Summary

Childhood obesity has more than tripled in the United States in the past thirty years to reach a prevalence of 16.4%; within the Los Angeles Unified School District, over half of the students are considered to have an unhealthy body composition.\textsuperscript{1, 2} Childhood obesity results from an interplay between many factors, including poor diet, lack of physical activity, physical environment, and demographics.

Policy action is needed to curb the growth of obesity, to prevent the development of chronic disease in overweight and obese patients as they reach adulthood, and to reduce the health care costs associated with obesity and its related health consequences on an already strained economy.

There is a strong correlation between the consumption of sugar-sweetened beverages and obesity, making policies that support the reduction in sugar-sweetened beverages a logical place to start to tackle childhood obesity.\textsuperscript{4}

Introduction

The problem

In the United States, childhood obesity has reached epidemic proportions: in the past three decades alone, the prevalence of obesity has more than tripled among children, reaching 16.4% in the year 2007. Childhood obesity in California is an even greater threat to public health, with rates pushing 30.5%.\textsuperscript{1} In Los Angeles county, the overall rates currently hover at 23%, although the rate differs dramatically among counties: while the prevalence of childhood obesity in Manhattan Beach is only 4%, it is 39% in Walnut Park.\textsuperscript{1} And according to a study issued by the California Physical Fitness Report, less than half of Los Angeles Unified School District students are considered to have a healthy body composition and one third considered to be at risk for future medical problems.\textsuperscript{2}
Childhood obesity is taking a toll on the future health of Americans, resulting in long-term and severe health consequences: in one study, 60% of obese children had at least one cardiovascular disease risk factor. And, if obesity rates continue as they have been, for the first time in American history, life expectancy will actually drop by two to five years in the next few decades. But childhood obesity is also putting a large dent in America’s healthcare costs: in Los Angeles County, the annual cost to families, employers, the healthcare industry, and the government totals $6 billion.

The causes

There are a number of factors that play a role in the development of obesity, and no single factor can be isolated as the sole or most important cause. Genetic and demographic risk factors include parental obesity, early body mass index, having a mother who smoked during pregnancy, low socioeconomic status, and race/ethnicity (particularly Mexican-American and non-Hispanic black). Behavioral factors include spending more than eight hours watching TV per week at age three, short sleep duration at age three, rapid weight gain in the first year of life, a diet high in energy-dense foods, and a lack of exercise. Environmental factors include low access to grocery stores and produce vendors, easy access to fast-food retail outlets and convenience stores, low access to green space or outdoor parks, and increased portion sizes.

The effects

Children who are obese are at risk of developing the following immediate, short-term, and long-term health consequences:

- **Immediate**: poor self-esteem, depressive symptoms, restrictions on activity level
- **Short-term**: high cholesterol, high BP, behavior, learning, and attention disorders, asthma, insulin resistance
- **Long-term**: diabetes and pre-diabetes, bone and joint problems, osteoarthritis, cardiovascular disease, sleep apnea, certain types of cancer

Aside from health consequences, childhood obesity is incurring larger and larger costs on the American health care system. Although there is no data for the current economic cost of childhood obesity in Los Angeles, it is estimated that the direct costs of childhood obesity nationwide total $14.1 billion. If the current trend of rising childhood obesity continues—and as obese children turn into obese adults—experts hypothesize that the cost of obesity in 2050 will hit $208 billion.

Targeting the energy imbalance (taking in more calories than one burns) that many overweight and obese children have is essential and limiting the progression of childhood obesity. Many of the aforementioned behavioral risk factors for obesity result in an energy imbalance, such as a diet high in energy-dense foods like soda and packaged foods and a lack of exercise. It is estimated that overweight adolescents take in an extra 700-1,000 calories (the amount in a Big Mac and fries) per day than what’s required for normal growth and physical activity. And according to one study, just over half of those calories—549—come from added sugars. Because one-third of all

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added sugar intake comes from soda, reducing soda consumption is a reasonable target for obesity intervention policy.¹³

**Added Sugars: Taking a Toll on Health and Health Care**

Sugar-Sweetened Beverages are Linked with Childhood Obesity

The consumption of sugar-sweetened beverages among children and adolescents has increased over the past thirty years. Healthy or nutritious drinks, like milk and water, are being phased out, while sugar-sweetened beverages, likes soda, sports drinks, and fruit juice, are becoming increasingly popular.¹⁴ Sugar-sweetened beverages add empty calories and little to no nutrition, making them a key contributor to childhood obesity. In fact, for each additional serving of sugar-sweetened beverage a child consumes each day, his risk for obesity increases by 60%.¹⁵

In Los Angeles, 64.9% of adolescents ages 12-17 and 44.3% of children ages 2-11 drink at least one sugar-sweetened beverage per day.¹⁶ One twelve-ounce soda contains 39 grams of sugar, which means that almost one-sixth of the can is pure sugar. Soda isn’t the only sugar-sweetened beverages; more innocent-sounding drinks like fruit juice, sports drinks, energy drinks, flavored waters, and flavored milks also contribute to the consumption of added sugars. Respectively, each of these drinks contains, in teaspoons, 9, 7.2, 11.6, 4.9, and 6.3 teaspoons of sugar.¹⁷

Consumption of added sugars -- specifically those found in sugar-sweetened beverages like soda -- has been identified as a contributor to childhood obesity.¹⁵ Moreover, children who are already overweight are more likely to remain overweight if they drink sugary drinks every day.¹⁸ The correlation between the consumption of sugar-sweetened beverages and overweight or obesity is compounded by the fact that humans do not register liquid calories in the same way that they register calories from food, such that we don’t compensate for those extra calories at mealtime. This results in an even higher calorie imbalance.⁶

**Childhood Obesity, Long-Term Health Problems, and the Increasing Strains on Health Care**

Obese and overweight children face many of the same negative health consequences as adults, including hypertension, cardiovascular disease, diabetes, asthma, poor self-esteem, and certain types of cancers. Preventing or limiting the upward trajectory of childhood obesity would have a profound impact on the overall health of the nation. In California alone, an overall reduction in BMI of 5%—for a 5’6” woman 190 pounds, that’s a loss of just 10 pounds—could spare the millions from disease:¹⁹

- 796,430 people could be spared from type 2 diabetes,
- 656,970 from coronary heart disease and stroke,
- 698,431 from hypertension,
- 387,850 from arthritis, and
- 52,769 from obesity-related cancer
According to Trust for America’s Health, which projected these numbers, the related savings would amount to $81,702,000,000 in savings by 2030.\(^{19}\)

**Current Recommendations for Added Sugar Intake**

Currently, the American Heart Association recommends limiting the amount of added sugars in one’s diet to 5-15% of one’s total caloric intake. For children ages 4-8 years taking in 1,200-1,400 calories a day, that results in 60-210 calories from added sugar. The American Heart Association also recommends limiting the weekly caloric intake from sugar-sweetened beverages to 450 calories, the amount found in three 12-ounce cans of soda.\(^{20}\)

**Policy Implications**

**Existing Legislation**

**CA AB Bill 2084**

Assembly Bill 2084, Healthy Beverages in Childcare, was set into legislation in 2010. The bill establishes guidelines for beverages served in childcare, including:\(^{21}\)

- Serve only 1 percent or nonfat milk to children 2 years or older.
- Limit juice to no more than one serving of 100 percent fruit juice per day.
- Serve no beverages with added sweeteners, natural or artificial.
- Ensure water is available throughout the day (especially at meal and snack times).

AB 2084, of course, restricts soda in childcare facilities, but it also tackles healthier-sounding--but just as sugary--beverages like fruit juice. The ban of all beverages with added sweeteners -- soda as well as fruit juices, fruit-flavored drinks, chocolate or flavored milks, energy drinks, and more -- is a step in the right direction. Calories from any type of added sugar, be it soda or fruit cocktail, can lead to weight gain. Building on AB 2084, in July of 2011, the Los Angeles Unified School District voted to completely eliminate flavored milks, which contain 24-27 grams of sugar, from its school breakfast and lunch menus.\(^2\)

**CA AB Bill 669**

AB 669, the Sweetened Beverage Tax Law, which became operative on July 1, 2012, is an amendment to a previous bill that imposes a penny-per-ounce tax on sugary drink dispensers. According to Assemblyman Bill Monning, who wrote the measure, the bill was introduced to create revenue for obesity prevention and activity programs, like the Children's Health Promotion Fund.\(^{21}\) The estimated funds of $1.445 billion would go towards classrooms, physical education and nutritious school meals, and local children’s programs.\(^{22}\)

The bill is heavily opposed by the American Beverage Association, including Coca-Cola and Kraft foods, saying that the bill "demonizes certain industries, hurts business, threatens an already weak economy, and places an unfair burden on low-income shoppers.” Public health advocates, of course, favor the bill because of its potential to offset obesity-related medical costs and and to fund future prevention and intervention programs.\(^{23}\) According to a public opinion poll commissioned by the California Center for Public Health Advocacy, support was shown by 61% of Los Angeles residents, 60% of low-income residents, and 66% of Latino voters.\(^{24}\) According
to the Soda Tax Revenue Study, which estimated the economic effects of the bill, the soda tax would raise $1.7 billion annually, of which $850 million would go directly to classrooms and $300 million each would go to local children’s programs and school PE and healthy lunch programs.25

Potential Legislation and Intervention Programs

CA AB 1746
Stop Sports Drinks Sale During School, currently held under submission, would restrict the sale of sports drinks at school during the day. Since California prohibits the sale of soda and most other sugar-sweetened beverages on school campuses, students are turning to sports drinks to fill that void. But a typical 32-ounce sports drink contains 14 teaspoons of sugar—the same amount in 22 Starburst candies—making the consumption of sugar-sweetened beverages an enduring problem.26

RENEW LA County
This non-profit organization aims to implement and adopt policies that would target childhood obesity by improving nutrition and increasing physical activity, specifically in disadvantaged communities. Among other nutrition- and exercise-focused policy strategies, RENEW’s top objective is to increase access to healthy foods and decrease access to sugar-sweetened beverages in eight cities with significantly high obesity rates.27

The Childhood Obesity Research Center
A partnership between USC Keck School of Medicine and Children’s Hospital LA, CORC aims to build on current research and understanding in order to treat and prevent childhood obesity. CORC facilitates a number of studies to better understand the mechanisms of childhood obesity, and thus to be able to develop more effective interventions, such as Transitions (a study investigating the reasons for the decline in physical activity in Latina and African American females) and FAME (a study investigating the effects of meal consumption and subsequent mood and physical activity).28

Conclusions
In addition to implementing the nutrition standards set forth by CA AB 2084 and CA AB 669, the California legislation should pass CA AB 1746 in order to further reduce the consumption of sugar-sweetened beverages. Los Angeles County should also implement the intervention and prevention strategies that non-profit and research groups, like RENEW LA County and The Childhood Obesity Research Center, are commissioning in an effort to reduce the sales, marketing, and consumption of sugar-sweetened beverages.
References


