

Not So Sweet:

Confronting the Health Crisis from
Sugar-Sweetened Beverages in California



CVP

Center for Vulnerable Populations
@ San Francisco General Hospital and Trauma Center

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EXECUTIVE SUMMARY

California has led the way in the implementation of policies that increase access to healthy foods – a change in zoning laws in Fresno to allow for more farmers’ markets, an improvement in the food available in Los Angeles County facilities through healthy food procurement policies, and regulation of school meals in Oakland so that they meet minimum nutrition standards. But despite these efforts, consumption of sugar-sweetened beverages (SSB) is pervasive and the health consequences are more evident than ever.¹ SSB, which include sodas, fruit punches, sports drinks, and other beverages high in sugar and corn syrup, are the largest source of added sugar in the U.S. diet today.^{2,3}

Consumption of SSB has been on the rise. From 1977 to 2001, SSB intake increased by 135% for children and adults in the U.S.⁴ Furthermore, the National Health and Nutrition Examination Survey reports that the total daily kilocalories from SSB is much higher for adults (age 20 and above) in communities of color than their White counterparts. Specifically, African Americans (9%) and Mexican Americans (8%) consume more of their daily kilocalories from SSB than Whites (5%).⁵ SSB are ubiquitous throughout California. Over 6 million adults, more than 2 million adolescents, and 2 million children ages 2-11 drink at least one SSB or more a day.⁶ The impact of these drinks on our health is devastating, particularly for communities of color.⁷

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In response to this public health crisis, several California cities, including Richmond and San Francisco, have proposed to tax sugar-sweetened beverages. This policy brief looks at the results of a projection of the health and economic benefits of a reduction in consumption of SSB in California, and suggests that a penny-per-ounce excise tax on SSB would be an effective policy to improve the health of all Californians. Based on research by the University of California San Francisco (UCSF), reducing the intake of SSB by 10% – the projected impact of an excise tax – would prevent 12,000 new cases of diabetes and save \$318 million in health care costs from 2013 to 2023. African Americans, Mexican Americans, and low-income individuals have a higher burden of diabetes, as well as higher current consumption of SSB.⁸ Because of these two factors, low-income communities and subgroup populations may be expected to have even greater health benefits from the reduction in SSB consumption. Whereas 1 in 20,000 adult Californians would be expected to avoid diabetes each year simply from the change in consumption as a result of a tax, 3 in 20,000 African Americans, 2 in 20,000 Mexican Americans, and 2 in 20,000 low-income individuals would avoid new cases of diabetes annually over the decade.



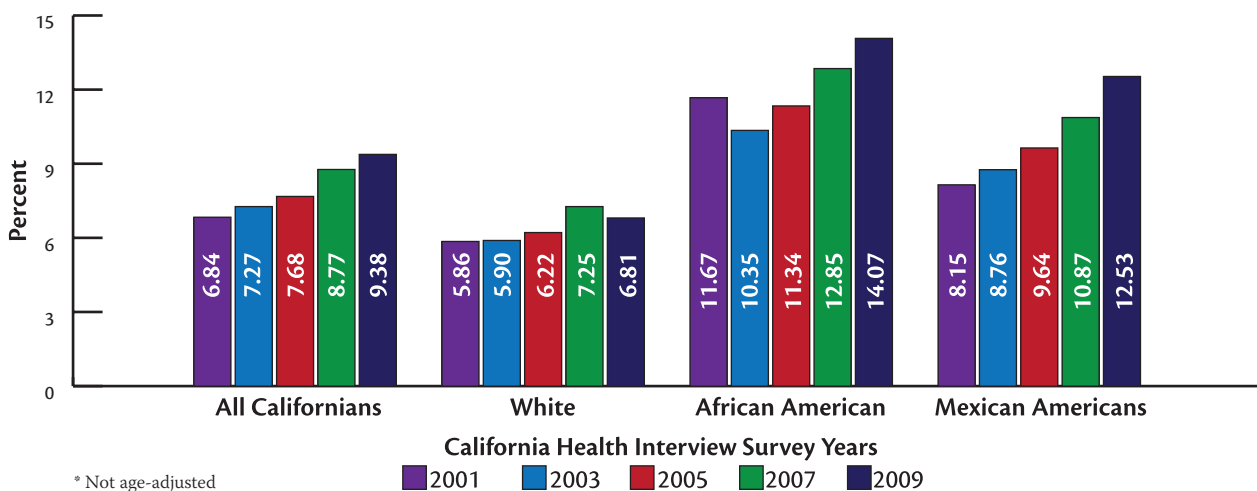


THE HEALTH CONSEQUENCES OF SUGAR-SWEETENED BEVERAGES

Current evidence suggests that higher consumption of SSB is associated with excess caloric intake, which leads to increased risk of obesity,⁹ type 2 diabetes,¹⁰ and coronary heart disease (CHD).¹¹ Studies have shown that those who drink one or more of these beverages each day can double their risk of diabetes and increase their risk of CHD by 23% compared to those who had one or fewer drinks each month.^{12, 13, 14} From 2003 to 2006, the diabetes prevalence among U.S. adults was 10.2% for Whites, 18.6% for African Americans, and 11.9% for Mexican Americans.¹⁵

Not surprisingly, the increase in SSB consumption has coincided with higher rates of diabetes in California. In 2009, prevalence of adult diabetes in the state was 8.5%, more than three times the target established by Healthy People 2010.¹⁶ Mexican Americans and African Americans have higher rates of diabetes than Whites, and these rates have risen steadily from 2001 to 2009, increasing by 50% for Mexican Americans and 17% for African Americans (*Figure 1*).¹⁷

Figure 1: Diabetes trend* in California, 2001-2009, by race/ethnicity



METHODOLOGY

In order to estimate the potential health impact of reducing SSB consumption, researchers at UCSF developed a California-specific version of the Cardiovascular Disease (CVD) Policy Model. A dynamic population-based model of heart disease, stroke, and diabetes in adults, the CVD Policy Model has been used to forecast trends in cardiovascular disease, obesity, and diabetes in the U.S., as well as examine the result of clinical and policy interventions. Inputs to the CVD Policy Model-California include the U.S. Census, regional data from the National Health and Nutrition Examination Survey (NHANES), the National Center for Health Statistics (NCHS), and the California Health Interview Survey (CHIS).

The researchers used the best available economic studies on the impact of the excise tax on consumption patterns that estimate a 10% reduction of intake,¹⁸ as well as the peer-reviewed literature on the impact of SSB on obesity, diabetes, and heart disease risk. They ran simulations



using the CVD Policy Model-California from 2013 to 2022 to estimate the health impact for adults related to a reduction in SSB consumption.

For more information, please refer to the article *“Health Benefits of Reducing Sugar-Sweetened Beverage Intake in High Risk Populations of California: Results from the Cardiovascular Disease (CVD) Policy Model”*, which you can download at www.plosone.org/article/abstract?id=doi%3A10.1371%2Fjournal.pone.0081723&representation=PDF

BENEFITS OF A REDUCTION IN SUGAR-SWEETEND BEVERAGE CONSUMPTION

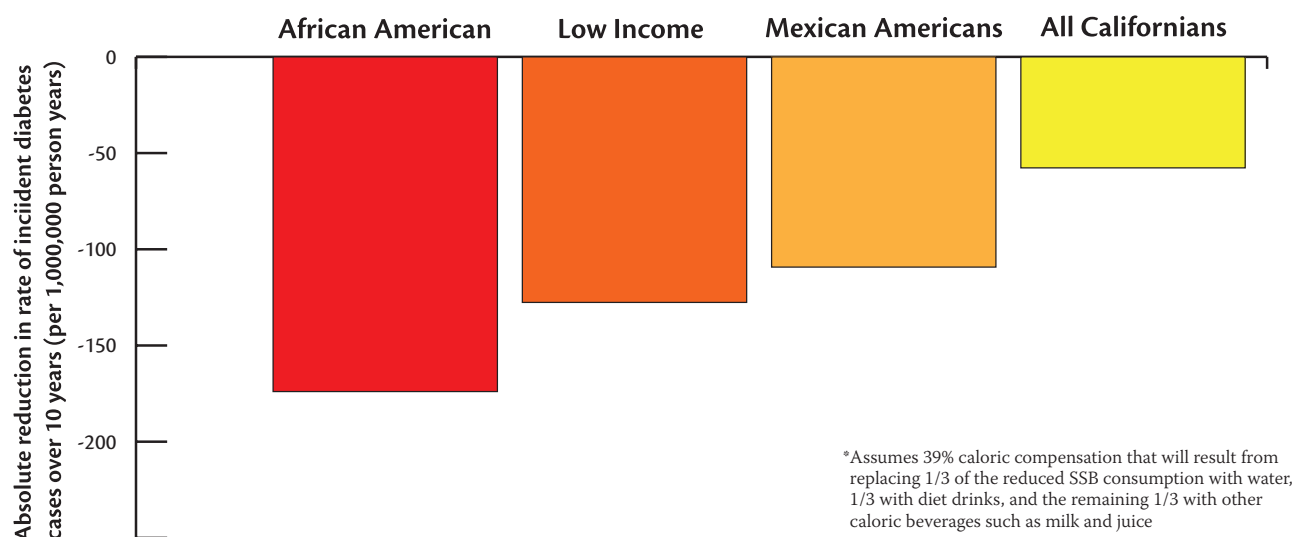
Prevention of New Cases of Diabetes

A reduction in SSB intake by 10% has the potential to prevent 12,000 new diabetes cases over the next ten years in California.

While all Californians would benefit from decreasing SSB intake, Mexican Americans, African Americans, and families making less than 200% of the Federal Poverty Level (\$47,700 for a family of four in 2014) are expected to experience the greatest reductions in the incidence of diabetes. For example, based on a 10% reduction in SSB intake, 1 in 20,000 Californians would be expected to avoid diabetes each year over the next decade, whereas the estimates are closer to 3 in 20,000 African Americans and 2 in 20,000 Mexican Americans annually (*Figure 2*). Due to the lack of available data for other populations, Mexican Americans and African Americans were the only communities of color included in the model.

Families with limited incomes would also benefit more. Based on a reduction in SSB intake, 2 in 20,000 low-income Californians would be expected to avoid diabetes each year over the next decade. These large reductions are partly explained by the overall higher SSB consumption and diabetes rates among these populations, as well as the higher daily intake rates among their younger populations.¹⁹

Figure 2: Projected decrease in annual incident diabetes at 10% SSB consumption reduction in subgroups in California





Prevention of Coronary Heart Disease

In addition to the significant impact on diabetes, a reduction in consumption of SSB by 10% has the potential to prevent as many as 6,000 cases of coronary heart disease (CHD) in the next decade. Again, the reductions in rates of CHD and related deaths are projected to be greatest for African Americans, Mexican Americans, and families with limited incomes.

Health Cost Savings

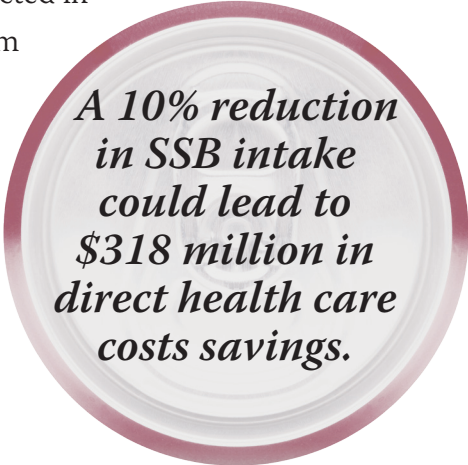
A reduction in SSB consumption could save California health care costs associated with diabetes and CHD over the next decade. A 10% reduction in SSB intake could lead to \$318 million in direct health care costs savings. In addition, \$14 million of excess CHD cost that resulted from diabetes could also be avoided.

EXCISE TAX TO DECREASE SUGAR-SWEETENED BEVERAGE CONSUMPTION

Although several strategies might be employed to reduce SSB consumption to improve health, the regulation and increase in price of these beverages are expected to be highly effective approaches to reduce consumption.²⁰ California's sales tax on these beverages has had only limited impact on curbing consumption since it was enacted in 1933,²¹ while the structure of an excise tax is likely to have a greater impact on deterring the purchase of SSB. Unlike a sales tax, which is levied at the time of check-out after the decision to purchase has already been made, an excise tax would be levied on the producers, so the increased cost would be reflected in the price tag, influencing the purchasing decision. Using estimates from a recent report on how changes in price impact consumption of SSB,²² studies have found that a penny-per-ounce excise tax could lead to a significant drop in SSB purchases. For example, for a 12-ounce soda with a pre-tax price of \$1.00, the excise tax would raise the price by 12% (about 12 cents) and result in a 9.5% to 12% reduction in consumption of these beverages.

In order to be effective, the definition of SSB would have to include all types of beverages with added sugar, including soda, fruit punch, sweetened ice tea, sports drinks, and syrups for fountain drinks. A narrowly written excise tax that does not cover all of these items may result in consumer substitution between sugar-sweetened products, which would undermine the effectiveness of the tax.

The tax would have the greatest financial impact on those with the highest consumption of SSB, which in California are communities of color and those of lower income. While this would be a regressive tax, these communities also have the highest rates of diabetes and thus have the potential to reap the greatest health benefits. From a public health perspective, the devastating toll that the obesity and diabetes epidemics are having on our health and health care costs demand



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urgent and effective policies that will have a high impact in curbing these trends. In addition, the revenue raised from the tax could be invested in initiatives to improve the health of low-income and vulnerable communities, including chronic disease prevention programs and providing access to healthier food options.

There is precedent for levying excise taxes to successfully improve the public's health. Since the passage of Proposition 99, which imposed an excise tax on cigarettes, adult smoking rates have declined by more than 40%, and mortality and morbidity rates for diseases related to smoking have also declined.²³ The current burden of diabetes suggests that policy approaches to curb this growing health crisis are necessary. Taxation of SSB in an effort to curb consumption is just one tool, but an extremely important one that is necessary to begin reversing the devastating trends in chronic diseases and promoting the health of all California's communities.

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Center for Vulnerable Populations

The Center for Vulnerable Populations (CVP) at the San Francisco General Hospital and Trauma Center is dedicated to improving health and reducing disparities through discovery, innovation, policy, advocacy, and community partnerships. The CVP seeks to develop effective strategies to prevent and treat chronic disease in communities most at risk.

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The University of California, San Francisco (UCSF) is a leading university dedicated to promoting health worldwide through advanced biomedical research, graduate-level education in the life sciences and health professions, and excellence in patient care. It is the only campus in the 10-campus UC system dedicated exclusively to the health sciences.

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