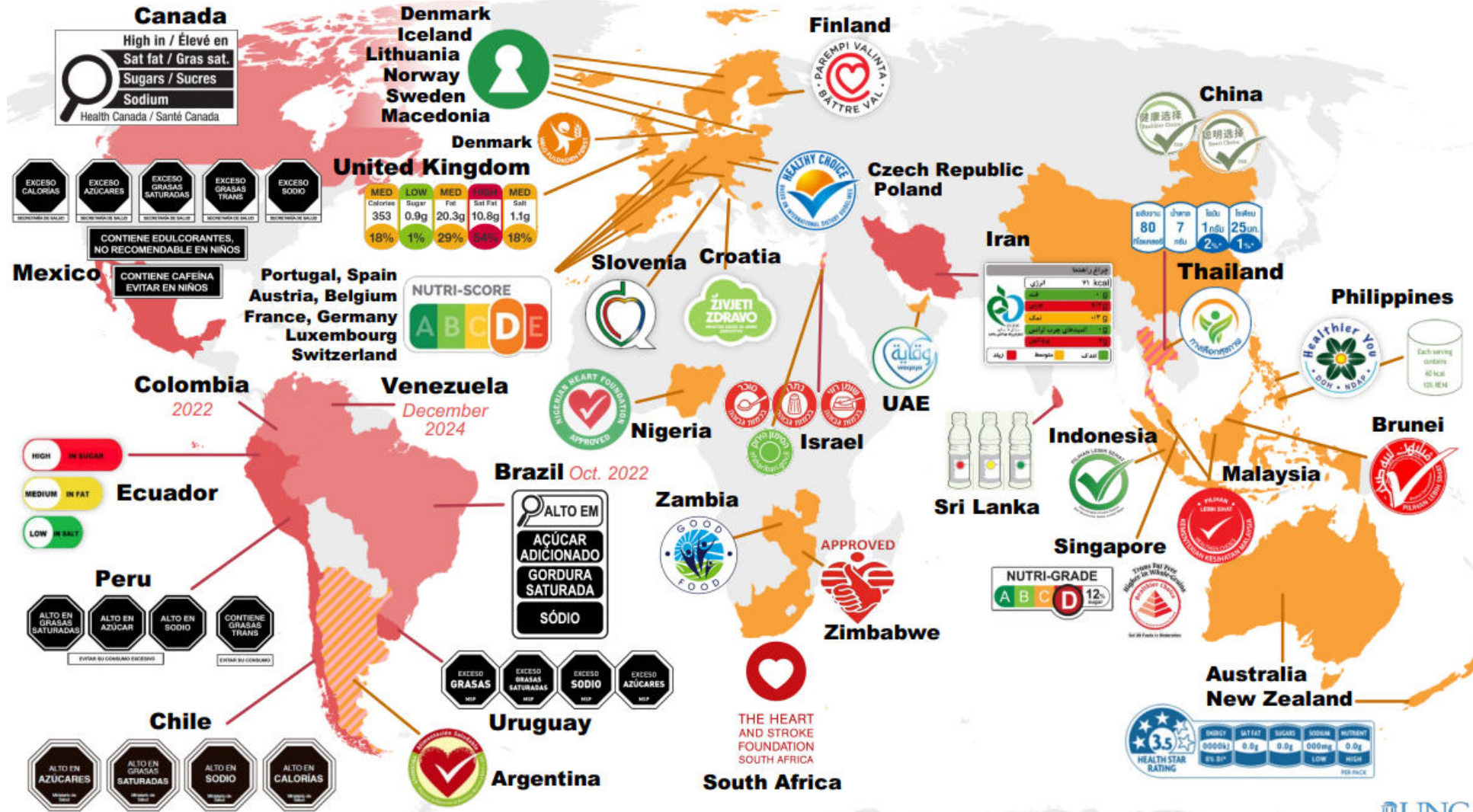
Canada



MANDATORY

VOLUNTARY

Countries with mandatory or voluntary interpretive labels on packaged foods and drinks



More organizations call for FDA to develop mandatory front-of-package nutrition labeling

Updated: April 13, 2023

Nutrition Tips		Nutrition Tips		High In	
Per serving		Per serving		Per serving	
Saturated Fat	Med	High In	% Daily Value	Saturated Fat	30%
Sodium	High	Saturated Fat	30%	Sodium	35%
Added Sugars	Low	Sodium	35%	Added Sugars	25%
FDA.gov		FDA.gov		FDA.gov	

PER SERVING

190 CALORIES	SAT FAT 5% DV	SODIUM 15% DV	ADDED SUGARS 25% DV
AVOID TOO MUCH			

CSPI worked with the American Cancer Society, American Heart Association, American Public Health Association, Consumer Federation of America, and Consumer Reports to file a supportive comment with FDA on CSPI's August 2022 petition for mandatory FOP.



FDA's Commissioner Califf: "a radical enthusiast" for FOPL



"I'm a radical enthusiast about that (FOP) and we're going to do everything we can to make it happen," Califf said during remarks at a virtual sugar-reduction summit hosted by the Center for Science in the Public Interest in May.

*"We're working hard to make sure that consumers have readily available information about added sugars when making food choices **and hope and expect these actions will also encourage industry to reformulate**"*



Consumers want dietary guidelines to be validated by trusted government sources like the USDA and FDA.

2023 Sources of Information <i>Among all consumers (n=1500)</i>	Trusted (Multi-select)
The US Food and Drug Administration	37%
The US Department of Agriculture	13%
Scientific or medical sources (e.g., journals, scholarly articles, etc.)	9%
Family	6%
Online articles, blogs, or forums	5%
Cooking shows (e.g., television, YouTube, etc.)	3%
Spouse, partner, or significant other	3%
World Health Organization	3%
Cookbooks	2%
Food magazines	2%
Friends	1%
Television news or talk shows	1%
Newspapers	1%
Lifestyle magazines	0%
Celebrity influencers	0%
Radio	0%

What's Happening Next

- FDA/all-Government “Sugar Reduction” meeting expected this fall
- USDA finalizing school meals standards
- FDA finalizing “Healthy” in spring 2024
- FDA moving forward QUICKLY with front-of-package labeling consumer testing
- 2025 Dietary Guidelines expected winter 2024



International Sweetener Symposium

Sugar Reduction: Policies, Pressure and Public Perception *(And what does it mean for you?)*

August 8, 2023

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Disclaimer

These are my observations based on contact with sugar and corn sweetener buyers and sellers in the market, on data from the USDA and various other government and private sources and on review of published reports from Sosland editors and other media. They are not meant to be the views of Sosland Publishing Co. I do not trade in the cash or futures sugar markets.

Sugar Reduction: Overview

■ Overview

- *This is a highly complicated and real issue, and you need to really appreciate what Courtney and others are dealing with.*
- “Horror” story forecasts or “worst-case scenarios” of a 50% loss in sugar demand if food manufacturers reformulate to meet government regulations under a 5% or 6% added sugar policy.

■ Not worst-case scenario, but not going away either

- Drop to 10% added sugar from current 13% average very roughly equates to at most a 23% reduction in demand = 3.2 million tons.
- Mexico could account for one-half to one-third of the reduction, depending on US needs.
- Eliminating imports from Mexico isn't the answer, brings corn sweeteners back to the U.S. among other political and trade issues.
- US producers don't produce 85% allocation of U.S. sugar use (may still be room to grow).
- Population growth will continue to support some level of sugar demand.
- Need long-term view and short-/mid-/long-term plans to address an issue that isn't going away.

Sugar Reduction: Overview

- **Players**
 - Government(s), advocacy groups, WHO, food/beverage manufacturers, sugar processors/refiners, consumers, PRODUCERS.
 - “For” are sugar producers, processors/refiners, food/beverage manufacturers.
 - “Against” all levels of government (to some degree), advocacy groups, WHO.
 - “Caught-in-the-middle” consumers (most of whom happen to like sugar).
- **Mandatory (taxes, regulations)/voluntary**
- **Consumer perception/reaction**
 - Growing number of kids/young people who may be more averse to sugar consumption than older generations.
 - Sizable majority of consumers say they want to reduce sugar intake, but in reality don't do it.
 - Consumers continue to rank taste as a high priority in food purchases/eating (good for sugar).
 - Food manufacturers challenged to replace sugar taste and other qualities.

Sugar Reduction: What are these guys going to say?

My Nashville Granddaughters

National Ice Cream Day (July 16)

- chocolate milk shakes
- whipped cream
- frosting-rimmed glasses
- candy toppings

This may be heartwarming or humorous, but this is the generation you need to think about.

SIDE NOTE: These two girls (ages 7 and 5) have never tasted soda or carbonated beverages (but they love sweets; their parents buy mostly organic; etc.



Sugar Reduction: Sugar reduction reports abound

Word search on Sosland's *Food Business News* website brought up 630 stories on “sugar and reduction”

- Tate & Lyle expands **stevia** sweetener portfolio
- Sunsweet launches probiotic snacks, **lower sugar beverage**
- Kerry adds to **sugar-reduction portfolio**
- Ingredient from Beneo **reduces sugar**, adds fiber
- **Government efforts to limit sugar are intensifying**
- USDA to **regulate added sugars in school meals**
- **Getting sugar out of dairy alternatives**
- **Non-sugar** the ‘unstoppable trend’ in beverages, PepsiCo's Laguarda says
- Collaboration creates coatings with up to **50% less sugar**
- **Less sugar** a top priority for consumers
- Etc., etc., etc.

Sugar Reduction: Companies focus on less sugar

■ Market opportunities remain ripe for sugar reduction innovation

(Based on latest International Food Information Council survey)

The prominence of “low in sugar” as a prerequisite of healthy food together with tightening nutritional guidelines for school meal programs underscore the urgency behind many food and beverage companies’ efforts to cut sugar levels or, at least, offer reduced-sugar alternatives. That urgency has rippled through the supply chain with ingredient suppliers bringing a plethora of sugar reduction innovations to market.

Several ingredient introductions during the past few months from established companies like Beneo, Howtian, Icon Foods, Kerry and others specifically target sugar reduction. The new ingredients focus on reducing sugar or addressing such issues as flavor modulation or flavor masking.

■ Nestle bringing new sugar-reduction technology to market

Nestle SA is taking another crack at sugar reduction. The company is introducing a sugar-reduction technology that uses an enzymatic process to reduce the sugar in such products as malt, milk and fruit juices by 30%, according to the company.

“Sugar reduction across our portfolio remains a top priority,” said Stefan Palzer, chief technology officer for Nestle. “This new technology is a true breakthrough, as we can reduce sugar without adding sweeteners while preserving a great taste, all at a minimal cost increase.

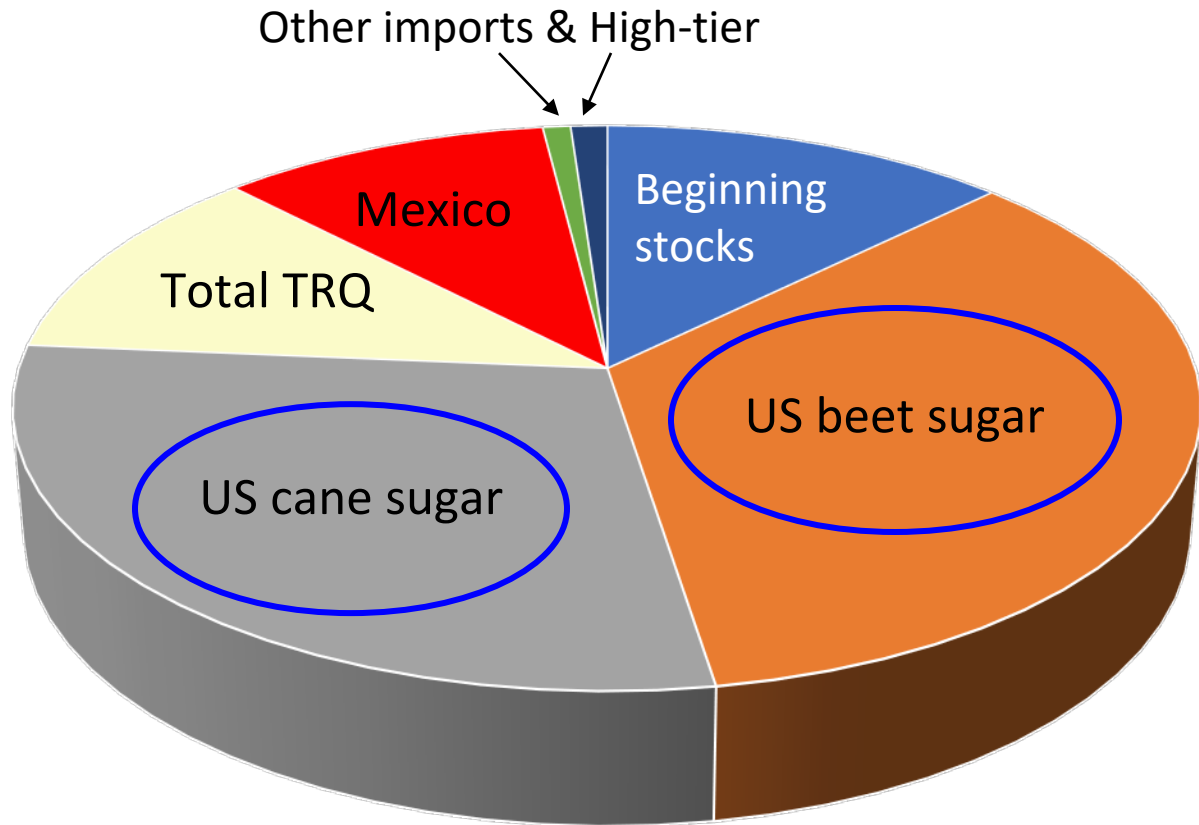
■ As consumers sour on sugar, brands have sweeter options

Demand for less sugar drives sweetener innovation, more choices for product developers.

Sosland is part of “the media” but without an agenda; yet we have run hundreds of stories about sugar reduction and reformulation as we report on industry trends and studies and what food manufacturers, governments and consumers are doing.

Sugar Reduction: What the numbers say – sugar sources

- The numbers don't tell the real story



<i>USDA July WASDE</i>	% of total	1,000 tons
Beginning stocks	12.7%	1,841
US beet	34.7%	5,022
US cane	28.9%	4,177
T.R.Q.	11.4%	1,644
Mexico	10.3%	1,486
Other imports	0.9%	125
High-Tier imports	1.1%	165

USDA forecasts 2023-24 total US sugar supply at 14,460,000 tons, raw value.
 USDA forecasts 2023-24 domestic sugar deliveries as 12,600,000 tons; total use at 12,740,000 tons.

Sugar Reduction: What the numbers say – sugar sources

Domestic sugar supply and use

1,000 tons	2023-24
Begin. Stocks	1,841
Production	9,199
Beet	5,022
Cane	4,177
Imports	3,420
T.R.Q.	1,644
Other Prog.	125
Mexico	1,486
High Tier	165
Ttl Supply	14,459
Exports	35
Deliveries	12,705
Food	12,600
Other	105
Misc.	-
Total Use	12,740
Ending Stocks	1,719

Per statute, USDA allocates 85% of US sugar needs as calculated in the July WASDE report to domestic beet and cane producers.

12,600,000 x .85 = 10,710,000 tons
 Beet (54.35%) = 5,820,885 tons
 Cane (45.65%) = 4,889,115 tons

USDA Forecast	Difference
9,199,000 tons	-1,511,000 tons
5,022,000 tons	-798,885 tons
4,177,000 tons	-712,115 tons

Reductions of 12.9% added sugars to 10% is a 22.5% reduction
 22.5% reduction of sugar deliveries for food = 2,835,000 tons

That may be worst-case scenario (vs 50% reduction), but in reality, it would be much less than 22.5% as guidelines at this point are voluntary.

Any loss in demand from reformulation could be offset by US production falling short of OAQ and/or by lower imports from Mexico at this point.

So the issue isn't loss of demand for the amount of sugar you can produce.

Sugar Reduction: What the numbers say – sugar deliveries

USDA SMD Report	FY 2022 (OCT-SEP)	Percent of total
PRODUCT OR BUSINESS OF BUYER		
Total Deliveries (<i>actual weight</i>)	10,986,352	
Bakery, cereal, and related products	2,592,382	24%
Confectionery and related products	1,180,958	11%
Ice cream and dairy products	825,230	8%
Beverages	803,341	7%
Canned, bottled and frozen foods	392,644	4%
Multiple and all other food uses	1,002,777	9%
Non-food uses	119,411	1%
Hotels, restaurants, institutions	93,548	1%
Wholesale grocers, jobbers, dealers	2,438,329	22%
Retail grocers, chain stores	1,264,035	12%
Government agencies	15,907	0%
All other deliveries	257,790	2%

It's hard to get behind – or ahead of – something that doesn't appear to be an immediate threat or cost.

BIG 4 account for 69% of sugar deliveries:

24% bakery sector
 22% wholesale grocers, jobbers, dealers
 12% retail
 11% confectionery

Most "at risk" sectors total 54% of deliveries:

24% bakery
 11% confectionery
 8% dairy
 7% beverages
 4% canned/frozen foods

USDA forecasts 2023-24 domestic sugar deliveries for human use at 12,600,000 tons.

Sugar Reduction: The price impact

- **The price impact**
 - Does sugar consumption react to price more than label “warnings”?
 - Not so much with consumers in United States.
 - Some switching between corn sweeteners and sugar by food manufacturers if prices differences wide enough (and between beet and cane sugar amid wide price differences), but labeling, ingredient mix, etc., limits short-term switching.
 - Price is more of a factor in other countries, esp. where sugar supplies/prices are tightly controlled, and incomes are lower.
 - Not really a lower-cost alternative to sugar (other than corn sweeteners)
 - Alternative sweeteners (artificial and natural) cost more.
 - Doesn't mean amount of added sugar can't be reduced.
 - Price may be more of a supply factor than a consumption factor.
 - Encourage/discourage planted area.
 - Encourage/discourage refinery expansion.

Sugar Reduction: Alternative sweeteners

- **High-intensity sweeteners**
 - FDA-approved as food additives in the United States: [saccharin](#), [aspartame](#), [acesulfame potassium \(Ace-K\)](#), [sucralose](#), [neotame](#), and [advantame](#).
- **Plant and fruit-based high-intensity sweeteners**
 - Stevia (steviol glycosides, stevia rebaudiana or fermentation-based processes).
- **Sugar alcohols**
 - Sorbitol, xylitol, lactitol, mannitol, erythritol, and maltitol.
- **“Sugar” metabolized differently than traditional sugars**
 - D-allulose, D-tagatose, Isomaltulose.
- **Sweeteners not allowed or approved in the United States**
 - Such as calcium cyclamate, sodium cyclamate, magnesium cyclamate, and potassium cyclamate and whole-leaf stevia.

Sugar Reduction: But wait; There's more

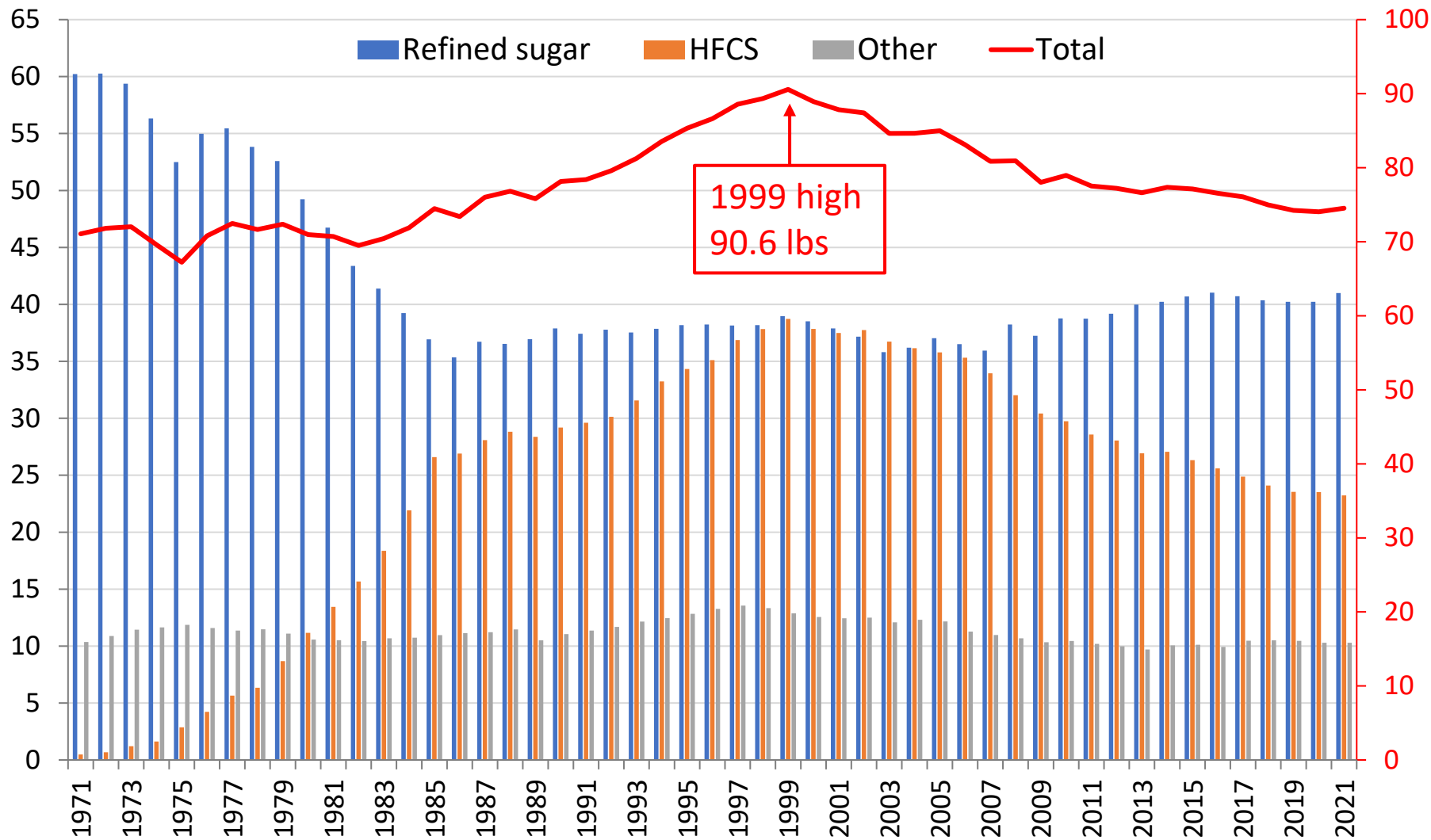
- **Other natural sweetener alternatives to sugar**
 - Honey, maple syrup, monk fruit, yacon syrup, agave, coconut sugar, date sugar, brown rice syrup, tapioca syrup, pureed fruits, fruit juice, molasses (it actually comes from sugar).
- **Corn sweeteners**
 - HFCS (various sweetness levels), glucose, dextrose, others.
- **Some of the above are caloric, some are not**
- **Attitudes about artificial sweeteners have become more negative than concerns about sugar and maybe even than corn sweeteners**
- **Plus, most of them are more expensive, which discourages food manufacturers**
- **Alternative/artificial sweeteners have turned out not to be the answer to replacing sugar (except in diet drinks and foods), but there is some cumulative impact, and stevia is probably the one to watch**

Sugar Reduction: “Sugar” consumption

- Reduction in total SWEETENER consumption has occurred (as obesity rates have increased)
- Beverages have accounted for largest reduction in caloric sweetener consumption (HFCS)
- Corn sweeteners have taken the hit; replaced mainly by sugar
- Sugar consumption – guilt by association or need to blame
 - Advertisers, general media, advocacy groups tend to talk about sugar reduction without distinction between type of caloric sweetener, calling everything “sugar.”
 - Sugar wasn’t taken out of Coke Zero Sugar, right?
- Sugar is an easy target; even if results are minimal, damage will be done – perception – over the long term
- It happened to beverages and corn sweeteners, don’t think it can’t happen to sugar

Sugar Reduction: Total per capita caloric sweetener deliveries

In lbs. Adjusted for loss from primary to retail, retail to consumer, consumer waste. Source: USDA Economic Research Service.



Per capita consumption (deliveries)

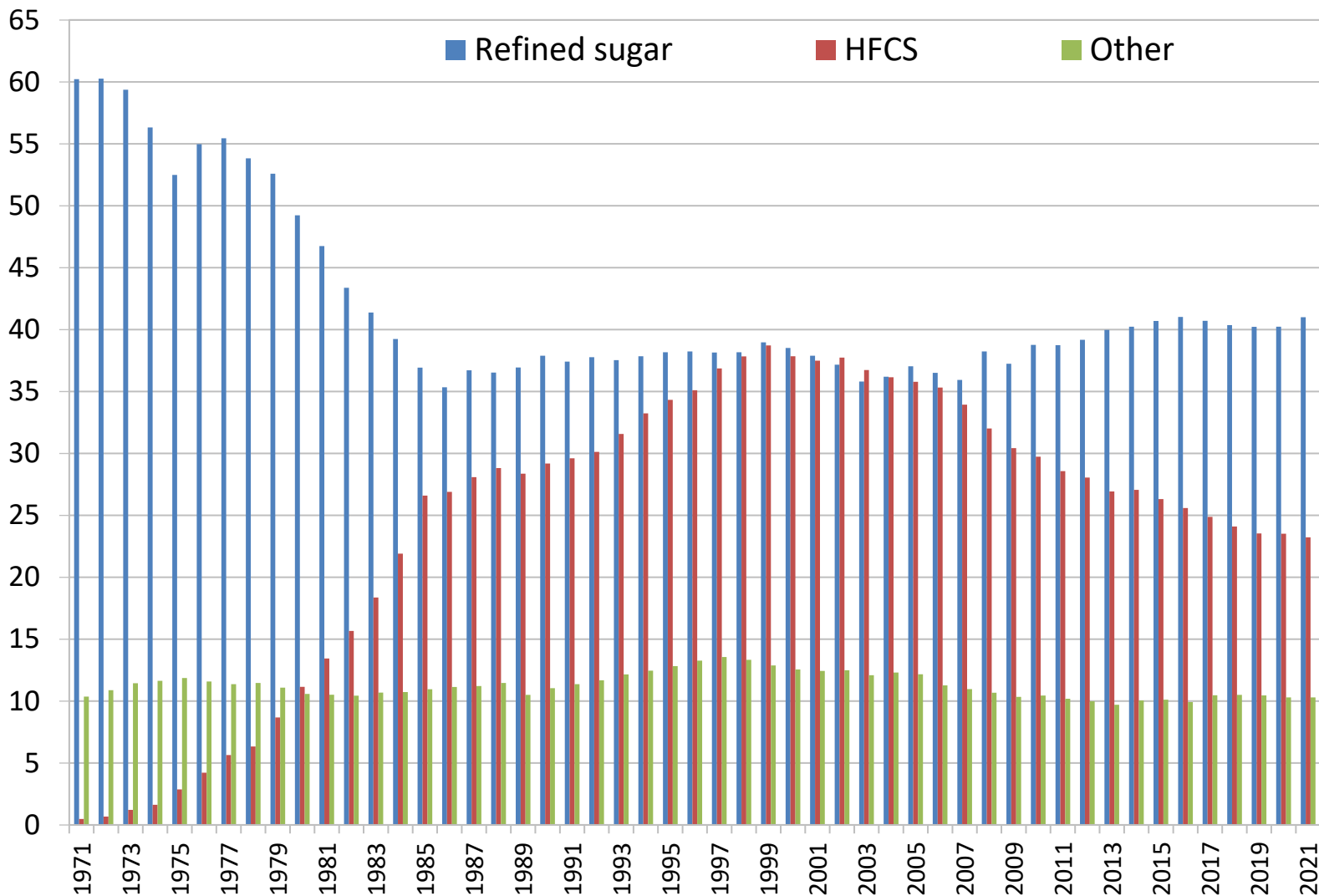
Total caloric sweetener consumption record high: 90.6 lbs in 1999 (153.7 lbs not adjusted for loss)

2021 total caloric sweetener consumption 74.5 lbs (127.4 lbs not adjusted for loss)

Down 17% from record high

Sugar Reduction: Per capita sweetener deliveries by major type

In lbs. Adjusted for loss from primary to retail, retail to consumer, consumer waste. Source: USDA Economic Research Service.



Per capita consumption (deliveries)

Sugar consumption record high: 60.3 lbs 1972 (102.6 lbs not adjusted for loss);

low: 35.3 lbs in 1986 (60.2 lbs not adjusted for loss)

2021 sugar consumption 41 lbs (69.8 lbs not adjusted for loss)

Sugar consumption down 32% from high; Up 5% from 1999; up 15% from recent low in 2003

HFCS record high 38.7 lbs per capita in 1999 (65.9 lbs not adjusted for loss); down 40% from high (largest lost in 42% HFCS used mostly for non-beverage applications)

Sugar Reduction: What the government controls

- **SNAP, WIC, school meals, military food programs (rest is mostly voluntary)**
 - Total participation in government programs around 80 million people (25% of population), excluding military
 - Programs account for about 8% of US sugar consumption, or about 1 million tons.
- **Taxes (mostly aimed at beverages)**
 - Several US cities/municipalities (and Navajo Nation) have beverage taxes in place.
 - Over 50 countries globally have beverage taxes in place or proposed.
- **Labeling**
 - Government seeks to draw attention to added sugar content with FOP labeling.
 - “Warning labels” proposed or in place in some areas and countries.
- **Dietary Guidelines are voluntary and likely not very effective at sugar reduction**

Sugar Reduction: Same or more pressures globally

Global situation: UK

Background

- The UK's sugar reduction program was launched in 2016 aimed to reduce the sugar content of food products that contribute the most sugar to children's intakes, with a target of 20% reduction by 2020.
- Targets were set for 10 product categories with baseline data taken from 2015.

Results

- The final report was published December 2022.
- There was a **3.5% reduction** in sales weighted average total sugar per 100g in products sold between 2015 and 2020.
- **Only a 0.5% overall decrease in sales weighted average calories** was achieved.

Table ES1a. Summary of change in sugar content by food category between baseline (2015) and year 4 (2020)

Product category	Retailers and manufacturers (% change in SWA (note 1) sugar per 100g)	Eating out of home sector (% change in SA (note 2) sugar per 100g)
Overall	-3.5	-0.2
Biscuits	-3.1	0.3
Breakfast cereals	-14.9	NA (note 4)
Chocolate confectionery	-0.9	NA (note 4)
Ice cream, lollies and sorbet	-7.2	0.5
Puddings	-2.3	0.3
Sweet spreads and sauces	-10.1	NA
Sweet confectionery	-2.8	NA (note 4)
Yogurts and fromage frais	-13.5	NA (note 4)
Cakes	-3.2 (note 3)	-8.2
Morning goods	-4.9 (note 3)	-3.5

Sugar Reduction: Same or more pressures globally

- **Global situation: Mexico**
 - Soda taxes in place since 2014 (with funding in part by Bloomberg).
 - 8% tax on “non-essential” foods high in sodium, solid fats or added sugars.
 - 2020 “warning” labels were added to FOP for foods with “excess” sugar, sodium, fat.
 - Initial sharp decline in soda consumption but eased as years gone by.
 - Beverage companies switch between sugar and HFCS depending on price.
 - There has been some reduction of soda consumption in Mexico.
 - Depends on who does the study.
- **Global situation: More than 50 countries have some form of soda taxes**
 - **Soda taxes have** been found to not significantly reduce calorie or sugar intake, yet fall “hardest on the most impoverished families” and “**have** fewer opportunities to avoid the **tax**” - *Washington Post*
- **WHO effect**
 - WHO recommends added sugar not exceed 10% of calories and suggests 5% is better.
 - Certain countries tend to “default” to WHO guidance.

Practically Speaking





When sugar is removed, new ingredients need to take its place.

There is no easy substitute for sugar.

Nutrition Facts

About 13 servings per container
Serving size 2 tbsp (32g)

Amount Per Serving	
Calories	190
% Daily Value*	
Total Fat 16g	21%
Saturated Fat 3.5g	18%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 150mg	7%
Total Carbohydrate 6g	2%
Dietary Fiber 2g	7%
Total Sugars 3g	
Includes 3g Added Sugars	6%
Protein 7g	
Vitamin D 0mcg	0%
Calcium 0mg	0%
Iron 0.4mg	2%
Potassium 94mg	2%
Vitamin A 0mcg	0%
Vitamin C 0mg	0%
Vitamin E 1.5mg	10%
Niacin 3.2mg	20%
Copper 0mg	

*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Original Peanut Butter



Reduced Sugar Peanut Butter



Nutrition Facts

About 13 servings per container
Serving size 2 tbsp (32g)

Amount Per Serving	
Calories	210
% Daily Value*	
Total Fat 17g	22%
Saturated Fat 4g	20%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 100mg	4%
Total Carbohydrate 6g	2%
Dietary Fiber 2g	7%
Total Sugars 2g	
Includes 2g Added Sugars	4%
Protein 7g	7%
Vitamin D 0mcg	0%
Calcium 0mg	0%
Iron 0.4mg	2%
Potassium 94mg	2%
Vitamin E 3mg	20%
Niacin 3.2mg	20%
Copper 0mg	

*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Despite the "1/3 Less Sugar" claim, calories have increased by 20



**Non-nutritive
Sweeteners**

Added Sugars

Calories

Sugar Reduction: But artificial sweeteners aren't the answer either

The Atlanta
Journal-Constitution

By Nancy Clanton, The Atlanta Journal-Constitution
Sept 13, 2022

Study: Artificial sweeteners linked to increased risk of cardiovascular disease

SCIENTIFIC
AMERICAN

Some Sugar Substitutes Affect Blood Glucose and Gut Bacteria

In a new study, participants who consumed sugar substitutes showed an altered microbiome and spikes in blood glucose

By Emily Willingham on August 19, 2022

NEWS

Sept. 8, 2022, 3:56 PM EDT

By Aria Bendix

Spate of new research points to the potential harms of artificial sweeteners

Recent studies suggest that consuming too many artificial sweeteners could elevate blood sugar levels and raise one's risk of heart disease or stroke.



SEPTEMBER 16, 2022

Research Shows That Artificial Sweeteners Can Have Unexpected Effects on the Body

Medical press

SEPTEMBER 15, 2022

Sugary drinks could raise your odds for fatal cancers: Study



Participants who consumed artificially sweetened beverages also had an increased risk of pancreatic cancer, even after BMI adjustment.

Diet coke 'may be bad for your heart' as experts say artificial sweeteners 'should not be considered a safe alternative to sugar'

By EMILY CRAIG HEALTH REPORTER FOR MAILONLINE
PUBLISHED: 18:30 EDT, 7 September 2022 | UPDATED: 18:30 EDT, 7 September 2022

Non-nutritive sweeteners affect human microbiomes and can alter glycemic responses

Date: August 19, 2022

Source: Cell Press

Summary: Since the late 1800s non-nutritive sweeteners have promised to deliver all the sweetness of sugar with none of the calories. They have long been believed to have no effect on the human body, but researchers challenge this notion by finding that these sugar substitutes are not inert, and, in fact, some can alter human consumers' microbiomes in a way that can change their blood sugar levels.

SOSLAND
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yahoo!life

People Who Consume Artificial Sweeteners May Have a 9% Higher Risk for Heart Disease, New Research Suggests

Karla Walsh

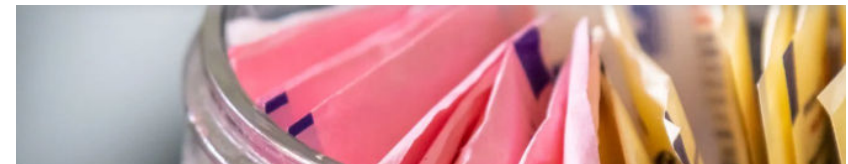
Wed, September 14, 2022 at 2:18 PM · 5 min read



TheScientist
EXPLORING LIFE, INSPIRING INNOVATION



Shafaq Zia
Aug 19, 2022



Home / News & Opinion

Artificial Sweeteners Alter Gut Bacteria in Humans



WHO Advises Against the Use of Non-Sugar Sweeteners

- [WHO's May 2023 guidance](#) advises against the use of non-sugar sweeteners to control weight, citing potential health risks including an increased risk of Type 2 diabetes, cardiovascular disease, and early death in adults.

Sugar Reduction: Same or more pressures globally

WHO's IARC Declares Aspartame a “Potential Carcinogen”

July 14, 2023: WHO's International Agency for Research on Cancer (IARC) categorized aspartame as a “possible carcinogen.”

FDA's response:

While it would be inappropriate to speculate on potential scenarios surrounding other organizations' assessments of aspartame, “the FDA can affirm that scientific evidence has continued to support its conclusion that aspartame is safe for the general population.”





We know we need to cut down on sugar. But replacing it with artificial compounds isn't necessarily the answer

by [Bee Wilson](#) Thu 8 Dec 2022 01.00 EST

"In a startling turnaround, the WHO's draft guidance stated that non-sugar sweeteners should "not be used as a means of achieving weight control or reducing risk of non-communicable diseases" such as diabetes or heart disease. Suddenly, the whole rationale for sweeteners as a "healthy" alternative looked much shakier."



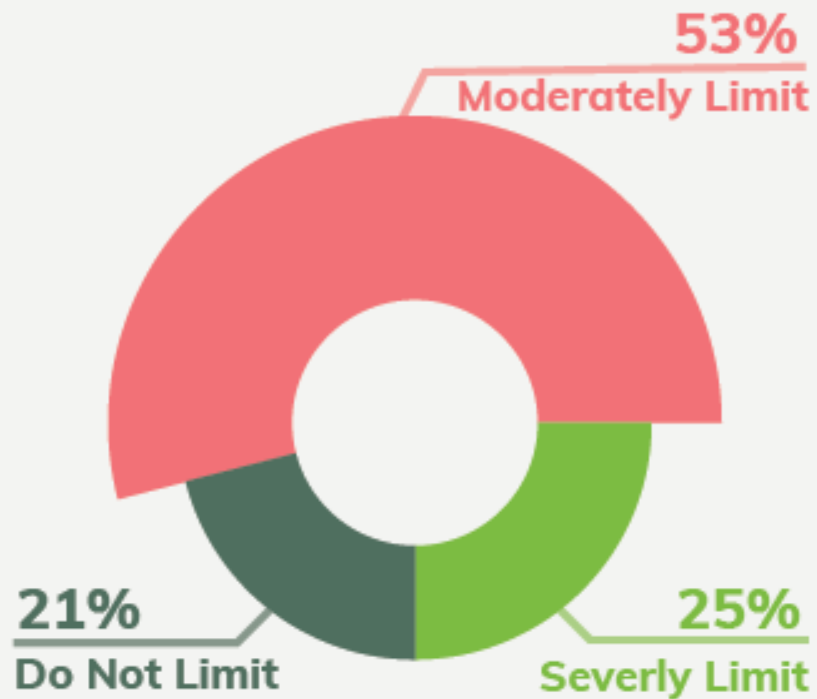
Sugar Reduction: Conclusions

- **Separate fact from fiction**
 - It's not just sugar that causes obesity: total calories, physical activity, socio-economic class, etc.
 - It's not just sugar that causes cavities. (my talk with dentist)
 - Can't promote sugar consumption; but food manufacturers promote your product when they promote their products.
 - Can promote moderation for which demand for sugar will be more than adequate to take domestic supply.
 - Sugar isn't bad for you, but it's not bad to eat less either in some cases.
 - Moderation versus Regulation.

Sugar Reduction: Conclusions

- **Sugar reduction can't be ignored**
 - Global phenomenon, or at least a global effort.
 - Government will continue to try and regulate “healthy” lifestyle.
 - Domestic pressure from government and advocacy groups will increase.
 - Generational changes will make a difference, most likely eating less sugar.
 - As consumers consistently say they want to reduce sugar intake, more will.
 - Food manufacturers have been and will continue to reformulate/reduce sugar as they seek to satisfy consumer demand for “healthy.”
 - Opportunity for sugar producers, sugar refiners, corn refiners and food manufacturers to find common ground.
 - Pressure on sugar remains constraint in processor/refiner expansion.
 - It's not doomsday for sugar demand; per capita sugar demand will likely decline; total demand supported by population growth but won't significantly increase.
 - Promote moderation, educate, work vertically through food chain.

CONSUMERS ARE MODERATING THEIR INTAKE OF SUGAR, BUT AREN'T REPLACING SUGAR WITH ARTIFICIAL SWEETENERS.



CONSUMERS WHO LIMIT THEIR SUGAR INTAKE DO SO BY:

53% by eating food that is less sweet (sugar is reduced, no artificial sweeteners added)

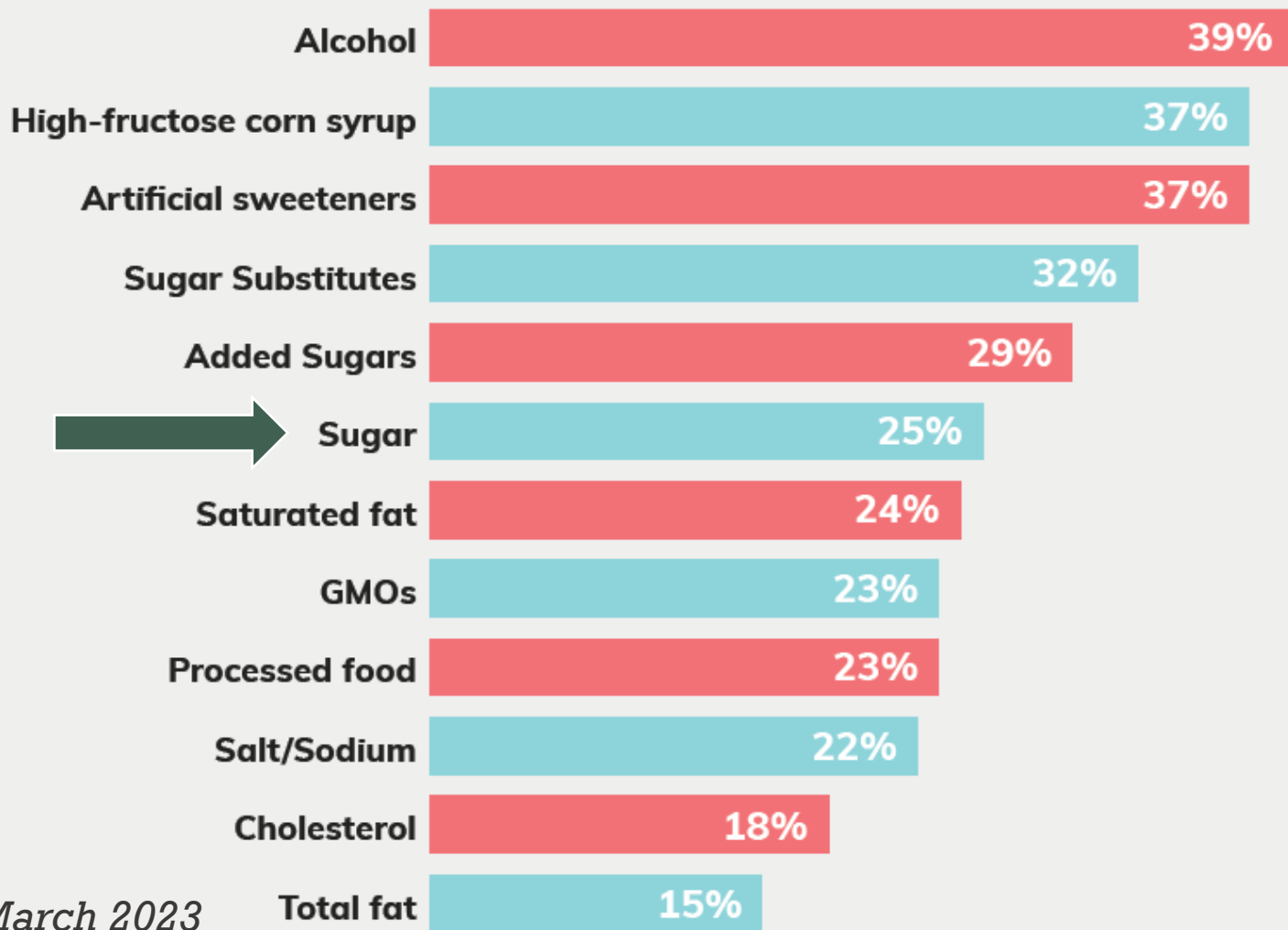
33% by eating the same food but in smaller portions and/or less often (i.e. I moderate)

14% by eating foods that replace sugar with artificial sweeteners

SUGAR MOVES OUT OF TOP 5 ON THE LIST OF WHAT CONSUMERS SEVERELY LIMIT.

A SHIFT FROM FIVE YEARS AGO WHEN SUGAR WAS #1.

82% of consumers severely limit at least one dietary component

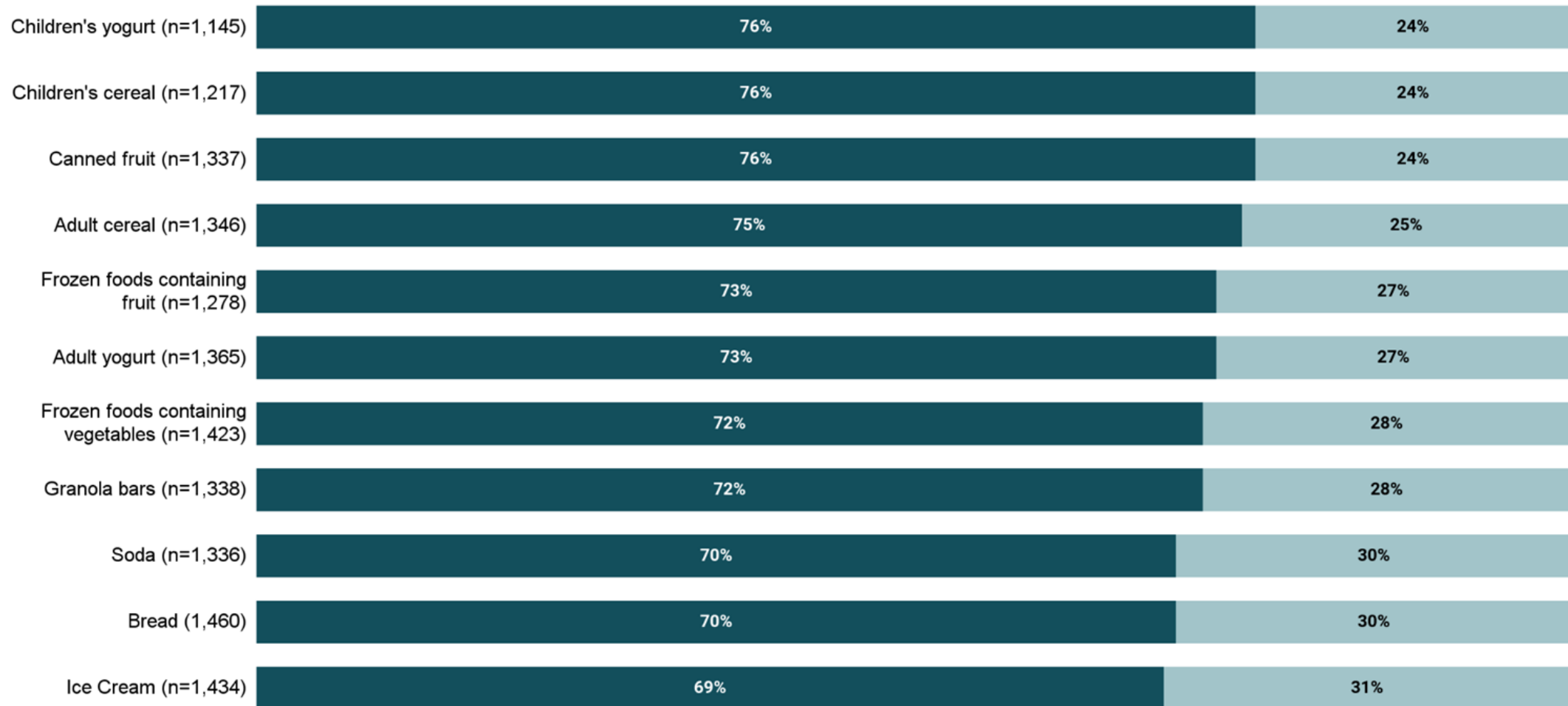


Buying children's food stands out as the most important occasion to avoid artificial sweeteners.

Avoid Artificial Sweetener Products 2023

Among consumers who buy these products

■ Important to Avoid ■ Not Important to Avoid



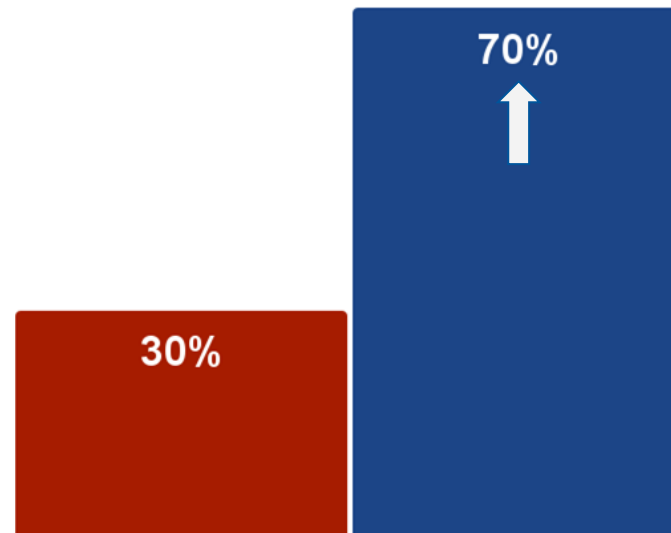
Consumers overwhelmingly disagree with USDA's current proposal allowing artificial sweeteners in school lunches.

Q47. Which of the following statements best describes how you feel about the ingredients in these school lunches?

Showing % agreement with 'Artificial sweeteners should be ___ in school lunch'

↑ - Indicates the value is significantly higher than the average at a 95% confidence level

■ Allowed ■ Not Allowed



All consumers
(n=1500)

Thank You!
Visit sugar.org

Get Social with [#MoreToSugar](https://twitter.com/MoreToSugar)

