



Childhood obesity and nutrition

CHILD HEALTH SNAPSHOT NO. 3

Paula Lozano, Charlotte J. Picard, Myles C. Castro, and Pamela T. Roesch

Childhood obesity is associated with poor physical and psychological health in childhood and beyond.¹⁻³ Over the past 40 years, obesity among U.S. children aged 6 to 11 years increased from 6.5% to 18.4%.^{1,4} This rise is partly attributed to increased availability of calorically-dense foods, such as sugar-sweetened beverages and fast food, that are high in sugar and fat and low in nutritional value.^{2,5,6} Recent studies show that children aged 2 to 11 years consume almost 9% of their daily calories from fast food and 6% of their daily calories from sugar-sweetened beverages.^{7,8} Conversely, consumption of fruits and vegetables is known to aid in weight management and reduce risk of chronic disease.¹ From 2007 to 2010, nine out of ten U.S. children did not eat enough vegetables.⁹

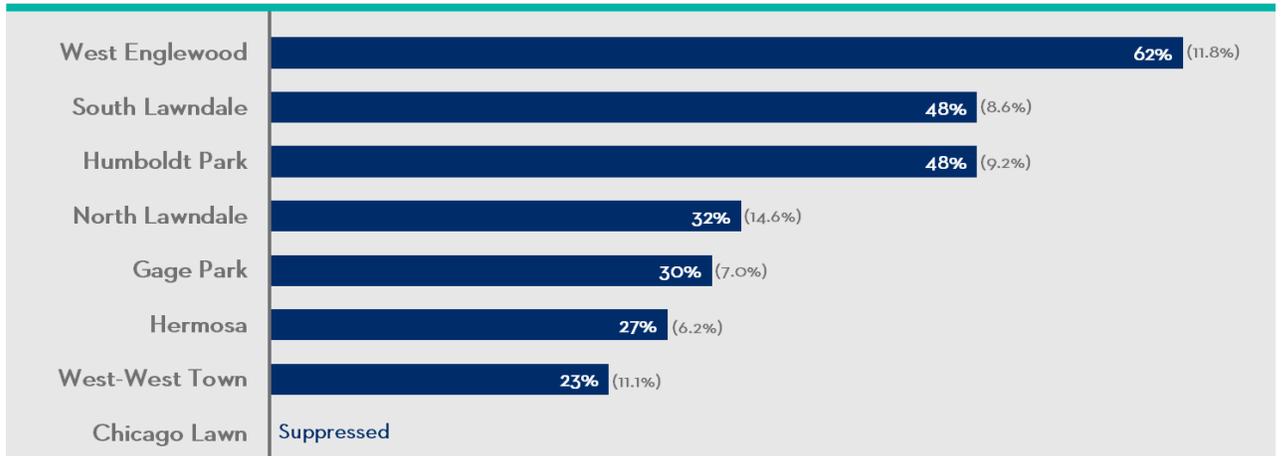
WHICH COMMUNITIES ARE MOST AFFECTED?

- Six out of ten children aged 2 to 12 years in West Englewood were obese.
- Over 80% of children aged 2 to 12 years in South Lawndale and West-West Town had fast food at least once in the past week.
- Less than half of children aged 2 to 12 years in Gage Park and South Lawndale had at least one serving of vegetables in the previous day.

WHO IS MOST AFFECTED?

- More than half of children aged 2 to 3 years were obese.
- Among children aged 4 to 12, over 50% had one or more sugar-sweetened beverage in the previous day and over 60% had fast food at least once in the past week.
- Less than half of Hispanic/Latinx children had at least one serving of vegetables in the previous day.

FIGURE 1: Prevalence of obesity among children aged 2 to 12 years by community area

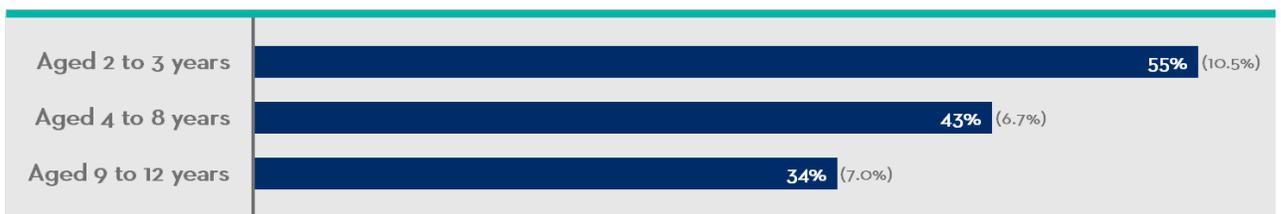


Sampled West Town community area west of Western Avenue only
 Sample size: 206, Rao-Scott Chi-Square p-value : 0.0542

PREVALENCE (STANDARD ERROR)

- The prevalence of obesity among children ranged from 23% in West-West Town to 62% in West Englewood.

FIGURE 2 : Prevalence of obesity among children by age group



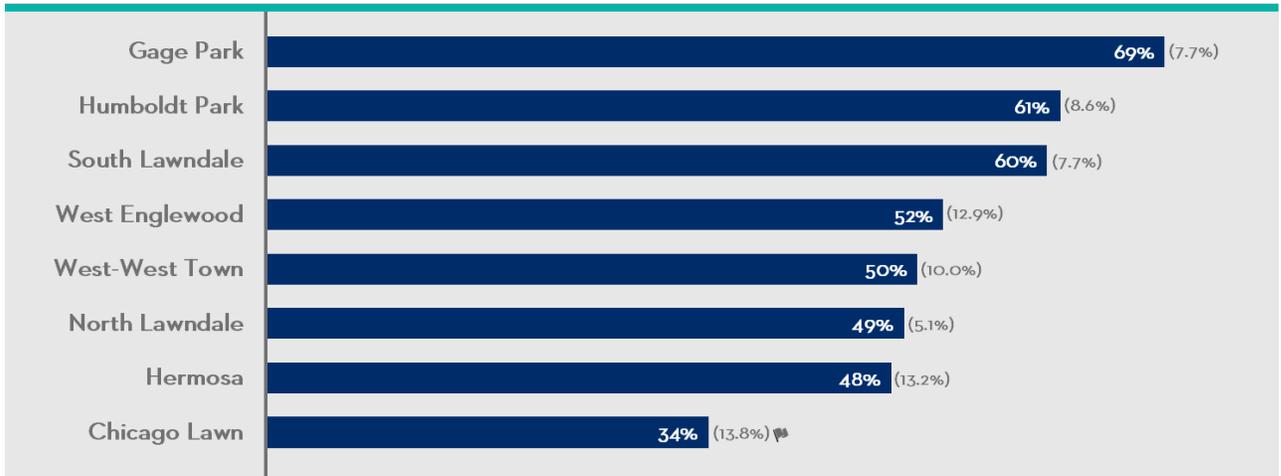
Sample size: 218, Rao-Scott Chi-Square p-value : 0.3112

PREVALENCE (STANDARD ERROR)

- The prevalence of obesity was highest among children aged 2 to 3 years (55%) when compared to other age groups. However, differences between age groups were not statistically significant.

Obesity was defined by a child's body mass index at or above the 95th percentile for children of the same age and sex,¹⁰ using the 2000 CDC growth reference charts for children and teens aged 2 to 20 years.¹¹ This measure was only assessed for children aged 2 to 12 years.

FIGURE 3: Percent of children aged 2 to 12 years who had at least one sugar-sweetened beverage in the previous day by community area

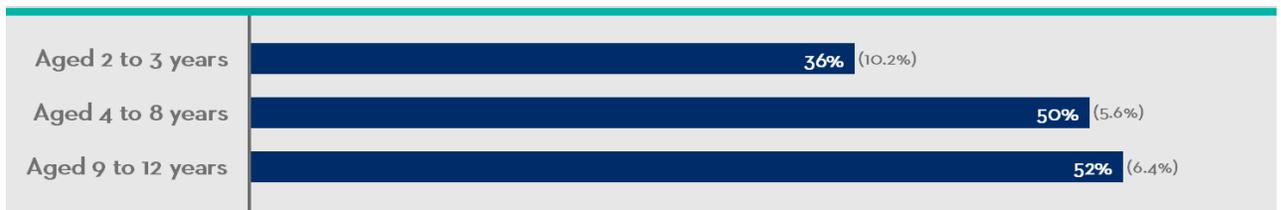


Sampled West Town community area west of Western Avenue only
 Sample size: 308, Rao-Scott Chi-Square p-value : 0.3056

PREVALENCE (STANDARD ERROR)
 FLAG: INTERPRET WITH CAUTION

- The percent of children who had one or more sugar-sweetened beverage in the previous day ranged from 34% in Chicago Lawn to 69% in Gage Park.

FIGURE 4: Percent of children aged 2 to 12 years who had at least one sugar-sweetened beverage in the previous day by age group



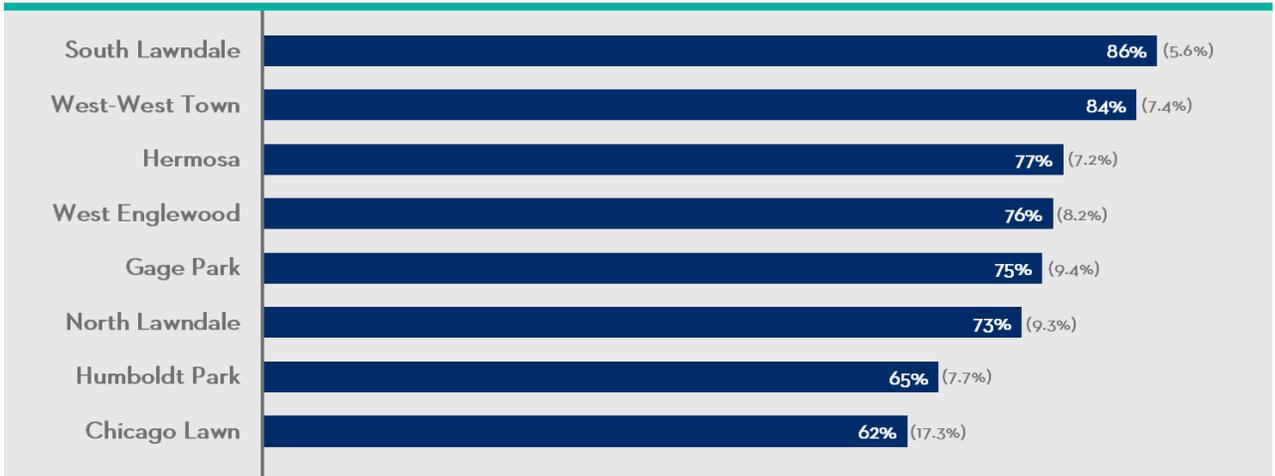
Sample size: 325, Rao-Scott Chi-Square p-value: 0.4018

PREVALENCE (STANDARD ERROR)

- The percent who had at least one sugar-sweetened beverage in the previous day was higher among children aged 4 to 12 years than children aged 2 to 3 years, although differences between age groups were not statistically significant.

Sugar-sweetened beverage were defined as non-diet drinks with added sugar, such as sodas, sweetened water drinks, sports drinks, and energy drinks. A child was defined as having had at least one sugar-sweetened beverage if they had one or more glasses or cans of any of these beverage in the previous day. Asked only among children aged 2 to 12 years.

FIGURE 5: Percent of children aged 2 to 12 years who had fast food at least once in the past week by community area

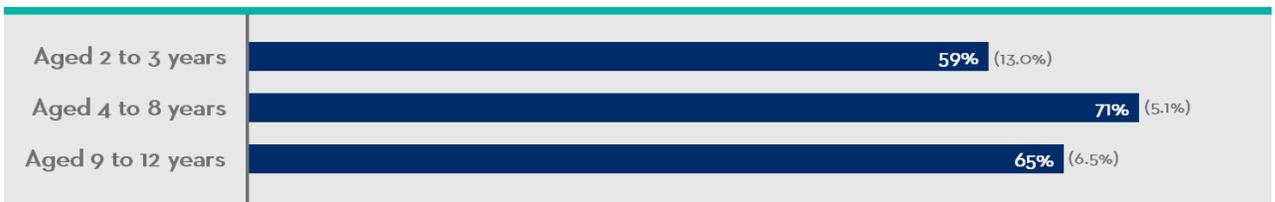


Sampled West Town community area west of Western Avenue only
 Sample size: 310, Rao-Scott Chi-Square p-value: 0.4470

PREVALENCE (STANDARD ERROR)

- The percent of children who had fast food at least once in the past week ranged from 62% in Chicago Lawn to 86% in South Lawndale.

FIGURE 6: Percent of children aged 2 to 12 years who had fast food at least once in the past week by age group



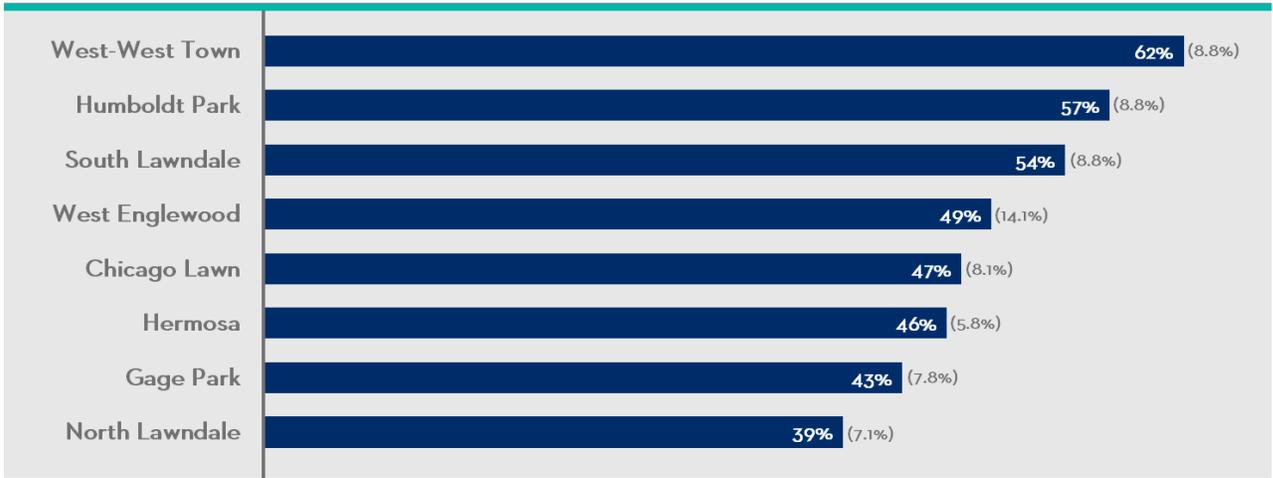
Sample size: 327, Rao-Scott Chi-Square p-value: 0.5739

PREVALENCE (STANDARD ERROR)

- Over 65% of children aged 4 to 12 years had fast food at least once in the past week. Children aged 2 to 3 years were less likely to have had fast food at least once in the past week. Differences between age groups were not statistically significant.

Fast food was defined as fast food meals eaten at school, home, fast food restaurants, carryout, or drive thru. Fast food restaurants include places like McDonalds, KFC, Pizza Hut, and other chain stores, as well as locally owned restaurants serving fried chicken, hamburgers, pizza, and hotdogs for carry out. Children were defined as having had fast food at least once in the past week if they consumed any of these types of meals one or more times in the past seven days. Asked only among children aged 2 to 12 years.

FIGURE 7: Percent of children aged 2 to 12 years who had at least two servings of fruit in the previous day by community area

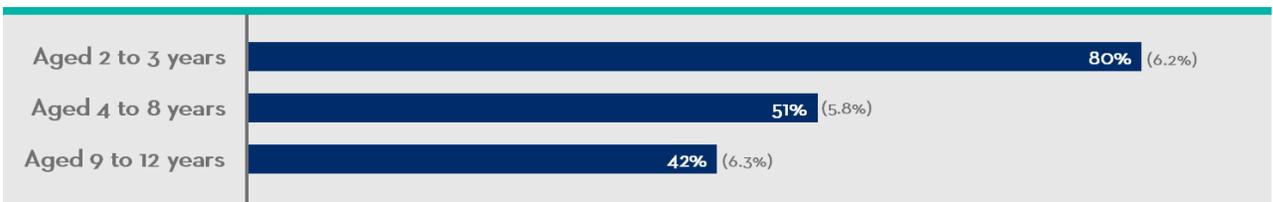


Sampled West Town community area west of Western Avenue only
 Sample size: 303, Rao-Scott Chi-Square p-value: 0.6946

PREVALENCE (STANDARD ERROR)

- The percent of children who had two or more servings of fruit in the previous day ranged from 39% in North Lawndale to 62% in West-West Town.

FIGURE 8: Percent of children aged 2 to 12 years who had at least two servings of fruit in the previous day by age group



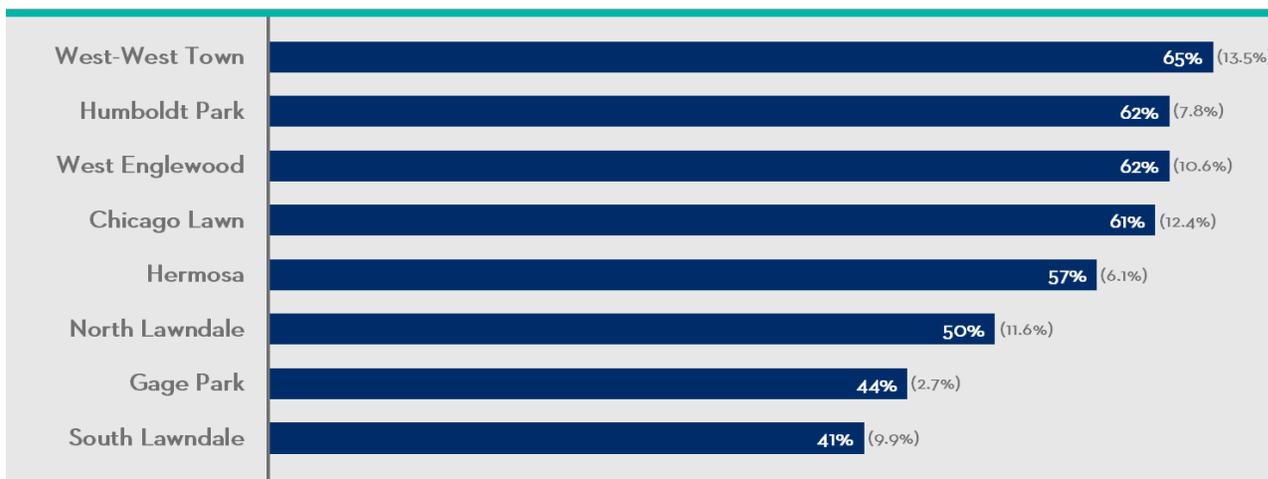
Sample size: 320, Rao-Scott Chi-Square p-value: 0.0090

PREVALENCE (STANDARD ERROR)

- Four out of five children aged 2 to 3 years had two or more servings of fruit in the previous day. Fruit consumption among children aged 2 to 3 years was significantly higher than in older age groups.

A serving of fruit was defined as a medium sized piece of fruit, such as an apple or banana, or half a cup of chopped fruit. Children were defined as having had at least two servings of fruit if they consumed at least this amount in the previous day. Asked only among children aged 2 to 12 years.

FIGURE 9: Percent of children aged 2 to 12 years who had at least one serving of vegetables in the previous day by community area

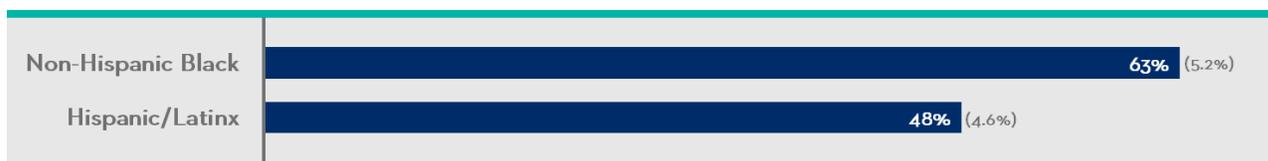


Sampled West Town community area west of Western Avenue only
 Sample size: 304, Rao-Scott Chi-Square p-value: 0.4496

PREVALENCE (STANDARD ERROR)

- The percent of children who had one or more serving of vegetables in the previous day ranged from 41% in South Lawndale to 65% in West-West Town.

FIGURE 10 : Percent of children aged 2 to 12 years who had at least one serving of vegetables in the previous day by race/ethnicity



Sample size: 302, Rao-Scott Chi-Square p-value: 0.0281
 Children of other races not included in this analysis

PREVALENCE (STANDARD ERROR)

- Non-Hispanic Black children were more likely to have had at least one serving of vegetables in the previous day (63%) than Hispanic/Latinx children (48%). This difference was statistically significant.

A serving of vegetables was defined as one cup of leafy greens or a half cup of other vegetables such as green beans or potatoes (not including fried potatoes). Children were defined as having had at least one serving of vegetables if they had one or more servings of vegetables in the previous day. Asked only among children aged 2 to 12 years.

ABOUT THE SURVEY

Sinai Urban Health Institute (SUHI) is a unique, nationally-recognized research center on the west side of Chicago. Our mission is to achieve health equity among communities through excellence and innovation in data-driven research, interventions, evaluation, and collaboration. SUHI is a proud member of Sinai Health System. For more information about SUHI, visit www.SUHChicago.org.

SUHI designed and conducted Sinai Community Health Survey 2.0 in partnership with our Community Advisory Committee and the University of Illinois at Chicago Survey Research Laboratory (SRL). SRL administered surveys face-to-face in both English and Spanish to randomly selected households from each of the ten surveyed communities. If children aged 0 to 12 years lived in the household, interviewers randomly selected one child and interviewed the child's parent or legal guardian ("primary caregiver") about the child's health. Data collection took place between March 2015 and September 2016 with a final sample size of 394 children aged 0 to 12 years.

Survey results are representative at the community area level for all communities with the exception of West Town, which was sampled west of Western Avenue only. Due to limited sample size, children from Norwood Park and Lower West Side were excluded from community area analyses and children identified as Non-Hispanic White or Non-Hispanic Other were excluded from race/ethnicity analyses. More information about Sinai Survey is available at www.SinaiSurvey.org.

METHODS

We used weights to compute statistical estimates to ensure: (1) the estimates accounted for the differential probability of the selection of respondents; and (2) the distribution of child cases in each community area aligns with the distribution of children aged 0 to 12 years in the community area according to the 2010 Census. The Rao-Scott Chi-Square test and Adjusted Wald Test were used to test for statistical differences by community area, racial/ethnic group, sex, and age group. Findings were suppressed when the number of observations was less than five and flagged when the Relative Standard Error (RSE) was >30%, indicating that the values should be interpreted with caution.¹²

REFERENCES

1. Korinek EV, Bartholomew JB, Jowers EM, Latimer LA. Fruit and vegetable exposure in children is linked to the selection of a wider variety of healthy foods at school. *Matern Child Nutr.* 2015;11(4):999-1010.
2. Sahoo K, Sahoo B, Choudhury AK, Sofi NY, Kumar R, Bhadoria AS. Childhood obesity: causes and consequences. *J Family Med Prim Care.* 2015;4(2):187-192.
3. Moens E, Braet C, Bosmans G, Rosseel Y. Unfavourable family characteristics and their associations with childhood obesity: a cross-sectional study. *Eur Eat Disord Rev.* 2009;17(4):315-323.
4. Hales C, Carroll M, Fryar C, Ogden C. Prevalence of Obesity Among Adults and Youth: United States, 2015–2016. In: U.S. Department of Health and Human Services, ed. Vol NCHS data brief. Hyattsville, MD: National Center for Health Statistics; 2017.
5. Anderson P, Butcher K. Childhood Obesity: Trends and Potential Causes. *Future of Children.* 2006;16(1):19-45.
6. Ebbeling C, Sinclair K, Pereira M, Garcia-Lago E, Feldman H, Ludwig D. Compensation for Energy Intake From Fast Food Among Overweight and Lean Adolescents. *Journal of the American Medical Association.* 2004;291(23):2828-2833.
7. Vikraman S, Fryar C, Ogden C. Caloric Intake From Fast Food Among Children and Adolescents in the United States, 2011–2012. In: U.S. Department of Health and Human Services, ed. Vol NCHS data brief. Hyattsville, MD: National Center for Health Statistics; 2015.
8. Rosinger A, Herrick K, Gahche J, Park S. Sugar-sweetened Beverage Consumption Among U.S. Youth, 2011–2014. In: Services USDoHaH, ed. Vol NCHS data brief. Hyattsville, MD: National Center for Health Statistics; 2017.
9. Centers for Disease Control and Prevention. Progress on Children Eating More Fruit, Not Vegetables. <https://www.cdc.gov/vitalsigns/fruit-vegetables/index.html>. Accessed May 14, 2019.
10. Centers for Disease Control and Prevention. Overweight and obesity; Childhood overweight and obesity. <http://www.cdc.gov/obesity/childhood/defining.html>. Accessed May 14, 2019.
11. Centers for Disease Control and Prevention. Using the CDC BMI-for-age Growth Charts to Assess Growth in the United States Among Children and Teens Aged 2 Years to 20 Years. <https://www.cdc.gov/nccdphp/dnpao/growthcharts/training/bmiage/page1.html>. Accessed May 14, 2019.
12. Klein RJ, Proctor SE, Boudreault MA, Turczyn. Healthy People 2010 Criteria for Data Suppression. *Healthy People 2010 Stat Notes.* 2002 Jul;(24):1-12.