Kids' Choice:
Healthy Drinks in Kids' Meals Campaign

PUBLIC HEALTH ADVOCATES
EVERYONE HAS THE RIGHT TO BE HEALTHY

HEALTHY EATING ACTIVE LIVING CITIES CAMPAIGN

Alfred Mata, Program Manager
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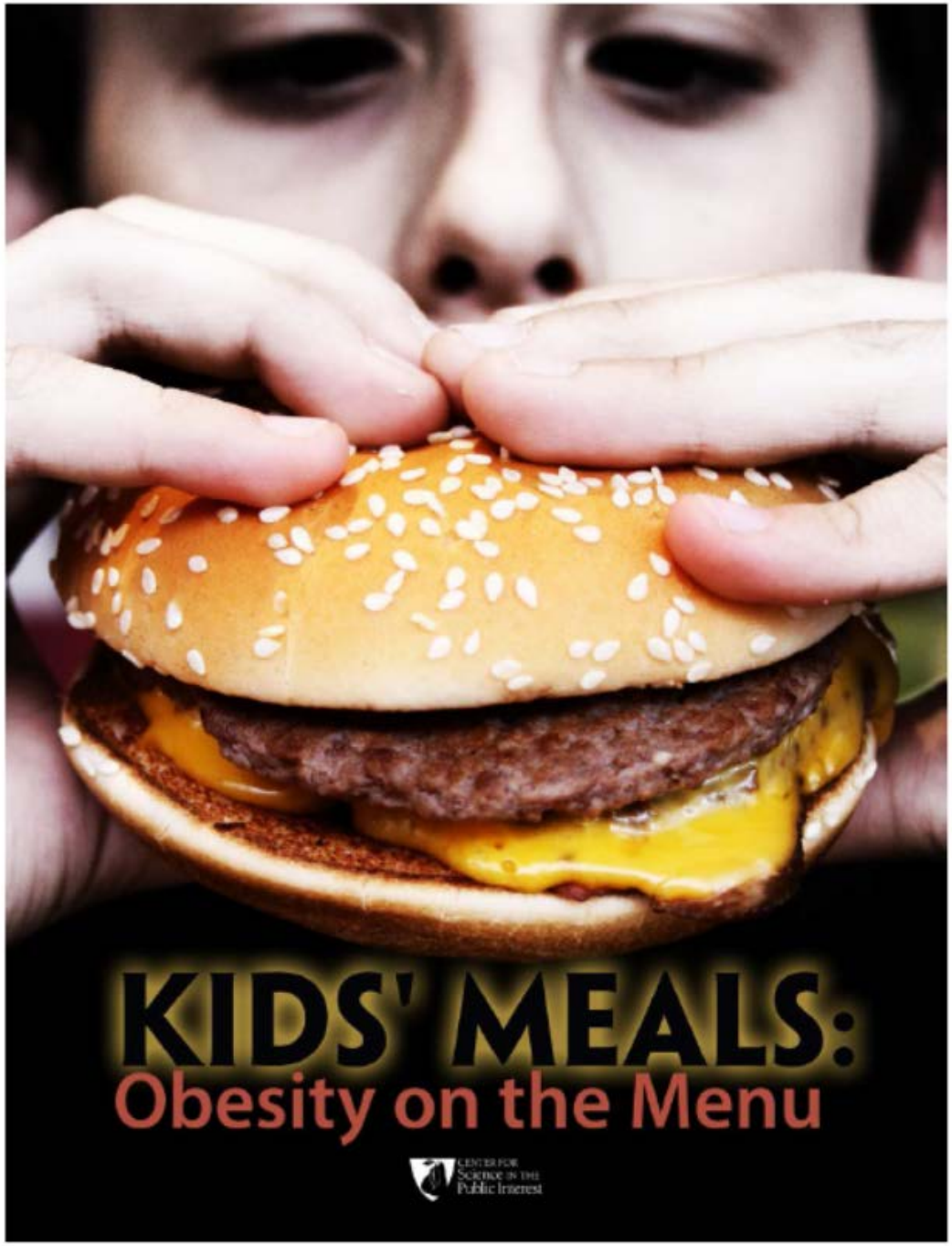
April 14, 2017


KIDS' MEALS:
Obesity on the Menu
Center for Science in the Public Interest

The Facts

- 40.7 percent of children in Long Beach are overweight or obese (CCPHA 2010)
- Each additional daily serving of sugary drinks increases a child's chance of becoming obese by 60% (Ludwig et al 2001)
- Eating out used to be a special treat, but these days families are increasingly eating meals from restaurants (National Restaurant Association 2012)
- Meals bundled with sugary beverage contain, on average, 179 more calories compared with meals with non-sugary beverages (AJPM 2016)

Restaurants that DON'T Push Sugary Drinks on Kids

Received grant funding to advocate for local policies that remove sugary beverages as the default beverage offered with kids' meals.

Funders:

Voices for Healthy Kids

The California Endowment

Partners:

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HEALTHY EATING ACTIVE LIVING CITIES CAMPAIGN

American Heart Association

Healthy Restaurants Through Policy

Requiring restaurants with kids meals to offer healthy beverages as the default

In October 2015, the City of Davis became the first city to regulate beverage offerings in kids' meals.

The ordinance requires that restaurant combo kids' meals include only water or milk as a default beverage option.

OTHER JURISDICTIONS

Davis – adopted **ordinance** October 2015

Stockton – adopted **ordinance** June 2016

Hawthorne – adopted **resolution** May 2016

Perris – adopted **ordinance** March 2017

Chula Vista – adopted **incentive program** November 2016

Daly City – pending

Ceres – pending

Turlock – pending

Modesto – pending

Compton – pending

Riverside – pending

SUPPORT HEALTHY DRINKS IN KIDS' MEALS: MAKE THE HEALTHY CHOICE THE EASY CHOICE

DID YOU KNOW?

- More than a third of children in California are overweight or obese, putting them at a higher risk of developing type 2 diabetes.
- Each additional serving of soda or sugary drinks increases a child's chance of becoming obese by 60%.
- Eating away from home is becoming increasingly common for busy families in California, and the more children eat out, the more soda and sugary drinks they consume.
- Nearly half of children in California drink at least one soda or sugary drink every day.

Offering healthy beverages, like water or milk, as the first option in kids' meals is an effective way for our community to promote the overall health and wellbeing of our children and families

I SUPPORT A HEALTHY DRINKS IN KIDS' MEALS ORDINANCE AND I'M ASKING YOU TO DO THE SAME!

Signature_____

Name_____

Address_____

PUBLIC HEALTH ADVOCATES

PUBLIC HEALTH ADVOCATES

EVERYONE HAS THE RIGHT TO BE HEALTHY

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Take Obesity off the Menu:

Healthier Default Beverages with Restaurant Children's Menus

Eating out use to be a special treat, but these days families are increasingly eating meals from restaurants. **25% of children's calories** come from fast-food and other restaurants.[1] This trend is of public health concern because consumption of restaurant food is associated with increased caloric intake and poorer diets.[2]

The vast majority of kids' meals include calorie-dense, nutritionally-poor foods and beverages.

- 86% of children's meals at the nation's largest chain restaurants are high in calories; many also are high in sodium (66%) and saturated fat (55%).[3]
- Over two-thirds of the top restaurant chains promote sugary drinks through kids' menus.[4]

Despite the health risks associated with soda and other sugary drink consumption, the majority of top restaurant chains include sugary drinks with kids' meals. With one in three children overweight or obese, sugary drinks should not be a default beverage in restaurant meals for young children.

- Soda, juice drinks, sports drinks, and other sugary drinks are the largest source of calories in children's diets, providing nearly half of children's sugars intake.[5]
- A study conducted by the Harvard School of Public Health found that for each additional serving of soda or juice drink a child consumes per day, the child's chance of becoming overweight increases by 60%.[6]
- Consumption of sugary drinks can displace healthier foods in children's diets, like low-fat milk, which, unlike sugary drinks, provides key nutrients including protein, calcium, potassium, magnesium, vitamin D, and vitamin A.[7]

Burger King
Kids Meal breakfast option

- A study conducted by Tufts University Schools of Nutrition Science and Dental Medicine found that for each additional 4 oz. increase in sugary drink consumption per day, a child's chances of having severe early childhood dental caries increases by 14%. Each additional 8 oz. serving increases the chances of having severe early childhood caries by 139%.[8]

Fast-food companies target children and adolescents with $714 million worth of marketing each year, promoting products, brands, and toy premiums to kids as young as 2 years old.[9] Restaurants market to children in schools, on television, on the Internet, and in their restaurants, among other places. They use marketing to shape children's food preferences and choices, including by shaping what kids think of as food. Studies show that repeated exposure to fast food and soda, through advertising, marketing, and consumption, cultivates a pattern for future consumption and a preference for those and similar foods.[10]

Support Parents, Protect Kids

Restaurants undermine parents' ability to feed their children healthfully when they directly market unhealthy food choices to children and make them a default option. Restaurants should work with parents, not against them.

Restaurants have made some progress improving children's meals, but progress has been modest and slow. Between 2008 and 2012, the percentage of restaurant children's meals meeting nutrition standards increased from 1% to just 3%.[3] Thus, states and localities need to nudge restaurants to do better. Improving the nutritional quality of restaurant children's meals is a shared responsibility that should involve states, localities, restaurants, and parents.

Several fast-food restaurants have taken the positive step of featuring only healthy beverages with children's meals, including McDonald's, Burger King, Wendy's, and Dairy Queen in 2015, joining Subway, Chipotle, Arby's, and Panera, which also do not include sugary drinks on their kids' menus.

Subway's Fresh Fit for Kids Meals offer low-fat or fat-free milk or water as the default

Given the sky-high rates of childhood obesity, states and localities can support parents in helping children make healthy food choices by ensuring restaurants offer healthier beverages as the default with restaurant children's meals.

Municipalities generally have the authority to regulate commercial products and practices to protect the public's health, safety, and general welfare. Addressing restaurant children's meals is a basic exercise of that authority. **Parents have the right to guide their children's food choices without so much interference from big food corporations.**

For more information, contact the Center for Science in the Public Interest:
nutritionpolicy@cspinet.org.

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Giving families more choices

2014 PROGRESS REPORT UPDATE

ALLIANCE FOR A HEALTHIER GENERATION

McDonald's partnered with the Alliance for a Healthier Generation to promote balanced food and beverage choices.

MCDONALD'S COMMITS TO*

Provide customers a choice of a side salad, fruit or vegetable as a substitute for French fries in value meals

OR

(Salad, fruit or vegetable option will vary per participating market)

Promote and feature only water, milk, and juice as the beverage in Happy Meals on menu boards and in-store and external advertising

Offer new fruit, vegetable, low/reduced fat dairy or water options in the Happy Meal and generate excitement for produce and dairy

Ensure 100% of all advertising directed to children to include a fun nutrition or children's well-being message

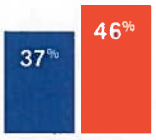
HIGHLIGHTS OF MCDONALD'S USA PROGRESS TO DATE

83%

Value Meals: Side Salad, Fruit & Vegetable Offerings

In first month after national rollout (February 2015), 83% of restaurants offered produce as a substitute for fries.

More Happy Meals Served with Low-fat/Fat-free Milk and 100% Juice



MILK & 100% JUICE

21 MILLION additional milk jugs and juice boxes served (Jul '14 - May'15) compared to prior year.

SODA

Fruit & Low-Fat Dairy Served**

38 MILLION Cuties® clementines
Nov '14-March '15

380 MILLION bags of apple slices
Jan '14 - Dec '14

Go-GURT®

161 MILLION Go-Gurt® low-fat yogurt with 25% less sugar than the leading kids' yogurt***
Jul '14-May '15

External Ads with Qualifying Message

99.9%

99.9% of McDonald's TV ads on programs directed to children included a nutrition or children's well-being message.

* *All pieces of this commitment will be fulfilled in McDonald's restaurants in 20 major markets by 2020, representing more than 85% of global sales.*

** *In Happy Meals and a la carte.*

*** *Go-Gurt® at McDonald's has 6g of sugar per 2.25 oz. The leading kids' yogurt has 9g of sugar per 2.25 oz.*

Learn more at **HealthierGeneration.org**

FOUNDED BY: American Heart Association. CLINTON FOUNDATION

Six Down, Many to Go

Since 2013, six top chain restaurants have committed to keeping kids' menus free from soda and other sugary drinks. They join Panera and Subway in offering healthier choices instead.

However, the majority of chain and independent restaurants continue to push soda on kids. Beverages contribute nearly half of added sugars in the diets of children and adults.[1]

2013

McDonald's

When McDonald's committed to only water, low-fat milk, and 100% juice as the beverages in Happy Meals, Don Thompson, then president and CEO, stated: "This commitment reflects McDonald's progress regarding nutrition and well-being."[2]

2014

Wendy's

Wendy's stated: "In the fall of 2014, we took the additional step of removing carbonated soft drinks from the Kids' Meal listing on our menuboards, both inside our restaurants and at our pick-up windows. The beverage options now listed for Kids' Meals are: 1% white or chocolate milk, bottled water and 100% juice."[3]

2015

Dairy Queen

Dairy Queen responded to advocacy efforts by the Center for Science in the Public Interest (CSPI) by removing sugary drinks from its menu. "We share CSPI's concern regarding children's nutrition," said Dean Peters, a spokesman for Dairy Queen. "It is important to all of us in the Dairy Queen system which is why we've been—for some time now—working toward offering healthier options on our menu."[5]

Burger King

Removing soda from the Burger King kids' menu, Alex Macedo, president of Burger King North America, said was "part of our ongoing effort to offer our guests options that match lifestyle needs."[4]

2016

Jack in the Box

In an email to CSPI, Brian Luscomb, a vice president of Jack in the Box stated: "[S]odas are no longer the default beverage for our Kid's Combos ...[W]e now only promote milk and juice as the beverage option."

IHOP & Applebee's

"Both IHOP and Applebee's have removed the choice of soft drinks from their kid's menus and/or placemats," a rep for DineEquity said in an emailed statement.

Going forward:

While there has been progress, voluntary company policies have not taken care of the problem. Most of the 50 biggest American restaurant chains continue to push sugary drinks on their kids' menus, including Chili's (#17), Arby's (#22), Panda Express (#29), Fridays (#36), and Bojangles' (#48),[7] as do many regional restaurant chains, and independently owned restaurants.

CSPI and Voices for Healthy Kids Action Center encourage healthy choices for kids' restaurant meals, including healthy beverage defaults. We support the above changes to kids' meals, but do not endorse any specific restaurants. To join us in urging companies and communities to improve their beverage offerings on restaurant children's menus, please contact CSPI at nutritionpolicy@cspinet.org or 202-777-8352.

CENTER FOR Science IN THE Public Interest

Voices for Healthy Kids Action Center

SOURCES :

HEALTHIER RESTAURANT CHILDREN'S MEALS: FREQUENTLY ASKED QUESTIONS

Eating out at restaurants is no longer a rare treat saved for a special occasion. American children consume, on average, one-quarter of their calories from eating out. And children eat almost twice as many calories when they eat a meal at a restaurant compared to a typical meal at home. This is in large part because many restaurants provide few healthy options for children and make unhealthy options the default accompaniment with a meal (i.e., the meals automatically are sold with fries and a soft drink). The overwhelming majority of children's meals at the nation's largest chain restaurants are high in calories; many also are high in sodium and saturated fat.

Addressing restaurant marketing is key to addressing food marketing to kids overall—restaurants are one of the top food categories marketed to children. Forty percent of all television food advertising to young kids is for fast food and other restaurant food. Many restaurants offer menu items designed for, and marketed, to children. Restaurant companies target children with $583 million worth of marketing each year; toy giveaways make up more than half of those expenditures.

Parents, health professionals and others can work with their state, city, or county on policies to set nutrition standards for restaurant kids' meals or beverages (as Santa Clara County, San Francisco, Davis, and Stockton, California have done).

These policies are new, innovative strategies to address an important contributor to childhood obesity. As with most new policies, there is a lot of misinformation about them, how they work, and whether they would have an impact on children's nutrition and health. The following Q&A answers some common questions and concerns.

FREQUENTLY ASKED QUESTIONS: HEALTHIER RESTAURANT CHILDREN'S MEALS

QUESTION: Isn't an ordinance unnecessary since many restaurants are already providing healthier options on kids' menus?

ANSWER: The overwhelming majority (97%) of children's meals at the nation's largest chain restaurants are high in calories, and many also are high in sodium (66%) and saturated fat (55%). There has been some progress improving children's meals at restaurants, but not nearly enough. Between 2008 and 2012, the percentage of restaurant children's meals meeting nutrition standards increased from 1% to just 3%. Although some restaurants have added healthier options, like apple slices, applesauce, and low-fat milk, much more needs to be done.

QUESTION: Will restaurants be able to meet the nutrition standards?

ANSWER: This policy uses nutrition standards based on those developed by the National Restaurant Association for its Kids LiveWell program. Many restaurants are already reformulating menu options, replacing french fries with fruits and vegetables and offering low-fat milk or water instead of soda. But progress has been too slow.

QUESTION: Do localities and states have the authority to enact these types of ordinances?

ANSWER: States and municipalities generally have the authority to regulate commercial products and practices to protect the public's health, safety, and general welfare. For example, many localities use this power to restrict smoking in public places, such as restaurants. Addressing restaurant children's meals is a basic exercise of this authority.[1]

QUESTION: Are there constitutional barriers to these types of laws?

ANSWER: Kids' meal policies do not violate the First Amendment's protections of speech. Although the First Amendment has been interpreted to protect "commercial speech," including advertising, this ordinance regulates a business practice, not speech. Policies do not address the advertising of the toys or meals, they address the practice of giving away a toy and/or the nutrition quality of children's meals.

QUESTION: Isn't it up to parents—not restaurants—to be responsible for what children eat when dining out?

ANSWER: Parents play a central role in determining what their children eat. However, food companies and restaurants regularly insert themselves into the parent-child relationship around food. Restaurants should support—not undermine—parents' efforts to feed their children healthfully.

Restaurants market to children in schools, in restaurants, on television, and on the Internet. They use marketing to shape children's food preferences and choices, to shape what kids think of as food. And unfortunately, restaurants are defining the social norm for children's meals as pizza, chicken nuggets, french fries, and sugary drinks. The overwhelming majority of children's meals (97%) are unhealthy. Parents shouldn't have to give up eating out at restaurants in order to make sure their child eat a nutritious meal.

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[1] To determine whether your community can implement these model policies, it is important to review both state and local law.

QUESTION: Is the ordinance another example of the nanny state?

ANSWER: Setting nutrition standards for children's meals is not big government interfering with parental responsibility. Parents have the right to guide their children's food choices without so much interference from big food corporations. Restaurants should do more to improve the nutritional quality of their offerings to give parents a fighting chance at finding healthy options their kids like. The percentage of restaurant children's meals that are healthy increased from 1% in 2008 to just 3% in 2012. Since restaurants haven't been making much progress on their own, cities and states can nudge them in the right direction.

QUESTION: Does this ordinance address childhood obesity and child nutrition?

ANSWER: Yes. Addressing childhood obesity is a combined responsibility by states/localities, restaurants, and parents. Kids get about 1/4 of their calories from eating out, and eating out is linked to obesity. Most children's restaurant meals are unhealthy, and improvements have been small and slow. States and localities can support parents in helping children make healthy food choices by implementing nutrition standards for children's meals. A study found that children were twice as likely to choose a healthier kids' meal when healthier meals are served with toys.

For more information on improving the nutritional quality of restaurant children's meals, please visit http://www.foodmarketing.org/ or email nutritionpolicy@cspinet.org.

Serve Kids Better™

Tips for Effective Kids' Restaurant Meals Messaging

- ✔ People want restaurants to provide healthy options for kids so that parents have good choices. Framing the issue in terms of government regulation can turn people away. Be sure to discuss it as a way to increase choice for parents.
- ✔ Emphasize that restaurants should work on making all components of kids' meals healthier, not just drinks.
- ✔ Messages that include surprising information based in facts and common-sense reasoning (i.e. six is the average age of a child ordering from the children's menu and 97 percent of children's meals are unhealthy) work best to convince voters/parents of the importance of increasing healthy food options on children's menus.
- ✔ In order to address arguments that kids' meals would be difficult for restaurants to improve, emphasize that some restaurants are already making changes and give examples.

Kids' Restaurant Meals Messages (*Use key messages consistently and repeatedly)

- ★ ***Our lives are busy, and more and more, we're grabbing a meal on the run or eating out. That's why it's so important that restaurants offer healthy food and beverage options—especially for children.***
- The majority of children's meals at the most popular restaurants are unhealthy. They are packed with calories, salt, and fat. And, children consume almost twice as many calories at restaurants compared to a typical meal at home.
- Parents simply want more healthy choices for kids and to cut down on those familiar requests for junk food and sugary drinks.
- To help parents, restaurants can make sure kids' meals are healthier. One easy way to get this started is to offer water or milk as the drink with kids' meals. They can also offer more fruit, vegetables, or whole grains and make sure the meals are not too high in calories, especially from excess fat and salt. The goal is to help kids see these healthy options as the norm, not the exception.
- Soda is too high in sugar for kids, yet it is usually the beverage served with children's meals. Drinking sodas and other sugary drinks, like energy and sports drinks, is associated with chronic diseases, such as heart disease and diabetes. Milk or water should be the beverage served with children's meals.

Language to Emphasize/Language to Avoid

Messages that resonate best are clear and simple. They use everyday language free of jargon and communicate shared values and emotion. Below you'll find a list of words/phrases Voices for Healthy Kids encourages you to use (left-hand column) when talking about kids' restaurant meals. Language in the right-hand column includes terms and phrases not as easily understood or impactful when looking to engage your audience.

Use This Language	*Instead of This Language*
✔ Choices and options	✖ Restrictions, mandates, bans, and regulations
✔ Sugary drinks like sports drinks, fruit drinks, energy drinks or soda; drinks with added sugar	✖ Sugar-sweetened beverages or SSBs
✔ Healthy standards	✖ Minimum nutrition requirements, banning sugary drinks
✔ Helping children grow up at a healthy weight	✖ Preventing childhood obesity
✔ Eating healthy and being physically active helps prevent diabetes and heart disease.	✖ Eating healthy and being physically active helps prevent childhood obesity.

Tips for Effective Messaging to Support Public Policy Change

1 Connect with supporters.

When communicating to gain support for policy, systems, and environmental changes that help kids grow up at a healthy weight, it is important to use language that will move people to take action. By framing your message in a way that paints a picture of how the current environment makes it difficult, if not impossible, to make healthy choices, you can create a sense of urgency and the need to take action. Make sure to clarify that the change and action you're calling for is about transforming environments to make it easy for people to eat healthy and be physically active and less about creating personal behavior change.

2 Use the right words.

While obesity is a chronic disease, most people still think of it as a personal problem with a personal solution. They believe if someone is obese or overweight, that person just needs to eat less and be more physically active. They don't immediately see the need for public policy solutions. However, when talking about people facing obesity-related diseases like diabetes and heart disease, most people agree that we need to work together to find a solution to the problem. Avoid using "obesity" and instead emphasize the health threats posed by heart disease and/or diabetes.

3 Emphasize choice.

People are most supportive of healthy changes if they don't fear their choices will be limited. When talking about adding healthy options, stress the array of overall choices offered to people, especially parents who we are here to support, so the focus is not on the removal of unhealthy options.

4 Use the right messenger.

Messages are only as strong as the person delivering them. Is the person delivering the message credible? Are they representative of the community most affected? Do they have personal experience related to the issue? Are they respected by the audience? The best messenger needs to be determined for each situation and location. For example, when messaging on health issues, the best messenger could be a doctor, a nurse, or a patient. Make informed decisions about the most culturally appropriate messenger on an issue.

5 Stress consumer education as ONE piece of the puzzle.

People believe education is the best way to encourage behavior change. But helping all children grow up at a healthy weight is a complex challenge and education is only one part of the solution. Reinforce consumer education as key to awareness building about the problem and solutions, but emphasize other initiatives that drive system-wide policy change. For example, with tobacco use, warning labels did a great deal to educate consumers but the change in norms and dramatic drops in smoking rates happened when environmental changes happened like prohibiting the sale to minors and making workplaces smoke-free.

6 Alleviate skepticism and build trust.

People are very skeptical of government and framing our solutions only from that lens can prevent us from getting our message through to key audiences. Introduce policy, systems, and environmental change efforts to the public with words like "services," "resources," "partnerships," as people are more inclined to embrace this terminology instead of "regulations," "mandates," "bans," "funding," and "government."

Correlates of Sugar-Sweetened Beverages Purchased for Children at Fast-Food Restaurants

Jonathan Cantor, MS, Andrew Breck, MPA, and Brian Elbel, PhD, MPH

Objectives. To determine consumer and fast-food purchase characteristics associated with the purchase of a sugar-sweetened beverage, as well as calories and grams of sugar, for children at a fast-food restaurant.

Methods. We completed cross-sectional analyses of fast-food restaurant receipts and point-of-purchase surveys (n = 483) collected during 2013 and 2014 in New York City and Newark and Jersey City, New Jersey.

Results. Caregivers purchased beverages for half of all children in our sample. Approximately 60% of these beverages were sugar-sweetened beverages. Fast-food meals with sugar-sweetened beverages had, on average, 179 more calories than meals with non–sugar-sweetened beverages. Being an adolescent or male, having a caregiver with a high school degree or less, having a caregiver who saw the posted calorie information, ordering a combination meal, and eating the meal in the restaurant were associated with ordering a sugar-sweetened beverage. Purchases that included a combination meal or were consumed in the restaurant included more beverage grams of sugar and calories.

Conclusions. Characteristics of fast-food purchases appear to have the largest and most important association to beverage calories for children at fast-food restaurants. Targeting fast-food restaurants, particularly combination meals, may improve childhood obesity rates. (*Am J Public Health.* 2016;106:2038–2041. doi:10.2105/AJPH.2016.303427)

Childhood obesity is a serious public health problem in the United States, with 17% of children aged 19 years and younger classified as obese (body mass index at or greater than the 95th percentile) in 2011 to 2012.[1] Increased caloric intake is a main contributor to the recent growth in obesity.[2] In 2009 to 2010, children consumed an average of 155 calories from sugar-sweetened beverages each day.[3] In New York City, approximately 42% of children in 2013 drank a sugar-sweetened beverage in the past week, a number that has declined since 2007.[4] Sugar-sweetened beverages contribute calories and added sugars but no nutritional value. Sugar-sweetened beverage consumption increases caloric intake that is not offset by consuming fewer calories from other sources.[5] The most recent Dietary Guidelines for Americans recommend that children limit their consumption of added sugars to 10% of total calories, yet national estimates show that children consume more than these recommended levels.[6]

We contribute to the literature on exposure of children to sugar-sweetened beverages by using fast-food receipt and point-of-purchase survey data. The objective nature of receipt data improves on the limitations known to exist with dietary recall data[7] and allows us to control for meal characteristics not available in other survey data. We examined consumer and fast-food purchase characteristics associated with the purchase of beverages and sugar-sweetened beverages for children at fast-food restaurants.

METHODS

The data used for this study were collected as part of a project evaluating the since-overturned amendment to New York City's health code that limited the size of certain fountain beverages. We surveyed lunch and dinner customers in New York City and Newark and Jersey City, New Jersey, at the 5 most common fast-food restaurant chains in New York City. Details on data collection methods are available elsewhere.[8] We included food and beverages on fast-food receipts in our analytic sample if the accompanying adult respondents indicated purchasing any item on the receipt for a child and the child was present at the time of the interview. We obtained nutritional information for all receipt food items from the restaurant chains' Web sites. We defined sugar-sweetened beverages as any beverages with added sugar, including soft drinks, sweetened tea, and flavored milks. Because the food industry estimates that ice displaces 40% of the volume of a beverage cup, we multiplied the nutritional content of fountain beverages without ice by 1.67.[9] We doubled the nutrition information for refilled beverages.

We used multivariable logistic regressions to calculate the predicted probabilities for purchases of a sugar-sweetened beverage for a child. In addition, we estimated linear regression models to identify correlates of total

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TABLE 1—Sample Characteristics, Predicted Probabilities for Purchase of a Sugar-Sweetened Beverage, and Adjusted Mean Grams of Sugar and Calories for Child Beverages at Fast-Food Restaurants: New York, NY, and Newark and Jersey City, NJ, 2013–2014

	Sample Characteristics, %	Purchased SSB, Predicted % (95% CI)	Beverage Mean Sugar, g (95% CI)	Beverage Mean Calories, kcal (95% CI)
Entire sample		33	21	85
Child characteristics				
Age, y				
≤11	85.5	32** (31, 33)	20 (19, 21)	82 (78, 86)
≥12	14.5	39** (35, 44)	26 (21, 32)	102 (79, 125)
Gender				
Male	45.5	38** (35, 42)	22 (20, 25)	91 (83, 98)
Female	54.5	29** (26, 32)	19 (18, 21)	80 (74, 86)
Caregiver characteristics				
Employment status				
Not employed	42.9	32 (28, 37)	21 (17, 25)	85 (69, 100)
Employed	57.1	34 (30, 37)	21 (18, 24)	85 (73, 97)
Race/ethnicity				
Non-Hispanic White	5.8	37 (28, 47)	15 (10, 20)	75 (54, 97)
Non-Hispanic Asian or American Indian	3.9	36 (19, 53)	23 (13, 32)	87 (55, 119)
Non-Hispanic African American	38.9	36 (31, 40)	23 (20, 26)	94* (85, 102)
Hispanic	51.3	31 (28, 34)	19 (17, 22)	79* (73, 86)
Highest level of education				
> high school	43.5	27** (25, 29)	18 (15, 21)	73* (64, 82)
≤ high school degree	56.5	38** (36, 40)	23 (21, 25)	94* (87, 101)
Did you see any calorie information in the restaurant?				
Did not see calorie labels	61.5	31** (30, 32)	20* (19, 21)	81* (79, 90)
Did see calorie labels	38.5	36** (34, 38)	22* (20, 24)	91* (86, 95)
Purchase characteristics				
Mealtime				
Dinner (4:30 PM to 7:30 PM)	49.7	34* (33, 34)	19 (18, 21)	81 (71, 90)
Lunch (11:30 AM to 2:30 PM)	50.3	32* (32, 33)	22 (20, 24)	89 (80, 99)
Combination meal purchased?				
No	58.4	23** (20, 26)	13** (10, 15)	51** (42, 60)
Yes	41.6	47** (42, 52)	32** (29, 36)	133** (120, 145)
Did you order eat in or to go?				
Eat in	46.8	40** (37, 43)	23* (21, 25)	92* (86, 98)
To go	53.2	27** (24, 29)	19* (17, 20)	78* (73, 84)

Note. CI = confidence interval; SSB = sugar-sweetened beverage. A logistic model was used for the purchased sugar-sweetened beverage outcome. Predicted probabilities are reported in that column. Ordinary least squares was used for the beverage calories and sugar outcome. Regression adjusted means are reported in their respective columns. Additional controls include the restaurant chain and the number of times the respondent went to a fast-food restaurant in the past week. SEs were clustered at the restaurant chain level. The sample size was n = 483.

*P < .05; **P < .01, indicating differences among groups within each variable.

number of child beverage calories and grams of sugar. All regression models controlled for child characteristics, including age and gender; caregiver characteristics, including employment status, self-reported race/ethnicity, frequency of fast-food visits in the past week, and highest level of education; and fast-food meal characteristics, including mealtime, location of restaurant (state), restaurant chain, and indicators for round of data collection and whether meal was taken to go or eaten in and whether it was a combination meal. Regression SEs were clustered at the restaurant chain level.

RESULTS

Our sample included 483 children and adolescents, 160 of whom had a sugar-sweetened beverage (33%). Approximately half of the beverages were soda (49%), 38% were juice, 5% were flavored milk, 2% were unflavored milk, 1% were water, and 5%

were other beverages (such as lemonade, sweet tea, hot chocolate). Table 1 includes descriptive statistics for characteristics of the children, their caregivers, and the individual purchases. Approximately 86% of our sample was aged 11 years or younger. Our sample had more females (55%) than males (45%). Fewer than half of our sample (42%) purchased a combination meal, of which 74% were kids' meals. Meals ordered for children contained an average 628 calories (SD = 358). However, meals that included a sugar-sweetened beverage averaged 722 calories (SD = 356) compared with 543 calories (SD = 254) for meals that included a non–sugar-sweetened beverage.

Table 1 also includes results from a logistic regression model in which the outcome variable was the purchase of a sugar-sweetened beverage and ordinary least squares regression with amount of calories and sugar for children's beverages. Adolescents (39%) and males (38%) were more likely to purchase a sugar-sweetened beverage. Children with parents with a high school degree or less (38%), who made their purchase during dinner hours (34%), who had a combination meal (47%), who had a caregiver who saw the posted calorie information (36%), and who ate their meal in the restaurant (40%) were more likely to purchase a sugar-sweetened beverage.

Neither the child's age category nor the gender characteristics were correlated to the number of grams of sugar or calories in the beverage. Three caregiver characteristics were significant: (1) beverage purchases by caregivers with a high school degree or less contained an average of 21 additional calories, (2) caregivers who saw calorie labels purchased drinks with 10 additional calories and 2 additional grams of sugar, and (3) African American caregivers purchased beverages with 15 additional calories compared with Hispanic caregivers.

Characteristics of the purchase were correlated with beverage grams of sugar and calories. Having a combination meal was associated with 82 additional beverage calories and 19 additional beverage grams of sugar. We also found that the setting of the meal mattered. Those who made their purchase to go bought beverages with 4 fewer grams of sugar and 14 fewer calories than those who ate in the restaurant.

DISCUSSION

Our results indicate that children who have a sugar-sweetened beverage with their fast-food meal have more beverage calories and more beverage grams of sugar. Our results suggest that race/ethnicity is correlated with the number of sugar-sweetened beverage calories purchased (with African Americans purchasing more than Hispanics) but not with the probability of making a purchase or the grams of sugar purchased. We found that fast-food meals with sugar-sweetened beverages had, on average, 179 more calories compared with meals with non–sugar-sweetened beverages. This difference in calories is important because it likely exceeds the national dietary guidelines of added sugar for children with a single meal in the day (120–180 calories). As a result, our findings suggest that one avenue for improving childhood obesity rates is to target fast-food restaurants.

This study had several limitations. First, we adjusted the beverage calories and grams of sugar for the 2% of children who refilled their beverage (4% of children with a beverage) based on the assumptions that refilled beverages were refilled only once, only after the first portion was consumed entirely, and that the beverage was completely refilled. To our knowledge, no standard refill adjustment exists. As a result, we may have misestimated the beverage calories and ounces for this small subgroup. Second, we only observed the size of the beverage purchased but not how much of each drink was actually consumed. Third, our sample did not include drive-through customers, which may make up a significant portion of fast-food restaurant traffic in some locations, particularly New Jersey. Finally, our results may not generalize to other fast-casual dining, other sit-down or full-service restaurants, or, more generally, all children. We do not know the response rate for our survey, but previous studies have indicated that the participation rate is as high as 60%.[10]

Because we found a strong correlation between having ordered a combination meal and consuming a sugar-sweetened beverage, a possible effective policy option for reducing sugar-sweetened beverage consumption would be to decouple sugar-sweetened beverages from combination meals.[11] Such an ordinance recently passed in Stockton, California. The goal was to remove sugar-sweetened beverages from being the default beverage for kids' meals. It is well established that most combination meals are, on average, less healthy.[12] Our findings indicate that decoupling sugar-sweetened beverages from combination meals, a practice that several chains have already started, could reduce the number of beverage calories and grams of sugar purchased and consumed.[11] AJPH

CONTRIBUTORS

J. Cantor and A. Breck conceptualized the study and contributed to the analysis, interpretation of the results, and writing of the article. B. Elbel conceptualized the study, design, and analysis plan and contributed to the interpretation of the results and the writing of the article.

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HUMAN PARTICIPANT PROTECTION

The study received approval from the Institutional Review Board of New York University School of Medicine.

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UCLA CENTER FOR HEALTH POLICY RESEARCH

Health Policy Brief

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Prediabetes in California: Nearly Half of California Adults on Path to Diabetes

Susan H. Babey, Joelle Wolstein, Allison L. Diamant, Harold Goldstein

"More than 13 million California adults —nearly half of the state's adult population—are estimated to have prediabetes."

SUMMARY: In California, more than 13 million adults (46 percent of all adults in the state) are estimated to have prediabetes or undiagnosed diabetes. An additional 2.5 million adults have diagnosed diabetes. Altogether, 15.5 million adults (55 percent of all California adults) have prediabetes or diabetes. Although rates of prediabetes increase with age, rates are also high among young adults, with one-third of those ages 18-39 having prediabetes. In addition, rates of prediabetes are disproportionately high among young adults of color, with more than one-third of Latino, Pacific Islander, American Indian, African-American, and multiracial Californians ages 18-39 estimated to have prediabetes. Policy efforts should focus on reducing the burden of prediabetes and diabetes through support for prevention and treatment.

Diabetes, particularly type 2 diabetes, is a significant and growing health problem that affects both adults and children and can cause a number of serious complications, including blindness, kidney disease, cardiovascular disease, amputation, and premature death. Nationally, the prevalence of diabetes among adults has nearly tripled over the past 30 years.[1] In 2014, 29.1 million people in the U.S., or 9.3 percent of the population, had diabetes (including 8.1 million with undiagnosed diabetes).[2] In California, the prevalence of diabetes among adults increased by 35 percent between 2001 and 2012.[3]

Prediabetes, also referred to as impaired glucose tolerance or impaired fasting glucose, is a condition in which blood glucose levels are higher than normal but not high enough for a diagnosis of diabetes. People with prediabetes have a much higher risk of developing type 2 diabetes, as well as an increased risk for cardiovascular disease. Results from the Diabetes Prevention Program (DPP) clinical trial indicated that among those with prediabetes, increased physical activity, improvements in diet, and weight loss can prevent or delay the onset of diabetes significantly more than placebo or medication.[4] Results also indicated that medication, while effective, is not as effective as lifestyle changes.

Nationally, more than one in three adults is estimated to have prediabetes, and 90 percent of these individuals are not aware that they have the condition.[2] Between 1999 and 2010, the prevalence of prediabetes among adults in the U.S. increased from 29 percent to 36 percent.[5] Moreover, between 1999 and 2008, the prevalence of diabetes and prediabetes among adolescents in the U.S. rose dramatically, from 9 percent to 23 percent.[6] Without intervention efforts, up to 30 percent of people with prediabetes will develop type 2 diabetes within five years, and up to 70 percent will develop diabetes within their lifetime.[7] There are very effective interventions available, including lifestyle modification programs recognized by the CDC's National Diabetes Prevention

California Center for Public Health Advocacy

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Exhibit 1

Percent of Adults Diagnosed with Diabetes and Estimated to Have Prediabetes by Age Group, California, 2013-14

	Diabetes	Prediabetes
Age	%	%
18-39	2%	33%
40-54	9%	49%
55-69	16%	60%
70+	20%	59%
All California Adults	**9%**	**46%**

Source: 2013-14 California Health Interview Survey

Note: Estimates of prediabetes are based on predictive models developed using 2009-2012 NHANES data and applied to CHIS 2013-14 data. Prediabetes estimates include adults with undiagnosed diabetes. Nationally, approximately 3.9 percent of adults have undiagnosed diabetes. Confidence intervals for estimates presented in this table are available here: *http://healthpolicy.ucla.edu/publications/search/pages/detail.aspx?PubID=1472*.

"Not only does diabetes increase the risk of serious medical complications, but it is also extremely costly to families, businesses, health care plans, states, and the nation."

Program, that can prevent or delay the progression from prediabetes to diabetes.[4]

The current trends in diabetes and prediabetes are troubling because of the associated human and financial costs. Not only does diabetes increase the risk of serious medical complications, but it is also extremely costly to families, businesses, health care plans, states, and the nation. Nationally, diabetes was estimated to cost $245 billion in 2012, including $176 billion in direct medical costs and $69 billion in lost productivity.[8] In California, the total cost of diabetes was estimated to be more than $27 billion, with $19 billion of that spent on direct medical care for diabetes and $8 billion on the indirect costs associated with the disease.[8] In addition, undiagnosed diabetes is estimated to cost California $2.8 billion and prediabetes $5.3 billion in direct medical care.[9]

This study used data from the 2013-14 California Health Interview Survey (CHIS) and the National Health and Nutrition Examination Survey (NHANES) to estimate the prevalence of prediabetes in California. NHANES 2009-2012 data were used to build and test a statistical model predicting prediabetes, defined by hemoglobin A1c and fasting plasma glucose (blood tests commonly used to diagnose diabetes and prediabetes). This predictive model was then applied to CHIS data to produce California-specific estimates of the prevalence of prediabetes and undiagnosed diabetes (herein referred to as prediabetes when reporting California estimates). The percentage of California adults with undiagnosed diabetes is expected to comprise a relatively small proportion of the prediabetes estimates presented. Nationally, less than 4 percent of adults have undiagnosed diabetes. This policy brief describes the estimated prevalence of prediabetes, including undiagnosed diabetes, statewide as well as by age, race and ethnicity, and county.

Prediabetes in California

One-Third of Young Adults in California Have Prediabetes

In California, more than half of adults (55 percent) have either prediabetes or diabetes. This includes 2.5 million adults, or 9 percent of the state's adult population, who have diagnosed diabetes. In addition, nearly half of adults (46 percent) are estimated to have prediabetes. This represents more than 13 million California adults. Prediabetes prevalence increases with age, rising from 33 percent among adults ages 18-39 to 49 percent among those ages 40-59 (Exhibit 1). Prevalence then levels off at approximately 60 percent among adults 55 and older.

Percent of Adults Estimated to Have Prediabetes by Race or Ethnicity and Age Group, California, 2013-14 **Exhibit 2**

	Age Group				
Race and Ethnicity	18-39	40-54	55-69	70+	All Adults
Latino	36%	51%	55%	51%	44%
Pacific Islander	43%	54%	76%	53%	55%
American Indian	38%	52%	65%	70%	51%
Asian	31%	45%	53%	58%	42%
African-American	38%	56%	61%	57%	50%
White	29%	49%	63%	61%	48%
Multiracial	37%	51%	58%	52%	45%
California	**33%**	**49%**	**60%**	**59%**	**46%**

Source: 2013-14 California Health Interview Survey

Note: Estimates of prediabetes are based on predictive models developed using 2009-2012 NHANES data and applied to CHIS 2013-14 data. Prediabetes estimates include adults with undiagnosed diabetes (approximately 3.9 percent of adults nationally). Confidence intervals for estimates presented in this table are available here: *http://healthpolicy.ucla.edu/publications/search/pages/detail.aspx?PubID=1472.*

Prediabetes Higher Among Adults of Color

Prediabetes disproportionately affects certain racial and ethnic groups. In California, at least half of Pacific Islanders (55 percent), American Indians (51 percent), and African-Americans (50 percent) are estimated to have prediabetes (Exhibit 2). Among young adults, more than one-third of Latinos (36 percent), Pacific Islanders (43 percent), American Indians (38 percent), African-Americans (38 percent), and those of multiple races (37 percent) are estimated to have prediabetes.

Prediabetes Varies by County

The prevalence of prediabetes varies from county to county among California adults. Because age is a particularly strong risk factor for diabetes and prediabetes, Exhibit 3 displays estimates of county-level prediabetes prevalence broken out by age group. High rates among young adults are particularly concerning, because the risk of complications from diabetes increases significantly the longer one has the condition. Among adults ages 18-39, the prevalence of prediabetes ranged from 26 percent in Lake County to 40 percent in both Kings and Imperial counties (Exhibit 3). Among this younger age group, five counties had rates below 30 percent (Lake, San Benito, Butte, San Francisco, and San Luis Obispo), and five had rates over 37 percent (Tulare, Merced, San Joaquin, Kings, and Imperial). Among all adults, rates ranged from 43 percent in Sutter and Butte counties to 54 percent in Nevada County and the combined counties of Tuolumne, Calaveras, Amador, Inyo, Mariposa, Mono, and Alpine. This regional variation is likely due to a number of factors, including differences in demographic, social, economic, and environmental characteristics.

"High rates among young adults are particularly concerning, because the risk of complications from diabetes increases significantly the longer one has the condition."

Exhibit 2

Percent of Adults Estimated to Have Prediabetes by County or County Group and Age, California, 2013-14

	Age Group				
County or County Group	18-39	40-54	55-69	70+	All Adults
Northern and Sierra Counties	**31%**	**50%**	**61%**	**60%**	**48%**
Butte	28%	52%	62%	53%	43%
Shasta	30%	52%	62%	54%	50%
Humboldt	32%	47%	67%	67%	48%
Del Norte, Siskiyou, Lassen, Trinity, Modoc, Plumas, Sierra	32%	48%	64%	63%	49%
Mendocino	30%	44%	66%	65%	48%
Lake	26%	43%	58%	58%	46%
Tehama, Glenn, Colusa	34%	58%	47%	59%	46%
Sutter	32%	51%	48%	58%	43%
Yuba	33%	55%	58%	57%	48%
Nevada	33%	46%	66%	71%	54%
Tuolumne, Calaveras, Amador, Inyo, Mariposa, Mono, Alpine	36%	53%	64%	60%	54%
Greater Bay Area	**32%**	**48%**	**62%**	**62%**	**47%**
Santa Clara	32%	43%	62%	65%	46%
Alameda	34%	51%	58%	64%	47%
Contra Costa	33%	44%	61%	62%	47%
San Francisco	28%	51%	66%	55%	44%
San Mateo	31%	48%	67%	65%	47%
Sonoma	33%	53%	61%	60%	49%
Solano	32%	48%	61%	50%	45%
Marin	31%	48%	61%	67%	50%
Napa	33%	48%	66%	65%	48%
Sacramento Area	**31%**	**50%**	**63%**	**60%**	**47%**
Sacramento	31%	51%	63%	58%	46%
Placer	31%	47%	61%	63%	47%
Yolo	32%	51%	59%	57%	44%
El Dorado	32%	49%	67%	62%	50%
San Joaquin Valley	**36%**	**50%**	**60%**	**57%**	**47%**
Fresno	37%	45%	68%	65%	49%
Kern	34%	58%	51%	49%	45%
San Joaquin	39%	46%	67%	58%	48%
Stanislaus	34%	54%	58%	52%	45%
Tulare	38%	41%	56%	56%	44%
Merced	38%	55%	51%	55%	46%
Kings	40%	49%	58%	60%	48%
Madera	32%	55%	63%	49%	45%
Central Coast	**33%**	**51%**	**61%**	**58%**	**46%**
Ventura	32%	53%	59%	61%	47%
Santa Barbara	33%	50%	64%	56%	47%
Santa Cruz	30%	45%	66%	61%	45%
San Luis Obispo	29%	52%	63%	57%	46%
Monterey	37%	48%	54%	50%	45%
San Benito	27%	53%	58%	62%	47%
Los Angeles	**33%**	**48%**	**57%**	**56%**	**44%**
Los Angeles	33%	48%	57%	56%	44%
Other Southern California	**33%**	**51%**	**60%**	**61%**	**46%**
Orange	31%	49%	62%	61%	46%
San Diego	32%	50%	62%	59%	46%
San Bernardino	35%	51%	52%	64%	45%
Riverside	34%	54%	63%	62%	48%
Imperial	40%	53%	43%	41%	44%
California	**33%**	**49%**	**60%**	**59%**	**46%**

Source: 2013-14 California Health Interview Survey

Note: Estimates of prediabetes are based on predictive models developed using 2009-2012 NHANES data and applied to CHIS 2013-14 data. Prediabetes estimates include adults with undiagnosed diabetes (approximately 3.9 percent of adults nationally). Confidence intervals for estimates presented in this table are available here: *http://healthpolicy.ucla.edu/publications/search/pages/detail.aspx?PubID=1472*.

Conclusions and Recommendations

More than 13 million California adults—nearly half of the state's adult population—are estimated to have prediabetes. This suggests that more effort is needed to address the prevention of diabetes and the detection of and intervention for prediabetes statewide. Health promotion and disease prevention efforts such as maintaining a healthy weight, consuming healthy foods and beverages, limiting intake of sugar and other simple carbohydrates, and being more physically active all reduce the risk of developing type 2 diabetes. To aid in the prevention of diabetes, particularly among those with prediabetes, policymakers should consider the following:

- ***Support diabetes prevention efforts.*** Most people with prediabetes do not know they have the condition. Providing coverage for and ensuring the regular medical practice of appropriate screening can identify people with prediabetes while it is still possible to prevent the onset of type 2 diabetes. In addition, insurance coverage for and referral to recognized diabetes prevention programs can remove critical barriers to education and care for people with prediabetes and can facilitate lifestyle changes that can prevent diabetes.
- ***Promote community and workplace environments that support healthy eating.*** Local and state policy initiatives can improve the food and beverage environment by increasing access to fruits and vegetables, decreasing marketing of unhealthy options, encouraging large institutions such as hospitals to follow healthy food procurement guidelines, developing educational strategies to assist consumers in making more informed food and beverage choices, and ensuring the availability of safe and low-cost drinking water.
- ***Promote built environments that encourage regular physical activity.*** Lack of physical activity is a significant risk factor for diabetes, and further policies should be developed to facilitate active living—for example, creating safe environments for walking and biking, providing access to safe parks and other places for recreation and physical activity, and offering worksite programs to facilitate regular physical activity for adults of all ages.
- ***Support adequate access to quality primary and specialty care.*** At-risk individuals need to have adequate and sufficient access to quality health care services. Lack of continuous health insurance coverage and insufficient benefits packages create significant financial barriers to accessing primary and specialty care services. In addition, increased access to recognized diabetes-prevention lifestyle modification programs has been shown to be particularly beneficial for adults with prediabetes.

"Most people with prediabetes do not know they have the condition."

Data Sources and Methods

The findings in this brief are based on data from the 2013-14 California Health Interview Survey (CHIS). CHIS 2013-14 completed interviews with more than 40,000 households that included 40,240 adults, drawn from every county in the state. Interviews were conducted in English, Spanish, Chinese (both Mandarin and Cantonese), Korean, Vietnamese, and Tagalog. California estimates of diabetes prevalence are based on self-report. Adults were asked whether they had ever been diagnosed with diabetes by a doctor. Those who responded "yes" were classified as having diabetes.

Estimates of prediabetes are statistically modeled. Data from the 2009-2012 National Health and Nutrition Examination Survey (NHANES) were used to build and test predictive models of blood glucose levels above cutoffs associated with prediabetes. NHANES is a cross-sectional survey that provides a nationally representative sample of the noninstitutionalized population. NHANES participants completed a household interview as well as a physical examination that included a blood sample. Predictive models were developed for the adult population (18 and older) using data from the NHANES fasting subsample. Cutoffs associated with prediabetes were applied to hemoglobin A1c (HbA1c) and fasting plasma glucose (FPG) values in NHANES: HbA1c of 5.7 percent or above, or FPG of 100 or above. People who reported having been diagnosed with diabetes were classified as having diabetes.

The predictive model was developed using Generalized Boosted Regression Models (GBM) implemented in R.[10] This iterative, machine-learning algorithm increases in complexity until it minimizes out of training-sample predictive error, which was assessed using tenfold cross-validation. The NHANES predictive model displayed good predictive ability: Pseudo R-squared = 0.304 and Coefficient of Discrimination = 0.301. These metrics are taken from the cross-validation and represent the prediction for cases not used in the training. Models predicted blood glucose levels above prediabetes cutoffs. As a result, estimates of prediabetes include adults with undiagnosed diabetes. However, those with undiagnosed diabetes are expected to represent a relatively small proportion of the prediabetes estimates presented here. Variance was estimated using multiple imputation. Confidence intervals for estimates presented in this publication are available here: *http://healthpolicy.ucla.edu/publications/search/pages/detail.aspx?PubID=1472.*

For consistency with earlier estimates, the National Center for Health Statistics applies regression equations to fasting glucose values collected after 2005. The current analysis does not involve comparison with earlier estimates. Therefore, fasting glucose values are based on the current laboratory measurement methods and have not been adjusted to be comparable to values collected in previous NHANES cycles. Based on our analysis of 2009-2012 NHANES data using HbA1c and FPG values not adjusted for comparability with earlier NHANES cycles, approximately 42 percent of U.S. adults 18 and over have prediabetes, and an additional 3.9 percent have undiagnosed diabetes. The predictive model developed in NHANES was applied to CHIS 2013-14 data to produce California-specific estimates of the prevalence of prediabetes (which include undiagnosed diabetes). Although the California prediabetes estimates include undiagnosed diabetes, the proportion with undiagnosed diabetes is expected to be relatively small, given that nationally less than 4 percent of adults have undiagnosed diabetes.

The California Health Interview Survey is a collaboration of the UCLA Center for Health Policy Research, the California Department of Public Health, the California Department of Health Care Services, and the Public Health Institute. For funders and other information on CHIS, visit *www.chis.ucla.edu*.

CHIS california health interview survey

This publication contains data from the California Health Interview Survey (CHIS), the nation's largest state health survey. Conducted by the UCLA Center for Health Policy Research, CHIS data give a detailed picture of the health and health care needs of California's large and diverse population. Learn more at: **www.chis.ucla.edu**

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Endnotes

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PREDIABETES

*policy*RECOMMENDATIONS

Diabetes is one of the most alarming epidemics facing California and a fundamental health equity issue. To prevent diabetes rates and diabetes-related costs from continuing to rise, coordinated and collective action is imperative, with a special focus on low-income communities and communities of color where the burden of diabetes and prediabetes is the greatest. The following are the California Center for Public Health Advocacy's key policy recommendations for reducing rates of prediabetes and diabetes in California.

1. Increase dedicated funding in the California state budget for initial equity-focused diabetes prevention efforts.

In fiscal year 2014, California earmarked no state monies specifically for diabetes prevention.[1] State funding of $0.03 per capita (all from federal funds) was the lowest in the nation.[2] As a first step, California should allocate state general funds comparable to other large states such as New York, which spends $0.42 per capita for basic diabetes prevention efforts, which would amount to $16 million per year annually in California and should focus particularly on communities where diabetes and prediabetes rates are highest. The state should also raise funds for comprehensive diabetes prevention efforts through other means, such as a statewide sugar tax or soda tax with funding distributed proportionately to rates of diabetes and prediabetes.

2. Require public and private insurance reimbursement of structured lifestyle modification programs designed to reduce the risk of diabetes among those with prediabetes, such as those recognized by the CDC's National Diabetes Prevention Program.

Results from the Diabetes Prevention Program clinical trial show that completing their program, losing five to seven percent of total body weight and exercising 30 minutes per day can reduce diabetes risk by up to 58 percent; up to 70 percent for those age 60 and older.[3] Diabetes prevention program coverage by Medi-Cal programs is particularly important because it provides health care coverage to many Californians who are at the greatest risk for diabetes.

3. Enact state and local policies that reduce consumption of added sugars, particularly policies encouraging children to drink water instead of sugar-sweetened beverages.

If we are serious about turning around the diabetes epidemic, we must focus on the biggest culprits to have the greatest impact. Sugar-sweetened beverages are the number one source of added sugars in the American diet,[4] they are a leading and proven contributor to the development of diabetes,[5,6] and they are specially marketed in low-income communities and communities of color where consumption rates are already the highest.

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Health Policy Brief

October 2013

Still Bubbling Over: California Adolescents Drinking More Soda and Other Sugar-Sweetened Beverages

Susan H. Babey, Joelle Wolstein and Harold Goldstein

SUMMARY: This policy brief examines changes in consumption of soda and other sugar-sweetened beverages among youth in California. Using data from the California Health Interview Survey, this study found that although the percent of children under the age of 12 who drink at least one sugar-sweetened beverage (SSB) per day dropped between 2005 and 2012, SSB consumption increased among adolescents. Establishing and strengthening policies that focus on reducing SSB consumption, especially among adolescents, could counter the SSB consumption trend among adolescents as well as result in further reductions among younger children.

"Sugar-sweetened beverage consumption is increasing among adolescents."

Soda and other sugar-sweetened beverages (such as energy and sports drinks) are the largest source of added sugar in the diets of both children and adults in the U.S.[1] Consumption of sugar-sweetened beverages has increased considerably since the 1970s. Between 1977 and 2002 Americans increased their caloric intake from soft drinks by more than 200%.[2] Recent research suggests that consumption declined between 2000 and 2010.[3] Nevertheless, sweetened beverages, which lack essential nutrients, continue to be a significant contributor to total caloric intake, especially for children and adolescents.[4,5] Despite recent declines, both adults and children still consume at least 150 calories from SSBs on any given day.[3] Because liquid calories do not satiate as well as solid foods, sweetened beverages tend to add to the calories people consume rather than replace them.[6,7]

Drinking sweetened beverages that have added caloric sweeteners (such as sucrose or high fructose corn syrup) is associated with less healthy diets as well as health problems, including overweight and obesity, type 2 diabetes and dental decay.[8-13] Numerous studies have found that consumption of sweetened beverages is associated with overweight and obesity among both adults and children.[8-10] Overweight and obesity are associated with serious health risks in children and adolescents, including increased risk for being overweight or obese in adulthood, as well as cardiovascular disease indicators such as high total cholesterol, high blood pressure and high fasting insulin.[14,15] In addition, consumption of sugar-sweetened beverages has been associated with increased risk of type 2 diabetes and metabolic syndrome.[13] Finally, consumption of sugar-sweetened beverages has been associated with decreased intake of more nutritious foods such as milk, fruits and vegetables.[11,12]

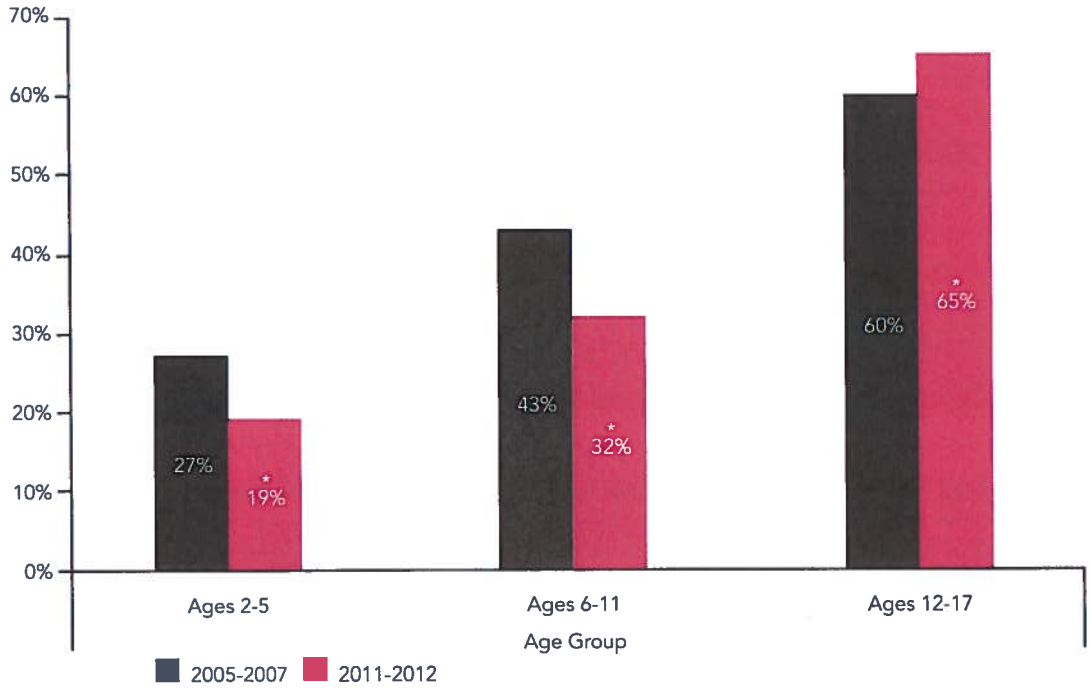
This policy brief, produced by the UCLA Center for Health Policy Research with funding from the California Center for Public Health Advocacy, examines the prevalence of and changes in consumption of soda and other sugar-sweetened beverages among California youth. The findings presented are based on data from the California Health Interview Survey (CHIS). This policy brief

California Center for Public Health Advocacy

This policy brief was developed with funding from the California Center for Public Health Advocacy

Exhibit 1

Percent of Children and Adolescents Drinking One or More Sodas or Other Sugar-Sweetened Beverages Per Day by Age Group, California, 2005-07 and 2011-12



*Significantly different from 2005-07, p<0.05
Source: 2005-07 and 2011-12 California Health Interview Surveys

"SSB consumption among young children has declined 27% since 2005."

also presents county-by-county variation in consumption of sugar-sweetened beverages.

Understanding the Numbers

In order to produce stable estimates at the county level, two cycles of CHIS data were combined, encompassing the time period from 2005 to 2007. This time period was then compared with the most recent CHIS survey, CHIS 2011-12, to examine changes over time.

Sugary Drink Consumption Declined in All Age Groups Except Adolescents

In California, 41% of children ages 2-17 drank at least one soda or other sugary beverage every day in 2011-12. Consumption of sugary drinks varied considerably by age (Exhibit 1). Nearly two-thirds of adolescents ages 12-17 (65%) drank at least one SSB per day—more than twice the proportion of children ages 6-11 (32%) and more than three times that of 2-5 year olds (19%).

Consumption of soda or other sugary drinks declined for all age groups except adolescents over the last seven years (Exhibit 1). Among children ages 2-5, the percent drinking at least one SSB per day dropped from 27% in 2005-07 to 19% in 2011-12. Similar declines were seen among children ages 6-11, from 43% to 32% over this same time period. However, among adolescents, 60% drank at least one SSB per day in 2005-07 compared

Exhibit 2

Percent of Children (Ages 2-11) and Adolescents (Ages 12-17) Drinking At Least One Soda or Other Sugar-Sweetened Beverage Per Day, Largest Counties, California, 2005-07 and 2011-12

	Children (Ages 2-11)			Adolescents (Ages 12-17)		
County	2005-07	2011-12	Percent Change	2005-07	2011-12	Percent Change
Alameda	25%	31%	24%	58%	64%	10%
Contra Costa	35%	16%*	-54%	43%	52%	21%
Fresno	45%	48%	7%	73%	76%	4%
Kern	49%	36%	-27%	63%	63%*	0%
Los Angeles	41%	26%	-37%	62%	68%	10%
Orange	34%	20%	-41%	57%	60%	5%
Riverside	39%	35%	-10%	65%	65%	0%
Sacramento	33%	23%	-30%	54%	58%	7%
San Bernardino	43%	34%	-21%	65%	71%	9%
San Diego	31%	28%	-10%	61%	61%	0%
San Francisco	15%	+		48%	48%*	0%
San Joaquin	38%	35%	-8%	70%	80%*	14%
San Mateo	28%	15%*	-46%	48%	56%	17%
Santa Clara	32%	22%	-31%	51%	53%	4%
Ventura	35%	16%*	-54%	62%	52%	-16%
California	**37%**	**27%**	**-27%**	**60%**	**65%**	**8%**

Note: Few differences between 2005-07 and 2011-12 were statistically significant. Estimates for less populous counties could not be broken down by age group. Exhibit 4 displays estimates among all youth ages 2-17 for all counties.

* Data from CHIS 2011-12 and CHIS 2009 were combined to provide a statistically reliable estimate.

\+ Data not statistically reliable

Source: 2005-07 and 2011-12 California Health Interview Surveys

to 65% in 2011-12. This trend is particularly troubling because adolescents also had the highest rates of consumption. The increase in consumption among adolescents was likely due, in part, to increased consumption of sports and energy drinks. Between 2009 and 2011-12, the percent of adolescents drinking at least one sports or energy drink per day increased significantly from 31% to 38%; whereas consumption of soda decreased slightly (from 43% to 41%), but the decrease was not statistically significant.

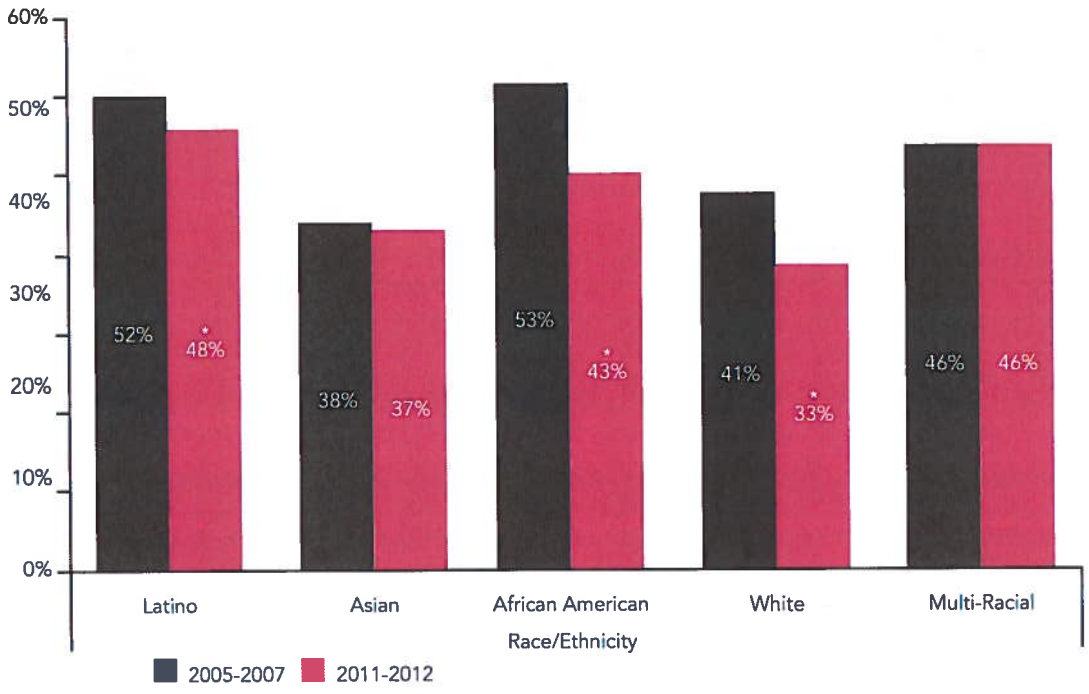
Adolescent Sugar-Sweetened Beverage Consumption Declined in Only One Large County

Exhibit 2 shows changes in SSB consumption among children (ages 2-11) and adolescents (ages 12-17) for the most populous counties in California. Among younger children, SSB consumption declined in 12 of the 15 largest counties and increased in only two, though few differences in consumption between 2005-07 and 2011-12 are statistically significant. In contrast, consumption among adolescents increased in 10 of the 15 largest counties and declined in only one.

"Energy and sports drinks are likely driving the increase in consumption among adolescents."

Exhibit 3

Percent of Youth Ages 2-17 Drinking One or More Sodas or Other Sugar-Sweetened Beverages Per Day by Race/Ethnicity, California, 2005-07 and 2011-12



*Significantly different from 2005-07, p<0.05
Source: 2005-07 and 2011-12 California Health Interview Surveys

"In nine California counties at least 50% of youth ages 2-17 drank at least one SSB each day."

Disparities in Sugary Drink Consumption Persist

Among California youth overall, consumption of sugary drinks declined across all racial/ethnic groups (Exhibit 3). The percent drinking at least one SSB per day was significantly lower in 2011-12 than in 2005-07 among Latino, African-American and white youth.[16] However, among adolescents (ages 12-17) consumption increased across all racial/ethnic groups except whites, with statistically significant increases occurring among Latino and Asian youth.

Even with declines in consumption among Latino and African-American youth, racial/ethnic disparities in SSB consumption persist (Exhibit 3). The proportion of youth drinking at least one sugary beverage per day was highest among Latinos at 48%, significantly higher than among whites at 33%. African-American youth (43%) and multi-racial youth (46%) also had significantly higher consumption than whites.

Central Valley Counties Have Highest Sugar-Sweetened Beverage Consumption

Exhibit 4 shows prevalence of consumption of sugary drinks by county for youth ages 2-17. Combining youth across all ages allows for comparison of consumption estimates for all counties. Consumption of sugary drinks varied considerably from county to county in California. In 2011-12, there were nine counties in which at least 50% of youth ages 2-17 drank at least one SSB each day. Among those, consumption was highest in Fresno and Kings Counties (58% and 60%, respectively). Six counties had a prevalence of daily SSB consumption below 30%, with the lowest prevalence in San Francisco and Marin Counties (21% and 25%, respectively).

Prevalence and Changes in Percent of Youth Ages 2-17 Drinking One or More Sodas or Other Sugar-Sweetened Beverages Per Day by County or County Group, California, 2005-07 and 2011-12

Exhibit 4

County or County Group	2005-07	2011-12	Percent Change
Alameda	37%	43%	16%
Butte	43%	39%	-9%
Contra Costa	38%	29%	-24%
Del Norte, Siskiyou, Lassen, Trinity, Modoc, Plumas, Sierra	45%	45%	0%
El Dorado	44%	36%	-18%
Fresno	56%	58%	4%
Humboldt	35%	33%	-6%
Imperial	57%	51%	-11%
Kern	54%	48%	-11%
Kings	57%	60%	5%
Lake	39%	53%	36%
Los Angeles	49%	42%	-14%
Madera	52%	48%	-8%
Marin	31%	25%	-19%
Mendocino	34%	34%	0%
Merced	57%	56%	-2%
Monterey	41%	53%	29%
Napa	42%	29%	-31%
Nevada	35%	37%	6%
Orange	43%	35%	-19%
Placer	42%	35%	-17%
Riverside	50%	47%	-6%
Sacramento	42%	36%	-14%
San Benito	48%	36%	-25%
San Bernardino	52%	49%	-6%
San Diego	42%	40%	-5%
San Francisco	25%	21%*	-16%
San Joaquin	50%	54%	8%
San Luis Obispo	46%	50%	9%
San Mateo	35%	29%	-17%
Santa Barbara	42%	34%	-19%
Santa Clara	39%	33%	-15%
Santa Cruz	38%	30%	-21%
Shasta	44%	39%	-11%
Solano	45%	56%	24%
Sonoma	40%	30%	-25%
Stanislaus	48%	49%	2%
Sutter	50%	42%	-16%
Tehama, Glenn, Colusa	48%	46%	-4%
Tulare	54%	49%	-9%
Tuolumne, Calaveras, Amador, Inyo, Mariposa, Mono, Alpine	40%	32%	-20%
Ventura	46%	29%	-37%
Yolo	42%	40%	-5%
Yuba	44%	30%	-32%
California	46%	41%	-11%

*For San Francisco County, data from CHIS 2011-12 and CHIS 2009 were combined to provide a statistically reliable estimate. Few differences between 2005-07 and 2011-12 were statistically significant.

Source: 2005-07 and 2011-12 California Health Interview Surveys

"Policies that discouraged soda may have had the unintended consequence of driving up consumption of sports and energy drinks."

Summary and Conclusions

The findings in this policy brief suggest that California has experienced some success in its efforts to reduce consumption of sugar-sweetened beverages. However, consumption among adolescents is on the rise. National health organizations recommend reducing consumption of sugar-sweetened beverages to help prevent obesity and improve public health.[17] Youth SSB consumption is influenced by a variety of social and environmental factors, including the food environment, marketing, education and norms. For example, research suggests that adolescents view more than 400 television ads for soda, energy drinks, sports drinks and fruit drinks in a year.[18] The consumption of SSBs by so many California children and the increase in SSB consumption among adolescents suggest that continued efforts are needed to reduce SSB consumption for all children, with a particular emphasis on adolescents. Policymakers could consider the following options:

- **Remove SSBs.** Policies that remove SSBs from schools and other places where youth spend significant amounts of time have been implemented successfully around the state. Unfortunately, many of the policies have focused solely on elementary school-age children or a single type of sugary beverage such as soda and may have the unintended consequence of encouraging consumption of other SSBs, like sports and energy drinks.

- **Provide Alternatives.** Water, fat-free or low-fat milk, and other unsweetened beverages should be available and easily accessible where youth congregate, including at schools and other public areas.

- **Limit Marketing of SSBs.** The marketing of high-calorie, low-nutrient foods and beverages is linked to overweight and obesity. As a result, both the World Health Organization and the Institute of Medicine (IOM) have called for standards in the marketing of foods and beverages to children. For example, the IOM recommends that foods and beverages marketed to children and adolescents should be consistent with the Dietary Guidelines for Americans.

- **Educate Youth and Parents.** Continue to educate youth and parents about the health effects of SSB consumption. For example, "Rethink Your Drink" campaigns have been implemented throughout California as well as nationally to help people identify beverages with added sugar and provide information about healthy drink options.

Data Source and Methods

This policy brief examines the prevalence of and trends in consumption of soda and other sugar-sweetened beverages in California using data from the 2005, 2007, 2009 and 2011-12 California Health Interview Surveys. All statements in this report that compare rates for one group with another group reflect statistically significant differences ($p<0.05$) unless otherwise noted. Each year, CHIS completes interviews with adults, adolescents and parents of children in over 40,000 households, drawn from every county in the state. Interviews are conducted in English, Spanish, Chinese (both Mandarin and Cantonese), Vietnamese and Korean. Adults and adolescents self-reported their consumption of soda and other sweetened beverages. Adults were asked the following question: "During the past month, how many times (per day, per week or per month) did you drink soda such as Coke or 7-up? Do not include diet soda." Responses to these questions were converted to a common metric to estimate daily consumption of soda. In CHIS 2005 and 2007, Adolescents were asked "Yesterday, how many glasses or cans of soda such as Coke, or other sweetened drinks such as fruit punch or Sunny Delight did you drink? Do not count diet drinks." Starting with CHIS 2009, these were split into the following two questions: "Yesterday, how many glasses or cans of soda such as Coke, did you drink? Do not count diet drinks." and "Yesterday, how many glasses or cans of sweetened fruit drinks, sports, or energy drinks, did you drink?" Responses to these questions were combined to estimate daily consumption of soda and other sweetened beverages. For children ages 2-11, the most knowledgeable parent or guardian responded to the following question: "Yesterday, how many glasses or cans of soda such as Coke or other sweetened drinks such as fruit punch or Sunny Delight did (he/she) drink? Do not count diet drinks." For all respondents,

CHIS california health interview survey

This publication contains data from the California Health Interview Survey (CHIS), the nation's largest state health survey. Conducted by the UCLA Center for Health Policy Research, CHIS data give a detailed picture of the health and health care needs of California's large and diverse population. Learn more at: ***www.chis.ucla.edu***

consumption of 100% fruit juice was reported in a separate question and is not included in our estimates of sweetened beverage consumption.

The California Health Interview Survey is a collaboration of the UCLA Center for Health Policy Research, California Department of Public Health, the California Department of Health Care Services and the Public Health Institute. For funders and additional information on CHIS, visit *www.chis.ucla.edu*.

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Overweight and Obesity among Children by California Cities - 2010

Susan H. Babey, Joelle Wolstein, Allison L.Diamant, Amanda Bloom, and Harold Goldstein
UCLA Center for Health Policy Research and California Center for Public Health Advocacy
June 2012

Data from the 2010 California Physical Fitness Test (PFT) was vital in the development of this report. The Fitnessgram data, mandated by the State, provides a snapshot of the physical fitness of students and provides the Body Mass Index (BMI) information used to compute obesity and overweight figures in this study.

Background

During the last three decades, the prevalence of overweight and obesity in the United States has increased dramatically in both adults and children.[1] In the 1970s, about 15 percent of adults were obese; by 2004, the rate had climbed to 32 percent.[1] Although the prevalence of obesity among children is lower than among adults, the rates among children and adolescents have increased considerably more. Between the early 1970s and 2003-2004, the prevalence of obesity nearly tripled among youth ages 12 to 19, from 6 percent to 17 percent, and more than quadrupled among children ages 6 to 11, rising from 4 percent to 19 percent.[1-4]

More positively, recent data from the National Health and Nutrition Examination Survey indicated that, between 2003-2004 and 2007-2008, there has been no significant change in the prevalence of obesity among children, suggesting that the prevalence of childhood obesity could be leveling off nationally. Nevertheless, rates remain high, with approximately 36 percent of 6- to 11-year-olds and 34 percent of 12- to 19-year-olds considered to be overweight or obese. Among these youth, 20 percent of 6- to 11-year-olds and 18 percent of 12- to19-year-olds are considered to be obese.[5]

Overweight and obesity are associated with serious health risks in children and adolescents, including an increased risk for high cholesterol and high blood pressure (indicators of cardiovascular disease), high fasting insulin (an early indicator of diabetes risk), and a variety of musculoskeletal disorders.[6-10]

Children who are overweight or obese often grow up to be obese as adults.[11,12] Among adults, overweight and obesity are associated with increased risk for diabetes, cardiovascular disease, hypertension, hypercholesterolemia, stroke, some types of cancer, musculoskeletal conditions, and premature death.[1,2,13] Obesity has become second only to tobacco use as the leading preventable cause of disease and death in the United States.[14] The rise in obesity and related diseases has led experts to predict a decrease in life expectancy and productivity for today's youth as well as increased individual and societal costs.[15-17]

Although the prevalence of obesity is high among all children regardless of race/ethnicity,

children of color are disproportionately affected. Hispanic, African American, and American Indian girls and boys have higher rates of obesity than white children.[1,18] Asian children tend to have the lowest rates of obesity, but they have also experienced considerable increases in recent decades.[19] Currently, African American girls and Mexican American boys in the United States have the highest rates of childhood obesity.[20] Recent research suggests that these disparities are mirrored in California, with higher rates of obesity and overweight among Latinos, African Americans, and American Indians than among whites and Asians.[21] Overweight and obesity and their associated health problems have a significant economic impact—in both direct and indirect costs. Direct medical costs may include preventive, diagnostic, and treatment services related to obesity. Indirect costs can include decreased productivity, restricted activity, absenteeism, and future value lost by premature death. Nationally, medical costs alone for obesity reach $147 billion each year.[22] California spends more public and private money on the health consequences of obesity than any other state.[23] Including lost productivity, overweight and obesity in California cost families, employers, the healthcare industry, and the government more than $21 billion each year.[24]

Study Methods

The California Center for Public Health Advocacy and the UCLA Center for Health Policy Research examined geographical variation by city in rates of overweight and obesity among fifth-, seventh-, and ninth-grade schoolchildren in California. Data were from the 2010 California Physical Fitness Test (PFT). State law mandates that public schools administer the PFT annually to all California students in grades five, seven, and nine. The test used in California schools is the Fitnessgram. Body composition, which includes measured height and weight, skinfold measurements, or bioelectric impedance analysis, is one of six fitness areas tested. We obtained de-identified, student-level data for the body composition component of the PFT from the California Department of Education (CDE). This study utilized measured height and weight to calculate Body Mass Index (BMI). Biologically implausible values were excluded. BMI was used to classify students as overweight or obese. Among children, overweight is defined as having a BMI between the 85th and 95th percentile on the 2000 Centers for Disease Control and Prevention sex-specific BMI-for-age growth charts, while obesity is defined as having a BMI above the 95th percentile.[25,26] This study utilized data from 1,214,061 students in 2010 with measured height and weight data.

City overweight rates were determined based on school locations. Schools were assigned to cities by mapping the school locations using latitude and longitude coordinates that are part of the CDE public school data file. GIS techniques were used to map the school locations and assign schools to cities based on census maps delineating incorporated cities and census designated places. Overweight rates in a city represent the average overweight rate for fifth, seventh and ninth grade public school students who attend schools physically located within the boundaries of that city. Data are shown for incorporated cities that have a population of 20,000. Results for cities with a sample size from the PFT of less than 100 are not presented. In addition, results for cities with PFT data reported for less than 70% of enrolled 5th, 7th, and 9th grade students are not presented.

City	County	2010 Overweight + Obese %
Adelanto	San Bernardino	40.4%
Agoura Hills	Los Angeles	15.6%
Alameda	Alameda	28.7%
Alhambra	Los Angeles	35.5%
Aliso Viejo	Orange	20.8%
Anaheim	Orange	43.5%
Antioch	Contra Costa	42.3%
Apple Valley	San Bernardino	35.1%
Arcadia	Los Angeles	25.1%
Atascadero	San Luis Obispo	29.9%
Atwater	Merced	45.1%
Azusa	Los Angeles	45.6%
Bakersfield	Kern	42.7%
Baldwin Park	Los Angeles	46.7%
Banning	Riverside	45.9%
Barstow	San Bernardino	42.3%
Beaumont	Riverside	38.1%
Bell	Los Angeles	47.1%
Bellflower	Los Angeles	42.7%
Benicia	Solano	29.9%
Beverly Hills	Los Angeles	21.5%
Blythe	Riverside	40.3%
Brawley	Imperial	50.0%
Brea	Orange	28.0%
Brentwood	Contra Costa	32.5%
Buena Park	Orange	41.8%
Burlingame	San Mateo	24.4%
Calabasas	Los Angeles	20.0%
Calexico	Imperial	47.6%
Camarillo	Ventura	30.2%
Campbell	Santa Clara	30.1%
Carlsbad	San Diego	16.8%
Carson	Los Angeles	45.0%
Cathedral City	Riverside	42.1%

City	County	2010 Overweight + Obese %
Ceres	Stanislaus	44.2%
Cerritos	Los Angeles	31.1%
Chico	Butte	30.8%
Chino	San Bernardino	41.8%
Chino Hills	San Bernardino	27.0%
Chula Vista	San Diego	37.9%
Citrus Heights	Sacramento	34.7%
Claremont	Los Angeles	29.8%
Coachella	Riverside	48.7%
Colton	San Bernardino	46.1%
Compton	Los Angeles	50.8%
Concord	Contra Costa	41.5%
Corona	Riverside	35.0%
Covina	Los Angeles	40.6%
Cudahy	Los Angeles	49.5%
Culver City	Los Angeles	32.6%
Cupertino	Santa Clara	18.4%
Cypress	Orange	27.6%
Daly City	San Mateo	39.2%
Dana Point	Orange	20.8%
Danville	Contra Costa	16.5%
Davis	Yolo	24.1%
Delano	Kern	48.0%
Desert Hot Springs	Riverside	40.0%
Diamond Bar	Los Angeles	29.4%
Dinuba	Tulare	44.9%
Downey	Los Angeles	40.1%
Duarte	Los Angeles	41.9%
Dublin	Alameda	26.1%
El Cajon	San Diego	38.1%
El Centro	Imperial	45.8%
El Cerrito	Contra Costa	36.3%
El Monte	Los Angeles	50.2%

City	County	2010 Overweight + Obese %
Elk Grove	Sacramento	33.8%
Encinitas	San Diego	18.5%
Escondido	San Diego	38.9%
Eureka	Humboldt	41.0%
Fairfield	Solano	39.3%
Folsom	Sacramento	22.2%
Fontana	San Bernardino	44.9%
Foster City	San Mateo	29.9%
Fountain Valley	Orange	31.4%
Fremont	Alameda	27.9%
Fresno	Fresno	42.5%
Fullerton	Orange	30.9%
Galt	Sacramento	39.9%
Garden Grove	Orange	38.0%
Gardena	Los Angeles	49.9%
Gilroy	Santa Clara	43.6%
Glendale	Los Angeles	37.7%
Glendora	Los Angeles	26.9%
Goleta	Santa Barbara	35.2%
Hanford	Kings	40.5%
Hawthorne	Los Angeles	45.5%
Hayward	Alameda	42.7%
Hemet	Riverside	38.1%
Hercules	Contra Costa	37.0%
Hesperia	San Bernardino	41.0%
Highland	San Bernardino	32.8%
Hollister	San Benito	43.2%
Huntington Beach	Orange	26.4%
Huntington Park	Los Angeles	53.0%
Imperial Beach	San Diego	39.8%
Indio	Riverside	44.4%
Inglewood	Los Angeles	47.8%
Irvine	Orange	21.7%

City	County	2010 Overweight + Obese %
La Cañada Flintridge	Los Angeles	22.3%
La Habra	Orange	36.9%
La Mesa	San Diego	36.9%
La Puente	Los Angeles	42.4%
La Quinta	Riverside	39.2%
La Verne	Los Angeles	30.8%
Lafayette	Contra Costa	17.8%
Laguna Beach	Orange	14.3%
Laguna Hills	Orange	27.2%
Laguna Niguel	Orange	19.4%
Lake Elsinore	Riverside	38.2%
Lake Forest	Orange	26.9%
Lakewood	Los Angeles	39.5%
Lancaster	Los Angeles	38.2%
Lemon Grove	San Diego	46.3%
Lemoore	Kings	42.4%
Livermore	Alameda	32.1%
Lodi	San Joaquin	39.2%
Loma Linda	San Bernardino	41.4%
Lomita	Los Angeles	44.0%
Lompoc	Santa Barbara	48.6%
Long Beach	Los Angeles	40.7%
Los Angeles	Los Angeles	45.2%
Los Banos	Merced	44.5%
Los Gatos	Santa Clara	15.4%
Madera	Madera	45.1%
Manhattan Beach	Los Angeles	11.3%
Manteca	San Joaquin	38.0%
Martinez	Contra Costa	33.0%
Maywood	Los Angeles	50.4%
Menifee	Riverside	36.1%
Menlo Park	San Mateo	26.1%
Merced	Merced	40.9%

City	County	2010 Overweight + Obese %
Millbrae	San Mateo	24.8%
Milpitas	Santa Clara	33.3%
Mission Viejo	Orange	25.1%
Modesto	Stanislaus	39.6%
Monrovia	Los Angeles	39.8%
Montclair	San Bernardino	43.9%
Monterey	Monterey	41.2%
Moorpark	Ventura	29.2%
Moreno Valley	Riverside	42.3%
Morgan Hill	Santa Clara	30.3%
Murrieta	Riverside	29.2%
Napa	Napa	38.5%
National City	San Diego	50.0%
Newark	Alameda	39.2%
Newport Beach	Orange	18.3%
Norco	Riverside	33.7%
Norwalk	Los Angeles	46.5%
Novato	Marin	31.7%
Oakdale	Stanislaus	34.6%
Oakland	Alameda	42.3%
Oakley	Contra Costa	36.7%
Ontario	San Bernardino	43.3%
Orange	Orange	43.2%
Oxnard	Ventura	47.9%
Pacifica	San Mateo	33.1%
Palm Desert	Riverside	31.6%
Palm Springs	Riverside	38.8%
Palmdale	Los Angeles	39.7%
Palo Alto	Santa Clara	18.4%
Paradise	Butte	27.7%
Paramount	Los Angeles	46.4%
Paso Robles	San Luis Obispo	32.7%
Patterson	Stanislaus	45.6%
Perris	Riverside	44.2%

City	County	2010 Overweight + Obese %
Pico Rivera	Los Angeles	43.7%
Pittsburg	Contra Costa	45.6%
Pleasant Hill	Contra Costa	32.1%
Pleasanton	Alameda	22.8%
Pomona	Los Angeles	48.1%
Port Hueneme	Ventura	52.6%
Porterville	Tulare	44.0%
Poway	San Diego	26.1%
Rancho Cordova	Sacramento	39.1%
Rancho Cucamonga	San Bernardino	30.0%
Rancho Palos Verdes	Los Angeles	29.1%
Rancho Santa Margarita	Orange	22.9%
Redding	Shasta	30.5%
Redlands	San Bernardino	30.8%
Redwood City	San Mateo	37.4%
Rialto	San Bernardino	45.0%
Richmond	Contra Costa	51.0%
Ridgecrest	Kern	27.2%
Riverbank	Stanislaus	43.7%
Riverside	Riverside	39.2%
Rocklin	Placer	24.0%
Rohnert Park	Sonoma	32.4%
Rosemead	Los Angeles	34.3%
Roseville	Placer	26.4%
Sacramento	Sacramento	39.9%
Salinas	Monterey	46.7%
San Bernardino	San Bernardino	43.9%
San Bruno	San Mateo	43.4%
San Carlos	San Mateo	29.2%
San Clemente	Orange	21.1%
San Diego	San Diego	33.5%
San Dimas	Los Angeles	31.6%

City	County	2010 Overweight + Obese %
San Fernando	Los Angeles	48.0%
San Francisco	San Francisco	31.7%
San Jacinto	Riverside	39.5%
San Jose	Santa Clara	36.0%
San Juan Capistrano	Orange	33.7%
San Leandro	Alameda	42.7%
San Luis Obispo	San Luis Obispo	23.6%
San Marcos	San Diego	31.9%
San Mateo	San Mateo	33.2%
San Pablo	Contra Costa	52.4%
San Rafael	Marin	32.4%
San Ramon	Contra Costa	22.6%
Sanger	Fresno	47.5%
Santa Ana	Orange	46.5%
Santa Barbara	Santa Barbara	28.2%
Santa Clara	Santa Clara	37.5%
Santa Clarita	Los Angeles	29.6%
Santa Cruz	Santa Cruz	31.0%
Santa Monica	Los Angeles	23.0%
Santa Paula	Ventura	47.9%
Santa Rosa	Sonoma	36.3%
Saratoga	Santa Clara	18.2%
Seal Beach	Orange	28.8%
Seaside	Monterey	45.6%
Selma	Fresno	47.0%
Simi Valley	Ventura	30.7%
Soledad	Monterey	48.5%
South Gate	Los Angeles	51.3%
South Lake Tahoe	El Dorado	34.6%
South Pasadena	Los Angeles	21.8%
South San Francisco	San Mateo	47.0%
Stanton	Orange	51.8%
Stockton	San Joaquin	42.4%
Suisun City	Solano	46.3%
Sunnyvale	Santa Clara	31.0%
Temecula	Riverside	27.6%
Temple City	Los Angeles	28.2%
Thousand Oaks	Ventura	25.7%
Torrance	Los Angeles	26.9%
Tracy	San Joaquin	37.6%
Tulare	Tulare	43.6%
Turlock	Stanislaus	39.7%
Tustin	Orange	35.9%
Twentynine Palms	San Bernardino	32.1%
Union City	Alameda	38.4%
Upland	San Bernardino	42.4%
Vacaville	Solano	36.3%
Vallejo	Solano	43.7%
Ventura	Ventura	33.1%
Victorville	San Bernardino	40.1%
Visalia	Tulare	40.8%
Vista	San Diego	38.7%
Walnut	Los Angeles	27.3%
Walnut Creek	Contra Costa	21.0%
Wasco	Kern	46.8%
Watsonville	Santa Cruz	49.3%
West Covina	Los Angeles	41.0%
West Hollywood	Los Angeles	43.8%
West Sacramento	Yolo	43.6%
Westminster	Orange	33.0%
Wildomar	Riverside	36.7%
Windsor	Sonoma	32.4%
Woodland	Yolo	42.6%
Yuba City	Sutter	35.2%
Yucaipa	San Bernardino	27.4%
Yucca Valley	San Bernardino	37.1%

1. Officially known as 'San Buenaventura (Ventura)'
2. Officially known as 'El Paso de Robles (Paso Robles)'

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