Research Watch

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Identifying Financially Sustainable Pricing Interventions to Promote Healthier Beverage Purchases in Small Neighborhood Stores

Nau C, Kumanyika S, Gittelsohn J, et al. Prev Chronic Dis. 2018;15:E12.
https://www.ncbi.nlm.nih.gov/pubmed/29369758

Abstract

INTRODUCTION: Residents of low-income communities often purchase sugar sweetened beverages (SSBs) at small, neighborhood "corner" stores. Lowering water prices and increasing SSB prices are potentially complementary public health strategies to promote more healthful beverage purchasing patterns in these stores. Sustainability, however, depends on financial feasibility. Because in-store pricing experiments are complex and require retailers to take business risks, we used a simulation approach to identify profitable pricing combinations for corner stores.

METHODS: The analytic approach was based on inventory models, which are suitable for modeling business operations. We used discrete-event simulation to build inventory models that use data representing beverage inventory, wholesale costs, changes in retail prices, and consumer demand for 2 corner stores in Baltimore, Maryland. Model outputs yielded ranges for water and SSB prices that increased water demand without loss of profit from combined water and SSB sales.

RESULTS: A 20% SSB price increase allowed lowering water prices by up to 20% while maintaining profit and increased water demand by 9% and 14%, for stores selling SSBs in 12-oz cans and 16- to 20-oz bottles, respectively. Without changing water prices, profits could increase by 4% and 6%, respectively. Sensitivity analysis showed that stores with a higher volume of SSB sales could reduce water prices the most without loss of profit.

CONCLUSION: Various combinations of SSB and water prices could encourage water consumption while maintaining or increasing store owners' profits. This model is a first step in designing and implementing profitable pricing strategies in collaboration with store owners.

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Review of 100% Fruit Juice and Chronic Health Conditions: Implications for Sugar-Sweetened Beverage Policy

Auerbach BJ, Dibey S, Vallila-Buchman P, Kratz M, Krieger J. Adv Nutr. 2018;9(2):78-85.
https://www.ncbi.nlm.nih.gov/pubmed/29659683

Abstract

Whether or not drinking 100% fruit juice causes poor health is controversial. Although 100% fruit juice may contain as much sugar as regular soda, it provides needed nutrients to Americans' diets. We systematically reviewed the current evidence of the association of 100% fruit juice consumption and chronic health conditions in children and adults. We focused on data from systematic reviews and meta-analyses about cardiometabolic health outcomes, liver disease, and caries. Aside from increased risk of tooth decay in children and small amounts of weight gain in young children and adults, there is no conclusive evidence that consumption of 100% fruit juice has adverse health effects. Guidelines from groups like the American Academy of Pediatrics and Dietary Guidelines for Americans recommending that 100% fruit juice may be consumed in moderation are consistent with the available evidence and should be used to inform food policies.

The Short-Term Impacts of the Philadelphia Beverage Tax on Beverage Consumption

Zhong Y, Auchincloss AH, Lee BK, Kanter GP. Am J Prev Med. 2018.
https://www.ncbi.nlm.nih.gov/pubmed/29656917

Abstract

INTRODUCTION: On January 1, 2017, Philadelphia implemented a beverage tax of $0.015/ounce on sugar ("regular") and sugar-substitute ("diet") beverages. The purpose of this study was to evaluate the immediate impact of the tax on residents' consumption of soda, fruit drinks, energy drinks, and bottled water.

METHODS: A repeat cross-sectional study design used data from a random-digit-dialing phone survey during a no-tax period (December 6-31, 2016) and a tax period (January 15-February 31, 2017) among 899 respondents in Philadelphia, Pennsylvania, and 878 respondents in three nearby comparison cities. Survey questions included frequency and volume of bottled water and beverages. Outcomes were daily consumption, and 30-day consumption frequency and volume. Propensity score-weighted difference-in-differences regression was used to control for secular time trend and confounding. Covariates were sociodemographics, BMI, health status, smoking, and alcohol use. Analyses were conducted in 2017.

RESULTS: Within the first 2 months of tax implementation, relative to the comparison cities, in Philadelphia the odds of daily consumption of regular soda was 40% lower (OR=0.6, 95% CI=0.37, 0.97); energy drink was 64% lower (OR=0.36, 95% CI=0.17, 0.76); bottled water was 58% higher (OR=1.58, 95% CI=1.13, 2.20); and the 30-day regular soda consumption frequency was 38% lower (ratio of consumption frequency=0.62, 95% CI=0.40, 0.98).

CONCLUSIONS: Early results suggest that the tax influenced daily consumption of regular soda, energy drinks, and bottled water. Future studies are needed to evaluate longer-term impact of the tax on sugared beverage consumption and substitutions.

Science organisations and Coca-Cola's 'war' with the public health community: insights from an internal industry document

Barlow P, Serodio P, Ruskin G, McKee M, Stuckler D. J Epidemiol Community Health. 2018.
https://www.ncbi.nlm.nih.gov/pubmed/29540465

Abstract

Critics have long accused food and beverage companies of trying to exonerate their products from blame for obesity by funding organisations that highlight alternative causes. Yet, conclusions about the intentions of food and beverage companies in funding scientific organisations have been prevented by limited access to industry's internal documents. Here we allow the words of Coca-Cola employees to speak about how the corporation intended to advance its interests by funding the Global Energy Balance Network (GEBN). The documents reveal that Coca-Cola funded and supported the GEBN because it would serve as a 'weapon' to 'change the conversation' about obesity amidst a 'growing war between the public health community and private industry'. Despite its close links to the Coca-Cola company, the GEBN was to be portrayed as an 'honest broker' in this 'war'. The GEBN's message was to be promoted via an extensive advocacy campaign linking researchers, policy-makers, health professionals, journalists and the general public. Ultimately, these activities were intended to advance Coca-Cola's corporate interests: as they note, their purpose was to 'promote practices that are effective in terms of both policy and profit'. Coca-Cola's proposal for establishing the GEBN corroborates concerns about food and beverage corporations' involvement in scientific organisations and their similarities with Big Tobacco.

Tackling Obesity and Disease: The Culprit Is Sugar; the Response Is Legal Regulation

Gostin LO. Hastings Cent Rep. 2018 Jan;48(1):5-7.
https://www.ncbi.nlm.nih.gov/pubmed/29457232

Abstract

It is staggering to observe the new normal in America: 37.9 percent of adults are obese, and 70.7 percent are either obese or overweight. One out of every five minors is obese. The real tragedy, of course, is the disability, suffering, and early death that devastates families and communities. But all of society pays, with the annual medical cost estimated at $147 billion. The causal pathways are complex, but if we drill down, sugar is a deeply consequential pathway to obesity, and the single greatest dietary source is sugar-sweetened beverages (SSBs). The copious amount of sugar in the American diet is no accident. Industry practices and regulatory failures have fueled this explosion. Yet there are sensible, effective interventions that would create the conditions for healthier behaviors. What are the key interventions, and how can we overcome the social, political, and constitutional roadblocks? Tobacco control offers a powerful model, suggesting that success requires a suite of interventions working in concert: labeling, warnings, taxation, portion sizes, product formulation, marketing restrictions, and bans in high-risk settings such as schools and hospitals. Each intervention deserves detailed analysis, but I'm kick-starting scholarly and policy conversation by systematically laying out the major legal tools.

The negative impact of sugar-sweetened beverages on children's health: an update of the literature

Bleich SN, Vercammen KA. BMC Obes. 2018;5:6.

Abstract

While sugar sweetened beverage (SSB) consumption has declined in the last 15 years, consumption of SSBs is still high among children and adolescents. This research synthesis updates a prior review on this topic and examines the evidence regarding the various health impacts of SSBs on children's health (overweight/obesity, insulin resistance, dental caries, and caffeine-related effects). We searched PubMed, CAB Abstracts and PAIS International to identify cross-sectional, longitudinal and intervention studies examining the health impacts of SSBs in children published after January 1, 2007. We also searched reference lists of relevant articles. Overall, most studies found consistent evidence for the negative impact of SSBs on children's health, with the strongest support for overweight/obesity risk and dental caries, and emerging evidence for insulin resistance and caffeine-related effects. The majority of evidence was cross-sectional highlighting the need for more longitudinal and intervention studies to address this research question. There is substantial evidence that SSBs increase the risk of overweight/obesity and dental caries and developing evidence for the negative impact of SSBs on insulin resistance and caffeine-related effects. The vast majority of literature supports the idea that a reduction in SSB consumption would improve children's health.

Equity impacts of price policies to promote healthy behaviours

Sassi F, Belloni A, Mirelman AJ, et al. The Lancet. 2018.
https://www.ncbi.nlm.nih.gov/pubmed/29627166

Abstract

Governments can use fiscal policies to regulate the prices and consumption of potentially unhealthy products. However, policies aimed at reducing consumption by increasing prices, for example by taxation, might impose an unfair financial burden on low-income households. We used data from household expenditure surveys to estimate patterns of expenditure on potentially unhealthy products by socioeconomic status, with a primary focus on low-income and middle-income countries. Price policies affect the consumption and expenditure of a larger number of high-income households than low-income households, and any resulting price increases tend to be financed disproportionately by high-income households. As a share of all household consumption, however, price increases are often a larger financial burden for low-income households than for high-income households, most consistently in the case of tobacco, depending on how much consumption decreases in response to increased prices. Large health benefits often accrue to individual low-income consumers because of their strong response to price changes. The potentially larger financial burden on low-income households created by taxation could be mitigated by a pro-poor use of the generated tax revenues.

The State of US Health, 1990-2016: Burden of Diseases, Injuries, and Risk Factors Among US States

Mokdad AH, Ballestros K, Echko M, et al. JAMA. 2018;319(14):1444-1472.
https://www.ncbi.nlm.nih.gov/pubmed/29634829

Abstract

INTRODUCTION: Several studies have measured health outcomes in the United States, but none have provided a comprehensive assessment of patterns of health by state.

OBJECTIVE: To use the results of the Global Burden of Disease Study (GBD) to report trends in the burden of diseases, injuries, and risk factors at the state level from 1990 to 2016.

DESIGN AND SETTING: A systematic analysis of published studies and available data sources estimates the burden of disease by age, sex, geography, and year.

MAIN OUTCOMES AND MEASURES: Prevalence, incidence, mortality, life expectancy, healthy life expectancy (HALE), years of life lost (YLLs) due to premature mortality, years lived with disability (YLDs), and disability-adjusted life-years (DALYs) for 333 causes and 84 risk factors with 95% uncertainty intervals (UIs) were computed.

RESULTS: Between 1990 and 2016, overall death rates in the United States declined from 745.2 (95% UI, 740.6 to 749.8) per 100,000 persons to 578.0 (95% UI, 569.4 to 587.1) per 100,000 persons. The probability of death among adults aged 20 to 55 years declined in 31 states and Washington, DC from 1990 to 2016. In 2016, Hawaii had the highest life expectancy at birth (81.3 years) and Mississippi had the lowest (74.7 years), a 6.6-year difference. Minnesota had the highest HALE at birth (70.3 years), and West Virginia had the lowest (63.8 years), a 6.5-year difference. The leading causes of DALYs in the United States for 1990 and 2016 were ischemic heart disease and lung cancer, while the third leading cause in 1990 was low back pain, and the third leading cause in 2016 was chronic obstructive pulmonary disease. Opioid use disorders moved from the 11th leading cause of DALYs in 1990 to the 7th leading cause in 2016, representing a 74.5% (95% UI, 42.8% to 93.9%) change. In 2016, each of the following 6 risks individually accounted for more than 5% of risk-attributable DALYs: tobacco consumption, high body mass index (BMI), poor diet, alcohol and drug use, high fasting plasma glucose, and high blood pressure. Across all US states, the top risk factors in terms of attributable DALYs were due to 1 of the 3 following causes: tobacco consumption (32 states), high BMI (10 states), or alcohol and drug use (8 states).

CONCLUSIONS AND RELEVANCE: There are wide differences in the burden of disease at the state level. Specific diseases and risk factors, such as drug use disorders, high BMI, poor diet, high fasting plasma glucose level, and alcohol use disorders are increasing and warrant increased attention. These data can be used to inform national health priorities for research, clinical care, and policy.

The association of flavored milk consumption with milk and energy intake, and obesity: A systematic review

Patel AI, Moghadam SD, Freedman M, Hazari A, Fang ML, Allen IE. Prev Med. 2018;111:151-162.
https://www.ncbi.nlm.nih.gov/pubmed/29501475

Abstract

Taxes on sugary drinks are being implemented to prevent chronic diseases. Sugar-sweetened milk has been exempt from such policies because of its nutritional value. This systematic review sought to examine whether flavored milk consumption was associated with milk and energy intake, and obesity among children. A search of PubMed, EMBASE, Cochrane, CINAHL, Web of Science, Cochrane Central Register of Controlled Trials and the grey literature was conducted for peer-reviewed publications published before June 6, 2016 that met the following criteria: 1) English-language publications, 2) studies of children ages 1 to 18 years, 3) controlled experimental, cohort, case-control, systematic reviews, or meta-analysis studies, 4) dependent variable: flavored milk consumption, 5) independent variable: weight, weight gain, weight change, body mass index, metabolic syndrome, waist circumference, cholesterol, triglycerides, blood pressure, serum glucose, calories, sugar, or milk consumed. Of 3978 studies identified, 13 met inclusion criteria. Ten studies were experimental and three were longitudinal cohort studies. Eleven studies found that flavored milk increased overall milk intake, five of seven studies that examined energy intake showed that flavored milk increased energy intake, and one of three studies that assessed obesity outcomes demonstrated an increase in weight gain with flavored milk consumption. Only one study was a randomized controlled trial, most studies had high bias, and over half were industry-funded or did not disclose funding. Although flavoring milk may increase milk intake, added sugars may promote increased energy intake. More data regarding flavored milk's impact on health is needed to inform its role in sugary drink policies.

Prevalence of Obesity and Severe Obesity in US Children, 1999–2016

Skinner AC, Ravanbakht SN, Skelton JA, Perrin EM, Armstrong SC. Prevalence of Obesity and Severe Obesity in US Children, 1999-2016. Pediatrics. 2018.
https://www.ncbi.nlm.nih.gov/pubmed/29483202

Abstract

OBJECTIVES: To provide updated prevalence data on obesity trends among US children and adolescents aged 2 to 19 years from a nationally representative sample.

METHODS: We used the NHANES for years 1999 to 2016. Weight status was determined by using measured height and weight from the physical examination component of the NHANES to calculate age- and sex-specific BMI. We report the prevalence estimates of overweight and obesity (class I, class II, and class III) by 2-year NHANES cycles and compared cycles by using adjusted Wald tests and linear trends by using ordinary least squares regression.

RESULTS: White and Asian American children have significantly lower rates of obesity than African American children, Hispanic children, or children of other races. We report a positive linear trend for all definitions of overweight and obesity among children 2–19 years old, most prominently among adolescents. Children aged 2 to 5 years showed a sharp increase in obesity prevalence from 2015 to 2016 compared with the previous cycle.

CONCLUSIONS: Despite previous reports that obesity in children and adolescents has remained stable or decreased in recent years, we found no evidence of a decline in obesity prevalence at any age. In contrast, we report a significant increase in severe obesity among children aged 2 to 5 years since the 2013–2014 cycle, a trend that continued upward for many subgroups.

Research Watch reviews the evidence on the health effects of sugar and the effectiveness of policy and other interventions to curb consumption to inform sugar reduction activities across the US.

This publication was prepared by Sally Bullock.

Healthy Food America acts on scientific evidence to drive change in food policy and industry practice, giving people greater control over their health and reducing diet-related illnesses, such as obesity, diabetes, and heart disease.