

Understanding Nutrition:

Primer Module on Overweight and Obesity

In 2001, the United States Surgeon General declared that the prevalence of overweight and obesity had reached *epidemic* proportions, resulting in large part from eating too many calories and not getting sufficient physical activity.¹

According to the National Institutes of Health, the high prevalence of overweight and obesity is related to genetic, environmental, social, and cultural factors. Certain illnesses (e.g., hypothyroidism, some hormonal disorders) and medications (e.g., steroids, some antidepressants and medications for psychiatric conditions) are also associated with or may lead to weight gain or obesity.² Obesity is a contributing factor to several leading causes of death, including heart disease, stroke, diabetes, and some types of cancer.

American society is often now described as “obesogenic” – defined by the Centers for Disease Control and Prevention as an environment which promotes higher food consumption, unhealthy foods, and lack of adequate physical activity.³ Significant environmental factors associated with overweight and obesity include:

- Aggressive marketing of high-calorie, low-nutrient food^a to children, youth, and their families;^{4, 5}
- Availability of fast food, soda, and high-calorie, low-nutrient food on school campuses;⁶
- Limited access to healthy and affordable foods in low-income communities;^{7, 8, 9}
- Inadequate infrastructures for physical activity in many communities;¹⁰
- Large portion sizes served in fast food chains and restaurants,^{11, 12} and,
- Sedentary activities (such as watching television, using computers and playing video games) that result in inactive lifestyles for both children and adults.^{13, 14}

^a High-calorie, low-nutrient foods are defined by the California Department of Public Health as pastries, such as doughnuts, muffins, croissants; deep-fried foods, such as French fries, fried chicken, fried fish, onion rings; snack foods, such as chips; and desserts, such as cake, pie, cookies, ice cream, candy bars.

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National Data

Since 1979, federal *Healthy People 2010* has set and monitored a series of science-based, 10-year national objectives to promote health and prevent disease. One of the objectives of *Healthy People 2010* was to reduce the prevalence of obesity in adults to 15%. By 2009, not a single state had met this goal.¹⁵

The National Health and Nutrition Examination Survey ([NHANES](#)) collects information about a series of health topics, including overweight and obesity, through interviews and physical examinations of a nationally representative sample of adults, youth, and children. In the last few decades, NHANES has documented a trend of increasing obesity resulting from an upwards shift in the distribution of BMI and an increase in the prevalence of those who are extremely obese.¹⁶

Adults

While the age-adjusted prevalence of overweight U.S. adults aged 20 and older rose only slightly from 33.1% in 1988-1994 to 34.2% in 2007-2008, over the same time period the age-adjusted prevalence of *obesity* increased 47.6% (from 22.9% to 33.8%), and the prevalence of extremely obese (BMI 40 and over) adults nearly doubled from 2.9% to 5.7%.¹⁷

- For adult men, between 1988-1994 and 2007-2008, the prevalence of obesity increased 57% (from 20.3% to 31.9%) in non-Hispanic whites, 76% (from 21.1% to 37.3%) in non-Hispanic blacks, and 50% (from 23.9% to 35.9%) in Mexican American men.
- For adult women, between 1988-1994 and 2007-2008, the prevalence of obesity increased 44% (from 22.9% to 33%) in non-Hispanic whites, 30% (from 38.2% to 49.6%) in non-Hispanic blacks, and 28% (from 35.3% to 45.1%) in Mexican American women.

Background on Obesity

Over 50 years ago, the American Heart Association identified obesity as a cardiovascular risk factor that could be changed by diet and exercise. However, early recommendations and guidelines issued by federal agencies and private organizations were overly simplistic and of little help to people struggling with overweight.

Early assessments of the causes of overweight and obesity rarely addressed cultural and environmental factors, such as aggressive marketing of high fat and sugar products with low nutritional value, lack of nutrition labeling, larger portions served in restaurants and by fast food outlets, or the availability of safe public spaces for physical activity. Nor were comprehensive solutions proposed, such as mass media educational campaigns and model school and community programs.

In 1980, preventing obesity in individuals and population groups was formally established as a national public health policy goal in the U.S. Department of Health and Human Services publication *Promoting Health/Preventing Disease*, updated and renamed *Healthy People 2000*, *Healthy People 2010*, and *Healthy People 2020*.^a In the 1990s, the Centers for Disease Control and Prevention began to fund state obesity prevention grants. In 2010, the Child Nutrition Reauthorization Act for the first time emphasized reducing childhood obesity for federal nutrition programs funded through the U.S. Department of Agriculture.

Other prestigious agencies and organizations are working to address the issue of obesity, including the Institute of Medicine (IOM), which issued a series of reports on childhood obesity, including *Preventing Childhood Obesity: Health in the Balance* (2005), *Food Marketing to Children and Youth: Threat or Opportunity?* (2005), *Progress in Preventing Childhood Obesity: How Do We Measure Up?* (2006), and *Early Childhood Obesity Prevention Policies* (2011). The Robert Wood Johnson Foundation also supports annual *F as in Fat* reports that examine national obesity trends.

Despite a national obsession with thinness and increased focus on prevention, obesity has more than doubled since 1960. In 2009, not a single state met the *Healthy People 2010* objective to reduce adult obesity to 15%.

^a U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion. (November 2010). *Healthy People 2020: Improving the Health of Americans*. Retrieved from <http://www.healthypeople.gov/>

Children and Youth

2007-2008 NHANES data found that an estimated 16.9% of U.S. children and youth ages 2-19 were obese (at or above the 95th percentile for their age group).

- Between 1976-1980 and 2007-2008, measured obesity doubled from 5.0% to 10.4% in preschool children ages 2-5, nearly tripled from 6.5% to 19.6% in children ages 6-11, and nearly quadrupled from 5% to 18.1% in youth ages 12-19.¹⁸
- Between 1988-1994 and 2007-2008, the measured prevalence of obesity in children and youth increased at all income and education levels. While obesity prevalence decreased as income increased, this relationship was not consistent across race/ethnic groups (see Figure 1).¹⁹ Nonetheless, there is a generally positive and consistent pattern of poverty ratios with obesity rates.

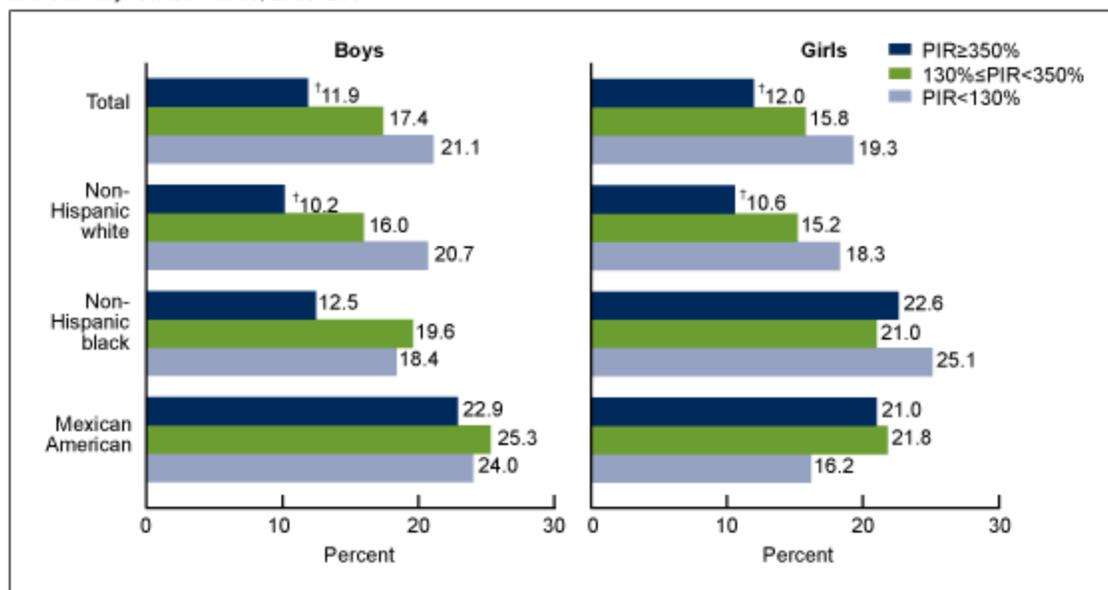
State-Based Nutrition and Physical Activity Program to Prevent Obesity and Other Chronic Diseases (NPAO)

NPAO is a CDC initiative that funds state obesity prevention grants through six strategic target areas to increase fruit and vegetable consumption, increase physical activity, decrease consumption of sugar drinks, decrease consumption of high-calorie, low-nutrient foods, and increase breastfeeding. The CDC estimates that 15% to 20% of obesity could be prevented through breastfeeding alone.^a

^a Dietz, W.H. (2001). Breastfeeding may Help Prevent Childhood Overweight. *JAMA*, 285, 2506-2507.

Source: Centers for Disease Control. (2011). *Obesity: Halting the Epidemic by Making Health Easier*. Retrieved from <http://www.cdc.gov/chronicdisease/resources/publications/aq/obesity.htm>

Figure 1. Prevalence of obesity among children and adolescents aged 2–19 years, by poverty income ratio, sex, and race and ethnicity: United States, 2005–2008



*Significant trend.

NOTES: PIR is poverty income ratio. Persons of other race and ethnicity included in total.
SOURCE: CDC/NCHS, National Health and Nutrition Examination Survey, 2005–2008.

National - California Comparison

The national Behavioral Risk Factor Surveillance System (BRFSS) is an ongoing telephone health survey that tracks self-reported health conditions and risk behaviors in adults ages 18 and older. States report their data to the CDC for analysis. States then have the option to analyze the data based on their own demographics. Table 1 indicates slightly lower percentages of overweight and obese adults in California compared to adults nationally. Over the past decade, California has followed the national trend, with data showing a slight decrease in the percentage of overweight adults while, at the same time, there has been a 36% increase in obesity from 1999 to 2009 (from 18.7% in 1999 to 25.5% in 2009), the latest year for which data are available from BRFSS).²⁰

Table 1. Percent of Self-Reported Overweight and Obese Adults 18+, 1999 and 2009 California and U.S.

	Percent Overweight (BMI 25.0-29.9)		Percent Obese (BMI 30.0+)		Total Percent	
	1999	2009	1999	2009	1999	2009
California	36.1	35.8	18.7	25.5	54.8	61.3
U.S.	36.8	36.2	19.6	26.9	56.4	63.1

Source: Centers for Disease Control and Prevention (CDC). (2009). *Behavioral Risk Factor Surveillance System Survey Data*. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. Retrieved April 19, 2011 from <http://apps.nccd.cdc.gov/brfss/>

Acronyms, Surveys & Methodologies

The statistical profiles in *Understanding Nutrition: A Primer on Programs and Policies in California* compile data from numerous surveys.

BRFSS: The *Behavioral Risk Factor Surveillance System* compiles national data from a system of state-administered, random-digit-dial phone interviews. The survey began in the late 1980's and uses standardized questions with individuals 18 and older.

CBRFSS: The *California Behavioral Risk Factor Surveillance System* analyzes BRFSS data and weights it to California Department of Finance demographic data to more accurately represent California's diverse population.

CDPS: The *California Dietary Practices Survey*, which began in 1989, is administered in odd-numbered years using a computer-assisted, random-digit-dial process to provide a representative sample of the adult 18+ population that have land-line telephones. Interviews are conducted in English and Spanish. Latino, African American, and low-income adults are oversampled to allow trend analysis among populations that are typically underrepresented.

CHIS: The *California Health Interview Survey* is a random-digit-dial telephone survey conducted every two years since 2001 that interviews 50,000 children, teenagers, and adults throughout the state on a wide range of health topics. It provides a detailed picture of the health and health care needs of California's large and diverse population. Many analyses are available at the county level.

CaITEENS: The *California Teen Eating, Exercise and Nutrition Survey*, operated since 1998, is a biennial telephone survey of partially random, digit-dialed and partially list-assisted 12-17 year olds in California, and the sample is weighted to the most recent state Department of Finance data.

CaICHEEPS: The biennial *California Children's Healthy Eating and Exercise Practices Survey* has used a demographically balanced market-research panel of households with 9-11 year olds since 1999. It includes a self-administered, parent-assisted mail survey and a follow-up telephone interview with a subset of the mail survey respondents.

mPINC: *Maternity Practices in Infant Nutrition and Care* is a national survey of maternity care practices and policies conducted by the Centers for Disease Control and Prevention that, beginning in 2007, has been conducted every 2 years. The survey is mailed to all facilities with registered maternity beds in the United States and Territories.

Adults in California

The California-specific analysis of the Behavioral Risk Factor Surveillance System (CBRFSS) provides the best data on California rates of overweight and obesity because the survey is weighted to the 2000 state population census counts. These data are considered by researchers to be a much more accurate estimate than BRFSS data which are weighted to the U.S. population (see Table 1).

The most recent CBRFSS data are available for 2010. According to weighted CBRFSS data, the percentage of overweight and obese Californians rose from 55.6% in 2000 to 59.8% in 2010, which is attributable to the increase in obesity.

The weighted CBRFSS data also provide good estimates of overweight and obesity by race/ethnicity, gender, age, and income. Table 2 shows that over the past decade, while the percentage of overweight adults has remained virtually the same or slightly lower, obesity has *increased* for every racial/ethnic group. Between 2000 and 2010, obesity rates among Asian/Other adults rose by 52.3%, the most of any group, followed by a 23.0% increase for Latinos, 20.0% for African Americans, and 25.0% for whites.²¹

Table 2. Percent of Self-Reported Overweight and Obese California Adults 18+ By Race/Ethnicity 2000 and 2010, Weighted by Population

	Overweight ^a		Obese ^b		Total Overweight and Obese	
	2000	2010	2000	2010	2000	2010
California total	36.6	36.0	19.0	23.8	55.6	59.8
White	36.3	36.0	18.0	22.5	54.3	58.5
African American	35.8	34.3	26.6	31.9	62.4	66.2
Latino	40.1	39.7	24.4	30.0	64.5	69.7
Asian/Other	30.9	30.0	8.6	13.1	39.5	43.1

^aOverweight is defined as a Body Mass Index (BMI) greater than or equal to 25 and less than 30. The differences of overweight between race/ethnicities was statistically significant in 2000 ($p < 0.05$) and in 2010 ($p < 0.0001$). Statistically significant differences for the change over time are not available.

^bObesity is defined as BMI 30 or greater. The differences in obesity between racial/ethnic groups was statistically significant in 2000 ($p < 0.0001$) and in 2010 ($p < 0.0001$). Statistically significant differences for the change over time are not available.

Data are weighted to the 2000 California population (the most recent 2010 Census data were not available for this study).

Source: California Behavioral Risk Factor Surveillance System. Data analysis provided on June 7, 2011, by Suzanne Ryan-Ibarra, Survey Research Group, Cancer Surveillance and Research Branch, California Department of Public Health.

In 2010, CBRSS data on self-reported heights and weights in California showed the following:

Gender

Men were much more overweight than women (43.3% vs. 28.8%) and have a slightly higher percentage of obesity than women (24.1% vs. 23.5%).

Age

Overweight and obesity increased from 42.0% in 18-24 year olds to 67.3% in adults ages 55-64 and then declined to 59.7% in adults 65 and older.

Income

Using the six income categories in this survey, adults with the lowest percentages of overweight or obesity also reported the highest income, over \$75,000 per year (55.9%), while adults with the highest percentage of overweight or obesity made less than \$15,000 per year (64.4%).

Of adults with incomes between \$15,000-24,999, 63.3% were overweight or obese, followed by 63.1% of those with incomes between \$25,000-34,999, 62.4% with incomes between \$50-75,000, and 61.8% of adults with incomes between \$35-49,999.^a

Poverty and Obesity

Low-income and food-insecure people face multiple challenges in adopting healthy behaviors, including:

- Lack of access to healthy, affordable foods
- Limited resources
- Limited opportunities for physical activity
- Cycles of food deprivation and overeating
- High stress levels
- High exposure to marketing and advertising for obesity promoting products
- Limited health care access

Source: Food Research and Action Center. (2010). *Why Low-Income and Food Insecure People are Vulnerable to Overweight and Obesity*. Retrieved from <http://frac.org/initiatives/hunger-and-obesity/why-are-low-income-and-food-insecure-people-vulnerable-to-obesity/>

^a The differences in obesity between income groups was statistically significant in 2010 (p <0.0001).

Children and Teens in California

There is no one study that tracks overweight and obesity in California children and adolescents across all age groups over time. However, a profile can be pieced together from different statewide studies which use parent and youth self-reports and measurements by health care providers. These reports suggest a leveling off in obesity among younger children, an increase for children ages 9-11 and a decline for children and youth ages 12-17.

Children and Youth from Low-Income Families (Measured Weights)

In the past 20 years, the percentage of overweight and obesity in children 0-5 from low-income families has generally been higher than in their U.S. counterparts, based on measurements taken by the children's health care providers.

Newly released data show that in 2010, 16.0% of children who were 2-5 years old in California's Child Health and Disability Prevention (CHDP) Program^a were overweight and 17.2% were obese, totaling 33.2%.

Nationally in 2010, 16.1% of this age group were overweight and 14.4% were obese, totaling 30.5%. Since 1990, obesity among California children 0-5 years of age has increased from 13.4%, peaking at 16.3% in 2004, and declining to 15.1% (compared to 14.4% nationally) in 2010.^{22, 23}

For children and youth ages 5-19, overweight increased steadily from 15.1% in 1989 to 18.4% in 2009 (the latest year for which data are currently available), and obesity in this age group nearly doubled from 12.7% in 1989 to 23.1% in 2009, for a combined total of overweight and obesity among 5-19 year olds of 41.5%.²⁴

Childhood Obesity Task Force

In February 2010, First Lady Michelle Obama launched the *Let's Move* campaign to solve the childhood obesity epidemic within a generation, and President Obama established an interagency Task Force on Childhood Obesity.

In May 2010, the White House introduced the Task Force's action plan to return to a childhood obesity rate of 5% by 2030 – the rate before childhood obesity first began to rise in the late 1970s.

The plan presents 70 recommendations, including getting children a healthier start in life, empowering/educating parents, providing healthy food in schools, improving access to healthy, affordable food, and getting children to be more physically active.

Source: White House Task Force on Childhood Obesity. (February 2011). *One Year Progress Report*. Retrieved from

http://www.letsmove.gov/sites/letsmove.gov/files/Obesity_update_report.pdf

^a California participates in the CDC-sponsored Pediatric Nutrition Surveillance System (PedNSS) which reports information from health care providers of the Child Health and Disability Prevention Program for low-income families.

Children and Youth (Parent or Self Reports)

Other studies gather data from all income levels and use information on weight reported by parents or directly by the children and youth.

- **9-11 year olds**

According to the California Children's Healthy Eating and Exercise Practices Survey (Cal CHEEPS), the percentage of parent-reported obesity in 9-11 year olds rose from 15.0% in 1999 to 18.1% in 2009, while the percentage of overweight 9-11 year olds increased only slightly, from 19.0% in 1999 to 19.5% in 2009. The total percentage of overweight and obesity from 1999 to 2009 rose from 34.0% to 37.6%.^{25, 26}

- **Youth**

According to data from the 2008 *California Teen Eating, Exercise and Nutrition Survey (CalTEENS)*.²⁷

- Overweight and obesity in California youth ages 12-17 *declined* from 24.3 in 2000 to 21.8% in 2008. The combined percentage for boys dropped from 27.0% in 2000 to 23.0% in 2008. The combined percentage for girls was 22.0% in 2000, peaked at 25.0% in 2004, and dropped to 20.6% in 2008.
- In 2008, for teens ages 12-17 years, African American youth had the highest percentage of overweight/obesity (39.9%), followed by Latinos (29.4%), Asian/Other (18.0%), and white youth (12.0%).

The Economic Cost of Overweight and Obesity

Nationally, from 1987 to 2001, obesity-associated illnesses accounted for 27% of increased medical costs in the U.S.²⁸ In 2006, it was estimated that \$147 billion were spent on obesity-related medical costs, and on average, obese individuals had annual medical costs that were \$1,429 higher than individuals of with a BMI of less than 25.²⁹

A review of the research published between 1980 and 2009 on obesity and its relation to mortality and morbidity estimated the total annual economic cost of overweight and obesity in the U.S. (including medical costs, lost productivity, disability, and mortality) to be \$270 billion.³⁰

In California, the total annual estimated cost for overweight and obesity was estimated at \$21 billion in 2006, including health care costs associated with overweight and obesity at \$12.8 billion and the cost of lost productivity at work being \$8.2 billion.³¹ This appears to be a significant increase from the \$8.4 billion for obesity and overweight estimated for 2000.³²

Recently, and for the first time in major federal legislation, the Affordable Care Act of 2010 funded obesity prevention as a strategy for health care cost containment.³³

To access additional modules in *Understanding Nutrition: A Primer on Programs and Policies in California*, go to www.ccrwf.org

APPENDIX A: Using BMI to Assess Overweight and Obesity

Overweight and obesity indicate ranges of weight that are higher than what is considered to be healthy for a given height. They identify ranges of weight that increase the likelihood of certain chronic diseases and other health problems.

Adults

Irrespective of gender or age, overweight and obesity ranges are determined by using weight and height to calculate "[Body Mass Index](#)," or BMI. A BMI between 25 and 29.9 is classified as overweight, a BMI of 30 or higher is obese, and a BMI over 40 is extremely obese.

BMI is calculated by dividing weight in pounds by the square of a person's height in inches and multiplying the result by 703. This formula is represented as:

$$\text{BMI} = \left(\frac{\text{Weight in Pounds}}{(\text{Height in inches})^2} \right) \times 703$$

The CDC provides an online BMI calculator for adults which can be accessed at:

<http://www.cdc.gov/healthyweight/assessing/bmi/index.html>

Children and Youth

BMI for children and youth is specific to gender and age. The Centers for Disease Control and Prevention (CDC) and the American Academy of Pediatrics recommend screening children beginning at two years old. A BMI-for-age between the 85th and 95th percentiles is referred to as "overweight," while BMI-for-age at or above the 95th percentile is classified as "obese." The percentile indicates the relative position of the child's BMI to recommended ranges for good health.^a

For more information on BMI for children and youth, go to:

http://www.cdc.gov/healthyweight/assessing/bmi/childrens_bmi/about_childrens_bmi.html

The CDC's BMI Calculator for children and youth can be found at:

<http://apps.nccd.cdc.gov/dnpabmi/>

^a Overweight and obesity terminology for children and youth was recently changed. Children and youth from the 85th percentile to the 95th percentile, previously designated as "at risk for overweight," are now referred to as "overweight." Children and youth with BMI at or above the 95th percentile, formerly called "overweight," are now referred to as "obese."

Sources: Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion. *Defining Overweight and Obesity*. Retrieved April 13, 2011 from <http://www.cdc.gov/obesity/defining.html>

Centers for Disease Control and Prevention. (February 15, 2011). *About BMI for Children and Teens*. Retrieved from: http://www.cdc.gov/healthyweight/assessing/bmi/childrens_bmi/about_childrens_bmi.html

U.S. Department of Health and Human Services. National Center for Health Statistics. (2010, June 25). *Changes in Terminology for Childhood Overweight and Obesity*. National Health Statistics Reports; 25. Retrieved from <http://www.cdc.gov/nchs/data/nhsr/nhsr025.pdf>

END NOTES

- ¹ U.S. Department of Health and Human Services. (2001). *The Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity*. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, Office of the Surgeon General. Retrieved from <http://www.surgeongeneral.gov/library>
- ² U.S. Department of Health and Human Services. National Institutes of Health. (November 2008). *Understanding Adult Obesity*. Retrieved April 17, 2011, from <http://win.niddk.nih.gov/publications/understanding.htm#genetic>
- ³ Centers for Disease Control and Prevention. (March 1, 2011). *Overweight and Obesity*. Retrieved from <http://www.cdc.gov/obesity>
- ⁴ Barado, A., Wootan, M.G. (November 2009). *Better-for-Who? Revisiting Company Promises on Food Marketing to Children*. Center for Science in the Public Interest. Retrieved from <http://cspinet.org/new/pdf/pledgereport.pdf>
- ⁵ Institute of Medicine of the National Academies. (2006). *Food Marketing to Children and Youth: Threat or Opportunity?* Washington, DC: The National Academies Press. Retrieved from <http://www.iom.edu/Reports/2005/Food-Marketing-to-Children-and-Youth-Threat-or-Opportunity.aspx>
- ⁶ Park, S., Sappenfield, W.M., et al. (October 2010). The Impact of the Availability of School Vending Machines on Eating Behavior During Lunch: The Youth Physical Activity and Nutrition Survey. *Journal of the American Dietetic Association*, 110(10), 1532-6.
- ⁷ Powell, L.M., Han, E., Chaloupka, F.J. (June 2010). Economic Contextual Factors, Food Consumption, and Obesity among U.S. Adolescents. *Journal of Nutrition*, 140(6), 1175-80.
- ⁸ Larson, N.I., Story, M.T., Nelson, M.C. (January 2009). Neighborhood Environments: Disparities in Access to Healthy Foods in the U.S. *American Journal of Preventive Medicine*, 36(1), 74-81.
- ⁹ Zick, C.D., Smith, K.R., et al. (November 2009). Running to the Store? The Relationship between Neighborhood Environments and the Risk of Obesity. *Social Science and Medicine*, 69(10), 1493-1500.
- ¹⁰ Sallis, J.F., Glanz, K. (March 2009). Physical Activity and Food Environments: Solutions to the Obesity Epidemic. *Millbank Quarterly*, 87(1), 123-154.
- ¹¹ Young, L.R., Nestle, M. (2007). Portion Sizes and Obesity: Responses of Fast-Food Companies. *Journal of Public Health Policy*, 28, 238-248.
- ¹² Condrasky, M., et al. (2007). Chefs' Opinions of Restaurant Portion Sizes. *Obesity*, 15, 2086-2094.
- ¹³ U.S. Department of Health and Human Services. Office of the Surgeon General. (January 11, 2007). *Overweight in Children and Adolescents*. Retrieved from http://www.surgeongeneral.gov/topics/obesity/calltoaction/fact_adolescents.htm
- ¹⁴ Foster, G.A., et al. (2006). Altering TV Viewing Habits: An Unexplored Strategy for Adult Obesity Intervention? *American Journal of Health Behavior*, 30(1), 3-14.
- ¹⁵ Centers for Disease Control and Prevention. (August 3, 2010). Vital Signs: State-Specific Obesity Prevalence among Adults – United States, 2009. *Morbidity and Mortality Weekly Report (MMWR)*. Retrieved from <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm59e0803a1.htm>
- ¹⁶ Centers for Disease Control and Prevention. (November 2007). *Obesity among Adults in the United States – No Statistically Significant Change since 2003-2004*. Retrieved from <http://www.cdc.gov/nchs/data/databriefs/db01.pdf>
- ¹⁷ Centers for Disease Control and Prevention. (June 2010). *Prevalence of Overweight, Obesity, and Extreme Obesity among Adults: United States, Trends 1976-1980 through 2007-2008*. Retrieved from http://www.cdc.gov/NCHS/data/hestat/obesity_adult_07_08/obesity_adult_07_08.pdf

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- ¹⁸ Centers for Disease Control and Prevention. (June 2010). *Prevalence of Obesity among Children and Adolescents: United States, Trends 1963-65 through 2007-08*. Retrieved from http://www.cdc.gov/nchs/data/hestat/obesity_child_07_08/obesity_child_07_08
- ¹⁹ Centers for Disease Control and Prevention. (December 2010). *Obesity and Socioeconomic Status in Children and Adolescents: United States, 2005-2008*. National Center for Health Statistics Data Brief No. 51. Retrieved from <http://www.cdc.gov/nchs/data/databriefs/db51.htm>
- ²⁰ Centers for Disease Control and Prevention. (2009). *Behavioral Risk Factor Surveillance System Survey Data*. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. Retrieved April 19, 2011 from <http://apps.nccd.cdc.gov/brfss/>
- ²¹ California Behavioral Risk Factor Surveillance System. Data analysis provided on June 7, 2011, by Suzanne Ryan-Ibarra, Survey Research Group, Cancer Surveillance and Research Branch, California Department of Public Health.
- ²² California Department of Health Care Services. (August 2, 2010). *2009 Pediatric Nutrition Surveillance – Summary of Trends in Growth and Anemia Indicators, Children Aged <5 Years*. Retrieved June 27, 2011, from <http://www.dhcs.ca.gov/services/chdp/Documents/PedNSS/2009/12C.pdf>
- ²³ Centers for Disease Control and Prevention. (June 3, 2011). *2010 Pediatric Nutrition Surveillance – National. Comparison of Growth and Anemia Indicators, Children Aged <5 Years*. Retrieved June 27, 2011, from http://www.cdc.gov/pednss/pednss_tables/pdf/national_table12.pdf
- ²⁴ California Department of Health Care Services. (August 2, 2010).
- ²⁵ California Department of Public Health. (February 2011). *California Children’s Healthy Eating and Exercise Practices Survey, 2009* [Data Table 66]. Retrieved April 24, 2011 from: <http://www.cdph.ca.gov/programs/cpns/Documents/REU-WeightStatus-CalCHEEPS2009.pdf>
- ²⁶ California Department of Health Services. (June 2004). *California Children’s Healthy Eating and Exercise Practices Survey, 1999* [Data Table 66]. Retrieved June 27, 2011 from <http://www.cdph.ca.gov/programs/cpns/Pages/1999CalCHEEPSDataTables.aspx>
- ²⁷ California Department of Public Health. *Network for a Healthy California. California Teen Eating, Exercise and Nutrition Survey (CalTEENS)*. Unpublished data; 2008.
- ²⁸ Thorpe, K.E., Florence, C.D., et al. (2004). The Impact of Obesity on Rising Medical Spending. *Health Affairs*; W4, 480-486.
- ²⁹ Finkelstein, E.A., Trogden, J.G., et al (2009). Annual Medical Spending Attributable to Obesity: Payer- and Service-Specific Estimates. *Health Affairs*; 28, w822-831.
- ³⁰ Behan, D.F. and Cox, S.H. (December 2010). *Obesity and its Relation to Mortality and Morbidity Costs*. Society of Actuaries. Retrieved from <http://www.soa.org/files/pdf/research-2011-obesity-relation-mortality.pdf>
- ³¹ Chenoweth & Associates, Inc. (July 2009). *The Economic Costs of Overweight, Obesity, and Physical Inactivity among California Adults – 2006*. Davis: CA: California Center for Public Health Advocacy. Retrieved from <http://www.publichealthadvocacy.org/costofobesity.html>
- ³² Chenoweth, D. (April 2005). *The Economic Costs of Physical Inactivity, Obesity, and Overweight in California Adults: Health Care, Workers’ Compensation, and Lost Productivity*. Retrieved from <http://www.cdph.ca.gov/healthinfo/healthyliving/nutrition/Documents/CostofObesityToplineReport.pdf>
- ³³ Trust for America’s Health. (2011). *Patient Protection and Affordable Care Act (HR 3590): Selected Prevention, Public Health & Workforce Provisions*. Retrieved from <http://healthyamericans.org/assets/files/Summary.pdf>

FOR MORE INFORMATION

This module on overweight and obesity is one component of *Understanding Nutrition: A Primer on Programs and Policies in California*. Go to www.ccrwf.org to access additional modules.

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Diane F. Reed, a long-time consultant with CCRWF, took the lead in researching and writing this primer on overweight and obesity.

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