Title
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Publication Date
2009-02-01

UCLA Health Policy Research Brief

February 2009

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Every day, over two million California adolescents (62%) drink soda and 1.4 million (43%) eat fast food, but only 38% eat five or more servings of fruits and vegetables.[1] Teen consumption of fruits and vegetables and soda is linked to the dietary habits of their parents. Adolescents are more likely to eat at least five servings of fruits and vegetables if their parents do so. Additionally, teens whose parents drink more soda in turn drink more soda themselves.

This policy brief examines adolescent consumption of fruits and vegetables, soda (not including diet soda) and fast food, and the relationship to parental dietary behaviors using data from the 2005 California Health Interview Survey (CHIS 2005).

Teen Fruit and Vegetable Consumption Linked with Parent Consumption

Fruits and vegetables are low in calories and rich in vitamins, minerals and fiber. Increased consumption of fruits and vegetables is associated with reduced risk of health conditions such as obesity, diabetes, cancer and cardiovascular disease.[2] The 2005 Dietary Guidelines for Americans recommends that adolescents eat 1.5 to 2 cups of fruit and 2.5 to 3 cups of vegetables per day (approximately nine servings on average).[3] However, in California, only 38% of teens consume just five servings of fruits and vegetables per day.

Fruit and vegetable consumption by adolescents is associated with that of their parents. Forty-two percent of adolescents whose parents eat five or more servings of fruits or vegetables daily also eat five servings per day compared to only 35% of teens whose parents eat fewer than five servings per day (Exhibit 1).

Even when adjusting for age, gender, race, household income and number of fast food restaurants near home, teens whose parents eat five servings of fruits and vegetables per day are 16% more likely to also eat five servings per day than teens whose parents eat fewer than five servings per day.

Teen Soda Consumption Higher When Parents Drink More Soda

Consumption of soda and other sugar-sweetened drinks (referred to as soda in this brief) has been linked to higher caloric intake, reduced consumption of fruits and vegetables and excess weight gain.[4] Although most soda is consumed at home, purchase of beverages from vending machines and consumption of fast food are associated with drinking soda.[5] In California, 62% of teens drink at least one soda per day, including 31% who drink two or more per day.

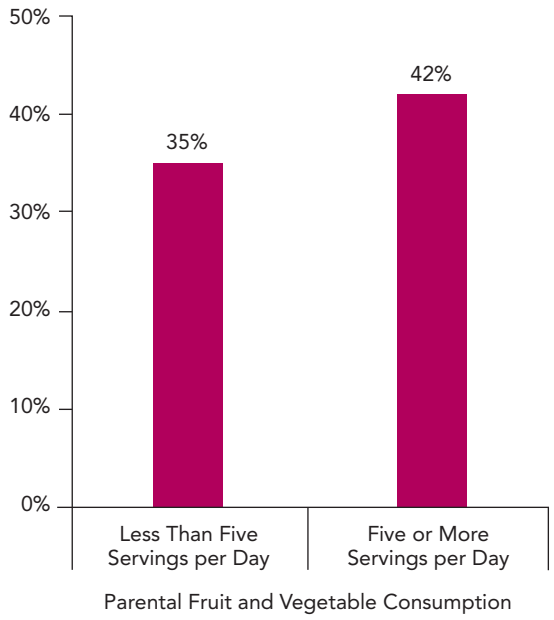
Teen soda consumption is associated with whether their parents drink soda. Almost

The California Endowment

Support for this policy brief was provided by a grant from The California Endowment.

Exhibit 1

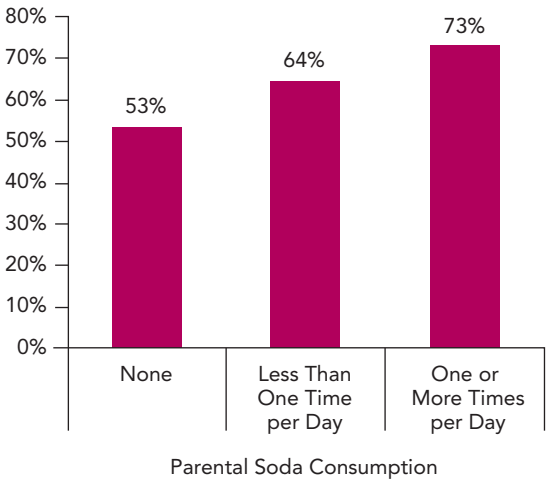
Percent of Adolescents Eating Five or More Servings of Fruits and Vegetables per Day by Parental Fruit and Vegetable Consumption



Source: 2005 California Health Interview Survey

Exhibit 2

Percent of Adolescents Drinking One or More Sodas per Day by Parental Soda Consumption



Source: 2005 California Health Interview Survey

three quarters of adolescents (73%) whose parents drink one or more sodas per day (not including diet soda) also consume at least one soda daily compared to just over half of those (53%) whose parents do not drink soda (Exhibit 2).

Even when adjusting for age, gender, race, household income and number of fast food restaurants near home, teens whose parents drink one or more sodas per day are nearly 40% more likely to drink soda every day themselves than teens whose parents do not drink soda.

There is also evidence that adolescent soda consumption is associated with parental consumption of fruits and vegetables. Almost two-thirds of teens (64%) whose parents do not eat five or more servings of fruits and vegetables daily had at least one soda per day, compared to 59% of teens whose parents ate five-a-day. However, this association is not independent of household income and individual demographic characteristics.

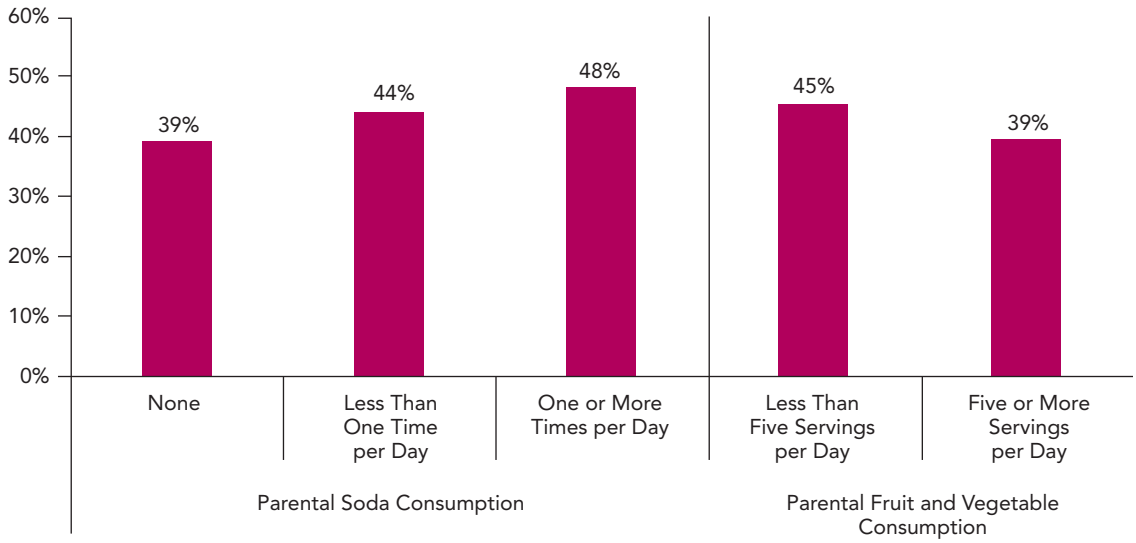
Teen Fast Food Consumption

Fast food consumption among adolescents has increased considerably, and greater fast food consumption is associated with weight gain and lower dietary quality.[6] In California, 43% of teens eat fast food at least once per day. Teen consumption of fast food is higher among those whose parents have poor dietary habits, such as drinking at least one soda or eating less than five servings of fruits and vegetables per day . Nearly half of adolescents (48%) whose parents drink soda every day have fast food at least once per day compared to 39% of those whose parents do not drink soda (Exhibit 3).

Adolescent consumption of fast food is lower among adolescents whose parents eat five or more servings of fruits and vegetables daily (Exhibit 3). Among adolescents whose parents consume fewer than five servings of fruits and vegetables daily, 45% eat fast food at least once per day compared to only

Percent of Adolescents Eating Fast Food At Least Once per Day by Parental Soda and Fruit and Vegetable Consumption

Exhibit 3



Source: 2005 California Health Interview Survey

39% of those whose parents eat five or more servings of fruits and vegetables daily. Although adolescent consumption of fast food is related to parental consumption of soda and fruits and vegetables, these relationships are not independent of household income and individual demographic characteristics.

Conclusions and Recommendations

In California, many adolescents drink soda and eat fast food every day but do not eat adequate amounts of fruits and vegetables. These eating patterns are linked with the eating patterns of their parents. Adolescents whose parents eat more fruits and vegetables in turn eat more fruits and vegetables themselves, drink less soda and eat fast food less often. In addition, adolescents whose parents drink soda also drink more soda themselves and eat fast food more often.

These findings suggest that improving parents' diets may help to improve the eating behavior of adolescents. Parents can influence their children's dietary habits positively through serving as role models and through the food environment at home.[7] Promoting retail food environments that encourage healthy choices and supporting parents in modeling healthy behaviors can help both parents and adolescents to improve dietary behavior, and reduce risk for obesity and chronic disease. Policymakers and health educators can help alter these patterns by developing supportive environments at home, at school and in the community:

- *Promote food environments that encourage healthy eating.* Food environments can be improved by increasing the availability and affordability of healthy foods. Policies have already been adopted to limit the consumption of sodas in schools, and these policies are being expanded to require that foods sold in California schools adhere to nutritional guidelines. In addition, recent policy changes require restaurants to provide consumers with nutritional information on menus and menu boards, and the foods covered under

the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) have been updated to include fresh fruits and vegetables, whole grain foods and low-fat dairy products. Additional efforts to improve the food environment could include expansion of access to fruits and vegetables in communities and at school; local area planning to increase the presence of supermarkets, farmer's markets, produce vendors and community gardens in inner city areas with limited consumer options; and addressing the relative affordability of healthier food options compared to less healthy options.

- *Support a home environment that encourages healthy eating.* Eating together as a family has been associated with better dietary behaviors and lower rates of obesity.[8] Family meal times can be facilitated through programs that support work/life balance such as flexible work hours. In addition, prepared food purchased outside of the home tends to be higher in fat, saturated fat and lower in nutrients than food prepared at home.[9] Policies that encourage families to eat food prepared at home more often could also be beneficial for dietary behaviors. Addressing the relative affordability of healthier food options compared to inexpensive and less healthy options typically offered at fast food outlets may help to encourage families to eat food that is prepared at home more often. Additionally, promoting policies that link the community food environment with the home environment can be particularly helpful. For example, policies that promote community and school gardens can increase the number of venues for growing food that families prepare for themselves as well as increase the availability of fresh produce. Finally, educating parents and children about how to prepare fresh produce can provide support for families who want to prepare food at home but may not know how to do so.

In spite of their growing independence, adolescents are influenced by their parents' lifestyles and behaviors. Parents, schools and the larger community can all play important roles in encouraging more healthful eating by adolescents.

Data Source

All statements in this report that compare rates for one group with another group reflect statistically significant differences ($p<0.05$) unless otherwise noted. The findings in this brief are based on data from the 2005 California Health Interview Survey (CHIS 2005). CHIS 2005 completed interviews with over 4,000 adolescents and over 43,000 adults, drawn from every county in the state, in English, Spanish, Chinese (both Mandarin and Cantonese), Vietnamese and Korean. 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. Funding for the CHIS 2005 statewide survey was provided by the California Department of Health Care Services, The California Endowment, the National Cancer Institute, the Robert Wood Johnson Foundation, the California Children and Families Commission, the California Office of the Patient Advocate, the California Department of Mental Health, the Centers for Disease Control and Prevention (CDC) and Kaiser Permanente. For local funders and other information on CHIS, visit *www.chis.ucla.edu.*

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Acknowledgements

The authors wish to thank Winnie Huang, MS, Lijie Di, MS, Hongjian Yu, PhD, Jenny Chia, PhD, Gwen Driscoll and Celeste Maglan for their assistance. The authors would also like to thank the following individuals for their helpful comments: Harold Goldstein, DrPH, Executive Director, California Center for Public Health Advocacy; Sharon Sugerman, MS, RD, FADA, Cancer Control Branch, California Department of Public Health.

Suggested Citation

Diamant AL, Babey SH, Jones M and Brown ER. *Teen Dietary Habits Related to Those of Parents*. Los Angeles, CA: UCLA Center for Health Policy Research, 2009.

Notes

1 Estimates of adolescent soda consumption are based on responses 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 you drink? Do not count diet drinks." Adolescent reports of the number of servings of fruit, vegetables and 100% fruit juice were combined to determined servings of fruits and vegetables. Estimates of adolescent fast food consumption are based on responses to the following question: "Yesterday, how many times did you eat fast food? Include fast food meals eaten at school, at home or at fast-food restaurants, carryout or drive thru."

2 Liu RH. Health benefits of fruit and vegetables are from additive and synergistic combinations of phytochemicals. *American Journal of Clinical Nutrition*. Sep 2003;78(3 Suppl):517S-520S. Lin B, Morrison RM. Higher fruit consumption linked with lower body mass index. *Food Review*. 2002;25:28-32. Rolls BJ, Ello-Martin JA, Tohill BC. What can intervention studies tell us about the relationship between fruit and vegetable consumption and weight management? *Nutrition Reviews*. 2004;62:1-17. Hyson D. *The Health Benefits of Fruits and Vegetables: A Scientific Overview for Health Professionals*. Produce for Better Health Foundation; 2002.

3 U.S. Department of Health and Human Services and U.S. Department of Agriculture. *Dietary Guidelines for Americans*, 2005. 6th Edition, Washington, DC: U.S. Government Printing Office, January 2005. Note, the exact amount recommended varies depending on age, gender and physical activity levels.

4 Malik VS, Schulze MB, Hu FB. Intake of sugar-sweetened beverages and weight gain: a systematic review. *American Journal of Clinical Nutrition*. 2006;84 (2):274 –288. James J, Thomas P, Cavan D, Kerr D. Preventing childhood obesity by reducing consumption of carbonated drinks: cluster randomised controlled trial [published correction appears in *British Medical Journal*. 2004;328(7450):1236]. *British Medical Journal*. 2004;328 (7450):1237. Harnack L, Stang J, Story M. Soft Drink Consumption Among U.S. Children and Adolescents: Nutritional Consequences. *Journal of the American Dietetic Association*. 1999;99(4):436-441.

5 Wang YC, Bleich SN, Gortmaker SL. Increasing Caloric Contribution From Sugar-Sweetened Beverages and 100% Fruit Juices Among U.S. Children and Adolescents, 1988-2004. *Pediatrics*. June 1, 2008 2008;121(6):e1604-1614. Wiecha JL, Finkelstein D, Troped PJ, Fragala M, Peterson KE. School Vending Machine Use and Fast-Food Restaurant Use Are Associated with Sugar-Sweetened Beverage Intake in Youth. *Journal of the American Dietetic Association*. 2006;106(10):1624-1630.

6 Nielsen SJ, Siega-Riz AM, Popkin BM. Trends in Food Locations and Sources among Adolescents and Young Adults. *Preventive Medicine*. 2002;35(2):107-113. Niemeier HM, Raynor HA, Lloyd-Richardson EE, Rogers ML, Wing RR. Fast Food Consumption and Breakfast Skipping: Predictors of Weight Gain from Adolescence to Adulthood in a Nationally Representative Sample. *Journal of Adolescent Health*. 2006;39(6):842-849. Schmidt M, Affenito SG, Striegel-Moore R, Khoury PR, Barton B, Crawford P, Kronsberg S, Schreiber G, Obarzanek E, Daniels S. Fast-food intake and diet quality in black and white girls: the National Heart, Lung, and Blood Institute Growth and Health Study. *Archives of Pediatrics & Adolescent Medicine*. Jul 2005;159(7):626-631. Taveras EM, Berkey CS, Rifas-Shiman SL, Ludwig DS, Rockett HR, Field AE, Colditz GA, Gillman MW. Association of consumption of fried food away from home with body mass index and diet quality in older children and adolescents. *Pediatrics*. Oct 2005;116(4):e518-524.

7 Campbell KJ, Crawford DA, Ball K. Family food environment and dietary behaviors likely to promote fatness in 5–6 year old children. *International Journal of Obesity* 2006; 30:1272–80. Baranowski T, Cullen WK, Branowski J. Psychosocial correlates of dietary intake: advancing dietary intervention. *Annual Review of Nutrition* 1999; 19:17–40.

8 Neumark-Sztainer D, Hannan PJ, Story M, Croll J, Perry C. Family meal patterns: associations with sociodemographic characteristics and improved dietary intake among adolescents. *Journal of the American Dietetic Association*. Mar 2003;103(3):317-322. Taveras EM, Rifas-Shiman SL, Berkey CS, Rockett HR, Field AE, Frazier AL, Colditz GA, Gillman MW. Family dinner and adolescent overweight. *Obesity Research*. May 2005;13(5):900-906.

9 French SA, Story M, Neumark-Sztainer D, Fulkerson JA, Hannan P. Fast food restaurant use among adolescents: associations with nutrient intake, food choices and behavioral and psychosocial variables. *International Journal of Obesity and Related Metabolic Disorders*. Dec 2001;25(12):1823-1833. Taveras EM, Berkey CS, Rifas-Shiman SL, et al. Association of consumption of fried food away from home with body mass index and diet quality in older children and adolescents. *Pediatrics*. Oct 2005;116(4):e518-524.

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PB2009-2

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