



Soft Drink Consumption and Its Link to Obesity and Health

Susan H. Babey, PhD
UCLA Center for Health Policy Research
Los Angeles, CA


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Presenter Disclosures

Susan Babey


(1) The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:

No relationships to disclose




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Background

- Consumption of soda and other sugar-sweetened beverages (SSBs) has increased since the 1970's
- There have been corresponding increases in caloric intake and prevalence of obesity among both adults and children
 - Approximately 2/3 of US adults are overweight or obese
 - Nearly 1/3 of children are overweight or obese




Background

- Research suggests SSB consumption may be an important contributor to overweight and obesity
- SSB consumption is also linked with other poor health outcomes
- This presentation will review trends in SSB consumption and identify several health effects associated with SSB consumption, providing examples



SSB Disparities and Link with Obesity – examples from CHIS

- 2005 California Health Interview Survey (CHIS)
- Telephone survey of adults, adolescents and children from across the state conducted every two years
- Interviews conducted with over 43,000 adults drawn from every county in the state
- The data provide a representative sample of the state's non-institutionalized population, including health information on the overall population and on many racial and ethnic groups as well as local-level health information for most counties



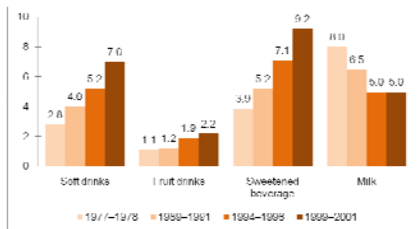
Changes in Beverage Consumption

- Drinking sweetened beverages is now more common than ever
- Between 1977 & 2002 Americans increased their caloric intake from soft drinks by 228%
- Average portion sizes have increased from 6.5 fl oz in the 1950s to 12 fl oz, 20 fl oz, and larger sizes today



Increase in SSB Consumption

Trends in U.S. beverage consumption 1977–2001 as percent of total daily calorie intake



Note: Sweetened beverage combines soft drinks and fruit drinks
 Source: Nielsen SJ, Popkin BM. Am J Prev Med. 2004 Oct;27(3):205-10.



Soft Drink Container Sizes



Even Larger Containers



16 oz 32 oz 44 oz 52 oz 64 oz

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High Rates of Soda Consumption in California

- **41%** of young children drink one or more sodas or other sweetened beverages per day (2.2 million)
- **62%** of adolescents drink one or more sodas or other sweetened beverages per day (2.1 million)
- **24%** of adults drink one or more sodas or other sweetened beverages per day (6.4 million)

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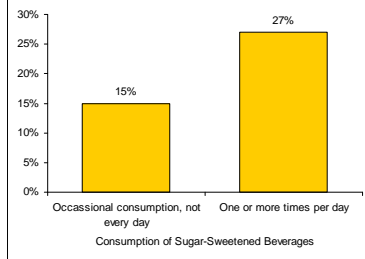
Link Between SSBs and Obesity

- A number of studies have found that greater SSB consumption is associated with overweight and obesity among both adults and children
- Randomized, controlled trials that examine the impact of reducing SSB intake indicate that reducing SSB consumption leads to reductions in overweight and obesity

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Adults Who Drink Soda More Likely to Be Overweight or Obese

Increased Likelihood of Being Overweight or Obese for Those Who Drink SSB Compared to Those Who Do Not, Adjusted for Race/Ethnicity and Income, Adults Age 18 and Over



Source: 2005 California Health Interview Survey



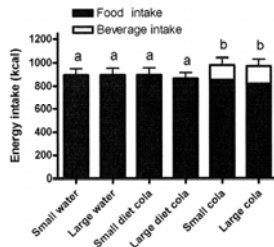
SSBs & Weight Gain

- Soda and fruit drinks have added calories from sweeteners (for example sucrose or high fructose corn syrup)
- Calories in liquid form are not well regulated and therefore may lead to weight gain
- SSBs displace foods that may protect against excess weight gain
- SSB intake is consistently associated with higher calorie intake



People Do Not Compensate for Additional Liquid Calories

Energy from food and beverages as a function of beverage type and portion size



Source: Flood JE, Roe LS, Rolls BJ. J Am Diet Assoc. 2006 Dec;106(12):1984-90.



SSBs & Other Health Outcomes

- SSB intake is associated with increased risk for cardiovascular disease (Fung et al 2009; Dhingra et al 2007)
- Greater SSB intake associated with insulin resistance and development of diabetes (Bremer et al 2009; Yoshida et al 2007; Montonen et al 2007; Schulze et al 2004)
- Consumption of SSBs associated with increased risk of dental caries (Marshall et al 2003; Sohn et al 2006; Vartanian et al 2005)



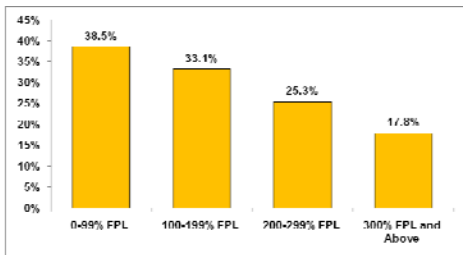
Disparities In SSB Consumption

- National data (NHANES) indicate that African Americans and Hispanics have higher SSB consumption than whites
- Data from NHANES also suggest that low-income adults and teens consume more soda and other sweetened beverages than those with high-income
- These same groups are at increased risk for obesity and other poor health outcomes



Soda Consumption Highest among Low-Income Adults

Percent who Drink One or More Sodas per Day, Adults Age 18 and Over

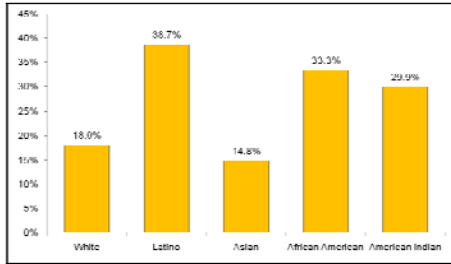


Source: 2005 California Health Interview Survey



Soda Consumption Higher among Latinos & African Americans

Percent who Drink One or More Sodas per Day, Adults Age 18 and Over



Source: 2005 California Health Interview Survey



Conclusions

- SSB consumption has increased
- SSB consumption is linked with obesity and other negative health outcomes
- There are significant disparities in SSB consumption as a function of income and race/ethnicity
- The existing research supports efforts to reduce consumption of sugar-sweetened beverages



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