County of Los Angeles Public Health

SUGAR-SWEETENED BEVERAGE CONSUMPTION

Among Children and Adolescents in Los Angeles County

November 2022

CONTENTS

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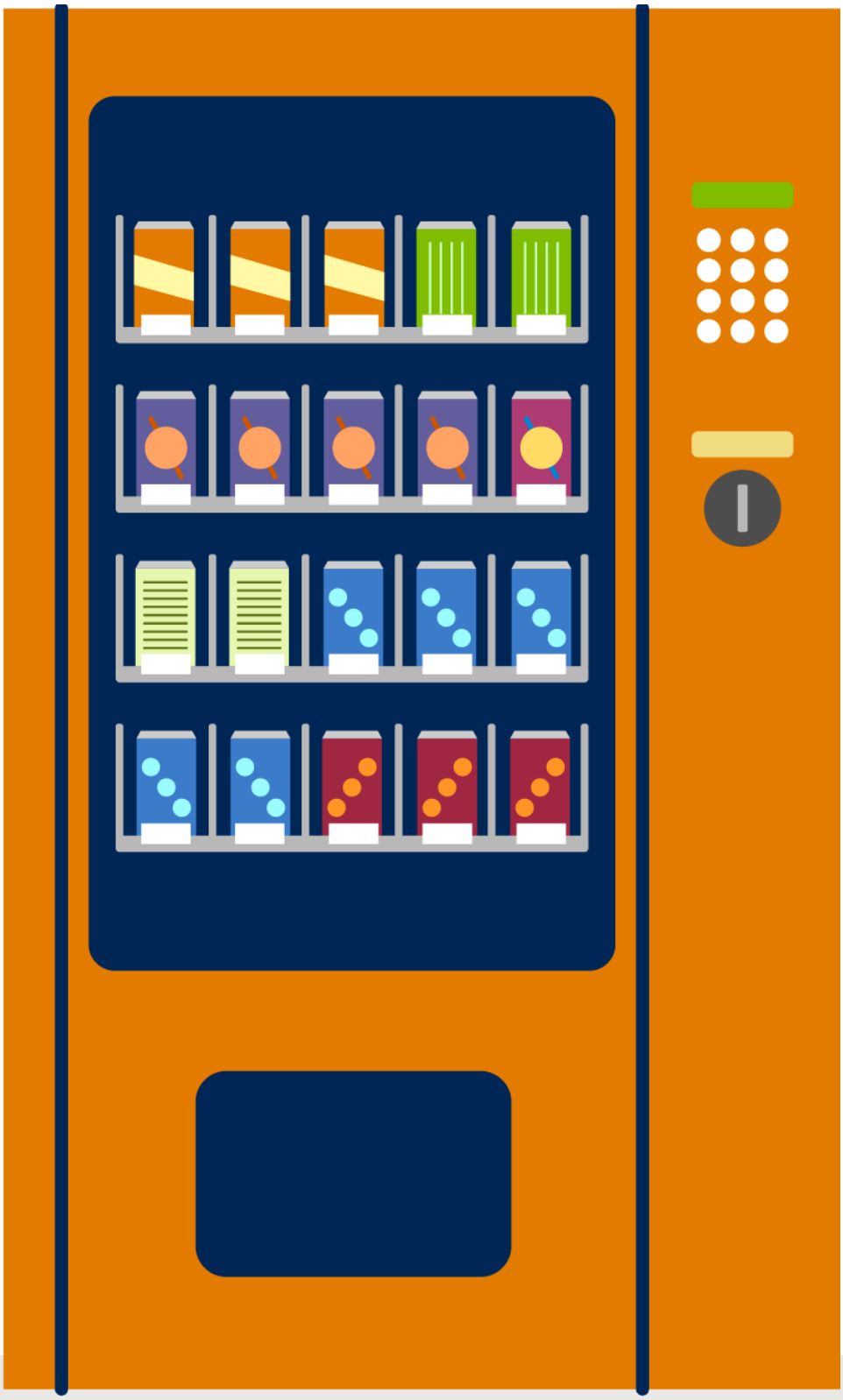


The Los Angeles County Health Survey is a periodic, population-based telephone survey that collects information on sociodemographic characteristics, health status, health behaviors, and access to health services among adults and children in the county. The 2018 survey was conducted for the Los Angeles County Department of Public Health by Abt SRBI Inc., and was supported by funding from Kaiser Permanente Southern California Community Benefit program, the Los Angeles County Department of Mental Health, and Department of Public Health programs including the Division of Chronic Disease and Injury Prevention, Children's Medical Services, Division of HIV and STD Programs, Oral Health Program, Substance Abuse Prevention and Control, and Environmental Health.

Sugar-sweetened beverages (SSBs) are defined as drinks that are sweetened with various forms of added sugar such as regular soda, fruit drinks, sports drinks, and energy drinks.[2]

KEY FINDINGS

In Los Angeles County, approximately one in three children aged 17 years and younger, or 840,000 children, consumed at least one sugar-sweetened beverage (SSB) on an average day in 2018.

In 2018, SSB consumption was higher among Black and Latino children, 47.6% and 43.1% respectively, compared to Asian and White children (25.4% and 21.0% respectively).

Over the past decade, while rates of SSB consumption decreased overall, Black and Latino children continue to have approximately double the rate of SSB consumption when compared to White and Asian children.

Findings showed large regional differences in child SSB consumption across Los Angeles County, with SSB consumption lowest in the West Service Planning Area (SPA) (16.7% in 2018), which includes communities like Santa Monica, Beverly Hills, and Malibu, and highest in the South SPA (51.6%), which includes communities like Crenshaw, Lynwood, and Compton.

Among households living below 100% of the federal poverty level (FPL), 47% of children consumed one or more SSB per day, compared to 22% of children living in households at or above 300% FPL.

Among low-income households, SSB consumption was lower among children who participated in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) (32.1%) compared to children who did not participate in the program (40.7%).

INTRODUCTION

Sugar-sweetened beverages pose an ongoing threat to child and adolescent health within Los Angeles County

Sugar-sweetened beverages (SSBs), or sugary drinks, are the leading source of added sugars in the American diet.[1] SSBs are defined as drinks that are sweetened with various forms of added sugar such as regular soda, fruit drinks, sports drinks, and energy drinks.[2]

According to the American Academy of Pediatrics, excess consumption of added sugars, most notably from SSBs, contributes to the high prevalence of childhood and adolescent obesity and increases the risk for dental decay, cardiovascular disease, hypertension, insulin resistance, type 2 diabetes, fatty liver disease, and all-cause mortality.[3] The Smile Survey 2020, a Los Angeles County-wide oral health assessment of more than 10,000 children, found that 27% of kindergarten children and 42% of third grade children in Los Angeles County are overweight or obese and obesity rates are higher among low-income, Latino, and Black children.[4]

Consumption of sugar, which includes SSBs, is one of the known causes of tooth decay and dental disease. Research has identified associations between SSB consumption and dental disease throughout the lifespan from infancy to adolescence to adulthood. A recent systematic review and meta-analysis concluded that increased SSB consumption is associated with not only an increased risk of dental caries, but also an increase in tooth erosion.[5] Additionally, tooth decay remains more common in children from socioeconomically disadvantaged households, among children from Spanish speaking households, and among Asian, Black, and Latino children.[6]

Within the US in 2011-2014, approximately 6 in 10 youth (63%) consumed a SSB on a given day, with older youth ages 12 to 19 having a higher mean intake and percentage of daily calories from SSBs as compared to younger children.[7] In California, one study found no significant change in SSB consumption among children from 2013-2014 to 2015-2016, with 22% of children ages 2-5 and 35% of children ages 6-11 consuming any SSB in the past day (2015-2016).[8]

1. Centers for Disease Control and Prevention. Get the facts: Sugar-sweetened beverages and consumption. Centers for Disease Control and Prevention. https://www.cdc.gov/nutrition/data-statistics/sugar-sweetened-beverages-intake.html. Updated April 11, 2022. Accessed April 12, 2022

2. Centers for Disease Control and Prevention. Rethink your drink. Centers for Disease Control and Prevention. https://www.cdc.gov/healthyweight/healthy_eating/drinks.html. Updated February 22, 2022. Accessed April 5, 2022

3. Muth ND, Dietz WH, Magge SN, et al. Public policies to reduce sugary drink consumption in children and adolescents. *J. Pediatr.* 2019;143(4). doi:10.1542/peds.2019-0282

4. Los Angeles County Department of Public Health, Oral Health Program. Smile Survey 2020: The oral health of Los Angeles County's children. . http://publichealth.lacounty.gov/ohp/docs/SmileSurvey2020_Final_info.pdf. Accessed 6/7/2022

5. Valenzuela MJ, Waterhouse B, Aggarwal VR, Bloor K, Doran T. Effect of sugar-sweetened beverages on oral health: a systematic review and meta-analysis. *Eur J Public Health*, 2021 Feb 1;31(1):122-129. doi:https://doi.org/10.1093/eurpub/ckaa147

6. Dai J, Soto MJ, Dunn CG, Bleich SN. Trends and patterns in sugar-sweetened beverage consumption among children and adults by race and/or ethnicity, 2003–2018. *Public Health Nutr.* 2021;24(9):2405-2410. doi:10.1017/s1368980021001580

7. Rosinger A, Herrick K, Gahche J, et al. Sugar-sweetened beverage consumption among U.S. youth, 2011-2014. *NCHS Data Brief.* 2017;(271):1-8. https://stacks.cdc.gov/view/cdc/44039

8. Beck AL, Martinez S, Patel AI, Fernandez A. Trends in sugar-sweetened beverage consumption among California children. *Public Health Nutr.* 2020;23(16):2864-2869. doi: 10.1017/S1368980020001147

SSB consumption data have consistently shown stark sociodemographic variations. Among youth, SSB consumption is higher in households with lower incomes and Black youth, as compared to White, Latino, and Asian youth.[8,9] Moreover, in a study assessing the increased caloric contributions from SSBs among US children and adolescents from 1988-2004, there was no per-capita consumption change among White adolescents but a significant increase among Black and Mexican American youth.[10] While data from the 2003-2004 through 2017-2018 National Health and Nutrition Examination Survey cycles show that SSB consumption has declined steadily for children, for Black children the rate of decline was slower.

This report summarizes the ongoing threat that SSBs pose to child and adolescent health within Los Angeles County. The report uses data from 2007 to 2018 and highlights the demographic and geographical health inequities that persist among Los Angeles County children and adolescents. Data specifically highlight variations and trends by racial and ethnic groups, across eight Service Planning Areas (SPAs), 26 health districts, and by participation in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). The report concludes with recommendations for governmental entities, cities, and organizations within Los Angeles County.

9. Ogden CL, Kit BK, Carroll MD, Park S. Consumption of sugar drinks in the United States, 2005-2008. *NCHS Data Brief*, 2011. https://www.cdc.gov/nchs/data/databriefs/db71.pdf. Accessed February 20, 2022

10. Wang YC, Bleich SN, Gortmaker SL. Increasing caloric contribution from sugar-sweetened beverages and 100% fruit juices among US children and adolescents, 1988–2004. *J. Pediatr.* 2008;121(6). doi:10.1542/peds.2007-2834

METHODS

The report draws from the Los Angeles County Health Survey (LACHS)

This report draws from the Los Angeles County Health Survey (LACHS), which is a cross-sectional, population-based, random-digit-dialed telephone survey of adults and children who currently reside in Los Angeles County. The Los Angeles County Department of Public Health Office of Health Assessment and Epidemiology has conducted the survey since 1997 and administers the survey approximately every two to four years. The survey includes a representative sample of approximately 8,000 adults (≥18 years of age) and 6,000 children in each survey cycle; interviews are conducted in English, Spanish, Chinese (Mandarin and Cantonese), Korean, and Vietnamese.

The child survey is completed by an adult member of the same household who knows the child well enough to answer questions about the child's health, their doctor visits, what kinds of food they eat, and their general activities. The survey collects information on topics such as health conditions, health behaviors, and attributes of the physical and social environment. Most of the data in this report come from the 2018 LACHS. Results from earlier cycles of the survey were used to assess trends and to conduct descriptive analyses on SSB consumption by age, race, and ethnicity. Details about the survey, including its full methodology, can be found at www.publichealth.lacounty.gov/ha.

In the LACHS child questionnaire, SSB consumption was assessed using the question, "on an AVERAGE DAY, about how many sodas or sweetened drinks such as Gatorade, Red Bull, or Sunny Delight does (your child) drink? Do not include diet sodas or sugar-free drinks. Please count a 12-ounce can, bottle, or glass as one drink." If the respondent says the child drinks 0 to 1 soda/sweetened drink a day, a few times a week, a few times a month, or occasionally, responses were coded as less than 1 a day.

The analyses presented in this report have several limitations. In the LACHS SSB consumption question for children, fruit juice with added sugar, flavored milks, and sweetened coffee/tea drinks were not included as examples. Drinks using non-sugar substitutes or artificial sweeteners were also not included in the analysis. Given that fruit juice, flavored milks, and sweetened coffee/tea drinks can have added sugar, the estimates in this report may be an underreport of SSB consumption. A second limitation is that no questions on water consumption were included in the LACHS. A third limitation is that the data are from 2018. Updated data on SSB consumption will be collected by the LACHS in 2022.

Lastly, data presented in this report provide unadjusted estimates of children's SSB consumption. Future research should consider multivariable statistical analyses to more comprehensively examine disparities in SSB consumption by accounting for factors such as income, which are known to influence SSB consumption.

RESULTS

In Los Angeles County, approximately 840,000, or 1 in 3 children, consumed SSBs on an average day (2018) (Table 1). Male children were more likely to consume SSBs than female children, 40.8% versus 33.5%. Among children less than 17 years old, SSB consumption on an average day was highest among adolescents age 12-17 at 45%. Daily consumption among children 6–11 years and 0-5 years was 39.3% and 26.5%, respectively. Among households living below 100% of the federal poverty level (FPL), 47% of children consumed one or more SSB per day, compared to 22% of children living in households at or above 300% FPL. SSB consumption was higher among Black and Latino children, 47.6% and 43.1% respectively, compared to Asian and White children (25.4% and 21.0% respectively).

42.1% of children ages 6 to 17 consumed one or more SSBs per day in Los Angeles County in 2018.

Table 1: Percent of Children (Ages 17 Years and Younger) Who Drink One or More SSB Per Day, Los Angeles County, 2018

	Percent	95% CI	Estimated #
LA County	37.2%	35.2 - 39.2	840,000
Gender			
Male	40.8%	38.0 - 43.7	470,000
Female	33.5%	30.7 - 36.3	370,000
Age Group			
0-5	26.5%	23.2 - 29.9	189,000
6-11	39.3%	35.6 - 43.1	305,000
12-17	45.1%	41.7 - 48.2	346,000
Federal Poverty Level*			
0-99% FPL	47.2%	43.3 - 51.1	336,000
100%-199% FPL	43.4%	39.6 - 47.3	254,000
200%-299% FPL	36.3%	30.6 - 42.0	100,000
300% FPL or above	22.0%	18.9 - 25.0	150,000
Race/Ethnicity			
Latino	43.1%	40.5 - 45.6	590,000
White	21.0%	16.9 - 25.1	90,000
Black	47.6%	41.1 - 54.1	85,000
Asian	25.4%	18.4 - 32.5	60,000
Native Hawaiian and Pacific Islander†	25.8%	0.0 - 56.4	n/a
American Indian and Alaska Native†	68.8%	33.3 - 100.00	n/a

Source: 2018 Los Angeles County Health Survey; Office of Health Assessment and Epidemiology, Los Angeles County Department of Public Health.

*Based on U.S. Census 2016 FPL thresholds which for a family of four (2 adults, 2 dependents) correspond to annual incomes of $24,339 (100% FPL), $48,678 (200% FPL), and $73,017 (300% FPL). These thresholds were the values at the time of survey interviewing.

†The estimate is statistically unstable (relative standard error >30%) and therefore may not be appropriate to use for planning or policy purposes.

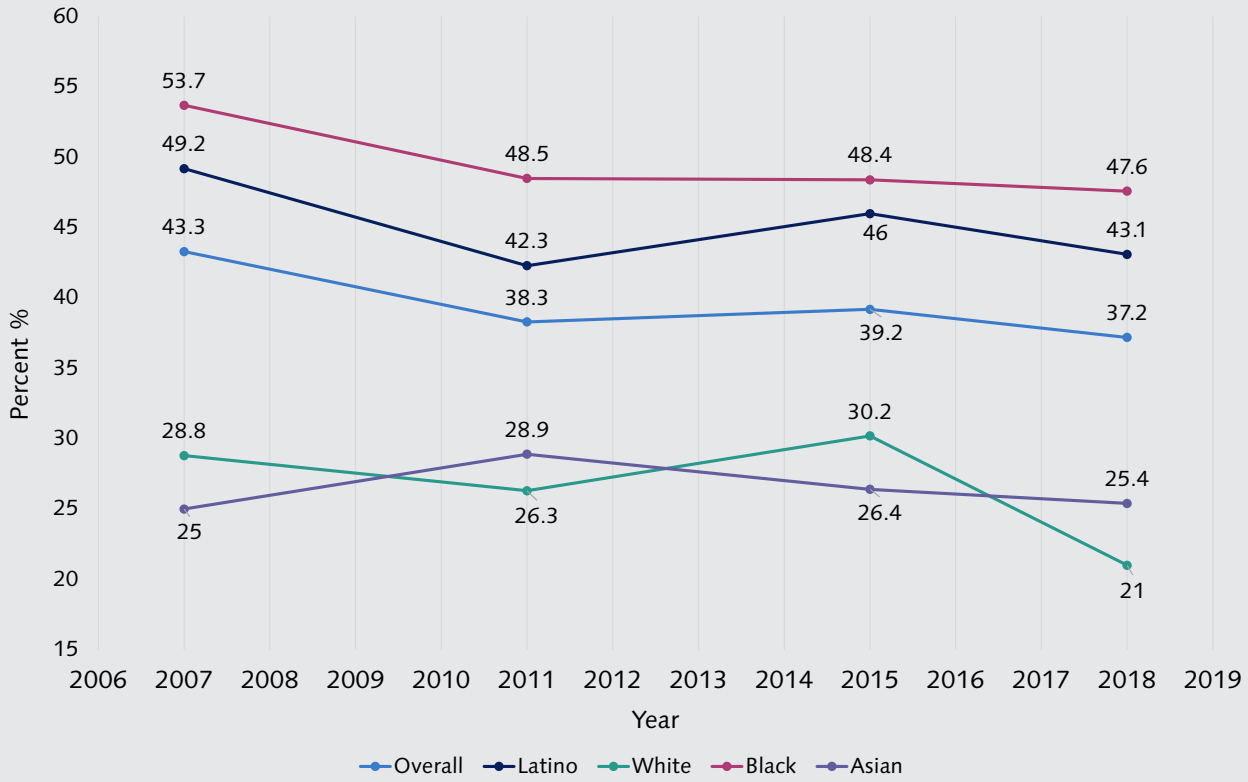
Trends in SSB Consumption by Race and Ethnicity

Overall, from 2007 to 2018, Los Angeles County child SSB daily consumption decreased by 6.1%, from 43.3% to 37.2% (Figure 1). While rates of SSB consumption decreased overall, rates of consumption among Black and Latino children were consistently higher than those among White and Asian children.

Consumption among Black children decreased by 6.1% from 2007 to 2018, however, in 2018 it remained 10.4% above the overall population consumption. Similar trends were observed among Latino children, where SSB consumption since 2007 has decreased, but remained higher than the overall population consumption. Lower percentages of White and Asian children consumed SSBs than the overall population, with 21% of White children and 25% of Asian children consuming at least one SSB in the past day, in 2018.

Note that consumption data for Native Hawaiians and Pacific Islanders, and American Indians and Alaska Natives were not available for some years and therefore are not included in Figure 1.

Figure 1: Percent of Children (Ages 17 Years and Younger) Who Drink One or More SSB Per Day by Race/Ethnicity, Los Angeles County, 2007-2018



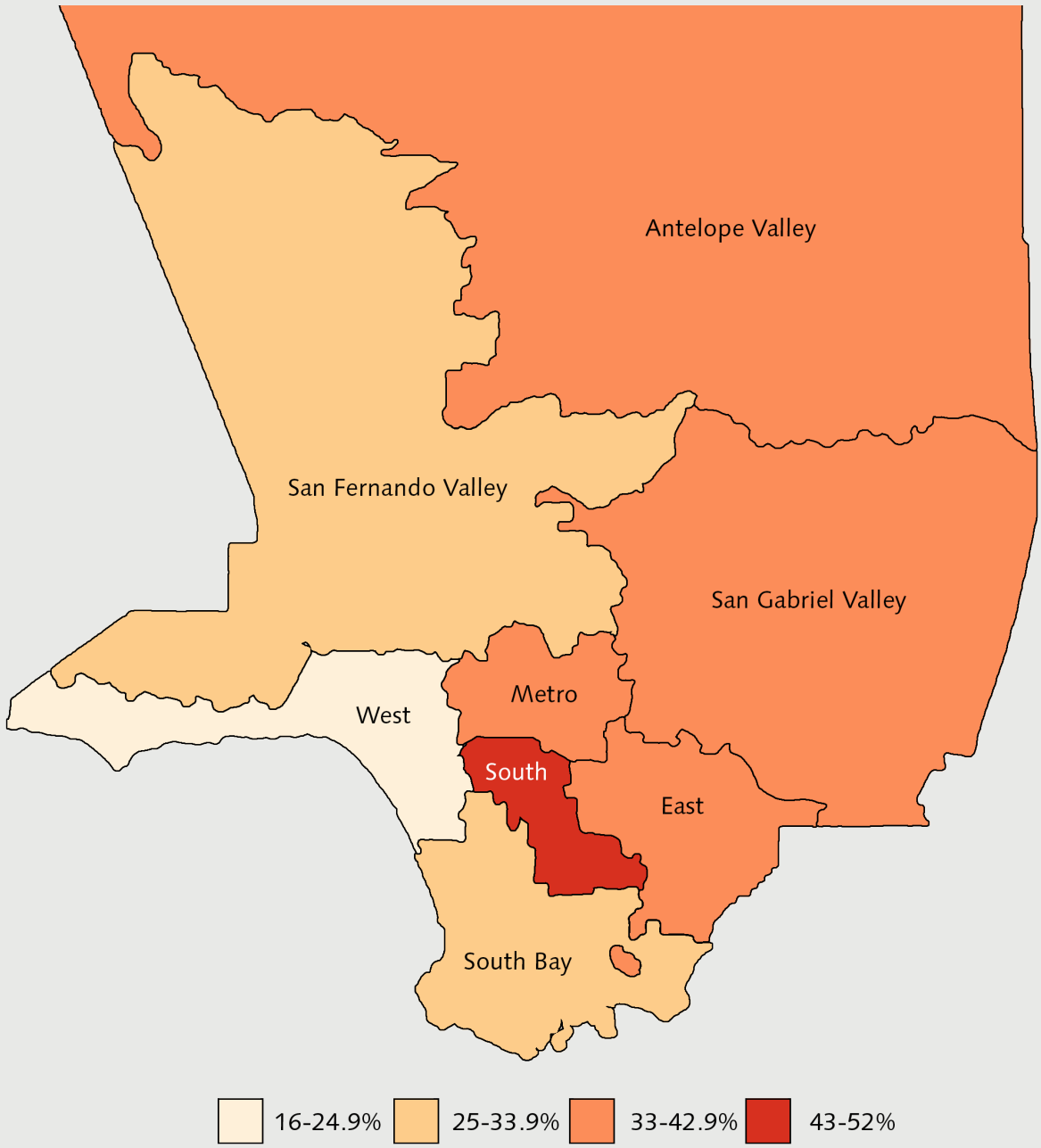
Source: 2018, 2015, 2011, and 2007 Los Angeles County Health Survey; Office of Health Assessment and Epidemiology, Los Angeles County Department of Public Health.

Note: The estimates for SSB consumption data for Native Hawaiians and Pacific Islanders, and American Indians and Alaska Natives were not available for some years of the Los Angeles County Health Survey or were statistically unstable (relative standard error >30%) and therefore not appropriate to use for planning or policy purposes.

Service Planning Areas and SSB Consumption

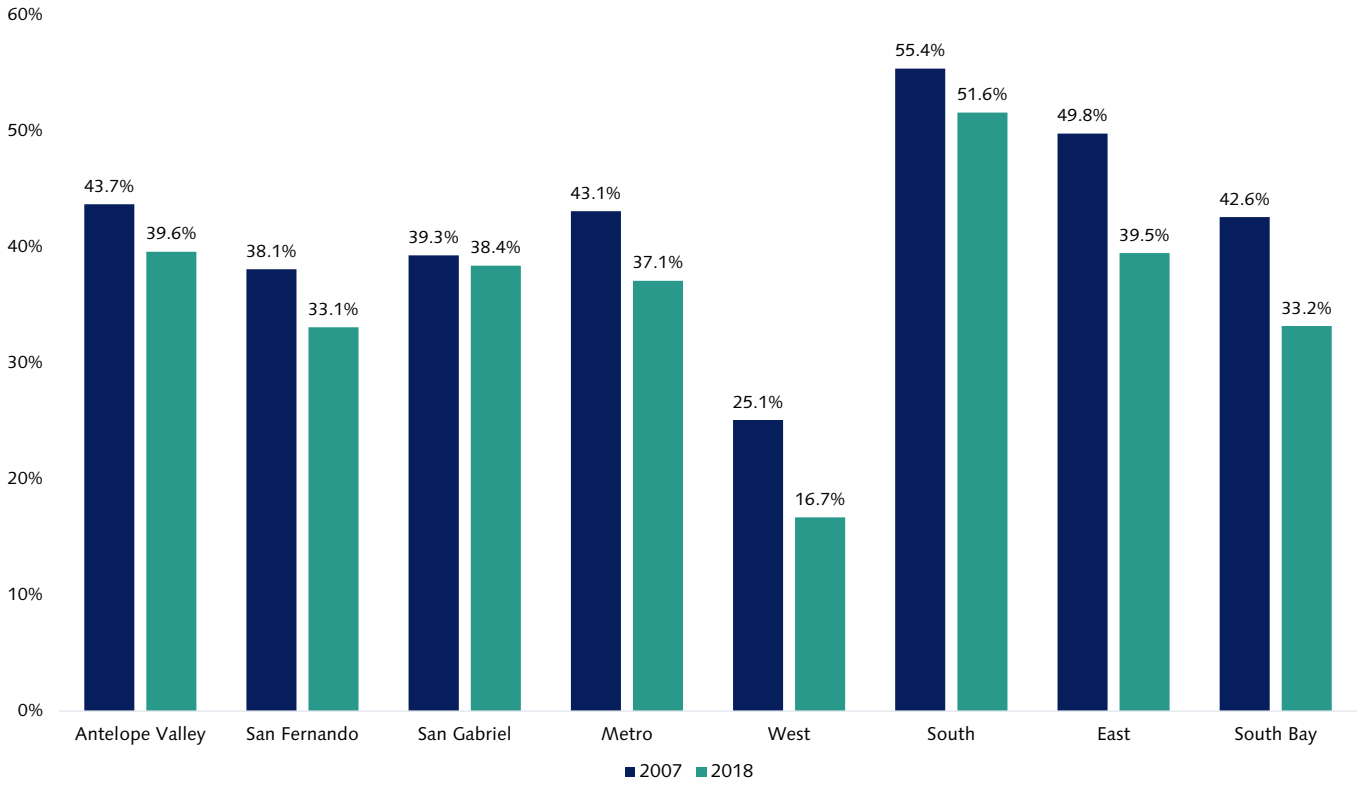
Variation in SSB consumption was also noted across the eight service planning areas (SPAs) throughout Los Angeles County, which have differences in socioeconomic, racial, and ethnic characteristics. In 2018, the most pronounced difference in child SSB consumption was between the South and West SPAs, with consumption in the South SPA (51.6%) three times higher than in the West SPA (16.7%) (Figure 2).

Figure 2: Map of Percentage of Children (Ages 17 Years and Younger) Who Drink One or More SSB Per Day by SPA, Los Angeles County, 2018



Across all SPAs, SSB consumption decreased in 2018 as compared to 2007 (Figure 3). However, the decrease in child SSB consumption from 2007 to 2018 did not drop as rapidly for some SPAs. For instance, child SSB consumption in the South SPA decreased by 3.8% and San Gabriel SPA decreased by 0.9% from 2007 to 2018. In comparison, the East and South Bay SPAs dropped by 10.3% and 9.4%, respectively, from 2007 to 2018.

Figure 3: Percentage of Children (Ages 17 Years and Younger) Who Drink One or More SSB Per Day by SPA, Los Angeles County, 2007 and 2018

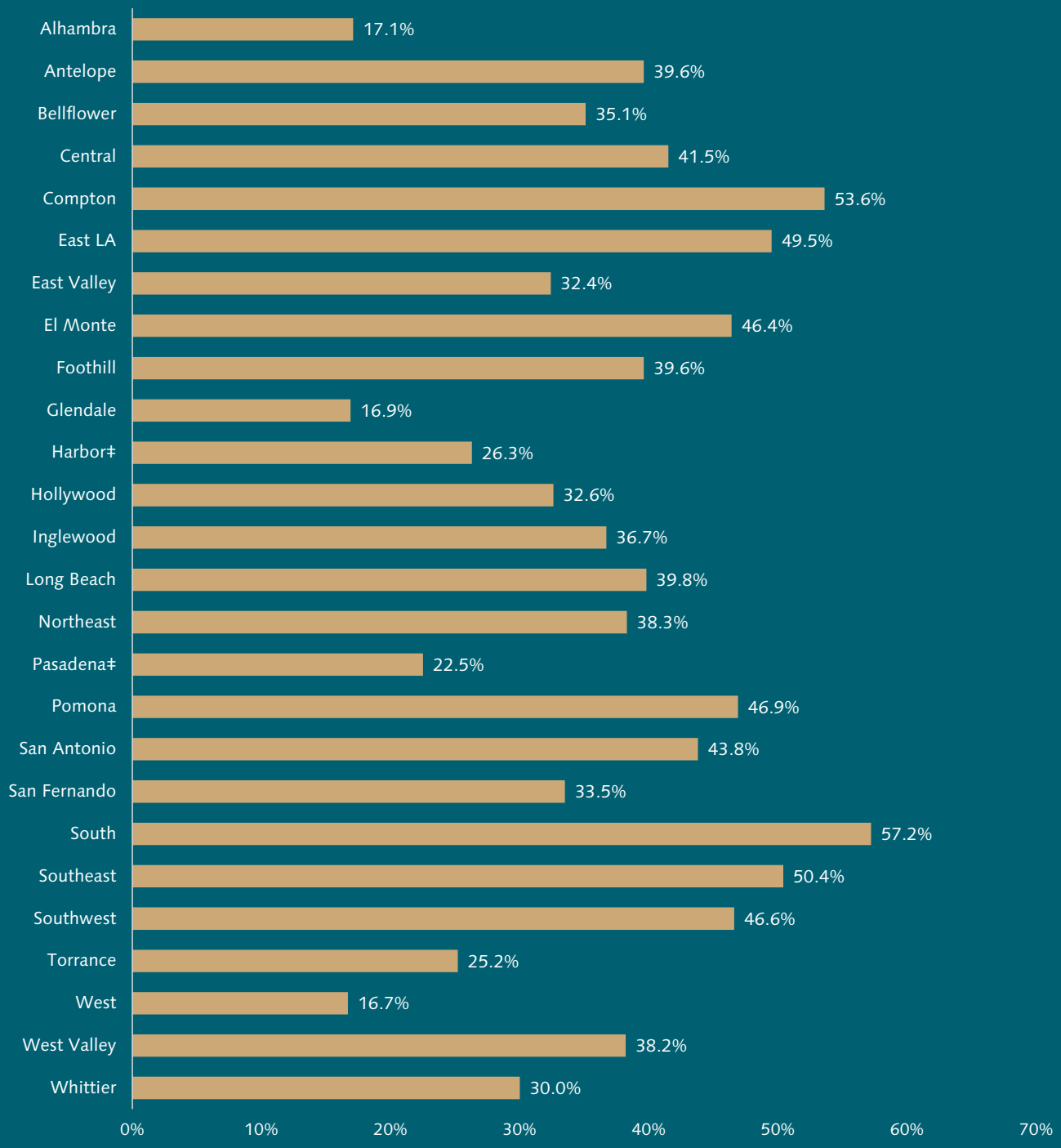


Source: 2007 and 2018 Los Angeles County Health Survey; Office of Health Assessment and Epidemiology, Los Angeles County Department of Public Health.

Los Angeles County Health Districts and SSB Consumption

Los Angeles County health districts, subdivisions of SPAs that are used to plan and manage public health service delivery across the county, also had differences in SSB consumption in 2018. Of the 26 districts, the districts with the highest SSB consumption were South (Watts, Florence), Compton, and Southeast (Historic South Central, South Park, Florence), at 57.2%, 53.6%, and 50.4%, respectively (Figure 4). Conversely, the districts with the lowest consumption were West, Glendale, and Alhambra, at 16.7%, 16.9%, and 17.1%, respectively.

Figure 4: Percentage of Children (Ages 17 Years and Younger) Who Drink One or More SSB Per Day by Health District, Los Angeles County, 2018



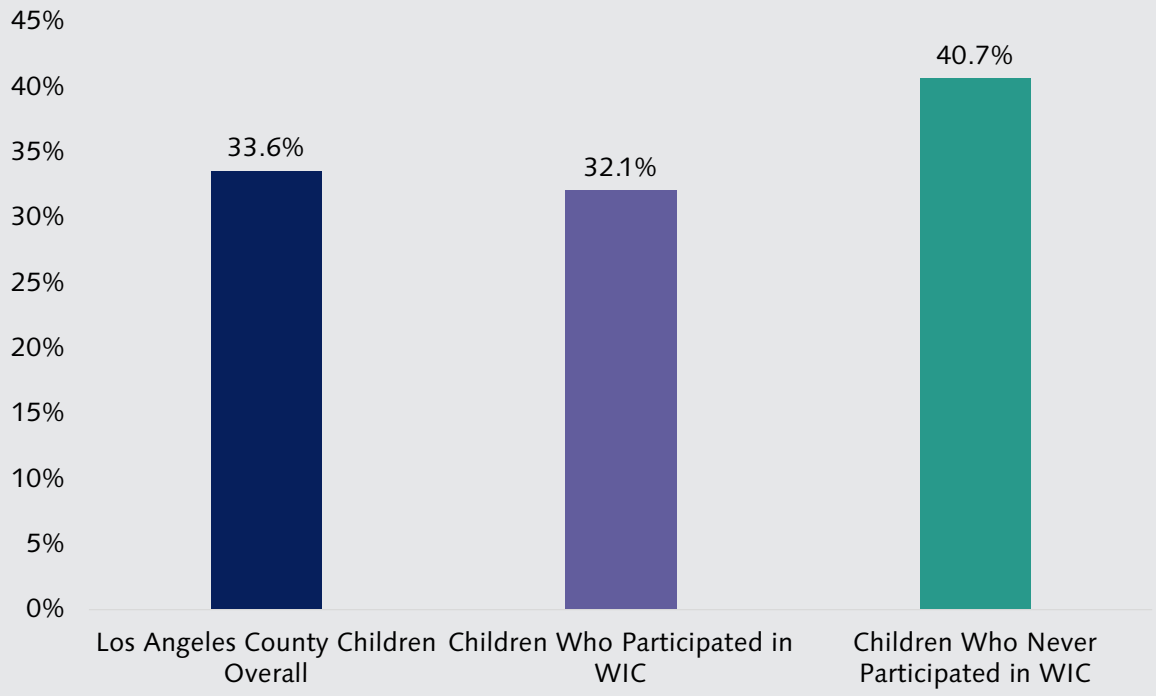
Source: 2018 Los Angeles County Health Survey; Office of Health Assessment and Epidemiology, Los Angeles County Department of Public Health.

‡The estimate is statistically unstable (relative standard error >30%) and therefore may not be appropriate to use for planning or policy purposes.

WIC Participation and SSB Consumption

The 2018 LACHS surveyed households with incomes <185% Federal Poverty Level (FPL) and found that 33.6% of children aged 0 to 5 within this income threshold drank one or more SSB per day (Figure 5). Among households with <185% FPL, 32.1% of children who participated in the WIC program consumed one or more SSB per day compared to 40.7% of non-WIC participants. WIC provides federal grants to states for supplemental foods, health care needs, and nutrition education for low-income pregnant, breastfeeding, and non-breastfeeding postpartum persons, and to infants and children ages 0 to 5.

Figure 5: Percentage of Children (Ages 0-5 Years) in Households with Incomes <185% FPL Who Drink One or More SSB Per Day by WIC Participation Status, Los Angeles County, 2018



Source: 2018 Los Angeles County Health Survey; Office of Health Assessment and Epidemiology, Los Angeles County Department of Public Health.

Notes: Results limited to households who are at or below 185% of the federal poverty level. Based on U.S. Census 2016 Federal Poverty Level (FPL) thresholds which for a family of four (2 adults, 2 dependents) correspond to annual incomes of $45,027 (185% FPL). These thresholds were the values at the time of survey interviewing.

CONCLUSION

Systemic Factors Affect SSB Consumption and Point Toward a Multi-Sector Approach to Reduce Disparities

Disparities in SSB consumption among racial, ethnic, geographic, and socioeconomic groups are reflected in the Los Angeles County data. Variations in consumption patterns are likely the result of systemic inequities that are outside of individuals' and families' control.[11] Geographical and racial inequities exist, in both the marketing of unhealthy foods and beverages, and in the lack of availability and affordability of drinking water.

Neighborhoods with a higher concentration of poverty and proportion of Black residents may have more outdoor sugary drink advertisements.[12] In addition, Latino children are exposed to more sugary drink marketing than any other group.[11] Low-income children are more likely to experience limited availability of nutritious food and beverage options due to cost, proximity, or lack of resources.[11] Persistent disparities also exist in the availability of safe and appealing drinking water in low-income communities.[13,14]

11.Change Lab Solutions. Sugary drink strategy playbook. Change Lab Solutions. https://www.changelabsolutions.org/sites/default/files/Sugary_Drink_Playbook_FINAL_20180906.pdf. Accessed April 4, 2022

12. Dowling EA, Roberts C, Adjoian T, Farley SM, Dannefer R. Disparities in sugary drink advertising on New York City streets. Am. *J. Prev. Med.* 2020;58(3). doi:10.1016/j.amepre.2019.09.025

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14. Balazs C, Morello-Frosch R, Hubbard A, Ray I. Social disparities in nitrate-contaminated drinking water in California's San Joaquin Valley. Environ. *Health Perspect.* 2011;119(9):1272-1278. doi:10.1289/ehp.1002878

These inequities may also contribute to variations in tap water consumption, with some research indicating that the probability of not drinking tap water increased for Black and Latino children following recent water crises such as the U.S. Flint, Michigan water crisis; consequently, these groups are more likely to consume SSBs.[15,16,17]

Participation in WIC seems to offer a protective factor against SSB consumption among low-income children, which serves approximately 40% of all Los Angeles County children under age 5.[18] In addition to nutrition counseling that addresses reducing consumption of sugar-sweetened beverages, WIC benefits include beverages that do not contain any added sugar. Moreover, longer participation in WIC is associated with decreased SSB consumption among young children.[19]

Healthy People 2030 includes an objective to reduce consumption of added sugars by people aged 2 years and over.[20] Pricing strategies and education interventions in schools are recommended to help limit foods and drinks with added sugars.[20] Professional organizations including the American Academy of Pediatrics and American Heart Association recommend working with organizations to structure opportunities that can reduce SSB consumption by making drinking water more available.[3] The National Clinical Care Commission report to Congress also recommends policies and programs to encourage water consumption over sugar-sweetened beverages.[21] A multi-sector approach is recommended to reduce disparities in sugar-sweetened beverage consumption among youth in Los Angeles County.

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17. Onufrak SJ, Park S, Sharkey JR, Sherry B. The relationship of perceptions of tap water safety with intake of sugar-sweetened beverages and plain water among US adults. *Public Health Nutr.* 2012;17(1):179-185. doi:10.1017/s1368980012004600

18. L.A. County WIC Data. Demographics. L.A. County WIC Data. https://lawicdata.org/data-research/topics/demographics/. Published 2020. Accessed April 4, 2022

19. Anderson CE, O'Malley K, Martinez CE, Ritchie LD, Whaley SE. Longer family participation in WIC is associated with lower childhood sugar-sweetened beverage intake. *J Nutr Educ Behav.* 2022; 54(3):239-248. doi: 10.1016/j.jneb.2021.10.003.

20. Healthy People 2030. Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Accessed September 16, 2022. https://health.gov/healthypeople/objectives-and-data/browse-objectives/nutrition-and-healthy-eating/reduce-consumption-added-sugars-people-aged-2-years-and-over-nws-10

21. National Clinical Care Commission. Report to congress on leveraging federal programs to prevent and control diabetes and its complications. Department of Health and Human Services. https://health.gov/sites/default/files/2022-01/NCCC%20Report%20to%20Congress.pdf. Accessed May 18, 2022

Recommendations to reduce disparities in SSB consumption among children in Los Angeles County

Limit SSB marketing in public buildings and spaces

Research has shown that marketing targeted towards children and adolescents can influence food preferences among children, including consumption of SSBs.[22,23] Progress has been made to address SSB marketing in California through Senate Bill 965, which was passed in 2005. This legislation banned the sale of SSBs from elementary, middle, and high schools during school hours. The federal Healthy, Hunger-Free Kids Act of 2010 required nutrition standards to be established for all foods and beverages sold to students on school campuses participating in the National School Lunch Program through the United States Department of Agriculture (USDA) Smart Snacks standards.[24,25] However, marketing of SSBs targeted toward children and consumption of SSBs by children in school settings can still occur during after school programs and during the school commute.[26,27]

To further the impact of Senate Bill 965 and the USDA Smart Snacks standards, county-level approaches could be taken to limit SSB marketing in public buildings and spaces. Currently, advertisement of tobacco products and alcoholic beverages are prohibited within 1,000 feet of the premises of any school, park, playground, recreational facility, youth center, child-care center, entertainment park or church in Los Angeles County.[28] The current prohibition on marketing of tobacco products and alcoholic beverages in places where children learn and play could be expanded to include SSBs.[11] Additionally, schools could also work to limit brand marketing on campus and extend marketing restrictions to off-campus events and other school-related activities through their school wellness policies.[11]

22. Roesler A, Rojas N, Falbe J. Sugar-sweetened beverage consumption, perceptions, and disparities in children and adolescents. *J Nutr Educ Behav.* 2021;53(7):553-563. doi:10.1016/j.jneb.2021.04.004

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24. California Department of Education. Competitive foods and beverages. California Department of Education. https://www.cde.ca.gov/ls/nu/he/compfoods.asp. Published May 2015. Accessed April 4, 2022.

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Make drinking water safe, accessible, and free throughout communities and schools

Introducing children to drinking water rather than SSBs early in life helps children develop a taste for plain water and avoid dental issues associated with SSBs.[29] Since children spend most of their daytime in school, to increase water consumption among children, schools need to make water clean, free and easily accessible for children.[30,31,32] For example, a cafeteria-based intervention showed that signage promoting water and having disposable cups installed near water sources was associated with an 0.58 ounce increase in water intake when compared with no intervention.[33]

In California, federal and state regulations require schools that participate in the National School Lunch Program or School Breakfast Program to provide access to potable water at no charge to students during breakfast and lunch periods, but making free, potable water readily accessible for students can be a challenge for some schools due to poor perceptions of tap water, deteriorating infrastructure and the prevalence of competing beverages.[34,35] Additionally, school cafeterias may be locked or off-limits outside of mealtimes. Children may also not have enough time to eat their meals and may not be allowed to get up to get water or bring reusable water bottles from home.

Increased investments are needed to provide safe water access for children through renovation of water fountains, provision of water bottle filling stations, and if necessary, adding filtration for potability or palatability, and updating school wellness policies to allow for effective access to water throughout the school day, including during class time rather than only during mealtimes.[34] For instance, in California, all licensed childcare centers are required to test drinking water for lead. The Drinking Water for Schools Grant Program also provides funding for schools for water access improvements.

In California, the Supplemental Nutrition Assistance Program-Education, locally known as CalFresh Healthy Living, also works with qualifying school districts and school-aged children from low-income households to improve the school environment by implementing youth engagement projects to increase water access and consumption. Such projects can be replicated throughout Los Angeles County.

At the county level, policies can be applied throughout the community at different settings including parks and recreation centers. Additional efforts should focus on updating residential water systems in areas of the counties that disproportionately have worse water quality.[36] In addition, the lack of access to clean tap water and low tap water consumption limit access to the benefits of community water fluoridation which are important for oral and physical health among children. Drinking fluoridated water keeps teeth strong and reduces cavities by about 25% in children and adults.[37]

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Local, city SSB excise taxes can use revenues to address health in low-income communities

Taxing sugar-sweetened beverages has emerged as an important policy strategy for addressing overconsumption of SSBs. Research shows that SSB taxes are associated with higher prices and lower sales of taxed beverages.[38] Several cities across the U.S. have implemented an excise tax on SSBs. SSB taxes can generally account for about 1 percent of general fund revenue in cities that have implemented a SSB tax.[39] Policymakers have used revenues generated by the tax to allocate resources for programs directed at communities disproportionately impacted by SSB marketing and consumption. Examples include improving water access or other programs that address the social determinants of health. Advisory boards that include members of the community can identify programs that most support communities disproportionately impacted by SSB consumption.[40] To improve public health by reducing SSB consumption, cities could also consider taxing a beverage's sugar content rather than a tax by SSB volume.[41] Recent advocacy efforts are underway to address the California preemption law that precludes local jurisdictions from enacting SSB excise taxes. More research is also needed to understand the impact of SSB taxes and changes in SSB consumption particularly for population subgroups, including by socioeconomic status and by race/ethnicity, and the implications for disproportionate impact on these populations.

Implement behavioral economics strategies to promote healthier options including water and milk without added sugar

Environmental changes using behavioral economics at locations where children and adolescents are present can support increased consumption of healthier drink options such as water and milk. Several states and cities, including public facilities in Los Angeles County have implemented food service guidelines and the inclusion of more healthy beverage options.[42,43,44] For public schools, the Smarter Lunchroom Movement focuses on making low or no-cost changes to the school cafeteria environment. Choice architecture techniques, including the accessibility and presentation of items, can increase the proportion of students who select certain meal components, including water and plain milk. At the community level, the County can work to enforce California's Healthy-by-Default Beverage law, Senate Bill 1192, which mandates restaurants that serve children's meals offer only unflavored milk or water as the default drinks.[45] Studies have found that although interventions such as the Healthy-by-Default Beverage law are effective in helping consumers choose healthier beverages, fast food restaurants continue to offer beverages in children's meals that are not consistent with the law.[46,47] Another strategy that can be implemented is the use of front-of-package nutrient warning labels, as this intervention has been shown to be successful in discouraging consumption and purchases of SSBs.[48,49]

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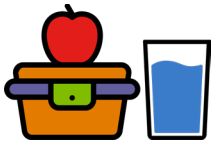

National school meals programs should aim to ensure access to healthy beverages and discourage consumption of sugary drinks

Policy changes that impact school meals programs should be in line with current scientific evidence on sugar consumption and health. Seemingly small policy changes in federal nutrition programs can impact consumption of SSBs at the local level. For example, the Healthy, Hunger-Free Kids Act of 2010 required flavored milks to be fat-free only for the National School Lunch Program and the School Breakfast Program. Recent changes to the National School Lunch Program and the School Breakfast Program permitted low-fat flavored milks to be served again, which may contribute to an increase in consumption of added sugar for students.[50] Low-fat flavored milk can often have more added sugar and calories than fat-free flavored milk. This exemplifies that small policy changes can lead to increased daily SSB consumption and subsequently poor health among school aged children.

Federal nutrition assistance programs should expand evidence-based nutrition education on the negative health impacts of SSB consumption

Ensuring that communities receive appropriate education about the health impacts of SSBs are important for communities to make informed choices about the beverages they will consume. Federal programs like WIC and SNAP-Education are critical to relaying health messaging to populations and communities who are disproportionately impacted by SSB consumption. Federal nutrition education programs can continue to promote and expand community education regarding SSBs and alternative healthy beverage options through campaigns such as the Rethink Your Drink campaign.[51] Educational and media campaigns can be a successful strategy to bring awareness to communities about the risks of SSBs while encouraging a reduction in the consumption of SSBs and increased consumption of water.

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